

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 application for a proposed PRC plan.

To: Wandoan Holdings Pty Limited;
SCAP Wandoan Pty Ltd
Level 44, Gateway Building
1 Macquarie Place
SYDNEY NSW 2000

ATTN: Melissa Brunner (Glencore Coal Assets)

Email: Melissa.Brunner@glencore.com.au

Our reference: EPML00297613 - Wandoan Coal Project (WCP)

Further information is required to assess an application for a PRCP schedule

1. Application details

The application for a proposed PRC plan, made by Wandoan Holdings Pty Limited, was received by the administering authority on 27 September 2024. A 'Not Properly Made' Notice pursuant to section 128 of the Environmental Protection Act 1994 was issued to the applicant on 8 October 2024. **This notice hereby withdraws the 'Not Properly Made' Notice pursuant to section 24AA of the Acts Interpretation Act 1954.**

The application reference number is: A-PRCP-NEW-100732384

Land description: ML 50229, ML 50230, ML 50231

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 1** below.

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.

Should the information request require an EIS process or applicant to submit a progressive rehabilitation and closure (PRC) plan then it must be completed and submitted.

A response to the information requested must be provided by **5 December 2025** (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/action and it was determined that no human rights are engaged by this 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 Business Centre Coal on the telephone number or via email listed below.



Signature

30 May 2025

Date

Dr Alison Cummings
Department of the Environment, Tourism, Science
and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

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

Attachments

[Information sheet: Internal review and appeals](#) (ESR/2015/1742)

Appendix 1: Additional information required for proposed PRC plan

Relevant section	Matter	Information Request
Rehabilitation Planning		
1. Final site design	The final site design included in the proposed Progressive Rehabilitation and Closure Plan (PRCP) does not align with the disturbance extent authorised under the current environmental authority (EA) for the Wandoan coal project. A PRCP must include a rehabilitation area/ management area for all disturbance authorised under the EA. As per section 4.1 of PRCP Guideline, “<i>Only areas of disturbance need to be included in the rehabilitation areas/improvement areas.</i>” Wandoan PRCP can be considered a greenfield site under Scenario 2 as outlined in the following information sheet - https://www.detsi.qld.gov.au/policies?a=272936:policy_registry/rs-is-exploration-greenfield-prcp.pdfhttps://www.detsi.qld.gov.au/policies?a=272936:policy_registry/rs-is-exploration-greenfield-prcp.pdf If Glencore propose to proceed with a reduced disturbance footprint in the PRCP as compared to the EA, if and when the PRCP schedule is approved, the PRCP schedule and EA must both contain conditions limiting the disturbance area to that detailed within the approved PRCP Schedule until an approved PRCP existed for the whole authorised EA area. If proceeding with this approach, this must be made clear in the updated PRC Plan and Schedule provided in response to this information request. Rehabilitation Area (RA6) includes 4,844ha of <i>EA approved disturbance not scheduled to be disturbed</i> and only final rehabilitation milestones (RMs) i.e., achievement of Post Mining Land Use (PMLU) to stable condition (RM8 and RM10) apply.	To align the approved disturbance between EA and PRCP, please provide updated PRC plan addressing RA6 disturbance and milestones, including but not limited to: (a) Change description of RA6 to “ancillary disturbance”; (b) Allocate relevant RMs (and not just one final RM); (c) Push completion dates to end of PRCP schedule; and (d) Where relevant, include RA6 in all rehabilitation planning and modelling (i.e., flood, groundwater, erosion assessment).

2. Land class suitability for slopes	The Table included in Appendix 2 below compares the rehabilitation outcomes, land class suitability (DME 1995) for grazing outcome, and slopes of disturbance domains as authorised under the current EA (a land outcome document) and the proposed PRCP. Review of this table indicates the slopes for some domains are proposed to be steeper than that approved under the current EA for recontoured spoil and waste rock dumps (18% compared with proposed slopes up to 22%), and roads and tracks (10% compared with <15%). Landform slope can impact the stability and achievement of final land use. As such, further information is required to justify the final landform can achieve the approved outcomes.	Provide a revised PRC plan that clarifies why the slopes approved under the EA cannot be achieved, and justification that the steeper slopes can support a grazing outcome.
3. Milestone criteria for slopes	Section 5.1.2 of PRC plan states that during construction of the landform, final slope and bench design including any temporary erosion control structures will be considered. The PRC plan lacks details about erosion control structures which have high failure probability, and more information is required to demonstrate that these structures can be expected to remain stable in a post-closure context. Milestone criteria will be required to demonstrate stability, including a requirement for a third-party AQP to certify that the structures can be expected to remain stable in the long term, with consideration given to ongoing performance, maintenance requirements, and residual risk post-closure.	Provide an updated Rehabilitation Planning Part that: (a) Clearly determines the rehabilitation methodology to achieve final landform design, including but not limited to, the use of engineered structures; (b) Provides further information to demonstrate that engineered structures will achieve stable condition; and (c) SMART milestone criteria which demonstrate stability of the final landform.
4. Highwalls	As per Figure 5-2 of the plan, the safety bund is proposed to be placed at the top of the slope beyond the weathered zone (figure 5-2 copied below for reference).	Provide a revised PRC plan that details the: (a) FoS of the highwall above the unweathered competent rock and above the weathered highwall slope; (b) Justification that the stability analyses results for Leichardt South pit are applicable to the other 7 pits that will have a highwall remaining post-closure (but be free draining with no depression);

