Appendix 1 – Additional information required to assess the application for an environmental authority and proposed PRC plan

Item	Relevant Document Section	Issue	Information Requested
Site-Specific EA Application			
1.1	Supporting Information	The degree to which the Vulcan South Project (VSP) and the Vulcan Complex Project (VCP) are integrated [also referred to as the Vulcan Coal Mine] is not clear. A greater description of the relatedness and integration of the VSP and VCP is required. Further, the justification is required as to why the applicant considered the VSP and VCP as separate projects, requiring separate environmental authorities (EAs).	(a) Provide additional details as to the relatedness and integration between VSP and VCP including how project timeframes may overlap; and (b) Justify why VSP and VCP are considered separate projects, requiring separate environmental authorities (EAs).
1.2	Supporting Information • Appendix F, s4.2 • Appendix G, 3.2	The number of sensitive receptors is not consistent between Appendix F and Appendix G for air and noise impacts, respectively. Additional justification is required to explain why the sensitive receptors for air and those for noise are not the same.	(a) Justify why the sensitive receptors for impacts to air and those for noise are not the same.
1.3	Supporting Information • Appendix G, s4.7	Appendix G, Table 4.2 includes proposed noise limits for sensitive receptors. Additional justification is required to justify the appropriateness of the use of the 'Z' weighted indoor noise level for unbalanced noise emissions (where dBZ – dBA > 15 dB).	(a) Justify why the 'Z' weighted indoor noise level for unbalanced noise emissions is an appropriate indicator of noise impact; and (b) Provide additional details as to the noise emissions from mining operations which would be expected to exhibit an 'unbalanced spectrum'.

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Item	Relevant Document Section	Issue	Information Requested
1.4	Supporting Information • Appendix F, s4.41; and • Appendix G, s6.2	Appendix G, section 6.2 discusses the significant affect the meteorological conditions may have on noise levels [15 to 20dB(A)] at sensitive receptors due to wind speed, direction, time of day, etc. The meteorological scenarios (as outlined in Table 6.1 Meteorological Scenarios) for the Noise Assessment, provide for a wind speed of zero (0) m/s and two (2) m/s. Further, 2 m/s is described as adverse meteorological conditions. However, there is insufficient justification as to why 2 m/s should be taken as representative of 'worst-case' adverse conditions. The department notes that Appendix F states the annual average wind speed as 2.53 m/s and Figure 8, 9 and 10 describe the range of meteorological conditions at the project. This would suggest the 'worst-case' scenario would be regularly exceeded.	(a) Justify the meteorological scenario taken to be 'worst-case' in terms of noise impact to sensitive receptors; and (b) Pending a response to (a), complete additional modelling under a wind speed parameter which is justifiably representative of the 'worst-case' impact to sensitive receptors.
1.5	Supporting Information • Appendix G, s6.7	Appendix G, section 6.7 discusses a period in which coal is proposed to be transported to a coal washing and load out facility located on the Peak Downs Highway. It is noted this proposal does not appear to be discussed elsewhere in the Supporting Information.	(a) Provide additional details as to whether the transportation of coal for washing and loading is still proposed; and (b) Provide additional details as to whether impacts to environmental values from coal haulage are constrained to noise/the acoustic environment. If additional impacts are identified, provide additional details of said impacts.

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Item	Relevant Document Section	Issue	Information Requested
1.6	Supporting Information • Appendix F, s7	The department notes that as per Appendix 7, section 6.2, compliance with the 24-hour average ground level concentration of PM_{10} air quality objective (AQO) can only be maintained with 'proactive mitigation measures' and periods of ceased operations. Appendix F, section 7 provides brief details the proposed mitigation measures to be employed to reduce impacts to the environmental values of air. The department recognises the following are proposed: • an air quality management plan; • water application on all major haul routes within the VS domain; and • progressive rehabilitation of areas that have been mined. However, this does not sufficiently describe the 'proactive mitigation measures' and periods of ceased operations.	(a) Provide additional details of all proposed mitigation measures to be implemented to comply with the AQOs. This should include measures identified as proactive for the purposes of compliance with the 24-hour average concentration of PM_{10}; and (b) Provide additional details of the circumstances under which operations are to cease to maintain AQOs, and the nature and extent to which operations will cease (i.e. complete shutdown, partial, CHPP, etc.)
1.7	Supporting Information • Appendix G, s8.1 and 8.2	Appendix G, section 8.1 and 8.2 suggests that several mitigation and management measures may be employed to achieve indoor acoustic quality objectives (i.e. noise quality objectives [NQOs]). However, it is unclear which, if any, of these measures are proposed to be implemented to prevent or minimise impacts the acoustic environment.	(a) Provide additional details of the full extent of proposed mitigation measures to be implemented to comply with the NQOs – with specific regard to indoor noise limits; and (b) Provide additional details of the circumstances under which operations are to cease to maintain NQOs, and the nature and extent to which operations will cease (i.e. complete shutdown, partial, CHPP, etc.)

