

Notice

Environmental Protection Act 1994

Information request

This information request is issued by the administering authority under section 140 of the Environmental Protection Act 1994 to request further information needed to assess an amendment application for a site-specific environmental authority.

To: Peabody Coppabella Pty Ltd
Level 14, 31 Duncan Street
Fortitude Valley, QLD 4006
By email transmission only

ATTN: Marianne Gibbons, Brad Cartwright
Email: MGibbons@peabodyenergy.com, BCartwright@peabodyenergy.com

Our reference: EPML00579213

Further information is required to assess an amendment application for environmental authority

1. Application details

The amendment application for a site-specific environmental authority was received by the administering authority on 16 February 2024.

The application reference number is: A-EA-AMD-100600739

Land description: ML70161, ML70163, ML70164, ML70236 ML70237, PL1015.

2. Information request

The administering authority has considered the abovementioned application and is writing to inform you that further information is required to assess the application (an information request).

The information requested is provided in **Appendix A – Information requested**.



3. Actions

The abovementioned application will lapse unless you respond by giving the administering authority -

- (a) all of the information requested; or
- (b) part of the information requested together with a written notice asking the authority to proceed with the assessment of the application; or
- (c) a written notice –
 - i. stating that you do not intend to supply any of the information requested; and
 - ii. asking the administering authority to proceed with the assessment of the application.

A response to the information requested must be provided by **28 November 2024** (the information response period). If you wish to extend the information response period, a request to extend the period must be made at least 10 business days before the last day of the information response period.

The response to this information request or a request to extend the information response period can be submitted to the administering authority by email to CRMining@des.qld.gov.au.

If the information provided in response to this information request is still not adequate for the administering authority to make a decision, your application may be refused as a result of section 176 of the *Environmental Protection Act 1994*, where the administering authority must have regard to any response given for an information request.


4. Human rights

A human rights assessment was carried out in relation to this decision and it was determined that no human rights are engaged by the decision.

5. Review and appeal rights

You may apply to the administering authority for a review of this decision within 10 business days after receiving this notice. Information about your review rights is attached to this notice or search 'DESI Internal review and appeals' at business.qld.gov.au. This information is guidance only and you may have other legal rights and obligations.

If you require more information, please contact Saranne Giudice on the telephone number listed below.