	 Figure 5-2 WCP conceptual highwall profile (SLR, 2014b) As per section 5.7.2.3, modelled highwall stability exceeds the departments expectation of a minimum factor of safety of 1.5. As per table 5-20 the FoS has been modelled at either the upper slope or the overall slope. To demonstrate geotechnical stability of 8 free draining voids, only 1 void named Leichhardt was considered with slopes of 40 or 60 degrees, not slopes up to 214% as proposed. Further justification is required to ensure that Liechhardt is representative of all free draining voids to confirm they will achieve geotechnical stability. The PRC plan also lacks details about safety gates/fence outside the safety bund.	(c) Based on information provided from (a) and (b), include commitment in the RM criteria of highwalls and spoil dumps achieving an FoS ≥ 1.5; and (d) Where relevant, revise the location of the safety bund for each highwall to demonstrate sustainable PMLU and long-term stability or clarify if access gates are required.
5. Reprofiled void depressions	Table 6.1 of Appendix I shows depth of reprofiled void depressions as difference between voids base and max water level. This should be maximum water depth and not maximum void depth.	For reprofiled void depressions, update Table 6.1 of Appendix I to: (a) Rename the column titled as “Maximum depth (m)” to “Maximum Water depth (m)”; and (b) Clarify maximum void depth.
6. Groundwater and surface water quality data	Section 2.3.7 of PRC plan identifies the relevant waterways and their environmental values. No receiving environment water quality data has been provided. The PRCP guideline section 3.1 requires the EA holder to	(a) Provide an updated Rehabilitation Planning Part that includes background/baseline receiving environment

	provide baseline information with respect to site hydrology and fluvial networks. Similarly, groundwater quality data has not been provided. Background surface and groundwater quality data is important as it helps to determine the water quality limits, suitability of monitoring locations to demonstrate the stability and non-polluting state of the final rehabilitated landform.	water quality monitoring data and groundwater quality data. (b) Please provide surface and groundwater data (separately) in one of the attached spreadsheets: • Attachment 1_Data_Blank_1; or • Attachment 2_Data_Blank_2.
7. Groundwater levels and flow	Section 4.6.11 states: <i>"Local groundwater flow conditions may be different from regional flow conditions with potential steeper gradients and increased velocities in response to hydraulic stresses such as groundwater abstraction."</i> It is noted that no groundwater contours are provided based on observed groundwater levels at the project site to support any discussion about groundwater flows. This is required as a basis for the conceptualisation of the groundwater system and to compare with simulated groundwater contours from the numerical groundwater model.	Provide groundwater level elevation contours for the major geologic units based on the observed groundwater levels at the project site to provide confidence in the modelled groundwater elevation contours and to understand the current groundwater flow directions.
8. Groundwater Monitoring Bores	Section 4.6.2 states: <i>"GCAA monitors a network of bores within the Project area on behalf of the Proponent, with additional bores installed in late-2023/24 to supplement the existing network."</i> Based on Table I-1 in Appendix 1 it appears that 20 bores were drilled in November/ December 2023. It is noted that the numerical model transient calibration period finishes in December 2022 indicating that water levels from the new bores were not used in the calibration of that model. Figure IV-3.2 (Transient Calibration Points) appears to confirm this. Additionally, strata details from the new bores appear likely to be unavailable for use in developing model layers.	Provide advice as to whether the new bores drilled in November/ December 2023 were used in any way to support the groundwater report. If so, how the information from these bores was used.

	It is not clear if any information from the new bores has been used in any way to support the groundwater report. This information should be made clear to understand what data was available to support the groundwater assessment.	
9. Location of Groundwater Monitoring Bores	Figure 4.7 appears to indicate a large number of monitoring bores drilled on the eastern part of the project site but very few on the western part of the site. There is no discussion in the report as to why this spread of monitoring bores has been adopted.	Provide discussion as to: (a) Why the majority of monitoring bores are located on the eastern side of the project. (b) How has this impacted the assessment of groundwater conditions on the western part of the site.
10. Groundwater Data	Section 4.6.3 Groundwater Data states “<i>however, monitoring to the south of the Project shows a decline in groundwater levels¹ of ~150 m (Appendix II).</i>” A footnote to this comment states: <i>Note that data has been extracted from the GWDB and cannot be verified for accuracy. Some data is considered unreliable.</i> It is noted that some data provided in the report appears to be referenced from Vibrating Wire Piezometers (VWPs). Is this the data that is considered unreliable? DETSI has concerns about the quality of data that is provided from some VWPs across a number of mining sites. It is unclear if any VWP data used in developing this groundwater assessment been verified.	Provide an update rehabilitation planning part that details: (a) Whether the unreliable data referenced was VWP data. (b) How any VWP data that was used in the groundwater assessment was verified for accuracy.
11. Groundwater Model Predictions	The groundwater report provides no modelled groundwater elevation contours for the major geologic units at the start of the transient calibration in 1995 or at 2022 (end of calibration). These contours would provide the simulated impact of CSG activities during this period. The 2022 simulated groundwater elevation contours should be compared to the groundwater elevation contours developed based on	Provide modelled groundwater elevation contours for the start and end of the model calibration period to demonstrate model predicted impacts of CSG on groundwater levels, and to provide a comparison of modelled groundwater elevation contours with groundwater elevation contours developed using observed groundwater data.

	observed data to determine how well the model is simulating actual groundwater level conditions and observed groundwater flow directions.	The latter will provide confidence in the groundwater modelling.
12. Post Closure Groundwater Levels	Section 6.1 states <i>“No groundwater-driven residual pit lakes are predicted in the base case simulations, which uses the average annual rainfall for the modelled recharge. However, there is a residual risk that during very wet years, that ephemeral water bodies could rise in these areas. Since progressive backfill and rehabilitation will be undertaken, an improved understanding of these risks should be developed during operations.</i> <i>Shallow groundwater is predicted in proximity of several backfilled open cut areas, generally in areas where the overburden emplacements are located close to the watercourses, where there is lower topography and there is localised mounding associated with the overburden emplacements.”</i> It is noted that post mining groundwater levels are predicted to be close to the surface in some areas, as little as 1m is stated, and there is potential for higher groundwater levels in those wetter years which have not been modelled. It is stated that as progressive backfill and rehabilitation will be undertaken an improved understanding of these risks should be developed, but no discussion of what management options might be adopted should these risks be realised. There is no discussion of how future updated groundwater modelling will incorporate additional information that is acquired during mining and early backfilling operations and how this might be utilised in any alterations to the final landform.	Given the uncertainties associated with final post mining groundwater levels and the residual risks associated with groundwater rising above ground level and into some depressions, provide an updated rehabilitation planning part that includes additional information on what steps will be taken in the future in regard to updated groundwater modelling and potential adjustment of final landform design.
13. Flow Direction and Velocity	Section 6.1.2 of Flow Direction and Velocity and Table 6.1 appear to indicate groundwater flow from some of the backfilled pit spoil areas towards nearby watercourses. It is stated that:	Review Sections 6.2, 7 and Appendix V and provide clarification as to whether groundwater from the backfilled areas is predicted to drain into nearby creeks and/or contribute to alluvial groundwater. Provide advice on how future monitoring of water quality in spoil areas will be conducted and the results incorporated into future decision making relating to final landform