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Item	Relevant Document Section	Issue	Information Requested
1.8	Supporting Information • Appendix A, 5.3	Appendix A, section 5.3 contends that 'surface water' (i.e. non-mine affected water [MAW]) should include surface water run-off that has come into contact with areas disturbed by mining operations including out-of-pit waste rock emplacements. Additionally, it is argued that whilst this surface water may have a high sediment load, it will remain compliant with water quality objectives (WQOs). The department notes that the applicant proposes to manage this surface water via sediment removal at sediment dams prior to any release. However, additional evidence is required to support the determination that any surface water released will be compliant with the WQOs for the receiving waters. The applicant must demonstrate that this water can be managed appropriately and will not cause environmental harm to the receiving environment if released. Further, it is unclear how areas disturbed by mining operations could be effectively managed to prevent the contamination of surface water with coal, carbonaceous material or other contaminants. Coal and carbonaceous material would likely be present on haul road surfaces, laydowns and the exposed surfaces of out-of-pit waste rock dump.	(a) Provide additional details, including maps of the 'areas disturbed by mining operations' proposed to produce 'surface water' as opposed to MAW. (b) Provide additional evidence to support the proposed management of 'surface water'. Evidence in the form of water quality monitoring data from the VCP and/or an appropriate analogous site/s is permissible. (c) Provide additional details of the management measures to be employed to prevent the contamination of surface water with coal, carbonaceous material and other contaminants. Where surface water becomes contaminated, provide additional details as to how this is proposed to be managed and monitored.

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Item	Relevant Document Section	Issue	Information Requested
1.9	Supporting Information • Appendix A, s9.2	Section 2.1.2.2 *Release source – waste water from the relevant activity* of the department's guideline – 'Reef discharge standards for industrial activities' (Version 1.02) [ESR/2021/5627] specifies when section 41AA of the Environmental Protection Regulation 2019 (EP Reg) applies. Assuming that surface water is justifiably determined to contain sediment only, and no coal, carbonaceous material or other contaminants, section 41AA does not apply. The department notes that nitrogen may also be relevant where blasting is carried out. However, regardless of this determination, appropriate erosion and sediment control measures will be conditioned through the pending environmental authority to prevent as much sediment as is practical from entering the Great Barrier Reef catchment waters. The applicant is advised to propose an updated Erosion and Sediment Control Plan (ESCP) that is robust and effective in minimising contributions of total suspended sediment (TSS) and dissolved inorganic nitrogen (DIN) so as to support the aim of reducing end-of-basin fine-sediment and DIN loads.	(a) Confirm potential sources of DIN for the project. (b) Update the contents and requirements of the proposed ESCP. As a minimum, the ESCP should include: (i) an assessment of the size and characteristics of all catchment areas; and (ii) an assessment of relevant properties of soils and waste materials; and (iii) identification of receiving waters environmental values, water quality objectives and management intent; and (iv) specification of minimum design criteria for erosion and sediment control structures to achieve the management intent of receiving waters; and (v) locations and descriptions of all erosion and sediment control measures; and (vi) an audit schedule to ensure erosion and sediment control measures are maintained.

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Item	Relevant Document Section	Issue	Information Requested
1.10	Supporting Information • Appendix A, s7.3.10	Appendix A, section 7.3.10 includes an assessment of the effects of releases from sediment dams on the water quality of receiving waters. However, these scenarios only account for the electrical conductivity and release flow rate from sediment dams. It is unclear why TSS or other relevant WQOs have not been included in the modelled scenarios.	(a) Justify why the 'worst-case' scenario modelling for impacts to receiving waters only includes EC and flow rate; and (b) Pending the response to (a), provide additional modelling that accounts for key contaminants including TSS and heavy metals – selenium, arsenic and molybdenum.
1.11	Supporting Information • Section 5.8.4 • Appendix H	The geochemical assessment recommends several mitigation and management measures to minimise the risk of environmental harm to the receiving environment from mine resource, materials and waste. It is unclear if the recommendations are proposed to be implemented, and how these recommendations would be implemented in practice.	(a) Confirm the measures to be implemented as recommended by the geochemical assessment; and (b) Provide additional details of how the measures will be employed. This should include details of monitoring and management practices to be employed, timeframes, methodology and parameters for confirmatory testing of material; and how coal reject and tailings material will be placed within waste rock dumps, including minimum capping depth and general capping design.
1.12	Supporting Information • Section 2.6.1	Section 2.6.1 indicates that tailings and rejects will be deposited in ex-pit waste rock dumps. However, the Supporting Information does not provide sufficient detail as to this proposal. Tailings storage ex-pit poses a far greater geotechnical and environmental risk than in-pit disposal. The application does not provide information on the management of tailings which is commensurate to this risk. The application does not provide sufficient detail as to the required characteristics for 'dry tailings' to be stored ex-pit and the management of tailings where characteristics do not meet the required minimum requirements (e.g. excessive moisture within tailings, etc.).	(a) Provide additional details of the structure and geotechnical design, including capping and closure design for the ex-pit tailings storage facility; (b) Provide a risk assessment of the ex-pit disposal of tailings, including risks presented to surface water and groundwater; and (c) Provide additional details as to how tailings disposal will be managed to minimise risk of environmental harm to surface water and groundwater.

