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: Batchfire Callide Pty Ltd
Level 11, 141 Queen Street
BRISBANE QLD 4000

By email transmission only

Attention: Maurice Gayler, Manager – Environment and Community

Email: Maurice.gayler@batchfire.com.au

Our reference: EPML00720413

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

1. Application details

The application for a proposed PRC plan for Callide Mine was received by the administering authority on 28 April 2023 (re-submitted on 29 July 2024 in response to a Not properly made notice dated 15 May 2023).

The application reference number: A-PRCP-NEW-100695667

Land description: Mining Lease (ML) 5632, ML5641, ML5653, ML5654, ML5655, ML5662, ML6993, ML6994, ML80030, ML80092, ML80093, ML80107, ML80115, ML80117, ML80118, ML80122, ML80151, ML80186 and ML700059.

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 Attachment 1.

3. Actions

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

Queensland Government

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

A response to the information requested must be provided by 12 May 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.

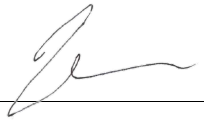
The response to this information request or a request to extend the information response period can be submitted to the administering authority by email to CRMining@des.qld.gov.au.

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, and it was determined that no human rights were engaged by this action.

If you require more information, please contact Business Centre Coal on the telephone number listed below.



Signature

26/09/2024

Date

Juliana McCosker
Department of Environment, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Business Centre Coal
PO Box 3028, Emerald QLD 4720
Phone: +61 7 4987 9320
Email: CRMining@des.qld.gov.au

Attachment 1: Additional information required for proposed PRC Plan

No.	Relevant Section	Matter	Information Requested
Rehabilitation Planning Part			
1	Section 2.1 – Project description Section 2.14 – Rehabilitation/ improvement planning	The ERC applications submitted for Callide Mine include costs for the rehabilitation of exploration drill holes and groundwater monitoring bores at each of the mining areas at various locations within the MLs. The PRC plan does not describe or identify the disturbance and rehabilitation associated with these activities and there are no applicable milestone criteria included in the PRCP schedule. Land where exploration or monitoring activities have been undertaken, even within areas designated 'undisturbed', are disturbed and must be progressively rehabilitated to achieve a Post Mining Land Use (PMLU). The rehabilitation requirements in Appendix 1 of the EA for Boundary Hill South specify basic completion criteria for the rehabilitation or conversion of exploration drill holes and groundwater monitoring bores as part of the mine infrastructure area domain. More information is required about whether this disturbance is carried out within any environmentally sensitive areas or protected matters to determine the best approach for incorporating the disturbance into the PRC plan as either a PRCP schedule condition (i.e. rehabilitation as per standard conditions) or a rehabilitation area (RA) with specific milestone criteria and areas identified on a reference map where exploration is permitted (but with no requirement to show locations of activities to allow for flexibility).	Provide an updated Rehabilitation Planning Part that includes more information about the disturbance and rehabilitation associated with exploration and monitoring activities undertaken at Callide Mine. Indicate using maps the areas within the MLs where exploration and monitoring is carried out or is planned to be carried out with respect to any mapped environmentally sensitive areas (ESAs), prescribed environmental matters or protected matters. If the disturbance and rehabilitation required for this disturbance would not comply with the conditions for the 'Eligibility criteria and standard conditions for exploration and mineral development projects' it is likely to impact on any ESAs or protected matters or would likely impact on prescribed environmental matters, propose specific rehabilitation milestone criteria and a RA for inclusion in the PRCP schedule and reference maps.
2	Section 2.6 – Surface water	No receiving environment water quality data has been provided in the Rehabilitation Planning Part. Section 3.1 of the PRCP guideline requires the EA holder to provide baseline information with respect to site hydrology and fluvial networks. Background surface water quality data is important to determine appropriate site-specific water quality limits for monitoring whether the final landform achieves stable condition.	Provide an updated Rehabilitation Planning Part that includes: • Background/baseline receiving environment water quality monitoring data. • Relevant EVs, Water Quality Objectives (WQOs) and guidelines. • A comparison of WQOs and guidelines with background receiving environment water quality.

No.	Relevant Section	Matter	Information Requested
3	Section 2.14.3 Existing rehabilitation	Section 2.14.3 of the Rehabilitation Planning Part shows the areas of completed rehabilitation at each mining area (i.e. total 611ha) in Table 6 and Figure 16 and the year of completion (i.e. seeding). It describes the rehabilitation of the overburden emplacement areas and areas surrounding the creek diversions. It does not specify the target PMLUs for the existing rehabilitation areas. There is no description about how the rehabilitation was carried out and no discussion or evidence provided about the results of rehabilitation monitoring to demonstrate that the rehabilitation has been successful. This information is important to establish if the proposed rehabilitation strategies and measures of success in the Rehabilitation Planning Part are appropriate for informing the milestone criteria.	Provide an updated Rehabilitation Planning Part that includes more information about how the existing rehabilitation was carried out and documented evidence in the form of rehabilitation monitoring results and photographs that demonstrate that the existing rehabilitation has achieved satisfactory outcomes. This is particularly important for the areas seeded post 1998 when deep ripping was introduced and introduced pasture grasses were removed from the seed mix to support the proposed milestone criteria.
4	Section 2.9 - Flora and vegetation communities Section 2.10 - Fauna presence and populations Section 4.2 - Bushland - Post mining land use (PMLU)	Section 4.2 of the Rehabilitation Planning Part nominates a bushland PMLU for most disturbed areas (3,381.6ha). Bushland is defined in the Callide RMP (Appendix C2) as *areas revegetated using native and pasture grasses and native trees and shrubs to create a self-sustaining vegetation cover* like the pre-mining and adjoining areas. It adds that it is not intended to replicate native ecosystems and will provide ***limited*** fauna habitat. This contrasts with the 2003 report on rehabilitation completion criteria (Appendix C3) which refers to rehabilitation that consists of a native ecosystem that is self-sustaining and similar in species composition and erosion rates to native analogue sites. Appendix 1 of the EA (Boundary Hill South) also includes a rehabilitation objective to establish self-sustaining natural vegetation or habitat where the indicators are comparable to reference sites. While it is not possible to replicate a regional ecosystem, the species and structure of a specific target RE is implied by the 'bushland' PMLU. The bushland PMLU is stated to be consistent with relevant strategies and plans that aim to promote biodiversity/wildlife habitat. To ensure that vegetation is self-sustaining and providing valuable wildlife habitat, thereby helping to promote connectivity between the Statewide Biodiversity Corridor to the east and the Mt	Provide an updated Rehabilitation Planning Part that includes more information about how the composition of the bushland PMLU is consistent with the surrounding undisturbed areas, and consider incorporating characteristics, ecological values and targets associated with these regional ecosystems in the revegetation species mix and milestone criteria. Include details about how the rehabilitation will support the Mt Murchinson Nature Refuge by re-establishing/reinforcing landscape connectivity. Detail the consideration that has been given to how the bushland PMLU will support the fauna species of conservation significance in the surrounding undisturbed areas and consider incorporating habitat values and/or native fauna abundance and diversity into the milestone criteria.

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		Murchison Nature Refuge, suitable REs need to be selected as targets for the bushland PMLU.	
5	Appendix C3 – Callide Mine Report on Rehabilitation Acceptance Criteria (2003)	The report in Appendix C3 states that unmined reference sites have been monitored since 1994, describing one at Boundary Hill (*Corymbia citriodora* woodland with sparse groundcover and 2% slope) and one at Dunn Creek (*C. citriodora* woodland with sparse groundcover and 38% slope). However, no maps showing rehabilitation monitoring locations or reference sites has been provided. This is essential to assess whether these sites are sufficient and suitable. They must be unmodified or 'best on offer' not degraded natural systems. An alternative is to use published benchmarks for target REs using the BioCondition framework.	Provide a map in the Rehabilitation Planning Part along with coordinates of the location of the rehabilitation monitoring sites and reference sites. Include justification for the selection of reference sites and their suitability. The department recommends the use of the BioCondition framework to benchmark rehabilitation to a native ecosystem of target RE and inclusion as milestone criteria for native vegetation PMLUs as opposed to using reference sites.
6	Section 4 – Post mining land use Tables 8 and 9 – Rehabilitation methods and completion criteria	Table 8 and Table 9 in section 4 of the Rehabilitation Planning Part provide the completion criteria for the bushland and grazing PMLUs. Further criteria are required to demonstrate that the final landform achieves stable condition as per the definition of the EP Act. In addition, not all completion criteria achieve SMART principles.	Provide an updated Table 8 and Table 9 in the Rehabilitation Planning Part and proposed PRCP schedule that includes: • Target revegetation species and associated seeding rates. • Specific weed criteria. • Justification for the proposed groundcover criteria. • SMART topsoil criteria based on site-specific data including topsoil quality. • Justification for the water quality criteria provided based on background surface water data or default WQOs and guidelines. • Include • Include groundwater criteria. • Include further detail regarding soil quality monitoring, including monitoring locations, frequency, Contaminants of Concern (CoCs)s and limits.