	<i>Groundwater levels are not predicted to daylight (i.e. express above ground surface) in the base case groundwater model prediction, which uses the average annual rainfall for recharge.</i> Section 6.2 appears to indicate that the anticipated water quality within the spoil material will not <i>pose a significant risk to the quality of surface and groundwater resources in the vicinity of the Project.</i> However, despite this statement it is not clear if groundwater is predicted to drain into the creek beds that have been identified as receptors. For example, in periods immediately following high rainfall and high recharge in the alluvium, there may be potential for movement of alluvial groundwater back into the watercourse when stream flows finish. In the case of Woleebee North and Woleebee North Sat, Appendix V, Figures V-10 and V-11 appear to indicate that the final groundwater level will be above bed level in Woleebee Creek. But in 'section 7 Conclusion', it is stated '<i>Groundwater is not predicted to express within the creeks</i>'. This statement appears to conflict with Figures V-10 and V-11 referenced above. This issue should be clarified to confirm the final landform can achieve non-polluting.	management to minimise movement of any poor-quality groundwater towards watercourses.
14. Calibrated Model Parameters	In figure I1-3.14 the lower bounds for recharge rates of 1×10^{-8} m/day (0.0036 mm/yr) for all aquifers and the calibrated recharge rates for non-alluvial aquifers appear very low. The calibrated recharge rate for the Weathered Surat Basin being 4.49×10^{-7} m/day (0.16 mm/yr) and for the Springbok Sandstone being 3.56×10^{-7} m/day (0.13 mm/yr). In comparison the lowest OGIA rates referenced in Section 4, Table 4.1 of this report were 4.3 mm/yr for the Walloon Coal Measure and 3.2 mm/yr for the Springbok Sandstone. These values are much higher than those being used in the Wandoan numerical model.	Provide an updated rehabilitation planning part that includes additional information to support the lower bounds used for the calibration of recharge rates and the final calibrated recharge rates in the non-alluvial aquifers in Table I1-3.14.

	No justification is provided for these low bounds and low calibrated recharge rates. Information should be supplied to demonstrate that recharge rates applied in the modelling are within realistic boundaries to provide confidence in the modelling.	
15. Life of Mine – Model Set-Up – Recharge to spoil	VI-4.2.1 Life of Mine - Model Set-Up – Recharge to spoil This section states: <i>Similarly, a reference recharge rate (10% of rainfall) and evapotranspiration rate (same as alluvium unit) was applied for the spoil sourced from Williams (2008).</i> It is noted that Williams (2008) is identified as: <i>Williams, David, J. 2008. 'The Influence of Climate on Seepage from Mine Waste Storages During Deposition and Post-Closure'. Mine Closure 2008.</i> Typically, where localised data is not available, model reports have referenced Mackie (2009), and a recharge rate of between 1 and 5.5% of rainfall to be used on the spoil. DETSI have reviewed Williams (2008) and it is not clear what part of this report has been referenced to support a spoil recharge rate of 10%. The recharge rate applied to the spoil in the latter stages of mining and post mining is potentially an important part of the water balance.	Provide additional advice as to how Williams (2008) supports the use of a recharge rate of 10% for the spoil in the numerical groundwater model. Provide advice as to why Williams (2008) was referenced in preference to Mackie (2009).
16. Soil and overburden quality and management	16.1 Section 5.6.2 of PRC plan provides details about topsoil stockpile planning and placement. There is no mention of stockpile height that has direct relationship with soil health* and must be considered when planning for stockpiling. As per Mine Rehabilitation (industry.gov.au) standard topsoil stockpiles height is <2m and a greater height can result in significant deterioration of soil physicochemical and biological properties.	Provide an updated Rehabilitation Planning Part that includes details about topsoil stockpile height management noting the guidance by Mine Rehabilitation (industry.gov.au).

	This information is required to ensure that sufficient quality topsoil will be available for rehabilitation activities. * Fischer, A. M., Van Hamme, J. D., Gardner, W. C., & Fraser, L. H. (2022). Impacts from topsoil stockpile height on soil geochemical properties in two mining operations in British Columbia: implications for restoration practices. Mining, 2(2), 315-329.	
16.2	Section 2.3.4.4 of PRC plan provides soil quality results. Soil pH and Exchangeable Sodium Percentage (ESP) results are from 2008. The sampling regime for waste characterisation must meet the best practise standards. One of such standards is to have temporally representative i.e., most recent data. Having knowledge of mine material properties as close to the landform construction as possible will ensure that each material is suitable both for its final placement in the landform, and for the target plant community to be re-established. For soil quality characteristics, other than pH and ESP, Appendix B provides latest results from 2024. However, a total of 11 soil samples from a maximum of 9 sampling sites (one bulk pit and 8 drill holes), all located within one mining lease (ML50230), were chosen. To meet the best practice standards, sampling regime must also be spatially representative with sample numbers sufficient to characterise all soils that would be disturbed and/or used in rehabilitation of the site. The rate of sampling should be like those used in precision agriculture which is around 1 test site per 5ha as long as the material is of a similar nature.	The applicant is required to: (a) Provide further justification that the soil sampling regime is spatially and temporally representative; and (b) Pending (a), update the Rehabilitation Planning Part that will include soil characterisation based on spatially and temporally representative sampling data or commitment to conduct further soil sampling close to the landform construction to confirm design.
16.3	Section 4 of Appendix B states that, <i>“selenium can have a concentration greater than the livestock drinking water value (ANZG, 2018) under ideal oxidising conditions.”</i> It also states that, <i>“Overall, dissolved metal/metalloid concentrations in surface runoff and seepage from the mine materials are unlikely to present a significant risk to surface and groundwater resources with the expectation that the material will be handled according to standard industry mine waste management practices.”</i>	Provide an updated Rehabilitation Planning Part that includes details about consistency of waste characterisation with section 3.6.1 of PRCP Guideline.