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Item	Relevant Document Section	Issue	Information Requested
1.13	Supporting Information • Appendix A, s5	The department notes that MAW will be generated in areas disturbed by highwall mining. With reference to Appendix A, Figures 1.9 and 1.10, it is unclear how MAW will be effectively managed so as to prevent releases to the receiving environment and maintain separation of MAW from other waters such as surface run-off. Specifically, Figures 1.9 and 1.10 do not appear to include mine water infrastructure needed to manage MAW such as mine water dams – or in place of dams – drains, sumps and/or piping for the conveyance of MAW to a suitable storage.	(a) Provide additional details as to how surface water is to be managed within the extent of areas disturbed for highwall mining, with specific regard to MAW. Clarification should include conceptual drainage plans for all years of active highwall mining before rehabilitation is completed.
1.14	Supporting Information • Appendix A, s5.5.1	Appendix A, section 5.5.1 discusses the sizing and placement of sediment dams for surface water management. However, this section also explains that runoff from haul roads and access roads is to be captured by sediment basins, before being either released to the receiving environment or returned to the mine water system. Additional justification is required to support the treatment of surface water collected from haul roads as surface water and not MAW.	(a) Provide additional details of water collected from haul roads, including whether this water will be MAW and if said water will be contaminated by coal, carbonaceous material, hydrocarbons, or other contaminants which are predicted to exceed the identified water quality objectives for release (WQOs). (b) Should the response to (a) confirm that water is determined to be MAW, provide updated and/or additional information pertaining to: (i) the proposed surface water management strategy and infrastructure; (ii) updated conceptual drainage plans; and (iii) any further updates to the supporting information necessary to ensure consistency and accuracy (i.e. water balance modelling or water management system assessment).

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Item	Relevant Document Section	Issue	Information Requested
1.15	Supporting Information	The application refers to and relies upon 'field-verified' regional ecosystem (RE) mapping. However, it is not clear if this field verified mapping has been validated and accepted by the Queensland Herbarium.	(a) Provide additional details of the field-verified RE mapping; (b) Confirm if any previous mapping submitted by the applicant to the Queensland Herbarium covers the full the extent of the VSP project and has been accepted by the Herbarium; and (c) Provide evidence of acceptance by the Queensland Herbarium and the accepted spatial files.
1.16	Supporting Information • Appendix B, s7.2	Appendix B, section 7.2 states that "No mitigation measures are currently proposed or required as part of the Project" [with respect to groundwater]. However, it is noted that a selection of management and mitigation measures are proposed in the preceding section 7.1.3. It is unclear if the project does or does not propose to implement management and mitigation measures, or if only a selection of management measures are proposed.	(a) Provide additional details of the management and mitigation measures to be implemented to prevent or minimise impacts to groundwater.
1.17	Supporting Information • Appendix B, s2.1.3 and s6.2.1	Appendix B, section 2.1.3 identifies the information requirements for applications that involve the exercise of underground water rights. Additionally, section 5.7.1 identifies third-party users of groundwater in the surrounding region. Additionally, section 6.2.1 predicts the proposed pits may have groundwater inflows up to 43 m^3/day. As the proposed resource activity involves the exercise of underground water rights the applicant may have additional obligations under Chapter 3 of the *Water Act 2000*. An underground water impact report (UWIR) may be required.	(a) Contact the department's Energy and Extractive unit for assistance in determining if a UWIR is required. Email: UndergroundWater@des.qld.gov.au (b) Pending the outcome of (a), advise the business centre of said outcome.
1.18	Supporting Information • Section 5.3.1 Spatial Files	Section 5.1.3 describes the vegetation communities within the bounds of the proposed disturbance footprint. The disturbance footprint is stated to contain 1,996.6 ha of remnant vegetation, 87 ha of regrowth and a remaining 642.4 ha of cleared pasture. However, this is inconsistent with the area of the disturbance footprint as stated within the main text of the Supporting Information and within the spatial files at only 1,757 ha.	(a) Confirm the quantities of remnant, regrowth and cleared land within the proposed disturbance footprint.