Signature

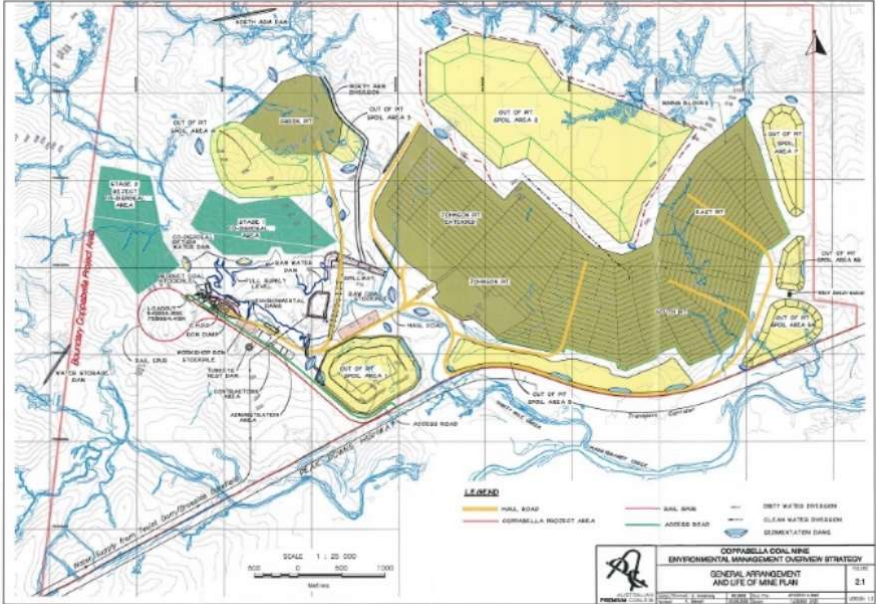
28/05/2024

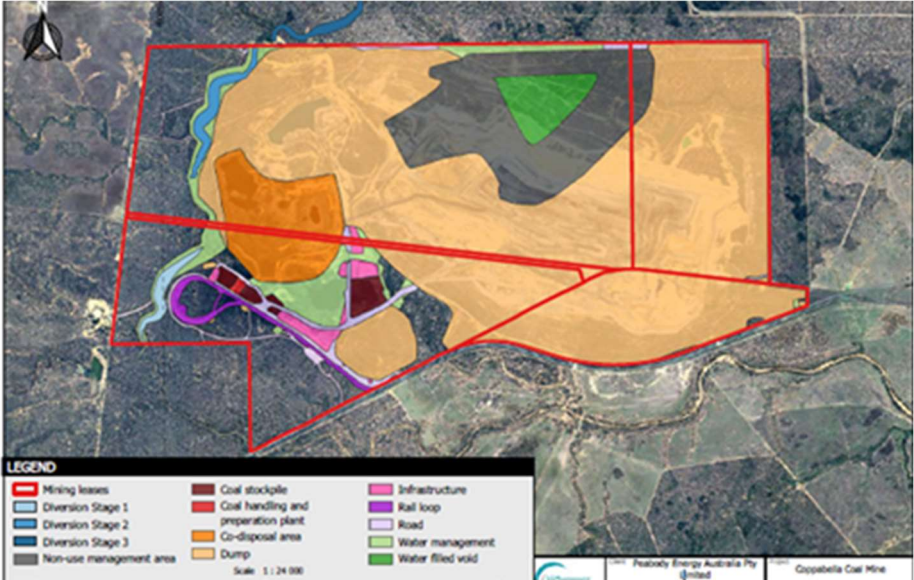
Date

Alisha Stewart
Department of Environment, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

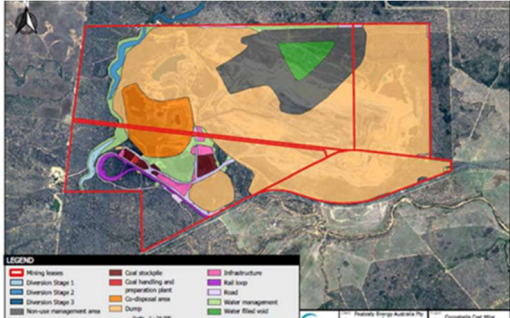
Enquiries:
Business Centre Coal
PO Box 3028, Emerald QLD 4720
Phone: (07) 4987 9320
Email: CRMining@des.qld.gov.au


Appendix A – Information requested

No.	Matter of Interest	DESI Comment	Requested Action/s
1.	Land use approval	<p>Section 7.9.2.1 of the EA amendment application supporting information document states <i>“Peabody has determined that land use within ML70164, ML70161 and ML70237 is permitted without further Commonwealth Government and Queensland State Government approval”</i>.</p> <p>Figure 2.1 – <i>General Arrangement and Life of Mine Plan</i> in the Environmental Management Overview Strategy (EMOS), June 2002, does not include disturbance to land in the Humbug Gully Creek area.</p>  <p>EMOS, Figure 2.1 - General Arrangement and Life of Mine Plan.</p>	<ul style="list-style-type: none"> - Provide justification demonstrating why land use within ML70164, ML70161 and ML70237 has been determined to be permitted without further Commonwealth Government or Queensland State Government approval. - Clarify what documents are being relied upon to demonstrate a pre-approved impact to the Humbug Gully area.

<p>2.</p>	<p>Disturbance footprint</p>	<p>The EA amendment application supporting information document and technical appendices have provided limited information about the area of land that will be disturbed by the proposed amendment.</p> <p>The EA amendment application supporting information document provides Figure 1 – <i>Proposed disturbance</i>, which depicts the domains of disturbance.</p>  <p>Figure 1 – Proposed disturbance</p> <p>However, according to Table C1 – <i>Final land use and rehabilitation approval schedule</i> in the current EA, the total authorised disturbance footprint is 2,390ha. The projective surface area (ha) for undisturbed land is 1,753ha, which is approximately 42% of the total area. The proposed disturbance depicted in Figure 1 appears to be of a larger area than authorised in the EA.</p> <p>Table C1 – Final land use and rehabilitation approval schedule</p> <table border="1" data-bbox="524 1342 1281 1428"> <thead> <tr> <th>Disturbance type</th> <th>Projective surface area (ha)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Disturbance type	Projective surface area (ha)			<ul style="list-style-type: none"> - Provide the area (ha) of all proposed land disturbance associated with the amendment (on all the mining leases to which EPML00579213 relates) including: <ul style="list-style-type: none"> o The proposed residual void. o The Humbug Gully Creek diversion and associated water management landforms. o Land which will be disturbed by using as waste rock dump. o Total area of disturbance proposed. o Undisturbed area. - Provide an updated disturbance map for the EA.
Disturbance type	Projective surface area (ha)						

		Elevated landform (overburden)	700		
		- upper slopes			
		- lower slopes	840		
		Access tracks and haul roads	250		
		Elevated landform (co-disposal)	150		
		- upper surface			
		- slopes	70		
		Residual Voids	80		
		Rail loop	30		
		CHPP General Area	150		
		Water Management Structures	120		
		Undisturbed	1,753		
		Total	4,143		
3.	Spatial data	Spatial data was not provided to support the amendment application. Spatial data is required for the department's assessment of the application.		-	<p>Provide spatial files (for all MLs associated with EPML00579213) including:</p> <ul style="list-style-type: none"> ○ All domains of disturbance ○ The total disturbance footprint ○ Impact areas for each MSES