	To confirm the final landform will be stable and non-polluting, section 3.6.1 of PRCP Guideline requires the plan to “<i>Characterise mine wastes in a report that describes the likely physical behaviour and chemical reactivity of the waste materials under the conditions in which they would be stored.</i>” As such, further details are required to confirm that mine material characterisation have considered the conditions in which those materials will be stored (i.e., would there be <i>ideal</i> oxidizing conditions to cause selenium exceedance?).	
	16.4 The PRC plan contains limited details about soil amelioration and fertilisation. As per section 3.6.1 of PRCP Guideline, the rehabilitation planning part must include details of the site preparation required for rehabilitation activities including: a) The application and incorporation of ameliorants (if required for chemical balance) and bulk ameliorants such as gypsum, lime and other organic materials; and b) The application of fertilisers and where applicable, irrigation.	Provide an updated Rehabilitation Planning part that includes details about ameliorants and fertilisers that will be used, application rates and method of incorporation. These details must also be provided in the PRCP schedule where appropriate.
17. Cover design	Section 5.10 of PRC plan states that, “<i>No engineered cover systems are required to manage the storage of mine materials at the WCP due to the low risk posed by the NAF/ NAF (barren) material</i>” As per section 2.3 of Appendix B, only 2 coal rejects and tailings samples (one sample each) were analysed. There were 31 <i>potential</i> coal reject samples as well, however, were determined to have mineralogical composition similar to overburden. As such, and just like soil, the number of samples for rejects and tailings is not sufficient to determine whether an engineered cover design is required or not. As per Assessment and Management of Acid Drainage (DME, 1995) “<i>sufficient samples should be taken to accurately characterise the nature, distribution and variability of critical parameters in each material type, including waste rock and ore samples. Ideally this should be based on accepted statistical procedures.</i>” This guideline also provides details about minimum number of waste samples to be taken based on mass of each	Provide an updated Rehabilitation Planning Part that includes details about: (a) Completeness of tailings sampling; and (b) What design principles have been considered for the conceptual cover design that will minimise water infiltration and saline drainage. For details about cover design principals, please refer to section 3.6.1 of the PRCP guideline.

	separate rock type (e.g., 3 samples for <10,000tonnes). The completeness of representative sampling is one of the biggest limitations in assessing mine waste characterisation results and the application must include enough information to address this concern. There is also lack of evidence (i.e., monitoring data) confirming the proposed systems will effectively reduce infiltration (and oxygen) to minimise seepage. This information is required prior to recommending the cover design are operating as designed and if these designs satisfy the completion criteria relevant to the final landform/PMLU.	
18. Erosion Assessment	Water Erosion Prediction Project (WEPP) has been used for erosion assessment with results provided in Appendix J. The following issues have been identified with WEPP model: - No details about erodibility parameters, calibration and validation of the modelling; - Determines only rill erosion risk; - Does not determine high erosion risk areas and as such risk of erosion failure; - Does not determine the effects of significant hydrological events and biogenic factors; - Reports average and not maximum erosion rates; and - Does not consider steep weathered zone slopes. Based on above issues, the current rehabilitation planning part does not confirm the landform designs will achieve a stable condition.	Update the PRC plan to include a revised landform design and erosion assessment that can demonstrate a stable condition can be achieved as per section 111A of the EP Act. The revised erosion assessment must at a minimum include: (a) All input parameters including soil erodibility parameters; (b) Calibration, validation and sensitivity analysis based on locally obtained data; (c) Erosional hotspots from different erosion forms (including gullying and tunnel erosion); (d) An appropriate presentation of (c) such that the results can be interpreted by the reader and highlight areas of risk and modes of failure; (e) Effect of significant hydrological events and biogenic factors; (f) Maximum erosion rates; and (g) Consider entire landform including the unweathered steep slopes.

19. Native Bushland proposed on highwalls	The applicant has elected to propose a PMLU of Native Bushland for both weathered (slopes 22%) and unweathered (slopes 214%) portions of highwalls. The narrow strips of Native Bushland proposed on the highwalls is unlikely to form a functioning ecosystem due to environmental conditions and isolation. Larger areas of native vegetation rehabilitation are strongly encouraged and in line with other outcomes approved under the current EA (refer appendix 2 below). It's also not clear that what regional ecosystem(s) are targeted to be established. An appropriate PMLU for Woleebee Creek could involve the establishment of a Native Bushland, as the disturbance areas are currently designated for grazing in the PRCP. Regional Ecosystem (RE) 11.3.25 is identified as a suitable option. The watercourse retains remnant vegetation and serves as a key habitat for the threatened fauna recorded on the site. Maintaining and enhancing these ecological values would align with conservation priorities. Furthermore, the area between safety bund and the unweathered competent rock will have Native Bushland PMLU too. The purpose of safety bund is to provide exclusion zone as it provides space for highwall collapse. As such, it's unclear that how the native vegetation in this area will be monitored and managed. It's also unclear that how native vegetation will establish successfully on steep slopes up to 214% on unweathered rocks.	For high walls, provide a revised Rehabilitation Planning Part that includes: (a) Clarification on which regional ecosystem(s) are being aimed for with a view to developing completion criteria; (b) Discussion on why grazing is a more suitable PMLU compared to Native Bushland (woodland) in the areas with slopes >15% and especially >20%; (c) Sufficient details to demonstrate that steeper slopes up to 214% will achieve sustainable PMLU of Native Bushland; and (d) Details of how Native Bushland PMLU will be established, monitored and managed on the unweathered component of the highwall and area between safety bund and unweathered rocks.
20. Ecological surveys	Section 2.3.5 of PRC plan states that, <i>"Nine REs were ground-truthed within the MLs during 2023 and 2024 field assessments undertaken by SLR (SLR, 2024c)...SLR undertook field surveys in spring 2023 and autumn 2023 and 2024 (in line with recommendations provided in Eyre et al. (2022a) for the Brigalow Belt bioregion)."</i> However, ecological surveys/data have not been supplied to confirm statements and summaries made in section 2.3.5.	Provide ecological surveys / data to confirm statements and summaries made in section 2.3.5.