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Item	Relevant Document Section	Issue	Information Requested
1.19	Supporting Information • Table 5-4 •	The application appears to be inconsistent with respect to the identification of, and impacts to, wetlands. Appendix A, section 3, states there are no matters of state environmental significance (MSES) wetlands, wetland values or wetland protection areas identified in or adjacent to the project area. Appendix C, section 4.4.4 states that there are no wetlands or watercourses of high ecological significance are located within the survey area. However, Appendix C, Figure 4-2 identifies a 'natural wetland' within the extent of the project's mining lease area. The wetland does not appear to be identified or discussed elsewhere in the supporting information.	(a) Provide additional details as to the nature of this wetland and the extent of predicted impacts.
1.20	Supporting Information • Appendix B, 5.7.3;	Appendix B, section 5.7.3 states that is it highly unlikely for aquatic groundwater dependent ecosystems (GDEs) to exist within one (1) kilometre of the proposed pits. Further, Appendix B, section 5.8.3 *Aquatic ecosystems* indicates that groundwater was too deep or saline to support freshwater aquatic ecosystems. However, Appendix D, section 5.6 states that the main stem of Hughes Creek and small areas in the east of the project area is mapped as a potential aquatic GDE. Further, Appendix B, section 5.7.3 also states that there is an area of mapped terrestrial GDE associated with Hughes Creek.	(a) Provide additional details with respect to the nature of the potential GDEs associated with Hughes Creek; and (b) Provide additional details as to the extent of ground-truthing undertaken to verify the presence or absence of mapped GDEs.
1.21	Supporting Information • Section 5.13	Section 5.13 indicates that regulated waste will be generated on-site. However, insufficient detail is given regarding the regulated wastes expected to be generated on-site, such as tyres, industrial wastes and tailings/rejects. Further, the department considers the disposal of tailings and rejects likely meets the definition regulated waste as defined by the Environmental Protection Regulation 2019 (EP Reg). Resultingly, the proposed activity must include authorisation to carryout environmentally relevant activity (ERA) 60: Waste disposal.	(a) Provide additional details as to the types of wastes expected to be generated on-site. (b) Provide additional details as to the constituent materials and chemical characteristics of waste to be disposed of within waste rock dumps. This should include any chemical inputs to coal processing and tailings generation.

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Item	Relevant Document Section	Issue	Information Requested
1.22	Supporting Information • Appendix B, s.5.8.4; s.7.1.2	Appendix B, section 5.8.4 provides preliminary monitoring data for groundwater. It is unclear if interim guidelines have been developed and proposed as part of the application. Further, it is unclear if analytes are appropriate to detect potential contamination to groundwater such as total petroleum hydrocarbons.	(a) Provide additional details as to the proposed interim guidelines for WQO for groundwater; (b) Provide groundwater monitoring data for all analytes and physical parameters; and (c) Provide additional details as to how potential contaminants to groundwater from mining activities will be monitored.

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1.23	Supporting Information
	• Section 5.3.5;
	• Section 5.3.6
	• Appendix C, s5.2
		Avoidance and Mitigation of Impacts to Prescribed Environmental Matters
		
		An offset proposal cannot be considered for the application at this time as the department is not satisfied that all reasonable avoidance and mitigation measures have been or will be undertaken to address impacts on prescribed environmental matters (PEMs).
		
		The application does not apply the offset policy/framework in such a way that first considers how impacts to PEMs have been demonstrably avoided, then mitigated; before considering the use of offsets. Offsets are intended to only compensate for unavoidable impacts to PEMs.
		
		As per section 1.3 of the statutory instrument – *'Queensland Environmental Offsets Policy'* (Version 1.12) [EPP/2015/1658], all offsets must meet seven (7) offset principles. Principle 2 requires that "impacts must first be avoided, then mitigated, before considering the use of offsets for any remaining impact".
		
		Several PEMs are identified to be part of a contemplated offset proposal. As per section 5.3.5 – Matters of National Environmental Significance (MNES) these include—
		
		• **Threatened ecological communities;**
		  ○ 120.3 ha of Brigalow (*Acacia harpophylla* dominant and co-dominant) [endangered]; and
		• **Threatened species;**
		  ○ 1,023.6 ha of Koala (*Phascolarctos cinereus*) [endangered] habitat, composed of—
		  ▪ 21.3 ha of high-quality habitat;
		  ▪ 559.1 ha of moderate-quality habitat; and
		  ▪ 443.2 ha of low-quality habitat; and
		  ○ 1,364.1 ha of Squatter Pigeon (*Geophaps scripta scripta*) [vulnerable] habitat, composed of—
		  ▪ 671.2 ha of foraging habitat (524.3 ha of which is also breeding habitat); and
		  ▪ 692.9 ha of dispersal habitat; and
		  ○ 71.1 ha of Central Greater Glider (*Petauroides armillatus*) [vulnerable] habitat;
		  ○ Ornamental Snake habitat; and
		  ○ Northern Quoll habitat.
		
		As per section 5.3.6 – Matters of State Environmental Significance (MSES) impacted PEMs also include—
		
		• **Regulated vegetation;**
		  ○ 25.6 ha of regional ecosystem (RE) 11.3.2 [of concern]; and
			(a) Justify how impacts to each PEM will be or have been avoided in the first instance.
			
			(b) Provide additional details as to how impacts to each PEM have been avoided and can be further avoided or minimised to reduce impacts to each matter.
			
			(c) Provide further details of how each matter will be mitigated – and why avoidance is not reasonable.
			