No.	Relevant Section	Matter	Information Requested
			• Include erosion and sediment control measures criteria. • Include the removal of dam liners, if present. Revise criteria to ensure SMART principles have been incorporated.
7	Section 6.1.8 - Revegetation	Section 6.1.8 of the Rehabilitation Planning Part states that the revegetation species mix for the bushland PMLU is consistent with the undisturbed and surrounding areas of the mine. It is not clear how the species were selected and to what extent they are consistent with the undisturbed areas. Only one table is provided, which lists species for both the bushland and grazing PMLUs. These PMLUs require different species mixes and the bushland PMLU may require dividing into more than one target RE. The 2003 report (Appendix C3) states that pasture grasses were eliminated from the seed mix post 1998, however, introduced species are included in Table 13 of the PRC plan. When compared to the dominant species in RE 11.10.13, the most extensive RE on the MLs, few of the Eucalyptus and Corymbia (Myrtaceae not Malvaceae) species, or grass species, listed in Table 13 are reflective of this RE. Note that *Echinochloa utilis* = *Echinochloa esculenta* (Japanese millet) and is introduced. Furthermore, *Cynodon dactylon* (Bermuda grass/couch) is introduced and considered an environmental weed. The PRC plan shows that the areas of existing rehabilitation (RA1) around the creek diversions must achieve a PMLU of bushland, however, there is no discussion in the planning part about whether suitable riparian species were chosen for these areas.	Provide an updated Rehabilitation Planning Part that includes justification for the species mix (e.g. prevalence in surrounding area, relevance for a suitable RE, suitability for topsoil store and relevance to the target PMLU). Provide separate species lists for each PMLU, and the proposed seeding rate (kg/ha) for each species. Ensure the species list is either reflective of a suitable analogue site for the target 'bushland' PMLU or specific to the target RE, dependant on the outcome of request item 5, allowing for seed availability. Indicate whether a sterile form of Japanese millet will be used to ensure it does not become an environmental weed. Remove *Cynodon dactylon* (Bermuda grass/couch) from seed mixes if non-sterile. The department does not support the inclusion of this species in the seeding mix.
8	Section 2.8.2 – Soil productivity Section 4.3 – Grazing (PMLU)	Section 4.3 of the Rehabilitation Planning Part states that the cattle grazing PMLU is proposed in suitable areas adjoining existing grazing land. The rehabilitated landforms used for grazing will be Class 1, 2 or 3 for native and improved pastures as per the Regional Land Suitability Frameworks for Qld (DNRME). This section states that the	Provide more information in the PRC plan and schedule about how the rehabilitation methodology and criteria proposed for achieving a grazing PMLU will be capable of sustaining a land suitability class of 3 or better.

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		rehabilitated landforms are like the pre-mining landforms and will therefore be able to sustain a grazing PMLU. Section 2.8.2 (Soil productivity) of the PRC plan refer to post mining land *capability* classes and assessments conducted, however, there is no discussion about how these have informed the proposed post mining land *suitability* classes. Most mining areas had baseline land capability classes of 6-8, with Trap Gully having a notable area of Class 4. The planning part does not indicate if the proposed grazing RAs are consistent with the pre-mining land classifications, or the post mine land capability classes required to be achieved in Table F1 of the EA. It adds that the rehabilitation is based on well-established rehabilitation methods and criteria, however, the PRC plan does not nominate specific criteria that can be measured to determine if rehabilitation meets Class 1, 2 or 3 land suitability. There does not appear to be any areas of existing rehabilitation that have achieved a grazing PMLU and the RMP (Appendix C2) and the 2003 report on rehabilitation acceptance criteria (Appendix C3) do not relate any specific measures of success for grazing to the achievement of a particular post mining land classification.	Include additional SMART criteria for ensuring that the grazing PMLU will achieve stable condition such as: • Vegetation ground cover >70%. • 3P (perennial, persistent and palatable) pasture species. • Weed presence is a maximum of 10% of total vegetative ground cover. • No evidence of erosion classified as 'moderate' or 'severe' as defined in the Erosion classification framework. • Average erosion rate of ≤5 t/ha/year with a maximum erosion rate of 10 t/ha/year.
9	Section 4.4 Retained infrastructure (PMLU) Section 10.2 Rehabilitation and improvement areas	Section 10.2 of the Rehabilitation Planning Part states that Callide Mine has three PMLUs – bushland, cattle grazing and retained infrastructure. Section 4.4 of the Rehabilitation Planning Part states that the retained infrastructure PMLU will consist of retained infrastructure that will be beneficial to the grazing and bushland PMLUs. The retained mine infrastructure consists of the buildings and retained dams in RA5 (33.4ha) and creek diversions in RA6 (12.8ha). Section 3.6.5 of the PRCP guideline states that it is the department's expectation for built infrastructure to be decommissioned, demolished and removed unless it is being formally retained by the landholder to achieve an appropriate PMLU. A PMLU of 'retained infrastructure' is not appropriate. Section 3.2 of the PRCP guideline states that an applicant must propose a PMLU (or NUMA) for all land within the resource tenures of the EA (including undisturbed land). Infrastructure including buildings, roads, dams etc. may be accepted as part of a PMLU where the relevant landholder	Provide an updated Rehabilitation Planning Part to include the following information for the retained infrastructure: • Nominate an appropriate PMLU for the retained buildings, retained dams and creek diversions (i.e. bushland, grazing, livestock water storage etc.) taking consideration of the surrounding land use and provide relevant criteria to its intended land use. • Provide a signed landholder statement/agreement for retained infrastructure.

No.	Relevant Section	Matter	Information Requested
		has signed a statement declaring that they agree to/will accept responsibility for the infrastructure post mining (includes the EA holder where they are also the landowner). The retained infrastructure must be safe, stable and not cause environmental harm. It must also benefit or improve the land. The retained buildings are located at Dunn Creek and consist of a workshop, three sheds, three office buildings and two car parks. The PMLU for the Dunn Creek mining area is bushland and the surrounding undisturbed area is native ecosystem. It is unclear how all these buildings will benefit the nominated PMLU. The rehabilitation milestone criteria nominated for RA 5 and RA6 require that they are certified as suitable for a PMLU but does not specify the PMLU. There are no figures in the PRCP that show the location of the retained infrastructure with respect to the underlying land ownership. There are also no landholder statements or agreements provided with the PRCP for the retained infrastructure.	• Justify how the retained buildings and dams on land owned by the EA holder will support the surrounding PMLU.
10	Section 4.4 Retained infrastructure – water storages	Further regarding retained dams, numerous dams that will provide a water source for cattle and local fauna are shown in Figures 21 to 24 of the Rehabilitation Planning Part. The rehabilitation methods proposed for the retained dams includes dewatering the storages with mine affected water being pumped into a final void and clean water being released under the EA. The final milestone criteria propose requiring certification that it is structurally stable and suitable for the subsequent 'non-mining' use. Given that the retained dams are not proposed to be NUMAs, they must be rehabilitated to achieve a stable condition, which includes having a PMLU and associated milestone criteria to ensure that the soil and the quality of any water that accumulates in the dams will support the nominated PMLU, and that any water that overflows or seeps from the dams does not impact the receiving environment.	Provide an updated Rehabilitation Planning Part and PRCP schedule that nominates a PMLU for the retained water storages based on their demonstrated ability to support either a bushland or grazing PMLU depending on their location within the final landform with respect to these PMLUs. This can be achieved by providing water quality monitoring and modelling results for quality and expected water balance. Demonstrate how water in the retained storages will achieve the water quality guideline values for the protection of the environmental values of the receiving environment in perpetuity.

No.	Relevant Section	Matter	Information Requested
		For the retained dams that are within or adjacent to a grazing PMLU, the water in these storages could provide a permanent or intermittent water supply for stock providing it can be demonstrated that the quality of any water that accumulates in them will remain suitable for that purpose long term. The retained dams that are within or adjacent to the bushland PMLU will need to be able to support this PMLU by ensuring that any water captured will be of suitable quality to sustain an aquatic ecosystem/provide a drinking water source for fauna. No criteria have been included to ensure that the retained water storages provide a sustained use (noting they may contain water intermittently) for livestock and/or aquatic ecosystems/fauna drinking and that they do not present a risk of environment harm to the receiving environment (i.e. non-polluting). Insufficient information has been provided to meet the requirements of s126C(1)(j) of the EP Act and Section 4.1 of the PRCP guideline with regards to the retained water storages.	Include SMART criteria to adequately measure success in achieving a PMLU for the retained water storages and protection of receiving environment water quality. Where an Aquatic ecosystem is proposed, consider the publications of the Queensland Mine Rehabilitation Commissioner to ensure best practise management of the relevant dam.
11	Section 4.4 Retained infrastructure – creek diversions	Section 4.4 of the planning part states that the retained infrastructure PMLU will include the permanent creek diversions of Trap Gully Creek within the Trap Gully mining area and the Oaky Creek diversion within The Hut mining area. These diversions were approved and constructed under the *Water Act 2000*. The water licence for the Trap Gully Creek diversion has been relinquished. The Oaky Creek diversion is maintained under its current water licence and will require certification by a RPEQ for relinquishment by the Qld government. The proposed milestone criteria for RA6 (Creek diversions) include certification that the Oaky Creek diversion complies with the requirements of the water licence, and that the Trap Gully Creek diversion achieves 'a stable diversion', as opposed to stable condition. The creek diversions are not proposed to be NUMAs so they must be rehabilitated to achieve a stable condition, with milestone criteria consistent with a PMLU such as 'watercourse', given that the rehabilitation outcome for a watercourse diversion is to mirror natural stream function.	Provide an updated Rehabilitation Planning Part and PRCP schedule that includes a rehabilitation milestone and milestone criteria consistent with achieving a watercourse PMLU to a stable condition.