21. Land class suitability	The land class suitability proposed is also of a lower standard for some domains than approved under the current EA (refer table in appendix 2). Furthermore, it is not clear how grazing PMLU can be sustained on slopes up to 22% noting QMRC publication* which recommends a 15% maximum slope for grazing * Short TA. 2023. Rehabilitated mined land suitability for beef cattle grazing in the Bowen Basin: Technical paper 1. Brisbane: Queensland Mine Rehabilitation Commissioner, Queensland Government.	Provide revised Rehabilitation Planning Part that includes justification that PMLU of grazing is sustainable on the land with slopes >15% without severe limitations and management requirements and have land suitability class consistent with the EA.
22. Reprofiled voids	Water in 8 reprofiled voids is proposed to be used by cattle opportunistically and when total dissolved salinity (TDS) is less than 4,000mg/L. As per Appendix I, salinity of water in those voids can be higher than cattle consumption suitable limits (>4000 mg/L) due to catchment run-off and low water volume. Appendix I also states that salinity will not accumulate over time “as salt is lost via infiltration and cattle water supply appears to offset salt mass inflow from runoff inflows.” The high salinity peaks have also been attributed to inherent nature of mass balance modelling approach and that it may not occur to such an extent in practice. Further details are required about: 1. Probability of scenarios when salinity levels will be high; 2. How cattle access will be limited in those times; and 3. Evidence that salinity peaks are due to nature of water balance model and that in practice it will not occur. This information is required to ensure that reprofiled void depressions will be able to sustain the targeted PMLU of stock watering.	For stock watering PMLU of reprofiled void depressions, provide an updated Rehabilitation Planning Part that will include details about: (a) Probability of scenarios when water salinity levels will be high; (b) How cattle will be restricted during high salinity levels; and (c) Evidence that salinity peaks are due to nature of water balance model and that in practice it will not occur.

23. Mud Creek retention of vegetation	As per section 5.5 of PRC plan, 8 reprofiled void depressions will be ephemeral in nature. However, <i>“For Mud Creek, the reprofiled void depression is expected to be able to sustain a waterbody for longer, with the cyclic filling and emptying expected to occur over larger periods of time (i.e., up to decades), because of the smaller, tiered base areas.”</i> In addition to providing details required in IR item 23 above, further details are also required about implications of longer water retention on vegetation regrowth.	For Mud Creek Void, provide details about impacts of longer water retention on vegetation regrowth. Noting the longer retention period, the modelled water quality results will also help determine its suitability for stock watering.
24. Seed mix – grazing pasture / legumes - Table 5-24	The seed species proposed in Table 5-24 of the PRCP for areas with a grazing PMLU has been reviewed to confirm species are suitable to support a sustainable grazing outcome and are as per preferred and recommended pasture species for the grazing land types applicable to the location of the Wandoan Coal. The table contains some weed species and species like Buffel Grass that have ability to outcompete other species. The species list can also be improved by adding species like Black speargrass.	The department recommends: a) Buffel is removed from the seed mix, given its ability to outcompete other species. It is acknowledged that buffel will likely regenerate from the seedbank within the topsoil and adjacent areas and be present in the final landform. b) Remove <i>Stylosanthes hamata</i> from the seed mix as it is an environmental weed and shouldn't be sown due to the risk of it invading woodlands. c) The following additional species are added to the seed list to further enhance achievement of a sustainable grazing outcome: ○ Preferred: Black speargrass, cotton panic (<i>Digitaria brownii</i>), forest bluegrass, Queensland bluegrass, kangaroo grass, curly and bull Mitchell grass. ○ Intermediate: Curly windmill grass, summer grass, Brigalow grass, shot grass (<i>Paspalidium globoideum</i>).