			(d) Confirm the scale, intensity and duration of impacts to the identified PEMs after the implementation of (a) and (b) – including PEMs of Ornamental Snake, Northern Quoll, Short-Beaked Echidna, Glossy Black-cockatoo and Common Death Adder.

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Item	Relevant Document Section	Issue	Information Requested
		○ 58.3 ha of REs 11.3.25, 11.5.3, 11.5.9b, 11.9.2, 11.10.1 and 11.10.3 [located within a defined distance from the defining banks of a relevant watercourse]. • **Protected wildlife habitat:** ○ Short-Beaked Echidna (*Tachyglossus aculeatus*) [special least concern]; ○ Glossy Black-Cockatoo (*Calyptorhynchus lathami*) [vulnerable]; and ○ Common Death Adder (*Acanthophis antarcticus*) [vulnerable]. Additional information is required before the department may be satisfied that an offset proposal can be pursued. Particularly, justification is required that clearly demonstrates how the 'avoid, mitigate, offset' approach has been provided for each PEM. The applicant must: • Demonstrate how impacts to each PEM has been avoided in the first instance. This may include details such as site planning, site selection, etc.; • Where avoidance cannot be reasonably achieved, demonstrate how impacts to each PEM is to be carefully managed and minimised (mitigation measures); and • Where avoidance and mitigation measures cannot be reasonably achieved or implemented, demonstrate how the impacts to each PEM are unavoidable and/or incapable of being completely mitigated. The department notes that Appendix C, section 5.2 and Table 5-3 contemplate a variety of mitigation measures. However, it is unclear if these measures are proposed to be implemented and the corresponding PEMs to which each measure is aimed to protect.	

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Item	Relevant Document Section	Issue	Information Requested
1.24	Supporting Information • Section 5.3.5; • Section 5.3.6; • Appendix C, s5.2	**Determining Significant Residual Impact** As per the guideline – '*Significant Residual Impact Guideline*' (2014) [the SRI guideline], the department may only impose offsets where it is satisfied that the prescribed activity will or is likely to have a 'significant residual impact' (SRI) on a PEM. SRIs are only those impacts to PEMs that— (a) remain despite the implementation of avoidance and mitigation measures; and (b) are 'significant' as guided by an SRI assessment under the SRI guideline. The SRI guideline provides 'significant impact criteria' for identifying a 'significant' impact to PEMs. An SRI assessment must be conducted for each PEM which will be impacted. If the significant impact criteria are exceeded by an impact, then offsets may be considered – and if so, must be considered for the entirety of the impact – not just the component of impact which exceeded the criteria. An SRI assessment must be completed for the following PEMs at a minimum: • Regulated vegetation; • Connectivity areas; • Wetlands and watercourses; • Protected wildlife habitat; and • Any additional PEMs identified as being impacted. *Note:* *When assessing Connectivity areas, the output of the Landscape Fragmentation Tool should be provided to the department as part of the SRI assessment.* *Also note, if at the time of the application to DES a decision by the Commonwealth has not been made regarding impacts to overlapping PEMs, then DES is required to assess and if a significant residual impact has been identified then impose offset conditions. The applicant can seek to remove the offset requirement from their state approval once a decision has been made at a federal level.*	(a) Complete an SRI assessment for remaining impacts to PEMs and provide a report of said SRI assessment/s to the department.

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Item	Relevant Document Section	Issue	Information Requested
1.25	Supporting Information • Section 5.3.5; • Section 5.3.6; • Appendix C, s5.2	**Determining Offsets as a Suitable Outcome** Finally, should a significant residual impact remain for any of the above PEMs, the applicant must successfully demonstrate that an offset is a 'suitable outcome'. As per section 3.6 of the '*General guide for the Queensland Environmental Offsets Framework'* (V1.03) [EPP/2021/5541] the department must have a high level of confidence that a suitable offset can be selected, designed and managed to achieve a conservation outcome and maintain the viability of the PEMs to be offset.	(a) Provide additional details of the availability and viability of land-based offsets for each impacted matter in order to deliver a conservation outcome. Please note that an available offset area must demonstrate the known sightings of the species and that the landholder is willing and able to implement conservation management to improve the conservation outcome for the species population within the proposed offset area. (b) Pending the response to (a), provide an assessment of the area in hectares (ha) of each PEM which is available to be used as an offset in the bioregion and subregion. Areas available for offsets include those which contain the PEM in question, are on freehold or leasehold land, are not already protected, are not at risk from completing land uses (e.g. mining, quarrying or forestry) and are not otherwise inappropriate for use as an offset area. The assessment must include a spreadsheet and shapefiles of lot-on-plans identified as suitable for offsets and available to deliver a conservation outcome.

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<table>
<tr><th>Item</th><th>Relevant Document Section</th><th>Issue</th><th>Information Requested</th></tr>
<tr>
<td>1.26</td>
<td>Supporting Information
Appendix A, s.7.3.7.2; s.9.3.1;</td>
<td>Appendix A contemplates the proposed release of ‘surface water’ via sediment dams.

