



23 May 2024

Ref: 2023.03002

Department of Environment and Science

Minerals Business Centre

PO Box 7230

CAIRNS QLD 4870

ATTENTION: Mikaela Dry

Via email: ESCairns@des.qld.gov.au

Dear Mikaela,

**RE: ENVIRONMENTAL AUTHORITY AMENDMENT RESPONSE TO INFORMATION REQUEST
NOTICE – DUGALD RIVER MINE**

MMG submitted an amendment application for Environmental Authority (EA) EPML00731213, and Progressive Rehabilitation and Closure Plan, to the Department of Environment, Science and Innovation (DESI) on 8 August 2023 (REF:A-EA-AMD-100480009).

On 26 March 2024, the DESI determined that further information was required to assess the application and issued an Information Request Notice. Wulguru Technical Services acknowledges the Information Request Notice and has this letter in response. A revised Supporting Information Report and Progressive Rehabilitation and Closure Plan is also attached. We look forward to working with the DESI through the assessment process.

Should you have any questions, please do not hesitate to contact me at madison@wulgurutechservices.com.au or 0407 491 814.

Yours sincerely,

Madison Jackson, CEnvP

Wulguru Technical Services

Appendix A – Response to Information Request Notice

Appendix B – Water Management Strategy

Appendix C – Technical Memorandum, PMLU Options Analysis



Appendix A – Response to Information Request

Item	Matter	Information Request	Response	Reference
General				
1	<p><u>Land disturbance.</u></p> <p>Inconsistencies have been identified regarding the total cumulative proposed disturbance footprint in the <i>Environmental Authority EPML00731213 Amendment Application Supporting Information Report (December 2023)</i> (the report). Section 2.2.1.1.1. of the report asserts the approximate total additional surface disturbance required for the construction of the wind farm facility is 86.51 hectares (ha), which includes 31.36 ha for the construction of wind turbine pads and meteorological masts, 46.79 ha for access tracks, 6.5 ha for clearing of a laydown area, and 1.86 ha for power infrastructure.</p> <p>Tables 3 and 18 of the report state the proposed amendment will entail an additional disturbance footprint of 78.15 ha for the construction and operation of the wind farm, however, the summary of potential impacts statement under Section 6.1. states that the proposed wind farm requires an additional disturbance area of 75 ha.</p> <p>Further, section 4.4.3. states 86 ha is</p>	<p>Clarification regarding the total cumulative additional proposed disturbance and its breakdown into each feature/domain is required to be provided.</p> <p>Provide detailed mapping and updated spatial information of all proposed areas to be included as part of this amendment.</p> <p>Provide clarity regarding the total switchyards proposed. If there are two switchyards proposed as suggested, provide an assessment on the additional switchyard to be assembled including the location, the proposed disturbance footprint, potential impacts and management measures.</p> <p>Ensure the total cumulative proposed disturbance footprint is reflected and incorporated into the proposed progressive rehabilitation closure plan (PRC Plan).</p> <p>A significant portion of this disturbance is located within sensitive areas with further information required to sufficiently understand the level of risk and extent of impact the renewables project will have on these sensitive values (see items requested below).</p>	<p>The previous inconsistencies were a result of rounding differences, and allocation of disturbance to various domains (e.g. disturbance for the windfarm compared to disturbance for other amendments).</p> <p>Disturbance areas have been confirmed and amended within the Supporting Information Report. No increase to the disturbance area is proposed. The proposed areas in Appendix A are the cumulative total for each domain, with the addition of the proposed disturbance.</p> <p>The Project has one existing switchyard (Switchyard 1) located at coordinate 412170, 7760656. The amendment proposes an additional switchyard (Switchyard 2) to be located at coordinate 411878, 7760073. The text has been amended to provide clarity.</p> <p>A total 0.72 ha of disturbance is proposed for additional</p>	Table 3 and Appendix A