	Grazing pasture / legumes <table> <tr> <td><i>Bothriochloa bladhii</i></td><td>Creeping Bluegrass</td><td>15</td></tr> <tr> <td><i>Bothriochloa ewartiana</i></td><td>Desert Bluegrass</td><td>15</td></tr> <tr> <td><i>Clitoria ternatea</i></td><td>Butterfly Pea</td><td>15</td></tr> <tr> <td><i>Desmanthus virgatus</i></td><td>Desmanthus</td><td>15</td></tr> <tr> <td><i>Dichanthium sericeum</i></td><td>Silky Bluegrass</td><td>15</td></tr> <tr> <td><i>Echinochloa esculenta</i></td><td>Jap Millet</td><td>15</td></tr> <tr> <td><i>Enchylaena tomentosa</i></td><td>Ruby Saltbush</td><td>15</td></tr> <tr> <td><i>Heteropogon contortus</i></td><td>Black Speargrass</td><td>15</td></tr> </table> Page 149 of 212 Glencore Coal Assets Australia Wandoan Coal Project Progressive Rehabilitation and Closure Plan <table> <tr> <th>Scientific Name</th><th>Common Name</th><th>Seeding Rate (kg/ha)</th></tr> <tr> <td><i>Megathyrus maximus</i></td><td>Green Panic</td><td>15</td></tr> <tr> <td><i>Panicum effusum</i></td><td>Hairy Panic</td><td>15</td></tr> <tr> <td><i>Panicum maximum</i></td><td>Gatton Panic</td><td>15</td></tr> <tr> <td><i>Stylosanthes hamata</i></td><td>Caatinga Stylo</td><td>15</td></tr> <tr> <td><i>Stylosanthes scabra</i></td><td>Shrubby Stylo</td><td>15</td></tr> <tr> <td><i>Stylosanthes seabrana</i></td><td>Caribbean Stylo</td><td>15</td></tr> <tr> <td><i>Cenchrus ciliare</i></td><td>Buffel (as a persistent perennial species adapted to variable rainfall areas)</td><td>15</td></tr> </table>	<i>Bothriochloa bladhii</i>	Creeping Bluegrass	15	<i>Bothriochloa ewartiana</i>	Desert Bluegrass	15	<i>Clitoria ternatea</i>	Butterfly Pea	15	<i>Desmanthus virgatus</i>	Desmanthus	15	<i>Dichanthium sericeum</i>	Silky Bluegrass	15	<i>Echinochloa esculenta</i>	Jap Millet	15	<i>Enchylaena tomentosa</i>	Ruby Saltbush	15	<i>Heteropogon contortus</i>	Black Speargrass	15	Scientific Name	Common Name	Seeding Rate (kg/ha)	<i>Megathyrus maximus</i>	Green Panic	15	<i>Panicum effusum</i>	Hairy Panic	15	<i>Panicum maximum</i>	Gatton Panic	15	<i>Stylosanthes hamata</i>	Caatinga Stylo	15	<i>Stylosanthes scabra</i>	Shrubby Stylo	15	<i>Stylosanthes seabrana</i>	Caribbean Stylo	15	<i>Cenchrus ciliare</i>	Buffel (as a persistent perennial species adapted to variable rainfall areas)	15	
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25. Water Infrastructure	Section 5.4.2.3 of the PRC Plan states that <i>“the exact location, size and operational detail of water infrastructure such as sediment dams will be confirmed and refined upon development of the WCP.”</i> In the absence of information about location of those water infrastructures, it's difficult to determine whether those infrastructures will not be in floodplain. Appendix E provides that clean water storages will be supplied, however does not list particulars including quantity, location, volume etc.	Provide an updated Rehabilitation Planning Part containing further detail and clarity regarding water structure location to ensure that the final proposed locations are not in the floodplain.																																																
Monitoring and Maintenance																																																		
26. Reference/ analogue sites	Section 8.1.1.1 of PRC plan states that, <i>“Rehabilitation success is often assessed using comparative reference sites. Reference sites <u>will be established in REs and selected to attempt to reflect post-mining</u></i>	The applicant is required to: (a) Update the Rehabilitation Planning Part to either:																																																

	<i>landform components which may include slope, aspect, water holding capacity and soil characteristic parameters.”</i> Use of reference sites for monitoring and maintenance of rehabilitation success will require regular analysis of site data including multi-year comparison trends and benchmarking against analogue/reference sites. As such, the rehabilitation planning part must clearly identify the reference sites and evidence and justification of the rationale for selecting those sites.	i. Clearly identify the reference sites and evidence and justification for selecting those sites; or ii. Include the methodology that will be applied to select reference site prior to commencement of mining operations. (b) Provide spatial data files and/or maps showing location or proposed location of reference sites; and (c) Update milestone criteria as needed.
27. Monitoring methodologies and standards	To demonstrate a milestone and milestone criteria have been achieved the PRC plan should describe the monitoring and maintenance systems that will be carried out (refer to section 3.8 of PRCP Guideline). This should include description of methodologies and standards, which could include field-based assessments and the application of new remote sensing, GIS and other relevant emerging technologies. These methods and standards have not been provided in rehabilitation planning part.	Provide an updated rehabilitation planning part that will include details about monitoring methodologies and standards
General		
28. Spatial data	There are some discrepancies in RA areas between the PRC plan and spatial files. For example, for RA2, there is difference of 10ha between PRC plan area (8,383ha) and spatial files (8, 373ha).	Provide updated spatial files to address discrepancy with PRC plan.
29. Landholder information (Baseline information)	The applicant has stated that there are 53 properties within the mining leases, 48 of which are owned by WCP JV. The remaining five (5) are privately owned properties. There are no details provided about privately owned properties.	Provide particulars (ownership details for these remaining privately owned properties).
30. Community consultation	The community consultation plan (CCP) provided in Appendix F lacks details about how feedback/comments will be considered during consultation.	Provide updated CCP that includes details about how feedback/comments will be considered

31. Rehabilitation Areas (RAs)	As per section 6.4 of PRC plan, “All water infrastructure will be either: (a) Retained under an agreement for stock watering purposes appropriate for a grazing PMLU; or (b) Decommissioned and rehabilitated, if required.” Section 9.2 of PRC plan allocates one RA (i.e., RA7) to all water infrastructure areas of 126ha. As per section 4.1 of PRCP Guideline, RAs must be based on the proposed rehabilitation methodology applicable to the PMLU and land that requires a specific type of rehabilitation strategy cannot be included into a broader area as there will be specific milestones only relating to a specific area of land within the larger area. This is the case herein whereby retained water infrastructure areas will have different rehabilitation methodology (i.e., ensuring water quality meets stock watering criteria and are safely accessible by cattle) than those to be decommissioned (i.e., landform reshaping, surface preparation, seeding etc). The same principal might be considered for RA1 whereby half of the pits will be designed to be free draining with remaining half reprofiled to become ephemeral water bodies.	To be consistent with RA principles in the PRCP Guideline, it is recommended to separate RA7 into two RA's with one for water infrastructure to be retained and other for water infrastructure to be decommissioned. Please consider the same principles and determine the need for separating RA1 into separate RAs with one for reprofiled shallow depressions and other for free draining.
32. LOM	To determine appropriate timeframes for RA6, please provide predicted mine life duration.	Clarify the predicted mine life duration.
PRCP Schedule – this section identifies key criteria that are missing or not considered adequate in their current form. This is not an exhaustive list, and it is noted that further changes will be required following response to this information request notice.		
33. General comment regarding milestone criteria	The PRCP schedule (Appendix N) includes milestone criteria and section 9.4 of the Rehabilitation Planning Part includes the milestones, criteria and justification. The PRCP schedule is lacking SMART criteria that reflects best practice.	Provide schedule with SMART criteria that reflects best practice: • Specific—it is clear what must be done • Measurable—it must be possible to know when it has been achieved