Section 3 of Appendix A identifies the WQO trigger levels for the receiving waters. Further, section 9.3.1 of Appendix A identifies the receiving water contaminant trigger levels. The trigger levels of Table 3.1 and Table 9.3 are compared below.
<table>
<tr><th>Parameter</th><th>Table 3.1</th><th>Table 9.3</th></tr>
<tr><td>pH</td><td>6.5 – 8.5</td><td>6.5 – 8.0</td></tr>
<tr><td>EC [µS/cm]</td><td>720 (base flow)
250 (high flow)</td><td>1,500</td></tr>
<tr><td>TDS [mg/L]</td><td><2,000</td><td>?</td></tr>
<tr><td>TSS [mg/L]</td><td><55</td><td>?</td></tr>
<tr><td>Sulfate (SO_4^{2-}) [mg/L]</td><td>25</td><td>1,000</td></tr>
</table>
It is unclear in Table 9.3 how levels have been formulated to protect environmental values (EVs) and why interim trigger levels have been developed for parameters with the exception of TDS and TSS. Further, it is unclear how impacts to the receiving waters can be managed and minimised without proposed trigger limits for TDS and TSS.</td>
<td>(a) Provide additional details as to how the proposed levels were formulated.

(b) Provide additional details as to how the proposed levels will protect EVs of the receiving waters.

(c) Provide additional details as to the formulation of interim trigger levels for TDS and TSS – that will protect the EVs of the receiving waters.</td>
</tr>
</table>

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Item	Relevant Document Section	Issue	Information Requested
1.27	Supporting Information • Appendix A, s9.5	Section 9.5 of Appendix A states that sediment dams will be monitored for a suite of water quality parameters. (i.e. pH, EC, major anions [sulfate, chloride and alkalinity], major cations [sodium, calcium, magnesium and potassium], TDS and a broad suite of soluble metals/metalloids). However, it is unclear if parameters will include those which are necessary to determine 'surface water' reporting to sediment dams is not MAW and is otherwise suitable for release. Specifically, parameters to be confirmed include: • Dissolved inorganic nitrogen (DIN); • Turbidity (NTU); • TSS; • Total Petroleum Hydrocarbons (TPH); and • Any other proposed parameters required to verify 'surface water' is not MAW.	(a) Provide additional details as to the parameters to be monitored for at sediment dams.

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Item	Relevant Document Section	Issue	Information Requested
Proposed PRC Plan and Schedule			
2.1	Proposed Progressive Rehabilitation and Closure Plan (PRC plan) • s.10.2.2 Proposed Progressive Rehabilitation and Closure Plan Schedule (PRCP schedule) • RA3 Worksheet Supporting Information. • Section 2.1 • Appendix G	The PRC plan, Schedule and Supporting Information for the EA Application appear to be inconsistent with respect to the timing of rehabilitation of highwall mining benches and haul roads. It is unclear if these areas are to be rehabilitated as soon as they become available. Section 2.1 of the Supporting Information describes the highwall mining trial program as being completed within one (1) year of mining operations. Table 2-3 also indicates that mining in the highwall mining areas will cease after the first year of operations. Appendix G, Figures 2.2, 2.3 and 2.4 indicate that the highwall mining area will not be rehabilitated after the first year of mining. Whilst overburden dumps are indicated to be available for rehabilitation, the highwall mining benches and haul roads appear to be omitted. Further, section 10.2.2 of the PRC Plan and the Rehabilitation Area (RA) 3 worksheet of the PRCP schedule indicate that 44.21 ha of land will be rehabilitated in 2025. However, it cannot be discerned if this rehabilitation relates to the highwall mining benches and haul road.	(a) Provide additional details as to when highwall mining benches and haul roads become available for rehabilitation; (b) Pending the response to (a), update the PRC plan and schedule to account for the rehabilitation of the highwall mining benches and haul roads when they become available for rehabilitation; and (c) Update the Supporting Information to be consistent with the PRC plan and schedule.

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Item	Relevant Document Section	Issue	Information Requested
2.2	PRC plan PRCP schedule Spatial Files	The PRC plan, schedule and spatial files are not consistent with the proposed post-mining land uses (PMLUs). It is noted that the PRCP schedule proposes the following four (4) PMLUs: • Low-intensity cattle grazing; • Low-intensity cattle grazing with habitat for Koalas and Squatter Pigeons; • Low-intensity grazing with habitat for Koalas and Squatter Pigeons; Native Ecosystems; and • Saraji Road. However, these PMLUs are not consistent across the PRC plan and spatial files. For example, section 4 of the PRC plan refers to three (3) PMLUs: • Low-intensity cattle grazing (also provides some habitat for threatened fauna); • Public road; and • Railway used for coal transport. Further, this is inconsistent with Table 5-1 which includes only two (2) PMLUs: • Low-intensity cattle grazing; and • Road reserve Further, the spatial files refer to three PMLUs: • 'GRAZ' (grazing); • 'NAT_ECO' (native ecosystem); and • 'PERM_INFRA' (permanent infrastructure). The proposed PMLUs must be referred to consistently throughout all documentation and files. This is to ensure clarity as to the exact nature of the PMLUs being proposed and which PMLUs are to be achieved at end-of-mine-life.	(a) Update the PRC plan, schedule and spatial files to use consistent terminology and descriptions of the proposed PMLUs. This should include the instances raised and any other instances within the application documents where the proposed PMLUs are referred to or described. Terminology must be clear as to the type of PMLU including whether the PMLU will include threatened fauna habitat and/or native ecosystem. (b) Update the PRC plan, section 4, to clearly describe each of the proposed PMLUs including relevant indicators of success