			<ul style="list-style-type: none"> ○ Impact areas for each MNES
4.	ROM	<p>It is unclear if the proposed amendment will result in an increase in annual tonnage and production.</p> <p>Section 5.1.1.3 of the EA amendment application supporting information document states “<i>Stage 3 diversion works will have the following benefits:</i>”</p> <ul style="list-style-type: none"> • <i>enables mining of economic resource beyond the current Humbug Gully, with ~33.4Mt (ROM) at 10:1 ratio at an estimated yield of 75 % which provides opportunity for improved outcomes from current mining”</i> <p>It is not clear whether the above statement refers to mining through Humbug Gully in ML70164, or the Johnson Extended Project in MLs 70384, 70385, 70386 and 70387.</p>	<ul style="list-style-type: none"> - Provide details of the current annual extraction rate for Coppabella Coal Mine. - Provide details of any proposed increase of the current annual extraction rate from the proposed amendment. - Clarify whether the anticipated ~33.4Mt (ROM) will be from ML70164 and/or MLs associated with the Johnson Extended Project.
5.	Overburden dump	<p>Figure 1 – <i>Proposed disturbance</i>, depicts the overburden dump location as adjacent to the eastern mining lease boundaries on ML70236 and the southern mining lease boundary on ML70237 which is adjacent to the Peak Downs Highway. This could hinder future landform re-structuring, shaping or battering, rehabilitation and maintenance activities.</p>  <p>Figure 1 – proposed disturbance</p>	<ul style="list-style-type: none"> - Explain why the overburden dump is adjacent to the mining lease boundaries in the map provided with the amendment application. - Provide the minimum distance that will be maintained between the overburden dump and mining lease boundaries.

<p>6.</p>	<p>Humbug Gully Creek diversion</p>	<p>Figure 3 – <i>MSES Vegetation</i>, Appendix H, Desktop Assessment for Prescribed Environmental Matters at Coppabella Mine, submitted with the EA amendment application depicts MSES vegetation on ML70161 in the proposed location of the creek diversion and associated water management landforms. Figure 6 – <i>Protected Wildlife Habitat</i> and Figure 9 – <i>Category B Remnant Vegetation within a Prescribed Distance of a Watercourse</i> in the same document also depict MSES wildlife habitat and Category B Remnant Vegetation within a Prescribed Distance of a Watercourse on ML70161 and ML70164 in the proposed location of the creek diversion and associated water management landforms.</p> <p>A description of impacts from the proposed amendment on the environmental values of land in the location of the Humbug Gully Creek diversion was not provided in the amendment application.</p>  <p>Figure 3 – MSES Vegetation</p>	<p>- Provide details in regard to the relative risks and likely magnitude of impacts on environmental values in the location of the Humbug Gully Creek diversion.</p>
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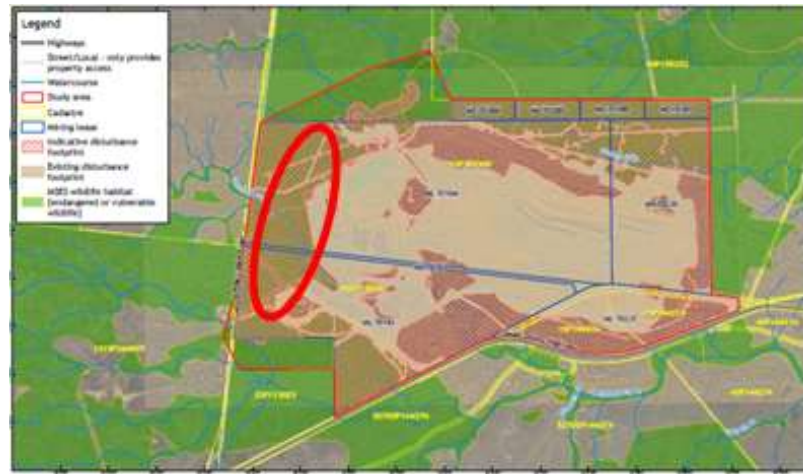


Figure 6 - Protected Wildlife Habitat

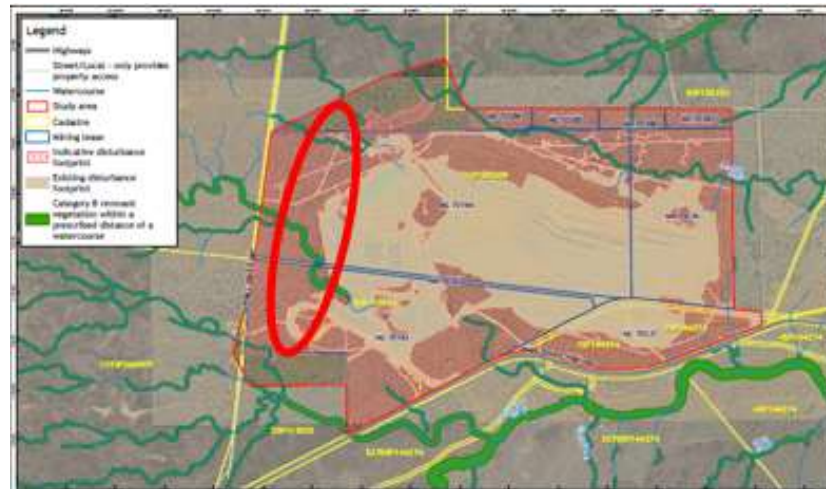


Figure 9 - Category B Remnant Vegetation within a Prescribed Distance of a Watercourse