No.	Relevant Section	Matter	Information Requested
12	Section 4.4 Retained infrastructure Table 10 – Rehabilitation methods and completion criteria	Table 10 of the Rehabilitation Planning Part provides the completion criteria for the retained infrastructure. Further criteria are required to demonstrate that the final landform is stable and the PMLUs are sustainable. In addition, not all completion criteria achieve SMART principles.	Provide an updated Table 10 in the Rehabilitation Planning Part and PRCP schedule that includes: • Water quality in the retained dams and drainage diversion as a completion criteria. • Revegetation criteria along the creek diversion. • Criteria that dams remain safe for stock access and creek diversions have vegetated banks. • Criteria that the landform is shaped to be gently sloping characteristic of the natural landform and reinstates natural drainage lines. Revise criteria to ensure SMART principles have been incorporated.
13	Section - 3 Community consultation Section 5 - Non-use management areas (NUMAs)	Section 5 of the Rehabilitation Planning Part states that the NUMAs are consistent with the outcomes of the community consultation. As identified in Table 4 (Land ownership at Callide Mine) and shown in Figures 15, 21-24, the residual void NUMAs at Dunn Creek, The Hut and Trap Gully are located within the Callide Timber Reserve owned by the State of Queensland. The community consultation register in Appendix B does not document any specific consultation carried out with the State (i.e. DESI) in relation to the NUMAs proposed on State land and any implications this may have for the management of the Callide Timber Reserve.	Provide an updated Rehabilitation Planning Part that satisfies the requirement of Section 3.3 of the PRCP guideline and s126C(1)(d) of the EP Act for the PRC plan by stating the extent to which the residual void NUMAs in the Callide Timber Reserve are consistent with the outcomes of consultation with the State and with any relevant strategies or plans for this land.
14	Section 5 – Non-use management areas (NUMAs) Section 6.3 - Voids	The Callide Mine environmental authority (EA) authorises residual void NUMAs at all mining areas, however, only the location and area of the Boundary Hill South (BHS) residual void NUMA is specified (i.e. condition F9 and Figure 2 of the Callide Mine EA). Section 5 (Non-use management areas) of the Rehabilitation Planning Part states that the locations and areas of the final void NUMAs for all mining areas except BHS are presented in the 2003 Report on Final Void Water Modelling Initial Investigations, which was referenced in the 2005 Report on Completion Criteria for Residual Voids (Appendix C4). The 2005 report has been accepted by the department to be a land outcome document (LOD) under the EP Act. This section also states that the areas of the final voids have been minimised as far as possible and are consistent with the areas in the LOD, however, this has not been demonstrated. It adds that where the	Provide an updated Rehabilitation Planning Part to include information that demonstrates that the total area of land proposed as a NUMA has been minimised to the extent possible and the location of the NUMAs minimise risks to the environment as per section 754(4) of the EP Act. Section 3.6.3 of the PRCP guideline also requires that the planning part include the following additional information about the voids: • Options available for minimising final void area and volume, including the total number of voids.

No.	Relevant Section	Matter	Information Requested
		exact locations of the residual void NUMAs (apart from BHS) differ from the LOD, there are no material changes in environmental impacts. There is no explanation for the different locations, where they differ or how it was determined that there would be no impacts. The 2005 LOD refers to residual voids as consisting of high walls, low walls and ramps. It states that 2 final voids will remain at Dunn Creek (Dunn Creek pit and The Bluff pit), a single void at Trap Gully, with residual voids at Central Valley and the Eastern Hillside of The Hut and two final voids at Boundary Hill. It specifies the maximum void depths and storage volumes but does not include the void areas or any figures showing the void locations. Therefore, section 754(4) of the EP Act applies to all mining areas except for BHS. The 2003 final void water modelling report does not meet the definition of a LOD. The 2003 report identifies 7 final voids in the final landform and figures 2.1 to 2.4 show the location of the proposed final landforms at each mining area. It does not specify if the final void boundary includes the highwalls, low walls and ramps or just the maximum surface area of the void water body. The surface area, storage volume, depth and elevation (m AHD) for each void identified in Table 2.1 and Appendix A pertains to the predicted water levels in the voids. In the absence of further information, the spatial representations of the locations and areas of the final voids in this report are not directly comparable with the locations and areas of the proposed residual void NUMAs in the PRC plan. The department acknowledges that since 2005 additional tenures have been granted at each mining area to allow for the expansion of the mine pits, which has resulted in some voids having a different final location in the PRC plan. However, as these are not represented in a LOD, the requirements of section 754(4) of the EP Act applies to all mining areas except for BHS. The locations and total area of the proposed residual void NUMAs at each mining area are shown in figures 21 to 24 of the Rehabilitation Planning Part. The spatial polygons	• Proposed final dimensions of the voids (i.e. depth, length and width). • Pit wall geotechnical and geochemical stability.

No.	Relevant Section	Matter	Information Requested
		identify the areas of each residual void NUMA, however, there is a discrepancy between the spatial area (323.7ha) and the total NUMA area of 332ha in Figure 27 for Dunn Creek. The PRCP proposes a residual void NUMA for CVS1 pit (4.1ha) at The Hut, however, a residual void at this location does not appear to have been contemplated by the earlier reports.	
15	Section 6.3 – Voids Appendix E – Final void water balance	Section 6.3 of the Rehabilitation Planning Part states that a final void water balance assessment was completed for all final voids in the final landform and provided in Appendix E. It concluded that all final voids would have sufficient capacity to contain accumulated water with nil overflow and void lake salinities would increase over time due to evaporation. The groundwater modelling presented in Appendix D, noted to be inadequate, indicated that some of the final void lakes may become groundwater sources that could result in seepage of saline water to the surrounding groundwater. The information provided in Appendix E of the Rehabilitation Planning Part does not satisfy the requirements of Section 3.6.3 of the PRCP guideline for void closure as it is based on outputs from a groundwater model that is not suitable for determining if the residual void NUMAs will act as sources or sinks.	Provide an updated rehabilitation planning part that includes an updated void water balance and a revised assessment of void hydrology, which addresses the long-term water balance and water level in the voids, stratification connections to groundwater resources and potential for overflow that is based on revised groundwater modelling (as required by item 33 of this notice) to determine whether the void is acting as a sink or a source for groundwater. Include additional information in the Rehabilitation Planning Part on the available freeboard in each final void based on the water balance modelling. This should include future climate conditions. It is stated that the final void salinity is likely to increase. However, the predicted salinity was not provided. In addition, no other contaminants of concern (CoCs) were assessed or discussed. Include the predicted future long-term water quality within the voids for the CoC.
16	Section 5 – Non-use management areas Table 11 – Management	Table 11 in section 5 of the Rehabilitation Planning Part provides the completion criteria for the NUMAs. Further criteria are required to demonstrate that the NUMAs would not cause environmental harm, or the risk is confined. In addition, not all completion criteria achieve SMART principles.	Provide an updated Table 11 in the Rehabilitation Planning Part and PRCP schedule that includes: • Void modelling to indicate that the final voids will be sinks and not spill to the environment in the long term. Section 6.1.1 states that several pits will function as a combination source and sink.