		• Achievable—it is capable of being achieved • Reasonable/relevant—there is a clear connection between the milestone and the desired outcomes. The requirement is reasonable • Time Specific—it is clear when the milestone will be completed.
34. Predicted flood levels and velocities	Considering potential high risk to the Woleebee voids (Woleebee Creek, Woleebee North, and Woleebee North Satellite) and dumps under 0.1% AEP and PMF (Woleebee Creek void) development of relevant milestones and criteria are required to manage the issue. The PRCP Schedule should contain milestone criteria that are linked to the site-specific risks informed by the risk assessment such as flood protection landforms or rock armouring where there is a high risk of erosion due to high flood velocities.	Provide an updated PRCP schedule that contains milestone criteria that are linked to the site-specific risks associated with predicted flood levels and velocities under 0.1%AEP and PMF and are informed by the risk assessment.
35. Timeframe	Section 9.5 of the Rehabilitation Planning Part states, “<i>The WCP has not commenced mining operations and there are no defined completion dates, as such the date the areas become available for rehabilitation has been adapted as ‘XX’ in the PRCP Schedule for the relevant RA (Appendix N -)...Please note that the above has been used only as general guidance for completing the PRCP Schedule. The timing of when these milestones will be achieved must also be considered for rehabilitation to be completed effectively and efficiently. For example, seeding should take place at the end of the year before the wet season and ideally is done soon after the application of topsoil. Milestones should also be aligned to maximise efficiency, where possible.</i>”	It is noted that the applicant has proposed yearly timeframes in some of the RA tables (e.g. RA1). Provide an updated PRCP Schedule based on: (a) Timeframes proposed in Table 9-3. (b) When milestones are completed by, as opposed to listing all years (year 3-9), especially where the cumulative area available remains the same for subsequent years.
36. RM1 Infrastructure decommissioned and removed	RM1 does not include any criteria about removal of machinery. Additionally, for retained infrastructure, there is no criteria to state that those infrastructure will be safe, stable and non-polluting.	Provide an updated PRCP schedule that contains: (a) Criteria for removal of machinery and equipment; and (b) SMART criteria for infrastructure to demonstrate stable condition*.

		*stable condition: as per section 111A of the EP Act, land is in a stable condition if— (a) the land is safe and structurally stable; and (b) there is no environmental harm being caused by anything on or in the land; and (c) the land can sustain a post-mining land use
37. RM2	Contaminated land criteria should also include consideration of hazardous material.	Provide an updated PRCP Schedule that includes consideration of hazardous material.
38. RM3	For landform reshaping, RM3 lacks details about geotechnical safety criteria. This geotechnical safety criterion is required to ensure that final landform will be safe and stable.	Provide an updated PRCP Schedule that includes geotechnical safety criteria to be achieved when reshaping land for example, ' <i>Constructed landform achieves geotechnical stability with a Factor of Safety (FOS) ≥ 1.5, which includes consideration of flood stress.</i> '
39. Slope and tailings disposal criteria	Based on the WEPP modelling outputs in the Rehabilitation Planning Part, stable landform is achieved when slope length is 100m. In addition, section 5.10 of the Rehabilitation Planning Part states that, " <i>Spontaneous combustion risks are managed through the design of the encapsulation cells and ensuring the height of the reject and tailings paddock dumped within the cells stay within the critical thickness limits ($\leq 2m$).</i> " Appendix L also recommended that for closure considerations a minimum offset of 20m of any tailings cell from the final landform. Information about slope length as determined by WEPP modelling, reject and tailings paddock height within overburden and offset distance between tailings cell and final landform has not been used to inform PRCP schedule criteria. As per section 12 of Common Issues with Progressive Rehabilitation and Closure Plan Applications (PRCP applications) , the milestone criteria as justified in the Rehabilitation Planning Part must be linked in PRCP schedule.	Provide an updated PRCP Schedule that includes milestone criteria regarding landform design such as slope length, setback distance between tailings cells and final landform face that are explained and justified in the Rehabilitation Planning Part.
40. RM4	This RM about removal of carbonaceous material could be merged with RM2.	It is recommended to provide an updated PRCP Schedule that is clear and concise, such as merging of carbonaceous material removal RM4 with RM2.

41. RM5	The Rehabilitation Planning Part (section 5.6.1.2) provides details about erosion mitigation measures for bare soil during initial 1.5 years post-rehabilitation. One of the measures is, <i>"Using high seeding rates for grasses and high fertiliser rates to facilitate establishment."</i> This information has not been linked in the PRCP schedule. As stated above, the milestone criteria as justified in the Rehabilitation Planning Part must be linked in PRCP schedule.	Provide an updated PRCP Schedule that includes milestone criteria explained and justified in the Rehabilitation Planning Part in relation to erosion mitigation measures.
42. RM6	Revegetation criteria are not SMART and lack details about: (a) Exclusion of stock from newly seeded areas (i.e., fencing criteria) (b) Fertilization of topsoil (Section 5.6.3.2 of the PRC Plan) states that, <i>"A controlled release fertiliser is to be applied at the time of ripping and seeding activities"</i>).	Provide an updated PRCP Schedule that includes milestone criteria to ensure that the final landform will be safe, stable, non-polluting, and that completion of each milestone will help progress to the upcoming milestone.
43. Achievement of surface requirements	Between revegetation (RM6) and achievement of PMLU (RM8 and RM9), there must be milestone criteria to demonstrate achievement of surface requirements including but not limited to: • Erosion stability; and • Non-polluting surface water quality.	Provide an updated PRCP Schedule that includes appropriate and relevant milestone criteria to demonstrate the trajectory to achieving progressive rehabilitation.
44. RM8 and RM9	There is only a one year gap between seeding (RM6) and achievement of PMLU (RM8 and RM9). This timeframe to achieve $\geq 65\%$ ground cover for grazing is not practical and is also inconsistent with Rehabilitation Planning Part that states soil will be bare for initial 1.5 years while vegetation cover establishes (i.e., after seeding).	Provide an updated PRCP Schedule that considers appropriate time required to achieve each rehabilitation milestone and as discussed in the Rehabilitation Planning Part.
45. RM10 PMLU to stable condition	Maximum erosion rates for grazing and Native Bushland PMLU are 17.4 and 19 t/ha/yr, respectively. An erosionally stable postmining landform will have a rate of erosion not greater than the rate of soil formation, which is thought to be less than 4 t/ha/y (Grigg et al., 2001)*. Bowen Basin has typical erosion rates of <5t/ha/yr with some landforms (over 350m elevation) tending towards higher erosion rates of 5-10t/ha/y.	Provide an updated PRCP Schedule that includes SMART erosional stability criteria to demonstrate the achievement of stable condition.