7.	Impacts to prescribed environmental matters	<p><u>Location of residual void</u></p> <p>Appendix G – <i>Coppabella Mine Continuation Project – Secondary Study Area – Terrestrial Ecology</i>, 19 January 2024 submitted with the EA amendment application lists the following disturbance of key matters in the proposed location of the residual void:</p> <ul style="list-style-type: none"> • MNES – Threatened ecological communities 47.07ha - RE 11.5.16 (Endangered) (Brigalow TEC) • MSES – Regulated vegetation 47.27ha - Category B ESA (Endangered RE 11.5.16) 11.25ha - RE within defined distance of a watercourse (Endangered) 119.10ha - Essential habitat • MNES and MSES – habitat for threatened species 133.96ha - Fork-tailed swift (<i>Apus pacificus</i>) 76.45ha – Greater glider (south and central) (<i>Calyptorhynchus lathamii</i>) 76.45ha – Koala (<i>Phascolarctos cinereus</i>) 59.60ha – Ornamental snake (<i>Denisonia maculata</i>) 129.66ha – Short beaked echidna (<i>Tachyglossus aculeatus</i>) 65.49ha – Squatter pigeon (southern) (<i>Geophaps scripta scripta</i>) 133.96ha – White-throated needletail (<i>Hirundapus caudacutus</i>) <p>The glossy black cockatoo (northern) (<i>Calyptorhynchus lathamii erebus</i>) is also considered likely to occur within the proposed location for the residual void, with 119.10ha considered preferred habitat for the species.</p> <p>In addition, the above report describes the area of the proposed residual void as largely supporting remnant Eucalypt and Acacia woodlands that are connected to expansive tracts of similar vegetation communities to the north, east and west. Accordingly, the area of the proposed residual void has a role in supporting biodiversity values at both local and regional scales. Areas of watercourse will be directly impacted and artificially modified. Vegetation along these watercourses and drainage features provide connectivity between areas of preferred habitat. Vegetation clearing in the location of the proposed residual void is likely to fragment habitat and result in the loss of connectivity values associated with this riparian corridor.</p>	<p><u>Location of residual void</u></p> <ul style="list-style-type: none"> - Provide additional details of avoidance and mitigation measures that may reduce the significant residual impact. - Where impacts are unable to be avoided or suitably mitigated, provide details of an environmental offset approach to counterbalance the significant residual impact of the prescribed activity on the prescribed environmental matters. This must include an assessment of the availability of the necessary offset requirements. <p><u>Location of Humbug Gully diversion</u></p> <ul style="list-style-type: none"> - Provide details of potential impacts to prescribed environmental matters from the Humbug Gully Creek diversion.
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		<p>There will be cumulative impacts on essential habitat through the loss of vegetation from clearing the adjacent ML70236 to allow for the overburden dump (these impacts are being assessed through an EPBC referral).</p> <p>Activities associated with the EA amendment will result in a significant residual impact on prescribed environmental matters, both directly and indirectly. However, the amendment application supporting information document references the Environmental Management Overview Strategy (EMOS) 2002 for a description of the environmental values of land which states that there are no Category A or Category B environmentally sensitive areas in close proximity to the mine.</p> <p><u>Location of Humbug Gully diversion</u></p> <p>The area of prescribed matters impacted from the Humbug Gully Creek diversion is unclear.</p> <p>Impacts to prescribed environmental matters from the proposed amendment must be considered for all mining leases associated with EPML00579213.</p>	
8.	Aquatic ecology	<p>The EA amendment application and supporting documents provided limited information on potential impacts to aquatic species from the proposed Humbug Gully Creek diversion.</p> <p>Appendix F – Coppabella Mine Project - MNES terrestrial ecology report, 13 February 2024, states “<i>only terrestrial GDEs are included in the report and aquatic and subterranean GDEs were assessed as part of the aquatic ecology assessment</i>”.</p> <p>Appendix B of the above document – <i>Likelihood of Occurrence Assessment</i> also states “<i>aquatic species including Elseya albagula and Rheodytes leukops are considered in the aquatic ecology report</i>”.</p> <p>The proposed diversion will redirect water away from an extended area of riparian vegetation downstream of the diversion which acts as both connectivity and a significant foraging resource for a diversity of fauna including threatened species.</p> <p>Appendix F – <i>MNES Terrestrial Ecology Report</i>, 13 February 2024, recommends that further investigation will be required to assess and estimate this hydrological impact.</p>	<ul style="list-style-type: none"> - Provide the aquatic ecology report. - Clarify when further investigations to assess the hydrological impact of the diversion on downstream vegetation and fauna will be undertaken.