<p>required to be cleared for the wind farm and ancillary infrastructure and 2 ha for the other amendments, totaling 88 ha and table 5 refers to approximately 88.44 ha of additional surface disturbance.</p> <p>The proposed amendments to Schedule A – Table 1 (Authorised Mining Activities) of the EA, as detailed within Appendix A of the report, states the additional maximum disturbance areas include:</p> <ul style="list-style-type: none"> • <i>Powerline: 2.0 ha</i> • <i>Groundwater infrastructure: 0.5 ha (note, table 3 of the report suggests this area is 0.54 ha)</i> • <i>Ventilation shaft 9: 0.05 ha</i> • <i>Switchyard 2: 1.0 ha</i> • <i>Sewage Treatment Plant: 0.38 ha</i> • <i>Power infrastructure: 1.86 ha (note, appendix A suggest this area is 2 ha)</i> • <i>Laydown: 6.5 ha</i> • <i>Wind farm and ancillary infrastructure: 31.36 ha</i> • <i>Access roads: 46.79 ha</i> <p>This amounts to a total of 90.44 ha and differs from the information included elsewhere in the report.</p>		<p>powerlines, classified as 'electrical' in the Supporting Information Report and spatial data. This has been included in the total disturbance footprint for the wind farm. The text has been amended to provide clarity.</p> <p>The area proposed for the STP was rounded to 0.2 ha. This has been amended in the text to the exact area of 0.18 ha.</p> <p>Cumulative disturbance areas have been amended in Appendix A for inclusion Schedule A – Table 1 (Authorised Mining Activities) of the EA.</p>	
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	<p>Further, it is unclear if areas identified as 'electrical' in Figure 2 – Proposed Disturbance Areas have been accounted for in the total cumulative disturbance footprint proposed.</p> <p>Section 2.2.2. of the report discusses the proposed replacement of the sewage treatment plant (STP) which will require an additional 0.2 ha, however, Table 21 identifies this total area as 0.18 ha.</p> <p>Section 2.2.1.1.5 of the report states a switchyard is proposed on land previously disturbed. Further on, it is identified a second switchyard will be assembled to support electrical equipment (pg. 43). It is unclear the number of switchyards and the total disturbance area required for this feature as only one has been assessed, and Figure X – Proposed Windfarm only depicts 1.</p>			
2	<p><u>Wind turbines and laydown area</u></p> <p>In section 2.2.1. of the report, it is identified that the ninth location for the wind farm facility will be used as a laydown area for turbine components (eight wind turbines proposed). However, Figure X – Proposed Windfarm identifies nine turbine locations and an additional area named 'Windfarm Laydown' directly adjacent to the mine infrastructure area. It is unclear the total number of wind turbines</p>	<p>Clarify the total number of wind turbines supported by detailed mapping. Provide information outlining what 'turbine components' entails, and the potential land development required for this area (e.g., landform development/shaping, construction methodology, topsoil stripping and stockpiling and management measures).</p>	<p>There are eight turbines in total, WTG1 and WTG3 to WTG9. Figure 3 has been amended for clarity.</p> <p>Two temporary laydown areas (windfarm temporary laydown east, and windfarm temporary laydown west) have been designated to support construction activities, including for park bays</p>	<p>Section 2.2.1</p> <p>Figure 3</p>

	<p>proposed, and the potential land development required for these areas.</p> <p>In addition, it is unclear what the material to be placed within the windfarm laydown area is suspected to be.</p>		<p>for light vehicles, elevated work platforms, etc.</p> <p>Large vegetation will be trimmed; vegetation groundcover and topsoil will remain undisturbed and no hardstands will be constructed.</p>	
3	<p><u>Matters of State Environmental Significance (MSES) - Regulated vegetation (essential habitat) and impacts to purple-necked rock wallaby (PNRW)</u></p> <p>Section 4.1.1.1.4. of the report outlines that the proposed renewables project will require clearing of approximately 68.7 ha of regulated vegetation - essential habitat, associated with the PNRW.</p> <p>A significant residual impact assessment (SRI) was undertaken (Table 39 of the report) which determined that impacts to this MSES value are likely to result in temporary disturbance to a subpopulation of PNRW associated with the clearance and construction phase of the project. However, within section 4.1.1.1.4. of the report, DRM have determined the proposed project is unlikely to significantly impact the population, with no proposed disturbance to any known PNRW colony and proposed tracks not transversing any known or suitable PNRW shelter habitat.</p>	<p>Provide clarification concerning impacts to the PNRW associated with the clearance of regulated vegetation (essential habitat) for this species.</p> <p>If there are impacts anticipated, undertake an assessment in accordance with the Queensland Environmental Offsets Policy to support the proposal and demonstrate that the offset hierarchy has been considered.</p>	<p>The total proposed disturbance to essential habitat has been clarified.</p> <p>A SRI has been undertaken and determined that the proposed amendment will not result in any significant residual impact to the essential habitat for the PNRW.</p> <p>An offset is not proposed for this matter.</p>	<p>Table 20</p> <p>Section 4.1.11</p> <p>Appendix K</p>