	As such, for erosional stability an erosion rate of 5 – 10 t/ha/y is considered acceptable. * Grigg, AH, Emmerton, BR and Callum, NJ (2001) The development of draft completion criteria for ungrazed rehabilitation pastures after open-cut coal mining in central Queensland. ACARP project C8038. Australian Coal Association Research Program (ACARP).	
46. Gully depth	RM10(i) states no gullies $\leq 3\text{m}$ and then RM10(j)(i) allows gullies up to 1m depth. The Australian Government (2016) states that during the landform design process, to manage risk on Australian mine rehabilitation sites, it is important to adopt a target erosion rate where rill and gully development is unlikely, and which considers the receiving environment and PMLU. Please note that as per recent publication by QMRC, “<i>Gullies on dispersive or hazardous material (e.g. Potentially Acid Forming material (PAF)) are not considered an acceptable risk, and the landform design process should seek to inhibit the initiation and development of rill and gully features.</i>” The publication also states that, “<i>The issue of gully presence and density is an important consideration. As mine waste landforms are constructed from unconsolidated material, incisions such as rills and gullies are not constrained such as they are in natural landforms, by underlying bedrock (Australian Government 2016). These conditions provide the opportunity for incisions to continue developing until all the mine waste material has been discharged to the surrounding environment the landform design process should seek to inhibit the initiation and development of rill and gully features.</i>” For gullies and erosional stability, the attached erosion classification framework (Appendix 3) is considered the standard and acceptable approach. * Applying erosion and Landscape Evolution Models to assess post-mining landform stability: Technical Paper	Provide an updated PRCP Schedule that includes SMART erosional stability criteria to demonstrate the achievement of stable condition.

Appendix 2 – Table comparing PMLU, land class suitability for grazing and slopes

Domain(s)	Current EA approved LCS* & Slope	Proposed PRCP LCS & Slope	PMLU
a) Exploration, Infrastructure including roads, MIA, etc.; and b) Low gradient overburden disposal stockpiles including tailings disposal	LCS: Exploration, Infrastructure including roads, MIA, etc. – if grazing, Class 2 and 3 Low gradient overburden disposal stockpiles including tailings disposal – if grazing, Class 2 Slopes: Infrastructure & ROM: 0-18% Roads and tracks 0-10% Recontoured spoil & waste rock dumps: 0-18%	LCS: Class 3** Slopes: <15%	EA: Beef cattle grazing, native bushland or plantation forestry PRCP: grazing
a) Steeper gradient overburden disposal stockpiles; and b) Final voids (ephemeral waterbodies and low walls)	LCS: Steeper gradient overburden disposal stockpiles and final voids – class 4 Slopes: Recontoured spoil & waste rock dumps: 0-18% Low walls 0-100%	LCS: Class 4 Slopes: 15-22%	EA: Low density beef cattle grazing or native bushland PRCP: Grazing (light)
Final voids (highwalls including weathered and unweathered zones)	0-214%	LCS: NA Slopes: 15-22% (weathered zone), 214% (unweathered zone)	EA: Native bushland (highwall) or low-density beef cattle grazing PRCP: Native bushland

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Dams (water storage dams, sediment dams, enviro dams)	Class 2	Water infrastructure retained for stock watering purposes and to support the PMLU of grazing OR Dams to be decommissioned will be rehabilitated by battering in the dam walls, topsoiling, contour ripping and seeding to establish vegetation to support a grazing PMLU.	EA: Either retained for subsequent agricultural use or remediated and rehabilitated for beef cattle grazing or native bushland
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*Based on the DME guidelines 1995

**as per proposed PRCP where practicable, this land will be returned to Class 2 grazing land, otherwise slopes over 3% will be returned Class 3 grazing land

Appendix 3 – Erosion classification framework*

Erosion classification	Minor	Moderate	Severe
Sheet erosion	Shallow soil deposits downslope	Partial exposure of roots; moderate soil deposits downslope	Loss of surface horizons, root exposure; moderate substantial soil deposits downslope
Rill erosion	<0.3m deep Occasional rills	<0.3m deep Common rills	>0.3m deep Numerous rills forming corrugated ground surface
Gully erosion	>0.3m deep Gullies are isolated, linear, discontinuous, and restricted to primary or minor drainage lines	>0.3m deep Gullies are linear, continuous, and restricted to primary or minor drainage lines	>0.3m deep Gullies are continuous or discontinuous, and either tend to branch away from primary drainage lines and on to foot slopes, or have multiple branches within drainage lines
Tunnel erosion	Absent	Absent	Present
Mass movement	Absent	Absent	Present

**the erosion classification framework is based on the 'Australian Soil and Land Survey Field Handbook' Third Edition. by the National Committee on Soil and Terrain (2009)*