9.	Ground water dependant ecosystems	<p>GDE mapping provided in Appendix H, <i>Desktop Assessment for Prescribed Environmental Matters at Coppabella Mine</i>, shows there are no terrestrial GDEs in the area of the proposed residual void or the proposed area of the diversion, however, the proposed diversion of surface flows on Humbug Gully Creek may have a downstream influence on surface flow volumes to the east, where fringing riparian habitats are identified as high potential Terrestrial GDEs and supporting habitat for MNES and MSES threatened fauna.</p> <p>Appendix F, <i>MNES Terrestrial Ecology Report</i> recommends further detailed assessment of impacts to groundwater and associated Terrestrial GDEs, particularly along Humbug Gully and associated floodplains, will be required to adequately assess impacts on Terrestrial GDEs and associated habitat for MNES fauna species (in particular greater glider and koala).</p> <p>Section 6.1.2.3 of Appendix F, <i>MNES Terrestrial Ecology Report</i>, also states that effective management/mitigation of Project impacts on terrestrial GDEs and associated MNES will require development of a Groundwater Dependent Ecosystem Monitoring and Management Plan, including annual monitoring of groundwater quality and potential drawdown to identify trends and changes over time in terrestrial GDEs, vegetation and habitat, within the predicted drawdown extent and downstream of the Project.</p>	<ul style="list-style-type: none"> - Provide the groundwater dependant ecosystem assessment submitted under the EPBC Act. - Clarify whether a groundwater dependant ecosystem monitoring and management plan is being developed. - Explain how impacts to GDEs will be monitored.
10.	Community Consultation	<p>Section 7.5.1 of the EA amendment application supporting information document states that “<i>the mine is located on land with a Native Title claim determination</i>”, however, Section 4.3 of the document states the extent to which the NUMA is consistent with the outcome of community consultation is “<i>consultation has been undertaken with affected landholders (such as underlying and adjoining land holders, and holders of land necessary for access to land to which the proposed amendment relates)</i>”.</p> <p>The EA amendment application has not provided any details regarding consultation with the Native Title holders or a Cultural Heritage Management Plan (CHMP) or Memorandum of Understanding (MOU) that is in place.</p> <p>Considering that input from Aboriginal people is specifically mentioned in Table C1 – <i>Final land use and rehabilitation approval schedule</i> of the current EA, and that the amendment proposes to change the post-mining land use of the residual voids to a</p>	<ul style="list-style-type: none"> - Clarify whether a consultation process has been completed or planned to inform the Native Title holders of: <ul style="list-style-type: none"> o the proposed relocation of the residual void and the proposed diversion of Humbug Gully o the proposed change of post-mining land use for the residual void from “water filled

		non-use management area (NUMA), consultation with the Native Title holders is necessary to ensure impacts to cultural and spiritual values are considered.	<p>voids complementary to the post-mine land use of the surrounding land” to a NUMA</p> <ul style="list-style-type: none"> ○ the proposed size of the NUMA. <p>- If consultation has occurred, provide details of the consultation.</p>
11.	Final Residual Void	<i>Table C1 – Residual Void Design, and Table C3 – Final land use and rehabilitation approval schedule</i> of the current EA have been interpreted to mean that 80ha is the total maximum surface area of water in the residual voids. Other parts of the void (high wall, low wall, end wall etc) have not been listed separately in the table. If the low wall is under 25% (4H:1V) it could readily support a PMLU.	<ul style="list-style-type: none"> - Provide justification as to why the low wall cannot sustain a PMLU. It is considered best practice that low walls are rehabilitated, and proposed as a PMLU where possible. - Clarify how measuring and monitoring the surface area of the pit lake water would be undertaken to stay within the interpreted requirement of 80ha during operations and post mine closure.

Table C1 - Final land use and rehabilitation approval schedule

Disturbance type	Projective surface area (ha)	Post-mine land description	Post mine land suitability classification
Elevated landform (overburden) - upper slopes	700	Establish a landform and revegetate with native species with input from Aboriginal people, the objective being to develop a conservation area useful to Aboriginal people.	Class 4
- lower slopes	840	Establish pasture species to control erosion initially and thereafter develop a self-sustaining native ecosystem.	Class 5
- access tracks and haul roads	250	Establish a landform and revegetate with native species with input from Aboriginal people, the objective being to develop a conservation area useful to Aboriginal people.	Class 4
Elevated landform (co-disposal) - upper surface	150	Establish a landform and revegetate with native species with input from Aboriginal people, the objective being to develop a conservation area useful to Aboriginal people.	Class 4
- slopes	70	Establish pasture species to control erosion initially and thereafter develop a self-sustaining native ecosystem.	Class 5
Residual Voids	80	Water filled voids complementary to the post-mine land use of the surround land.	Class 5
Rail Loop	30	Establish a landform and revegetate with native species with input from Aboriginal people, the objective being to develop a conservation area useful to Aboriginal people.	Class 4
CHPP General Area	150	Establish a landform and revegetate with native species with input from Aboriginal people, the objective being to develop a conservation area useful to Aboriginal people.	Class 4
Water Management Structures	120	Establish a landform and revegetate with native species with input from Aboriginal people, the objective being to develop a conservation area useful to Aboriginal people.	Class 4
Undisturbed	1753		
Total	4143		

Table C3 - Residual void design

Void Identification	Void wall - competent rock slope highwall (%)	Void wall – low wall	Void maximum surface area (ha)
Creek Pit	10V:1H	Between 1V:3H – 1V:4H	20
Johnson Pit	10V:1H	Between 1V:3H – 1V:4H	30
South Pit	10V:1H	Between 1V:3H – 1V:4H	20
East Pit	10V:1H	Between 1V:3H – 1V:4H	10

The application proposes one (1) residual void with a maximum surface area of water of 80ha, however when the domains of low wall, end wall, high wall, abandonment bund (and bund offset) are included in addition to the water surface area of 80ha, the proposed residual void will be 460ha.