No.	Relevant Section	Matter	Information Requested
	methods and completion criteria		• Final void water quality monitoring. • Groundwater quality monitoring criteria to ensure that the void is not impacting groundwater quality. • Signage criteria. Revise criteria to ensure SMART principles have been incorporated.
17	Section 6.1.1 - Hydrogeology	Section 6.1.1 of the Rehabilitation Planning Part states that the modelling predications indicate that the final void lakes may form groundwater sources post mining, which is unexpected and contrary to the findings of all previous groundwater assessments undertaken for the site, which concluded that all final voids would form groundwater sinks. It adds that the current groundwater model is known to have significant data gaps and these gaps are likely to have a significant bearing on predicted groundwater elevations and predicted functioning of the final voids. As a result, the numerical groundwater model that has been used in determining the post mining residual void conditions is not suitable for that purpose. To improve the model accuracy, it is noted that Batchfire are undertaking a groundwater field investigation, and it has been stated that the data collected will be used to update the model and a reassessment of void hydrology. The groundwater assessment provided in Appendix D of the PRC plan that was re-submitted on 29 July 2024 is dated 27 August 2023. However, as part of the department's recent pre-lodgement discussions about Callide's groundwater EA conditions, a report detailing an updated groundwater model dated 10 July 2024 was provided to the department. The updated model described is significantly different to that provided with the PRC plan. Given that Batchfire do not have confidence in the quality of the groundwater model provided with the PRC plan and given the issues identified with the reporting associated with that model and the groundwater assessment report generally, the report provided in Appendix D of the PRC plan cannot be used to inform the rehabilitation and improvement requirements for the site.	Provide an updated Rehabilitation Planning Part that includes clarification about whether the updated numerical model provided to the department in July 2024 will be used in conjunction with an updated surface water model to predict residual void behaviour or is further development of the model still required. Update this section of the Rehabilitation Planning Part to include a discussion about the outcomes from an updated numerical model and groundwater assessment, as demonstrated through the provision of updated appendices for groundwater and final void water balance.

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18	Section 6.1.2 - Flooding	Section 6.1.2 of the Rehabilitation Planning Part states that there are no floodplains at Callide Mine as defined by section 41C of the EP Regulation. Therefore, there is a low flood risk associated with the final voids and final landform, so flooding is not a key consideration. No flood assessment, modelling of the influence of flood depth and velocity on the final landform has been provided. Section 3.6.1 of the PRCP guideline states that the applicant must assess the flooding susceptibility and influence across the site irrespective of the pre-approved residual void NUMAs not being within a flood plain. If flooding is a consideration, the applicant must develop a hydrologic model of the catchment and a hydraulic model of the proposed mining area. Although flood plain modelling is not required for Boundary Hill South because the EA identifies a pre-approved outcome for the void with a location specified, the assessment of flood susceptibility is still required as per Section 3.4 of the PRCP guideline. The flooding assessment not only needs to consider the voids but also the other final landforms and the influence of flooding on the final landform stability and the future conditions of watercourses.	Provide an updated Rehabilitation Planning Part that includes information about the extent and impact of flooding across the site. For the final location and configuration of voids, the requirements of Section 3.6.1 of the PRCP guideline for flooding, at a minimum, must be met and the following information must be provided: • Consider the locations of domains in relation to potential flood levels. • Consider alteration of flow upstream and downstream. • Model flood levels (including probable maximum flood levels) for a range of design storm events. • Develop a flooding risk profile. Provide an updated Rehabilitation Planning Part that includes: a) The influence of flood events (including PMF) on all final landforms. b) Flood modelling study consistent with the proposed final location of all voids. c) Figures showing the influence of flood velocity on the final landform (depth and velocity). d) The future conditions of watercourses, including the geotechnical assessment against flood modelling velocities, the post mining flood model, and justify how this will form a stable condition. e) Include details of the conclusions drawn from the Flood modelling study.

No.	Relevant Section	Matter	Information Requested
			Depict the flood plain extent for the respective drainage lines on the final site design maps in the PRCP schedule.
19	Section 2.8 – Soils Section 2.8.2 – Soil productivity Section 6.1.3 - Soils and capping assessment	The 2003 report on rehabilitation acceptance criteria in Appendix C3 of the Rehabilitation Planning Part states that there is considerable variability across the site ranging from better quality alluvial soils to nutrient poor soil and deeper materials that would be highly dispersive if exposed. Detailed studies of soil characteristics were conducted for the Callide Mine EMOS to develop topsoil management practices but have not been provided. Section 2.8 (Soils) only provides the range of soil types that past studies have identified. No recent information is presented specifically in terms of the physical and chemical properties of the soil types and therefore their suitability of use in rehabilitation. The stated topsoil depths also cannot be confirmed due to the absence of supporting data. Section 2.8.2 (Soil productivity) states that >70% of Dunn Creek, Trap Gully and The Hut were found to have a Land capability class of VII and VIII. Reference is made to a 2003 Anglo report, but no data has been presented to support these classifications. Section 6.1.3 (Soil and capping material assessment) states that topsoil is tested prior to being respread and the topsoils are compatible with the revegetation species However, no data on soil assessments is provided. Although it is stated ameliorants and fertiliser may be required, the absence of soil analyses does not allow for a determination of what ameliorants and/or fertilisers may be required, forms and rates. As such, there is no indication of soil quality that can be used to reconcile the actual volumes of topsoil that are suitable for rehabilitation activities. Table 12 is indicative only.	Provide an updated Rehabilitation Planning Part that includes information about the soil assessments that have been undertaken as per Section 3.6.1 of the PRCP guideline and at a minimum identify and characterise the following: • The quality and quantity of available resources (such as topsoil, clay material and competent rock) required to complete the target rehabilitation methodology. • Physical and geochemical properties of the topsoil and subsoils to be used for rehabilitation and how this influences revegetation milestones throughout the project. • An assessment to determine the need for ameliorants and fertilisers, including the key physiochemical properties that must be achieved for successful vegetation establishment. • The relationship between soils and vegetation for the PMLUs and rehabilitation methodology. Also include justification for how the EC, pH and ESP of the soil will support the PMLUs to achieve a stable condition.
20	Section 6.1.4 - Waste characterisation	Section 6.1.4 of the Rehabilitation Planning Part does not provide any information about waste characterisation and the only reference is to a 1991 study. This study has not been provided with the application. While that study indicated that AMD may not pose an issue of concern and there have been no reported issues with overburden	As required by section 3.6.1 of the PRCP guideline, update the Rehabilitation Planning Part to include a report that characterises mine waste by describing the likely physical and chemical reactivity of the waste materials under the conditions which they are stored. It must also address the

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		geochemistry impacting rehabilitation on site, other parameters of environmental concern such as alkalinity and salinity have not been discussed. A geochemical analysis of overburden materials is required.	constituent elements present and their likely future speciation and mobility and identify any contaminants that pose a risk to the environment. The report should achieve the following: • Demonstrate that the sampling regime meets best practice standards, is spatially representative of all material being mined (i.e. the ore body, exposed pit walls and overburden etc.) and representative of all lithologies. • Be capable of confidently classifying mine waste streams based on environmental risk and managements requirements. • Be capable of generating block models and estimating the volume of mine waste based on waste type (i.e. level of environmental risk). • Provide recommendations for the management and mitigation of waste streams to manage environmental risk and achieve proposed rehabilitation methods and objectives. All mined material must be classified on its propensity to be potentially acid or non-acid forming, to generate neutral metalliferous or saline drainage, and its susceptibility to weathering, and must include the following: • Static tests, such as: o Chemical composition (whole rock and elemental analysis). o Mineralogical analysis. o Acid base accounting (paste pH, sulfur speciation, neutralising potential (NP) or acid

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			neutralising capacity (ANC) and total inorganic carbon). o Net acid generation. o Water extraction (batch extraction) tests – with solution assay. • Kinetic tests, such as: o Humidity cell leach testing. o Column leach testing. The characterisation of waste material should continue throughout the operation of the mine for the matters discussed above.
21	Section 6.1.6 - Cover design	Section 6.1.6 of the Rehabilitation Planning Part states that there are no rejects or tailings generated at Callide Mine and the geochemistry of overburden is benign and does not need a cover. This statement is not supported by analytical data such as geochemistry of overburden materials. Therefore, the conclusion that a cover system isn't required other than overlaying subsoil with 150-200mm of topsoil requires further supporting evidence.	Provide an updated Rehabilitation Planning Part to demonstrate that the waste material on site does not have potential for AMD, neutral mine drainage or saline mine drainage, which would require a cover design, by providing the results from geochemical characterisation, and the type and physical characteristics of the material being covered. More information is required about the soil cover design to demonstrate that: • The selected topsoil and subsoil will be stable (non-dispersive and non-erodible). • The overall cover thickness provides adequate rooting depth and plant available water to sustain the vegetation cover. • Exhibits desired hydraulic properties to encourage infiltration and avoid surface runoff. • Provides the required level of nutrients for the target ecosystem.