4	<p><u>MSES - Regulated vegetation (intersecting a watercourse)</u></p> <p>Conflicting information has been identified regarding the total cumulative impact area to regulated vegetation intersecting a watercourse. For example:</p> <ul style="list-style-type: none"> • Section 2.2.1.1.5. of the report states that bed level crossings will be constructed at five creek crossings during road establishment. • Section 3.6.3.1.4. states that there are nine instances of stream order 1 and 2 regulated vegetation watercourses mapped within the proposed disturbance area of the project. • Section 4.1.1.1.5. of the report states approximately 3.5 ha of clearing is required within areas mapped as regulated vegetation intersecting a watercourse. • Table 21 of the report states that <i>'There are no watercourses, as defined under the Water Act within the proposed disturbance areas.</i> 	<p>Provide further information regarding the proposed disturbance to this MSES value as a result of the proposed project. This includes:</p> <ul style="list-style-type: none"> • Total number of necessary crossings required and justification for these areas. A detailed assessment must be provided highlighting if the crossings are avoidable or can be achieved through a lesser impact footprint. • Detailed mapping and location of all necessary crossings. • Associated extent of impact to this MSES. <p>This information is required to enable assessment of the impacts and potential offset requirements. The avoid, minimise, and offset hierarchy must be clearly described with justification for the impacts to this MSES. If a significant residual impact is likely to occur as suggested, please provide the assessment undertaken in accordance with the Queensland Environmental Offsets Policy to support the proposal.</p> <p>Provide further information regarding the proposed creek bed level crossings to be implemented for the proposed project.</p>	<p>There are four drainage lines intersected by the proposed disturbance. Due to the orientation of the access roads, some drainage lines are crossed on more than one occasion. In total, the project disturbance intersects drainage lines at seven discrete locations.</p> <p>The proposed project design has been extensively studied and optimised to the final footprint presented in the application. This design has been developed for safe transport of infrastructure and to minimise surface disturbance. Drainage line crossings have been avoided wherever possible for safety and efficiency of construction. The disturbance proposed in the design reflects the smallest possible footprint for the project.</p> <p>It has been determined that after reasonable avoidance and minimisation techniques have been employed, there will be a direct impact to approximately 4.1 ha of regulated vegetation, intersecting a watercourse. Therefore, an offset is a reasonable requirement to be conditioned in this amended EA.</p>	<p>Figure 18</p> <p>Section 4.1.11</p>
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	<p><i>The pads do not intersect any drainage lines. The access roads for the wind farm will cross drainage lines on five occasions’.</i></p> <p>Section 4.1.1. of Appendix L (Ecological Assessment Report) identifies a significant residual impact will occur as impacts exceed criteria 1 and 3 of Table 1 (2.1 Significant residual impact test – criteria Table 1) of the <i>Significant Residual Impact Guideline (December 2014)</i>. No further information, assessment or consideration of potential offsets have been provided.</p> <p>Section 2.2.1.1.5. of the report discusses the requirement for creek bed level crossings during road establishment to allow unobstructed surface water flows. Limited information has been provided regarding the proposed creek bed level crossings and it is noted detailed designs will be prepared as part of the construction management program prior to commissioning.</p>	<p>This includes:</p> <ul style="list-style-type: none"> • Defining the total creek bed level crossings required. • Construction details and potential impacts during the construction and operational stage. • Management details to ensure creek bed level crossings support unobstructed surface water flow. 	<p>A financial offset has been calculated for this MSES.</p>	
5	<p><u>Regional ecosystems</u></p> <p>The endangered Regional Ecosystem (<i>Eucalyptus camaldulensis</i> - woodland on channels and levees) (ERE:1.3.7b) is mapped as present on the site and is listed as a category B Environmentally Sensitive Area (ESA) and MSES. Section 4.1.1.1.6. of the report states that ground- truthing</p>	<p>A definitive area and detailed mapping of the location of disturbance in relation to the River Red Gum Ecosystem (RE:1.3.7b) is required to enable assessment of the impacts and potential offsets. The avoid, minimise, and offset hierarchy must be clearly described with justification for the impacts to this ecosystem. The entire impact must be described to enable the consideration of</p>	<p>The classification under the VM Act class defines whether the RE is also an MSES, not the biodiversity status. RE 1.3.7b (<i>Eucalyptus camaldulensis</i>) woodland on channels and levees, has a VM Act class of ‘least concern’ and a biodiversity</p>	<p>Section 3.6.4.2</p> <p>Section 4.1.11</p>