The application supporting information document references the Water Management Plan (WMP) version 5 (deemed a LOD on 19 April 2022 as part of the transitional PRCP process) – which states that “the ‘projective surface area’ assigned for ‘Residual Voids’ in EA Table C1, includes approximately 80ha, which comprises the pit lake surface area of the voids (rather than the cross-sectional area at the top of the voids and the areas of low walls, end walls and high walls)”.

The application does not provide information on how the surface area of the water would be measured and monitored for compliance with the EA during operations and post-closure.

The document further states that “Given the area and location of the Residual Voids and other landforms noted in the EMOS, it is clear that there was no intention to rehabilitate the high walls or low walls below OGL. The projected area for these features at the end of the mine life is provided in Table 10-3. These further disturbance areas are not inconsistent with EA Table C1. The high walls and low walls are dealt with elsewhere in the EA”.

Table 10-3: Below Original Ground Level Disturbance Categories Omitted from EA

Below OGL Disturbance Categories Omitted from EA Table C1	Approximate Projected Disturbance (ha)
High wall Areas (inclusive of end walls)	158
1V:3H Internal Slopes below OGL to Water level	228
TOTAL	386

However, page 47 of the EMOS states that “the approximate area for residual voids that will be rehabilitated is 80ha”. The WMP also states that these residual voids will have a purpose of water use for the area - water filled voids complementary to the post-mining land use of the surrounding land.

The location of the residual voids and other landforms are substantially different from what is proposed in the amendment application. The WMP describes that at the cessation of mining there will be three voids containing water; Johnson Pit (previously

		<p>South Pit and East Pit), Johnson Pit West and Creek Pit. Therefore, the references in the WMP differ from the identifiers in Table C3 of the EA.</p> <p><u>Residual Void structures</u></p> <p>Appendix A, <i>Coppabella Landform Design Report</i>, describes surface water runoff from the off-lease catchment to the north of the void as being allowed to run into the pit via a drop structure integrated into the landform design of the final highwall, to be constructed as part of the final void establishment works. The document describes an alternative to this structure may be to develop a diversion drain around the northern and eastern lease boundaries.</p> <p>It is unclear how the surface water area of the pit lake would be measured and monitored to ensure the interpreted authorised 80ha of water surface area would be compliant. It is also unclear where diversion drains would be placed as the site map shows overburden dumps adjacent to the northern and eastern mining lease boundaries.</p>																			
12.	NUMA	<p>The EA amendment application supporting information document states that “where applicable, low walls will be rehabilitated by profiling, applying topsoil, ripping and seeding” and discusses two (2) scenarios for void modelling for predicted long-term water levels, volumes and surface area that differ in the assumptions around the establishment of vegetation within the final void (s).</p> <p>Summary of the differences between the 2 void scenarios.</p> <table border="1" data-bbox="519 1034 1413 1401"> <thead> <tr> <th></th> <th>Void Scenario 1</th> <th>Void Scenario 2</th> </tr> </thead> <tbody> <tr> <td>Volume (GL)</td> <td>43.9</td> <td>15.9</td> </tr> <tr> <td>Water Level (mAHD)</td> <td>81</td> <td>48.7</td> </tr> <tr> <td>Elevation at the lowest point (mAHD)</td> <td>6.5</td> <td>6.5</td> </tr> <tr> <td>Water surface area (ha)</td> <td>98</td> <td>65</td> </tr> <tr> <td>Final Void (ha)</td> <td>460</td> <td>100</td> </tr> </tbody> </table>		Void Scenario 1	Void Scenario 2	Volume (GL)	43.9	15.9	Water Level (mAHD)	81	48.7	Elevation at the lowest point (mAHD)	6.5	6.5	Water surface area (ha)	98	65	Final Void (ha)	460	100	<ul style="list-style-type: none"> - Provide details of why void scenario 2 has not been considered in the application supporting documents, including the landform design report. - Provide justification to demonstrate why the low wall cannot sustain a PMLU and minimise the extent of the NUMA. - Clarify the area of the proposed NUMA that is the residual void.
	Void Scenario 1	Void Scenario 2																			
Volume (GL)	43.9	15.9																			
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		<table border="1"> <tr> <td>Rehabilitation area (ha)</td> <td>0</td> <td>360</td> </tr> <tr> <td>Infiltration/seepage area (ha)</td> <td>370</td> <td>370</td> </tr> <tr> <td>Average salinity 100 years post mining ($\mu\text{S}/\text{cm}$)</td> <td>9,666</td> <td>20,895</td> </tr> </table> <p>All proposed non-use management areas (NUMAs) should have a footprint as small as practicable to limit environmental risk and future liability. It is unclear why scenario 2 has not been considered as a potential final landform in the application supporting information document or appendices.</p> <p>Section 6.0 of the application supporting information document states “<i>The proposed catchment area reporting to the void (~460 ha) is not able to support a PMLU due to average slope constraints (1V:3H). However, upon closure these areas will be rehabilitated as detailed in Section 4.5 and managed to be complementary with surrounding land use</i>”. However, section 4.2 of the application supporting information document states “<i>The NUMA is the area of the residual void(s) that is unable to support a PMLU and includes the pit lake, low wall, end wall, highwall and abandonment bund with appropriate offset</i>”.</p> <p>The area of the NUMA and the area to be rehabilitated is unclear.</p>	Rehabilitation area (ha)	0	360	Infiltration/seepage area (ha)	370	370	Average salinity 100 years post mining ($\mu\text{S}/\text{cm}$)	9,666	20,895	
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13.	<p>Groundwater Modelling</p> <p>Appendix C, Groundwater Final Void Assessment Report, Section 5.2.2.2 Recharge and Discharge</p>	<p>Section 5.2.2.2 discusses pre-mining groundwater levels. Elsewhere in the report it appears to indicate that groundwater levels in about 2009 could be considered to represent pre-mining groundwater levels in some parts of the mine.</p> <p>There is however, no historical mine plan presented. Section 5.5.2 states: CCM has been in operation since 1998 and mining has progressed in a general east to west direction with successive strips mined towards the North-Northeast. However, beyond that there is little information with which to assess the timing of likely historical groundwater impacts. This sort of information is required to support assessments of which groundwater levels represent pre-mining groundwater levels. Details of future mining should also be provided to provide an understanding of likely future impacts of mining.</p>	<ul style="list-style-type: none"> - Provide a mine plan of historical mining at Coppabella to support the assessment of pre-mining groundwater levels. - Provide a mine plan of future mining at Coppabella to support the understanding of future mining impacts on groundwater levels. 									