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22	Section 6.1.5 - Landform design	Section 6.1.5 of the Rehabilitation Planning Part states that the final landform is safe and structurally stable because it generally complies with the design criteria in the EA. The final landform slope assessment in Appendix F of the PRC plan only assesses the final void NUMA slopes against the final void design criteria in the EA. However, there are no analyses or modelling provided to predict the long-term stability of the final landform. No erosion assessment has been undertaken, and no information has been provided to demonstrate that the proposed landforms can be expected to be erosionally, geochemically and geotechnically stable. An erosion assessment is required and should be based on measured material erodibility properties and linked to appropriate performance targets. Landform design, rehabilitation methodology, and relevant milestone criteria should be informed by and clearly linked to the findings of the erosion assessment. The proposed landform design may need to be tested using landform evolution modelling to demonstrate that the design does not cause erosion outside of what the erosion assessment predicts for model hillslopes, and to identify any areas of increased risk that may require further attention. All methodology, modelling tools, and parameters used in the assessment/s should be described in detail and appropriately justified.	Provide an updated Rehabilitation Planning Part that includes a landform design that complies with the EA, and erosion modelling to demonstrate that all landforms can be expected to be erosionally stable. The erosion assessment must include supporting information to justify the selection/appropriateness of the input parameters, sensitivity analyses and a review of the performance of existing rehabilitation against model predictions. Provide an updated Rehabilitation Planning Part that includes an assessment of pit wall geotechnical and geochemical stability, considering the effects of long-term erosion and weathering of the pit wall and the effect of significant hydrological events. Detail any treatments required to ensure stability. The findings from the Final Void Water Balance Report (Appendix E) need to be included in the final landform design. Ensure that the final void design at The Hut has included the recommended extension of the height of the levee to ensure that there is no seepage from the void and that the final void design at Trap Gully has included the recommended diversion to ensure that there is no seepage from the void.
23	Section 6.1.7 - Water management	Section 6.1.7 of the Rehabilitation Planning Part describes the water that will be generated by the final landform. The water balance modelling carried out in Appendix E only assesses the final void lakes that will form in the final landform based on runoff from the final void catchment, rainfall/evaporation and groundwater inflows (Appendix D). It does not include relevant information from materials testing, erosion/landform modelling or flood modelling that would inform how the rehabilitated final landform, including spoil dumps, dams and the diversions will be free draining/water shedding.	In accordance with the PRCP guideline Section 3.6.1, the Rehabilitation Planning Part must include a description of the following: • Identify all CoCs from the activity for surface water and groundwater and detail the methodology used to determine the CoCs. The EA includes a full suite of contaminants, but only

No.	Relevant Section	Matter	Information Requested
		This section does not identify the CoCs from the activity (including PFAS) that may pose a risk to environmental values in the receiving environment. The CoCs should be based on the mining process (dams and seepage), contaminated land and waste characterisation. This information is required to determine appropriate surface water and groundwater quality criteria and demonstrate that the rehabilitation methods will result in the land achieving a stable condition (i.e. non-polluting).	pH, EC and TSS criteria are included in the PRCP schedule. • Describe the source, pathway and fate of contaminants that have the potential to impact environmental values. Include further detail on water quality monitoring (surface water and groundwater), including monitoring locations, frequency, CoCs and limits. This must include monitoring and limits for PFAS components. • Detail any ongoing water management and reduction requirements (i.e. treatment, dewatering, seepage collection etc.).
24	Section 7 - Risk assessment	Section 7 of the Rehabilitation Planning Part refers to the risk assessment in Appendix G, which was undertaken to identify the risks of a stable condition for the PMLUs not being achieved and to identify the risks of a NUMA causing environmental harm and not being safe and structurally stable. The risk assessment does not specifically identify the risks of the diversion not meeting relinquishment criteria. Furthermore, it only refers to bushfire being a risk in the Nature Refuge and not to the bushland PMLU. The risk assessment refers to existing and proposed treatment/controls generally but does not include a specific risk treatment plan with all the elements outlined in the PRCP guideline such as the reason for the treatment option, timing and monitoring requirements, which is intended to link to the monitoring and maintenance program.	Update the risk assessment in Appendix G of the Rehabilitation Planning Part to identify the risks associated with the Oaky Creek diversion and bushfire in the bushland PMLU areas. Provide a risk treatment plan as outlined in Section 3.7 (Risk assessment) of the PRCP guideline, which includes: • The reasons for selecting the treatment option. • Those responsible for the approval and implementation of the plan. • Proposed actions. • Resource requirements. • Performance measures and constraints. • Reporting and monitoring requirements. • Timing and scheduling.
25	Section 8 - Rehabilitation trials	Section 8 of the Rehabilitation Planning Part states that Table F2 of the EA allows for the establishment of trial slopes at all mining areas except for BHS on the overburden emplacements in the final landform at slopes greater than 15% and up to angle of	Provide an updated Rehabilitation Planning Part to include information about the rehabilitation trials that are approved and/or planned for the site, as required by

No.	Relevant Section	Matter	Information Requested
		repose. It adds that any trial slopes will be specified during the design of the overburden emplacement rehabilitation as part of RM3. This section does not indicate if any trials have been undertaken at site. There is no detail about the purpose of the trials, how and where they are likely to be carried out, when they will commence and how the results will be incorporated into the rehabilitation strategy. Section 3.7.1 of the PRCP guideline states that rehabilitation trials must commence as soon as possible and are not to be considered a milestone as they should be completed prior to land becoming available for rehabilitation.	Section 3.7.1 of the PRCP guideline, to satisfy the requirements of section 126C(1)(j) of the EP Act: • 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. • Where the trials have previously been carried out by the applicant.
Monitoring and maintenance			
26	Section 9 – Monitoring and maintenance	The information provided in section 9 of the Rehabilitation Planning Part about the rehabilitation monitoring and maintenance plans and the reporting of monitoring results contains limited information and does not satisfy the requirements of section 126C(1)(j) of the EP Act. Section 9.1 lists the parameters to be monitored for revegetation, erosion, soil quality and runoff quality, and the frequency of monitoring. Section 9.2 states that maintenance requirements for rehabilitated areas will be identified during rehabilitation monitoring and ad hoc inspections and includes examples of potential issues that may arise and remedial actions in Table 15. The monitoring program described does not directly relate to the rehabilitation and improvement milestone criteria in the PRCP schedule that are required to be achieved so trends in rehabilitation performance can be tracked, and specific management or	Provide an updated Rehabilitation Planning Part to reflect the information required by Section 3.8 of the PRCP guideline, which includes: • A schedule of monitoring, reporting and review for each milestone. • Description of methodologies and standards, which could include field-based assessments and the application of new remote sensing, GIS and other relevant emerging technologies. • Monitoring that enables the repeatable collection of relevant statistically valid data. • Monitoring using appropriate quality assurance and data management processes and systems.

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		maintenance actions can be implemented when there is a risk of criteria not being achieved or maintained. The monitoring and maintenance activities must link to the outcomes identified in the risk treatment plan developed from the risk assessment to ensure that all actions are undertaken to minimise and mitigate risks.	• Regular analysis of site data including multi-year comparison trends and benchmarking against analogue/reference sites. • Contingency strategies if monitoring data indicates milestone criteria are not being met. • Post-closure monitoring to ensure milestone criteria is demonstrated. • Intent of monitoring reports, such as provision of results and key findings. • Linkage to the risks and actions identified in the risk assessment.
27	Section 9 – Monitoring and maintenance Table 15	Table 15 of the Rehabilitation Planning Part states that if the species mix is not being achieved in revegetation, then one option is to consider alternative revegetation species. Given that Callide Mine has substantial areas of completed rehabilitation, there should be monitoring results that provide evidence that the species mixes used to date, and that the rehabilitation methods have produced satisfactory results, which would support the continuation of those methods.	Provide an updated Rehabilitation Planning Part that includes information that justifies the continued use of the current rehabilitation methods and species mixes at the mine if they are effective and if not, use this information to propose alternative strategies, appropriate milestone criteria and changes that need to be made to improve the rehabilitation outcomes.
28	Section 9.1.1 - Revegetation monitoring	Insufficient information has been included in section 9.1.1 of the Rehabilitation Planning Part about the methods, parameters and timing of revegetation monitoring. Note that monitoring must occur in a timely manner regardless of whether a wet season is 'typical'. The department recommends that modified BioCondition benchmark-based monitoring be explicitly used so that milestone criteria can be measured against established benchmarks. It is noted that Table 14 section 9.1.1 of the Rehabilitation Planning Part lists measures that are essentially the same as that for BioCondition benchmarks.	Adopt BioCondition benchmarks for bushland PMLUs, or if the methods described in section 9.1.1 are to be continued: • Indicate the density of monitoring sites/ha of rehabilitation and how sites will be selected to ensure that monitoring site coverage is adequate and representative. • Define what is meant by a weed. • Ensure species richness is separated into native and non-native measures. Also, provide an updated Rehabilitation Planning Part that details the process used to ensure that coarse woody