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Item	Relevant Document Section	Issue	Information Requested
2.3	PRC plan • s.1.2.10 Pre-mining Land Use → Land Suitability Ratings PRCP schedule	The proposed PMLU of "Low-intensity grazing with habitat for Koalas and Squatter Pigeons; Native Ecosystems" (assumed to be equivalent to the PMLU of "NAT_ECO" as per the spatial files) is proposed for the northern portion of MLA700073. However, the department is not satisfied that this proposed PMLU is likely to be achievable. As per section 1.2.10 and Figure 1-38, the pre-mining land suitability for the proposed PMLU has a land suitability of only '5' (i.e. unsuitable land with extreme limitations). With consideration for the pre-mining land use being generally unsuitable for grazing, it is unclear how the applicant proposes to rehabilitate land to a "stable condition" where the PMLU includes grazing.	(a) Provide additional details for the proposed PMLU for the area identified to be "NAT_ECO" as per the spatial files. (b) Provide additional details in terms of rehabilitation milestone criteria that will demonstrate the achievement of a stable condition with a PMLU of "Low-intensity grazing with habitat for Koalas and Squatter Pigeons; Native Ecosystems".
2.4	PRC plan • s.6.1.6 Surface Water • Appendix A PRCP schedule • Rehabilitation milestones	The department notes sediment dams are proposed to be removed from 'completely rehabilitated' catchments to allow run-off to shed to the receiving environment. The catchment of a sediment dam is proposed to be considered 'rehabilitated' when water monitoring data of runoff from rehabilitated areas is consistent with natural background conditions. However, the rehabilitation milestones (RMs), including the completion criteria, do not reflect the above proposal. The RMs should be updated to account for the proposed removal of sediment dams. Corresponding completion criteria must be developed in line with the SMART principles.	(a) Update the RMs and corresponding criteria to account for the proposed rehabilitation works; (b) Provide additional details as to how water monitoring data for runoff from rehabilitated areas will be collected; (c) Provide additional details as to how natural background conditions will be determined including the characteristics of water quality; and (d) Pending the responses to the above, update the PRC plan and schedule accordingly.

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Item	Relevant Document Section	Issue	Information Requested
2.5	PRC plan • s.6.2.8	The department recognises that rehabilitation at VCP is proposed to be taken as rehabilitation trials for the VSP. The PRC plan must stand on its own merit and as such, must meet the legislative requirements of the *Environmental Protection Act 1994* (EP Act). In accordance with section 126C(1)(j) of the EP Act, if rehabilitation trials are planned, the rehabilitation planning part must state: • the objective of the trial(s) • the trial design including, but not limited to, the location, underlying land characteristics and potential issues • the details of how the trial(s) will be carried out • when the trial(s) will commence • the duration of the trial(s) • how the trial(s) will be assessed for success • how the results of the trial(s) will be incorporated into rehabilitation strategies and the development of • milestones, and • where the trials have previously been carried out by the applicant. The PRC plan must be updated to include details of the above, with specific regard to how the rehabilitation trials at VCP will be carried out to inform rehabilitation at VSP. Further, it is noted that VSP may require specialised rehabilitation trials when considering the impacts of highwall mining and the PMLU which includes native ecosystem.	(a) Update the PRC plan to include the necessary information. The additional information should clearly demonstrate how rehabilitation trials at VCP can inform rehabilitation at VSP; and (b) Consider the need for additional or modified trials to support rehabilitation for the native ecosystem PMLU.