14.	Groundwater Modelling Appendix C, Groundwater Final Void Assessment Report, Section 7.5 Conceptual Model and Key Considerations of the Project, Figures 7-1 and 7-2	<p>It is difficult to reconcile some of the differences between these figures, perhaps because of the alignment of the sections. There is no map showing the locations of these sections, which needs to be addressed.</p> <p>In Figure 7-1 the current topography appears to be about 40 m above the top of MB5. In Figure 7-2 the current topography appears to be below the bottom of MB5. Additionally in Figure 7-2 the current topography appears to be down to the coal seam in the area south of MB5, but this existing deep cut area will not be part of the final void or backfilled. These items are confusing to interpret.</p> <p>Whilst it is accepted that these are conceptual models, some of these basic issues should be addressed.</p>	<p>- Provide a map to show the location of the cross sections. Review the validity of the information provided in Figure 7-1 and 7-2.</p>
15.	Groundwater Modelling	<p>An analytical groundwater model (Marinelli and Niccoli (2000)) to predict inflows to the final void and the extent of impacts (distance from residual void but not drawdown levels) to groundwater has been provided. The model has been used to represent two geologic units (Permian interburden and Permian coal seams). The modelling does not:</p> <ul style="list-style-type: none"> • include the linkages between the two Permian units or with the overlying Tertiary Sediments. • incorporate the impacts of historical and future mining (except for the single void represented at Coppabella). • represent the impacts of the Johnson Extended Project underground mine and the long term changes to the strata that the bord and pillar mining creates. • incorporate the impacts of the partial backfilling of voids with spoil. • provide predictions of the level of drawdown in the various geologic units during and post mining. <p>The model is unable to predict long term groundwater levels as a numerical groundwater model would, therefore the long-term void water level predicted by the surface water model has been compared with pre mining groundwater levels. As the analytical model is also unable to model the impacts of spoil (backfill) on groundwater inflow to the residual void, it has been included in the surface water model as infiltration/ seepage. However, limited detail is provided for the characteristics assumed for the spoil and the contribution of water predicted from the spoil to the residual void.</p> <p>There has been a significant change to the configuration of the residual void/s and therefore potential localised impacts since the AGE 2010 numerical groundwater model was developed.</p>	<p>- Provide a numerical groundwater model to adequately understand the impacts of the mining and residual void on groundwater levels in these various geologic units and the contributions of the various geologic units to the residual void.</p>