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			debris (Table 14) is stockpiled and available for use in rehabilitation.
29	Section 9.1.2 – Erosion monitoring	Section 9.1.2 of the Rehabilitation Planning Part describes the erosion monitoring that is typically undertaken at the site in conjunction with revegetation monitoring. It involves measuring the length, width and depth of each erosion gully along a 50m transect. Further details are required in the Rehabilitation Planning Part about whether erosional activity is identified using LiDAR analysis in addition to field-based techniques, and if an AQP determines the severity of erosion. The erosion monitoring must be able to demonstrate that the SMART erosion criteria in the PRCP schedule have been met, which should include the severity of erosion and acceptable rates of erosion and soil loss.	Provide an updated Rehabilitation Planning Part that includes appropriate erosion monitoring methods and measures that can be linked to SMART erosion milestone criteria.
30	Section 9.1.4 - Runoff monitoring	Section 9.1.4 of the Rehabilitation Planning Part states that surface runoff monitoring sites will be established in drainage lines downstream of completed rehabilitation. It adds that the monitoring locations, contributing catchment and rainfall/runoff event will be recorded. Monitoring will only occur during the wet season at the same frequency as vegetation monitoring and only includes the parameters pH, EC and suspended solids. The runoff water quality criteria proposed in the PRCP schedule for achieving a grazing or bushland PMLU to a stable condition (RM8) include pH 4.5 - 9.0, EC 80th percentile 1,600µS/cm and maximum 1,920µS/cm and suspended solids 1,000mg/L. There is no justification for these limits in the PRC plan (including the RMP and 2003 report on rehabilitation acceptance criteria). However, the rehabilitation completion criteria in Appendix 1 of the EA (BHS only) states that '*receiving water affected by water runoff has contaminant limits in accordance with the EA'*. More detail is required regarding the receiving environment water quality monitoring proposed to determine whether the final landform is stable and non-polluting. The monitoring locations, monitoring frequency, quality characteristics and limits must be included. Monitoring locations must be based on sources and pathways of potential contamination. A monitoring frequency of annually or twice yearly is not	Provide an updated Rehabilitation Planning Part that includes appropriate surface water rehabilitation and closure monitoring locations, monitoring frequencies, quality characteristics and limits that are fit for purpose and capable of identifying potential contaminants from all disturbed areas. Provide an updated monitoring program that specifies the frequency of water quality monitoring at sufficient intervals to consider seasonal variation and be able to gather data to demonstrate a stable and non-polluting condition has been achieved. All surface water monitoring locations and water quality data must be provided with the PRC plan to support the proposed monitoring locations and limits. Demonstrate how the WQOS and the ANZG (2018) guidelines have been considered.

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		sufficient. Monitoring frequency should consider a frequency of received rainfall and expected surface water runoff from rehabilitated areas. Quality characteristics must be based on CoCs. CoC should be the same for surface water and groundwater and be based on mining process (dams and seepage) and waste characterisation. Aquatic ecosystems are a scheduled environmental value for the receiving environment and must be considered. The water quality criteria must be fit for purpose (based on closure, not operations) and based on WQOs, aquatic ecosystem guidelines and background data for the receiving environment. Background data can be used to determine site-specific limits. For surface water, the 80th percentile of data for upstream/reference sites should be used for physio-chemical indicators and the 95th percentile for toxicants.	
31	Section 9.1 – Rehabilitation monitoring Groundwater	There are no milestone criteria proposed in the PRCP schedule for groundwater and therefore no section in the Rehabilitation Planning Part on groundwater quality monitoring. This is despite it being a requirement in Appendix 1 of the EA to demonstrate that the final rehabilitated landform at BHS is non-polluting. Therefore, information is required regarding groundwater quality monitoring that must be undertaken for all mining areas to determine whether the final landform is stable. The PRCP schedule must include SMART groundwater quality criteria based on information provided in the Rehabilitation Planning Part about groundwater monitoring locations, monitoring frequency, quality characteristics and limits. Referring to the EA is not supported in this case as the monitoring locations and quality limits are under review and such information must be contained in the Rehabilitation Planning Part and PRCP schedule. Monitoring locations must be based on sources and pathways of potential contamination. Annual groundwater monitoring is not sufficient. Groundwater monitoring should be quarterly.	Provide an updated rehabilitation planning part that includes appropriate groundwater rehabilitation and closure monitoring locations, monitoring frequencies, quality characteristics and limits that are fit for purpose and capable of identifying potential contaminants from all disturbed areas. Provide a groundwater monitoring program that specifies the frequency of groundwater quality monitoring at sufficient intervals to be able to gather data to demonstrate a stable and non-polluting condition has been achieved. All groundwater monitoring locations and quality data must be provided with the PRC plan to support the proposed monitoring locations and limits. Demonstrate how the WQOs and the ANZG (2018) guidelines have been considered.

No.	Relevant Section	Matter	Information Requested
		Quality characteristics must be based on CoCs. CoCs should be the same for surface water and groundwater and be based on mining process (dams and seepage) and waste characterisation. Limits should be fit for purpose (based on closure, not operations), site-specific and based on WQOs, guidelines and background data. For groundwater, the 95th percentile of baseline (ideally pre mining) data can be used to determine site-specific limits for all indicators as per the department's guideline '*Using monitoring data to assess groundwater quality and potential environmental impacts'* (2021).	
32	Section 9.1 – Rehabilitation monitoring Residual voids	There is no proposal in section 9.1 of the Rehabilitation Planning Part to monitor the water quality in the residual voids. Monitoring of the void water quality is required as the results will be used to demonstrate that the proposed NUMAs are not causing environmental harm. No water quality characteristics based on CoCs has been provided for the voids.	Provide an updated Rehabilitation Planning Part and PRCP schedule that includes a list of water quality characteristics based on CoCs to be monitored in the residual voids. Provide an updating monitoring program that specifies the frequency of water quality monitoring at sufficient intervals to be able to gather data to demonstrate that the residual void NUMAs are not causing environmental harm.
33	Appendix D – Groundwater report	The information provided in Appendix D of the Rehabilitation Planning Part does not satisfy the requirements of Section 3.6.1 of the PRCP guideline as it does not adequately assess the hydrogeology at the mine or present a conceptual model of the groundwater systems that can be integrated into the rehabilitation strategy for the site as outlined below. *Monitoring network* Appendix A of the groundwater report provides a map showing the bores used in the groundwater modelling but does not include a table of monitoring bores used to develop the conceptualisation, including details of bore depths, screened depths and the geologic units being monitored. *Groundwater contours*	Provide an updated Rehabilitation Planning Part that includes further details on the hydrogeology of the site, a pre- and post- mining conceptual groundwater model and an assessment of the risks to groundwater quality and level that is based on an updated groundwater model. The report must address the inadequacies identified.

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		There are no groundwater contours using observed data to demonstrate groundwater flow direction. This must be provided for the Precipice Sandstone and the Callide Coal Measures. *Hydrographs* Appendix B of the groundwater report provides calibration hydrographs which includes a history of water level data for bores in the area. However, in addition to the calibration hydrographs, hydrographs must be provided in the body of the report split into sections where hydrographs for common geologic units are shown and the variation on historical groundwater levels discussed including any visible impacts of mining, recharge, extended dry periods or other stresses. *Recharge rates* No information is provided on likely recharge rates to the various geologic units. *Historical pit inflow data* No historical pit inflow data is provided. *Groundwater modelling* The following information about the groundwater modelling has not been provided: • A detailed description of the groundwater model. • A map showing the lateral boundaries of the model. • Discussion about the various layers in the model except to say there are 13, and no table showing which layers represent which geologic unit. • Discussion about model boundary conditions, including recharge. • Discussion about whether landholder water use was incorporated into the modelling. • Details on model calibration beyond: *The calibration achieved a scaled root mean squared (SRMS) error within acceptable limits (i.e., 10%) as recommended by Barnett et al. (2012).* • Details of parameter bounds used in the modelling and calibrated parameters.	

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		• Discussion about the calibration period or the stress periods set up within the calibration and predictive model. • Indication as to what geologic unit (or model layer if we knew what they were) each of the calibration bores and calibration hydrographs identified in Appendix B relate to. • Discussion about how spoil has been dealt with in the model. • Details of when the predictive model extends to. • Predicted groundwater elevation contours at the end of mining in all geologic units. • Equilibrium groundwater elevation contours in all geologic units (only water table contours appear to be provided although they are not identified as such). *Groundwater inflows to voids* Appendix E of the groundwater report states that the consultant hydrogeologist provided curves of estimated elevation versus groundwater inflow, but this information is not provided in either Appendix D or Appendix E of the Rehabilitation Planning Part.	
PRCP schedule			
34	Reference maps Figures 31-24	It is not clear what the start and end dates in Figure 31-24 of the Rehabilitation Planning Part relate to as they do not align with those in the PRCP schedule for achieving the milestone criteria.	Provide an updated Rehabilitation Planning Part and PRCP schedule that includes more information about how the start date and end dates in figures 31-34 relate to the dates in the PRCP schedule and revise if necessary to ensure consistency.
35	Reference maps Figures 33 and 34	RA4 in the PRCP schedule for The Hut and Boundary Hill has a PMLU of grazing. Figures 33 and 34 of the PRC plan list the post mining land uses for The Hut and Boundary Hill but do not include grazing.	Provide an updated figure 33 and 34 of the PRCP schedule to include grazing as a PMLU for The Hut and Boundary Hill.
Milestones			