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Item	Relevant Document Section	Issue	Information Requested
2.6	PRC plan • Section 6.1.6 Surface Water → Final Landform Drainage • Appendix A, s5.9 • Appendix D	The PRC plan indicates the mine water dams are proposed to be retained post-mining to support the PMLUs. As per section 3.2 *Post-mining land use* of the statutory guideline – *'Progressive rehabilitation and closure plans (PRC plans)'* (ESR/2019/4964), infrastructure may be accepted as part of a PMLU where the relevant land holder has agreed through a signed land holder statement declaring that they will accept responsibility for the infrastructure once mining has ceased. All infrastructure to be retained onsite should be safe, stable and not cause environmental harm. If the underlying landholder is also the EA holder (or a parent corporation or a subsidiary corporation) they must justify how the infrastructure will provide a benefit or improvement to the use of the land and/or community once mining has ceased.	(a) Provide additional details as to the mine water dams – or any other infrastructure that will be retained'; (b) Provide evidence of agreement from the underlying landowner to accept said infrastructure post-mining; If the EA holder is the underlying landowner justify why retaining said infrastructure provides a beneficial outcome; and (c) Provide additional details as to the treatment/s for mine water dams that will ensure they are safe, stable, do not cause environmental harm – and are fit for purpose (i.e. free of contaminants, free of silt and sediment, suitable water quality for stock watering, etc.).
2.7	PRC plan • Section 10.3, Table 10-2 PRCP schedule	The RAs listed against each RM in Table 10-2 are not consistent with the corresponding schedule. Further, it is unclear as to why RM2 is not applicable to RA2.	(a) Update the PRC plan and/or schedule to be consistent; and (b) Justify why remediation of contaminated land is not applicable to RA2. Alternatively, include RM2 against RA2.

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Item	Relevant Document Section	Issue	Information Requested
2.8	PRC plan • Section 6.1.3, Table 6-1 • Section 6.1.5, Table 6-2 • Section 10.3, Table 10-2 PRCP schedule • RM4	RM4 includes a milestone criterion (MC) which requires subsoil to be applied to RA2 (in-pit dumps). Note that is excludes RA1 (ex-pit dumps). Further, section 6.1.3 discusses that the application of subsoil will enhance the water holding capacity of soil and provide better conditions for revegetation. Table 6-1 states that RA1 will not receive subsoil treatment due to insufficient quantity of material at an appropriate stage of project development. However, Table 6-2 suggests that there will be a surplus of topsoil material for use in rehabilitation. Clarification is required regarding the predicted quantity of topsoil, subsoil and waste rock for rehabilitation available over the duration of mining operations. Additional clarification is required as to the feasibility of strategic placement of subsoil on ex-pit dumps where supply is limited.	(a) Update section 6.1.5 and Table 6-2 to clearly outline the predicted quantities of topsoil, subsoil and waste rock available to be used in rehabilitation; (b) Provide further justification to support the lack of subsoil application to ex-pit dumps (noting it is proposed to be applied to in-pit dumps); and (c) Clarification is required as to the feasibility of partial or strategic use of subsoil where supply is limited.
2.9	PRC plan • Section 6.2 PRCP schedule • RM4	The need for soil amelioration is discussed in section 6.2 of the proposed PRC plan. Criteria for soil amelioration have not been included in the proposed PRCP schedule.	(a) Provide a revised PRCP schedule that includes appropriate RM criteria for soil amelioration.

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Item	Relevant Document Section	Issue	Information Requested
2.10	PRC plan • Section 6.2.3 • Table 5-1 PRCP schedule • RM7 and RM8	The proposed PRCP schedule provides limited milestone criteria to demonstrate achievement of the proposed PMLU of native ecosystem and the habitat features of low intensity grazing with habitat for koalas and squatter pigeons. The proposed PMLU for RA2, RA3 and RA4 incorporates habitat for Koalas and Squatter Pigeons. The proposed PMLU for RA2 includes both grazing and native ecosystem. Section 6.2.3 states habitat for Koalas and Squatter Pigeons can be incorporated into low intensity grazing PMLU and native ecosystem PMLU and habitat for the greater glider can be included in the native ecosystem PMLU. The proposed PRCP schedule includes RM6 for land becoming suitable for the commencement of grazing, RM7 for establishment of target vegetation and RM8 for the achievement of the PMLU to a stable condition. Table 5-1 of the proposed PRC plan refers to completion criteria regarding the prevalence of eucalyptus species, however these have not been incorporated in to the proposed PRCP schedule.	(a) Provide a revised PRCP schedule that includes appropriate RM and milestone criteria to demonstrate the achievement of the proposed PMLU including the provision of habitat for koalas and squatter pigeons.
2.11	PRC plan • Table 5-1 PRCP schedule • RM8	The proposed PRCP schedule refers to operational water quality limits contained within the EA for an adjacent site (VCP). Table 5-1 of the proposed PRC plan refers to site specific water quality triggers that will be established to present the most accurate measure of effect on water quality.	(a) Provide revised milestone criteria relating to water quality or further information to justify the proposed water quality criteria in RM8.
2.12	PRCP schedule • Rehabilitation tables for RA1, RA2, RA3 and RA4	For rehabilitation tables for RA1, RA2, RA3 and RA4, entries for areas when each milestone is completed by require revision to reflect cumulative areas. The tables must reflect the progression of each portion of each RA through the relevant milestones progressively over time (e.g. currently the table for RA1 depicts progression of 151.4ha through milestones 1 to 5 between 2025 and 2027, however, in 2030 the entire area of the RA (196 ha) is depicted as only being progressed through milestones 1 to 3).	(a) Revise cumulative areas achieved in rehabilitation tables for RA1, RA2, RA3 and RA4 to reflect the cumulative area for each milestone achieved as time progresses.