		There is also no allowance for the Johnson Extended project underground mine in the AGE 2010 model.	
16.	Appendix C, Groundwater Final Void Assessment Report, Section 5.2.1.1 Groundwater Distribution and Flow Figure 5-7	In this figure water levels are plotted for selected Tertiary Sediments and Permian monitoring bores. It is noted that some individual measurements (outliers) appear to be between 2 and 6m different to the majority of the measurements for that particular bore. This appears to be the case for monitoring bores MB1, MB2 and MB4. Is it possible that these different measurements are manual measurements that are not aligning with logger data. If that is the case, there may be some issues with some of the data presented.	- Review the water level measurements presented in Figure 5-7 and provide comment on the outliers for monitoring bores MB1, MB2 and MB4.
17.	Appendix C, Groundwater Final Void Assessment Report, Section 8.1.2 Model Design	This section states: <i>It is considered that the Tertiary aquifer has been dewatered during current mining activity. The groundwater model developed by AGE (2010) confirmed this showing groundwater levels as depressurised. The inflow component from the Tertiary aquifer is minimal and ignored.</i> It is noted in Figure 5-7 that the measured groundwater levels in Tertiary monitoring bore MB2 appear to be about 190 to 191 m AHD, up to about 2022. This compares with a bottom of screens in the bore at 184.7 m. This represents a depth of water of about 6.3 m in this bore. It is also noted that MB11, a Tertiary monitoring bore, is said to be dry at 181.75 m AHD (Table 5-1) when the base of the screen is said to be at 173.4 m AHD. It would appear that this bore may have been blocked. Based on the groundwater level stored on the groundwater database the water level in 2009 when drilled was about 180.8 m AHD. The depth of water at that time in this bore was about 7.4 m. There is therefore evidence that there is some water in the deeper Tertiary bores. Whilst there may have been some reduction in water levels in some Tertiary bores close to the pits (although not particularly evident in Figure 5-7 for MB2) it is likely these will at least partially recover post mining and play a role in understanding post mining groundwater impacts. It is also important to include the Tertiary Sediments aquifer in any modelling to understand the impacts of mining and post mining on that aquifer and any receptors that may rely on that aquifer.	- In updated groundwater modelling include an assessment of impacts to all geologic units potentially impacted by mining and post mining activities.

18.	Appendix D, Surface Water Final Void Assessment report, Section 4.3 Catchment Areas, Figure 4-5	It appears that the overlay for the void and the infiltration catchment to the void, does not line up with the existing pits on the imagery in the background.	<ul style="list-style-type: none"> - Review the location and extent of the void and infiltration catchment on Figure 4-5.
19.	Appendix D, Surface Water Final Void Assessment report, Section 4.5 Groundwater Interaction, Figure 4-7	<p>In this section Figure 4-7 provides Inflow vs Pit Lake (i.e. Final Void) Water Levels. However, the text under Figure 4-7 states: <i>Generally, the rate at which water is expected to seep from the voids reduces over time as the groundwater levels recover.</i></p> <p>It is assumed that this sentence is an error given the assessment does not appear to predict seepage of water from the void to groundwater.</p>	<ul style="list-style-type: none"> - Review the wording in section 4.5 in relation to the reducing seepage of water from the voids over time as groundwater levels recover.
20.	Appendix D, Surface Water Final Void Assessment report, Section 5.5 Limitations of the Assessment	<p>This section states: The model is based on a single assumed inflow water level relationship which was derived utilising an analytical method. No iteration between the groundwater analysis and results of this assessment have been undertaken. It is noted that there is no discussion as to how this has potentially impacted the prediction of both void water level and groundwater levels.</p>	<ul style="list-style-type: none"> - Provide discussion as to how the process of assumed groundwater inflow and the lack of an iteration process between the groundwater assessment and the surface water assessment has impacted the predictions of void water levels and groundwater levels.
21.	Greenhouse gas (GHG) emissions	<p>The EA amendment application supporting document and technical appendices do not consider greenhouse gas emissions. Section 7.6 – <i>Air</i> of the application supporting document only considers particulate emissions from operations including haulage on unsealed roads, mining, conveyors, infrequent blasting and wind action on stockpiles prior to revegetation.</p> <p>Section 226A of the <i>Environmental Protection Act 1994</i> includes the requirement for amendment applications to provide an assessment of the likely impact of each relevant activity on environmental values, including details on any emissions or releases likely to be generated by each relevant activity, and the management practices proposed to be implemented to prevent or minimise emissions and adverse impacts.</p>	<ul style="list-style-type: none"> - Identify the GHG emissions likely to be generated through the life of the project, in particular the emissions as a result of the amendment. - Determine the emission category of the project, with respect to the amendment being sought. - Identify all proposed management practices

		<p>Refer to the Guideline - Greenhouse gas emissions ESR/2024/6819 version 1.00, 15 May 2024 – https://www.desi.qld.gov.au/policies?a=272936:policy_registry/era-gl-greenhouse-gas-emissions.pdf</p>	<p>proposed to be implemented to prevent or minimise adverse impacts, with respect to the amendment being sought.</p> <ul style="list-style-type: none">- Identify if a GHG abatement plan will be required to accompany the application to identify continuous commitments to achieve progressive GHG mitigation and management throughout the life of the project, with respect to the amendment being sought.- Describe the risk and likely magnitude of impacts to environmental values resulting from the project's GHG emissions, with respect to the amendment being sought.
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