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36	General	There are several redundant entries for the cumulative areas available and achieved in the tables within the PRCP schedule. Where the same cumulative area will become available at different times, but the milestone will be achieved by the same date, the number of columns can be reduced (E.g. Dunn Creek RA2 - the available date in cell E8 is unnecessary as the 133ha will become available on the 10/12/2024, subsequently column D and E can be merged as both columns have a milestone completed date of 10/12/2026). While there is a requirement to have a milestone completed by 10 December, the date for when an area will become available can be any day or month of the calendar year. It is important to ensure that the amount of time between when an area becomes available and when the milestone is achieved is minimised in accordance with the PRCP guideline. There does not have to be an area value entered into every cell in the row for RM1. For example, the row for RM1 for Boundary Hill RA3 only needs to include the 5ha that will achieve RM1 by 10/12/32 and then the 50ha area that is available in 10/12/40. The remaining cells in that row can remain blank. The milestone completed by row needs to have sequential dates.	Refer to the tables in the PRCP schedule example in Appendix 2 of the PRCP guideline on how to cascade the cumulative area values and revise the PRCP schedule on this basis to simplify the tables and provide a clear date when each sub-area of an RA becomes available and achieves each relevant milestone.
37	All mining areas RA1 – Rehabilitated overburden (Bushland)	The PRCP schedule shows that for RA1 (Rehabilitated overburden) at each mining area, the total area that will have achieved RM6 (Surface requirements) by 2025 and RM7 (Bushland PMLU in stable condition) by 2030. Given that this RA includes existing rehabilitation that was revegetated prior to 1998, it is unclear why some of these areas have not yet achieved the PMLU.	Provide an updated Rehabilitation Planning Part that includes the status of the existing rehabilitation areas and how they are progressing toward achieving stable condition by providing/discussing the results of rehabilitation monitoring in the planning part by comparison with the expected criteria to demonstrate achievement of stable condition.
38	All mining areas RA5 - Retained infrastructure	The RA for retained mine infrastructure at each of the mining areas has a PMLU of 'retained infrastructure', which is not appropriate. This RA consists of retained buildings (Dunn Creek) and dams (Dunn Creek, Boundary Hill, Trap Gully and The Hut). This RA only achieves RM2 (Preparation of retained infrastructure), however, it must include milestone criteria for achieving stable condition for the nominated PMLU.	Update the Rehabilitation Planning Part and PRCP schedule to include a PMLU(s) and final milestone criteria for the retained buildings and dams to demonstrate achievement of stable condition. The PMLU could be

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			bushland or a use that will support the surrounding bushland PMLU providing this can be demonstrated.
39	Trap Gully and The Hut RA6 – Creek diversion	RA6 applies to the permanent creek diversions at Trap Gully and The Hut, which have been assigned a PMLU of 'retained infrastructure'. The mined land surrounding the diversions has been rehabilitated (RA1) to achieve a bushland PMLU. Therefore, consideration should be given to incorporating the creek diversions into the bushland PMLU or assign it a PMLU that reflects the ecosystem function/benefit it provides, as the PMLU of retained infrastructure is not appropriate. The PRCP schedule for this RA only consists of RM9 (Management of diversions), however, it must include final milestone criteria for achieving stable condition of the nominated PMLU.	Provide an updated Rehabilitation Planning Part and PRCP schedule to include a PMLU for the permanent creek diversions and final milestone criteria.
40	Boundary Hill RA3 – Mine infrastructure area – bushland	RA3 in the PRCP schedule for Boundary Hill has a PMLU of bushland for a total of 50ha of mine infrastructure area. Figure 34 of the PRC plan shows that 5ha of RA3 (at Boundary Hill East) will be rehabilitated by 2031, with the remaining 45ha commencing RM1 in 2041. This is not consistent with the PRCP schedule, which indicates that 5ha will achieve RM7 (stable condition) by 2041.	Provide an updated Rehabilitation Planning Part and PRCP schedule that provides consistent timeframes for the achievement of milestones.
Milestone criteria			
41	General	Not all criteria proposed in the PRCP schedule meet SMART principles and do not include many of the aspects required to demonstrate a stable condition has been achieved. Examples are provided in the subsequent items.	Provide an updated PRCP schedule that addresses the items raised below and throughout this request. Revise criteria to ensure SMART principles have been incorporated.
42	RM1 – Infrastructure decommissioning and removal RM2 – Preparation of retained infrastructure	The suitability of the retained infrastructure to support the PMLU must be demonstrated in the Rehabilitation Planning Part and a signed landholder agreement/statement provided. There are no milestone criteria for the removal of any fencing not required for the PMLU, pipelines, waste, machinery and equipment and the decommissioning of drillholes and bores.	The department seeks consideration of the following for RM1, which consist of criteria proposed in the PRCP schedule as well as additional criteria. These criteria can apply to both retained and non-retained infrastructure. *With the exception of any infrastructure to remain as part of the post-mining land use (PMLU) or where infrastructure is agreed to be retained by the landholder as evidenced by*

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		Criteria for ensuring that the retained infrastructure and dams can achieve a PMLU to a stable condition will need to be included in a later rehabilitation milestone.	*a signed landholder agreement, the following are complete:* *a) All services disconnected, terminated and removed.* *b) All buildings and associated infrastructure dismantled and removed offsite.* *c) All hardstand, concrete areas and roads (bitumen, blue metal, aggregate etc.) removed.* *d) All fencing that is not part of PMLU requirements removed.* *e) All pipelines drained and removed.* *f) All waste removed.* *g) All surface water drainage infrastructure removed.* *h) All drillholes, bores, sediment ponds and sumps decommissioned.* *i) All machinery and equipment removed from site.* *j) All dams dewatered and desilted.* *All infrastructure to be retained onsite must achieve stable condition.*
43	Contaminated land	The current milestone criteria in the PRCP schedule for RM1 includes the completion of contaminated land assessments and any decontamination works. For any retained infrastructure, RM2 requires that contaminated soil be removed, and the land be remediated or disposed of in the final voids. Note that the current EA does not include ERA 60, which authorises waste to be disposed of on site. SMART milestone criteria should include the specific steps for identifying, remediating or removing contaminated land in accordance with the EP Act, including site investigations, validation report and/or site management plans (where required) and a declaration from a SQP that no contamination unsuitable for the PMLU remains.	The department recommends updating the PRCP schedule with SMART criteria for contaminated land as a separate milestone to RM1.

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		This is recommended to be its own milestone in the PRCP schedule that is to apply to both retained and non-retained infrastructure areas.	
44	RM3 – Landform development and reshaping/reprofiling	The landform criteria in the proposed PRCP schedule that states '*finalise engineering and design plans with landform slopes in accordance with the EA'* is not appropriate. More specific geotechnical criteria, including but not limited to those as below, are required to demonstrate that the landform is geotechnically stable. • All earthworks must be completed to final landform design or general reshaping and pushing/trimming to achieve final landform completed. • Disturbed slopes must not be steeper than those specified in the EA – the specific slopes are to be included within the PRCP schedule. • An AQP certifies that as constructed landform achieves the design criteria for geotechnical stability with a specified Factor of Safety (FoS). • Erosion and sediment control systems are installed as per the construction design and verified by an AQP.	Provide an updated PRCP Schedule that includes SMART geotechnical criteria as recommended.
45	RM4 – Surface preparation	More detail is required around some of the criteria included in RM4 of the PRCP schedule to ensure they achieve SMART principles. Soil health and suitability should be assessed and documented by an AQP to confirm that soil/growth medium is suitable for the PMLU and target vegetation establishment. An assessment of the need for soil amelioration should be undertaken and any ameliorants applied at rates determined by an AQP. Further specify the depth of ripping of compacted surfaces into the soil/subsoil profile along the contour of slopes to ensure the criteria is measurable. Topsoil suitability criteria have not been provided and are required to demonstrate that land achieves stable condition and will be suitable for the PMLU. Topsoil should meet nominated suitability targets for P90, P75, P25, Emerson aggregate class, pH, EC and ESP.	Provide an updated PRCP Schedule to include SMART criteria for RM4 regarding: • Soil health and suitability assessments. • Topsoil suitability and indicator parameters and limits for soil monitoring. • Ripping, including addressing spacing and depth. • Erosion.

No.	Relevant Section	Matter	Information Requested
		SMART erosion criteria have not been provided, including acceptable values for average rates of soil loss, areas of rill or active gully erosion. The criteria are limited to rock mulching on steeper slopes. The installation and monitoring of surface and groundwater also forms part of surface preparation.	
46	RM5 - Revegetation	The criteria proposed in the PRCP schedule for RM5 that states '*finalise seed mix and application rates…*' does not achieve SMART principles as it would not demonstrate successful establishment of vegetation cover. Vegetation species and seeding rates have not been included for grasses and trees/shrubs. Therefore, the criteria are not specific or measurable. The seeding of all topsoiled surfaces using a rehabilitation seed mix comprising the species nominated in tables within the PRCP schedule for each PMLU should be completed at RM5. Stock exclusion fencing may also be a requirement at this stage to protect newly seeded areas.	Provide an updated PRCP schedule to include SMART criteria for revegetation consisting of lists of proposed revegetation species and their seeding rates. Consider the need for exclusion fencing and other management measures to ensure the successful establishment of target vegetation.
47	RM6 – Achievement of surface requirements	The PRCP schedule criteria for RM6 is limited to constructing stock fencing and rehabilitation monitoring. SMART erosion criteria have not been provided. Erosion criteria are required to demonstrate that land is stable and non-polluting. There should be no evidence of erosion classified as 'moderate' or 'severe' as defined by the Erosion classification framework. The criteria must include acceptable rates of erosion that must be complied with. Targets must be nominated for vegetative groundcover (i.e. >70%) and maximum weed presence (i.e. 10% of total vegetative groundcover). Evidence from rehabilitation monitoring should indicate that the species used in revegetation and native fauna (bushland PMLU) are present. The department recommends that a BioCondition assessment is undertaken by a AQP at this stage as	Provide an updated PRCP schedule to include SMART milestone criteria for demonstrating that the surface requirements have been achieved. Provide a proposed PRCP schedule that meets SMART principles including: • all CoCs that are relevant to Callide mine. The EA includes a full suite of contaminants, but only pH, EC and TSS criteria are included in the PRCP. • Include further detail on water quality monitoring (surface water and groundwater), including monitoring locations, frequency, CoCs and

No.	Relevant Section	Matter	Information Requested
		outlined in the latest version of the Queensland Herbarium's 'BioCondition Assessment Manual'. To demonstrate that the rehabilitation is non-polluting, surface water quality should meet the nominated water quality criteria presented in the PRCP schedule. Soil testing at RM5 should also indicate that the nominated parameters in the PRCP schedule have been met.	limits. This must include monitoring and limits for PFAS components.
48	RM7 – Achievement of bushland PMLU to stable condition	Additional milestone criteria, as outlined below, are required to be included in RM7 to demonstrate that the PMLU has achieved stable condition (i.e. safe, stable, non-polluting and able to sustain a PMLU). • The rehabilitation must not contain any safety hazards that are significantly different from the surrounding unmined land subject to the same land use. • Completed contaminated land investigations should be documented, including a site suitability statement for the PMLUs, site investigation report, validation report and/or draft site management plan and removal from the EMR where possible. • An AQP must certify that the final landform is geotechnically stable and has achieved a factor of safety of greater than 1.5. • The proposed milestone criteria for the bushland PMLU nominates species diversity of 4 or more native species. This diversity is too low to ensure a self-sustaining system. For the most extensive RE on the MLs (i.e. RE11.10.13), the benchmark values when using BioCondition are trees = 7, shrubs = 10 and grass = 6. It is recommended that criteria are proposed that follow the BioCondition Assessment Manual. • The criteria for health (i.e. 60% of trees are healthy and growing) does not achieve SMART principles. The timeframe at which this is measured is not defined nor is the amount of growth that is acceptable. It is not acceptable for 40% of trees present to be dead/unhealthy/not growing as this would not constitute successful rehabilitation. • The criteria for density of >100 stems/ha is sparse and does not specify cover or height. If not adopting BioCondition, a milestone criterion for cover is required.	Provide an updated PRCP Schedule to include SMART criteria as recommended by the department for: • Safety and stability. • Contaminated land. • BioCondition assessment. • Vegetation structure and function. • Presence of weeds. • Native fauna. • Soil suitability. • Erosion. • Receiving surface water quality criteria including monitoring locations, quality characteristics, limits and frequency of monitoring. • Groundwater quality criteria including monitoring locations, quality characteristics, limits and frequency of monitoring.

No.	Relevant Section	Matter	Information Requested
		• The criteria for the extent and species of weeds being 'similar to surrounding non-mining land uses' does not achieve SMART principles as this hasn't been documented in the Rehabilitation Planning Part. Weed presence should be a percentage of total vegetative cover. Weeds should not be limited to declared weeds. • For the groundcover criteria, organic cover must be separated from rocks/litter. • Rehabilitation monitoring must show that the species in the revegetation species mix are present and showing evidence of natural recruitment. It is also recommended that fauna surveys are undertaken that observe native fauna or indicators of their presence. • Soil and erosion criteria are required to demonstrate that land is stable, non-polluting and will be suitable for the PMLU. The soil suitability criteria for EC and pH that state 'within range appropriate for vegetation growth' does not achieve SMART principles. In the absence of site-specific soil data these ranges have no meaning. The soil criteria for ESP of <15% is not appropriate and should be <6%. The proposed erosion criteria of gullies >2m deep or wide is not acceptable. Soil testing must confirm that suitable parameters for pH, EC, ESP and Emerson Aggregate Test are met. There should be no evidence of moderate or severe erosion with values for average and maximum erosion rates provided based on an erosion assessment. • The purpose of the water quality criteria is to demonstrate that the land surface has achieved a stable condition and is non-polluting. Therefore, whether there are any short term/medium effects from the land surface on the receiving environment surface water. The current runoff criteria are not appropriate as they do not achieve SMART principles. Water quality monitoring criteria is lacking details on locations, monitoring frequency, quality characteristics and limits. The criteria should be based on background water quality data or default WQO and guidelines. Surface water quality results from monthly monitoring at (but not limited to) downstream locations during periods of flow over a minimum of 5 years must not exceed the limits nominated in the PRCP schedule.	

No.	Relevant Section	Matter	Information Requested
		• No groundwater monitoring criteria has been included. Quarterly groundwater quality and level monitoring is required for a minimum of 5 consecutive years to demonstrate the land has achieved a stable condition and is non-polluting. The groundwater monitoring locations, quality characteristics and limits to be monitored must be included within tables and figures in the PRCP schedule.	
49	RM8 – Achievement of grazing PMLU to stable condition	As recommended for RM7 (above), additional SMART criteria are required to be included for RM8 with respect to safety, stability, contaminated land, soil suitability, erosion, weeds and water quality for the grazing PMLU. For the grazing PMLU specifically, vegetation cover is expected to be >70%. The native grasses used in the grazing revegetation species mix identified in the PRCP schedule must remain present and showing signs of natural recruitment in rehabilitation monitoring data.	Provide an updated PRCP Schedule to include SMART criteria as recommended by the department for: • Safety and stability. • Contaminated land. • Vegetation structure and function. • Presence of weeds. • Soil suitability. • Erosion. • Receiving surface water quality criteria including monitoring locations, quality characteristics, limits and frequency of monitoring. • Groundwater quality criteria including monitoring locations, quality characteristics, limits and frequency of monitoring.
50	RM9 – Management of diversions	A final management type milestone and criteria for the creek diversions is not appropriate. The creek diversions are not proposed to be NUMAs and must be rehabilitated to achieve a nominated PMLU. Therefore, additional milestone criteria are required for the achievement of a PMLU to a stable condition for the creek diversions.	Provide an updated PRCP schedule to include SMART criteria for the achievement of a PMLU to a stable condition for the creek diversions for: • Surface water quality criteria in both diversions. • Revegetation criteria for the diversions. • Criteria to ensure that the landform is shaped to be gently sloping characteristic of the natural landform and reinstates natural drainage lines.
51	Retained infrastructure – water storages	An additional milestone and criteria, as recommended below, are required for the achievement of a PMLU to stable condition for the retained water storages.	Provide an updated PRCP schedule to include an additional milestone and SMART criteria for the

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		All retained water storages are to be assessed and approved as safe and stable by an AQP. Water storages monitored quarterly, must not exceed the limits specified in a table within the PRCP schedule for a minimum of 5 consecutive years. The limits provided must ensure that the water stored can support a suitable PMLU as evidenced by the water quality information provided in the Rehabilitation Planning Part for these dams.	achievement of the PMLU to stable condition for the retained water storages.
52	MM1 – Final void landform development	The criteria proposed for MM1 in the PRCP schedule refer to the residual void design outcomes stated in the EA. The slope angles from the EA need to be included in the criteria for them to achieve SMART principles. Additional criteria are required, including but not limited to those outlined below, to demonstrate achievement of final landform design. • The final high walls and voids must be assessed and certified by an AQP as geotechnically stable, achieving a factor of safety of greater than 1.5. • Groundwater monitoring bores are installed, and predictive modelling confirms that the voids will remain as groundwater sinks.	Provide an updated PRCP schedule that includes additional criteria as recommended by the department for the achievement of final landform design for the residual void NUMAs.
53	MM2 – Achievement of sufficient improvement	The criteria proposed for this management milestone in the PRCP schedule are aimed at ensuring that the residual void NUMAs will not cause environmental harm. Additional criteria, including but not limited to those outlined below, are required to demonstrate that sufficient improvement has been achieved. • The water level and quality in each residual void must not cause environmental harm to the surrounding environment as demonstrated by long term void and groundwater level and quality monitoring. The voids must be certified as groundwater sinks. • Bunding, fencing and signage should be in place. • The high walls and voids must be assessed and certified by an AQP as geotechnically stable with a factor of safety greater than 1.5. • There should be no evidence of erosion classified as 'moderate' or 'severe' as defined by the Erosion classification framework.	Provide an updated PRCP schedule that includes additional criteria as recommended by the department for the achievement of sufficient improvement for the residual void NUMAs.