	<p>surveys delineating the ERE 1.3.7b, indicate that only 1.04 ha of this ESA will be impacted as a result of the project. It is concluded that the project is not anticipated to have a significant impact on this ERE/ESA due to the limited size of disturbance. No further impacts, risks or management measures have been provided.</p>	<p>offsets. If a significant residual impact is likely to occur, provide an assessment undertaken in accordance with the Queensland Environmental Offsets Policy to support the proposal.</p>	<p>status of 'endangered'. This RE is considered a category B ESA, however, is not a MSES.</p> <p>Therefore, it is not assessable under the offset's framework. An offset is not proposed for this matter.</p>	
6	<p><u>Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) and Nature Conservation Act 1992 (NC Act) listed species</u></p> <p>Conflicting information has been identified regarding the total number and assessment of EPBC Act and NC Act listed species within the area. It is noted that several species did not undergo an SRI assessment. The following species were identified as having a 'possible' likelihood of occurrence within 50 kilometres (km) of the project area, however SRI assessments have not been conducted in relation to these: Fork-tailed swift, Carpentarian grasswren, Grey falcon and Painted honeyeater.</p> <p>Further, additional SRI assessments have been conducted for species not identified in the lists proposed by MMG Dugald River Pty Ltd (DRM) but listed under the EPBC Act and NC Act.</p> <p>The total number of potential species to occur within the project area is conflicting throughout the report. For example:</p>	<p>Provide clarification regarding the rationale followed to determine which species required SRI assessments.</p> <p>Provide succinct and complete information and assessments for all species identified as having the potential to occur within or surrounding the project area. This information is required to understand the potential impacts, risks and mitigation measures and strategies proposed to be implemented for all listed species under the EPBC Act and NC Act.</p>	<p>Species numbers have been revised for consistency across the Supporting Information report, the Ecological Assessment Report (Appendix K) and the PMST search tool.</p> <p>SRIs have been completed for all species identified in all search tools to have a likelihood of occurrence of "possible" or greater.</p> <p>The fork-tailed swift, Carpentarian grasswren, Grey falcon and Painted honeyeater were all determined to be 'unlikely' to occur, therefore SRIs were not completed.</p>	Appendix K

	<ul style="list-style-type: none"> • Table 16 of the report lists fifteen (15) EPBC Act marine or migratory species identified through desktop assessments as having potential to occur within 50 km of the project area. However, appendix L identifies twenty-one (21) marine and migratory species as having the potential to occur within a 50 km radius of the project area. • Table 17 of the report lists 15 species of fauna and one (1) species of flora listed as Endangered, Vulnerable or Near Threatened (EVNT) have potential to occur within a 50 km radius of the project area. However, appendix L identifies nineteen (19) species of fauna listed under the EPBC Act as having the potential to occur within 50 km radius of the project area. 			
7	<p>Bats Section 4.1.1.1.11. of the report states that “While no data is available on how high these species fly, most microbat species are typically thought to forage within or just above the canopy”. It is understood a range of species utilise heights equivalent to those within the rotor- sweep area (RSA) of</p>	<p>Provide a detailed assessment of the wind farm facility impacts on the bat species recorded from the area. This review should examine the potential mortality rate of species and be based on available wind farm monitoring reports, published flight heights</p>	<p>A bat collision risk assessment has been completed and provided. Impact triggers have been defined and an adaptive management plan has been prepared.</p>	<p>Section 4.1.10.3 Appendix K Appendix L</p>

	<p>the proposed wind turbines. Bats in north Queensland (including species noted at the project site) have been observed and published as foraging 100 to 300 meters (m) above the ground. A detailed assessment of the impact on bat fauna from the proposed wind farm facility is required.</p>	<p>for the species present, and if possible, new locally derived data by sampling bat activity at or near the altitude of the RSA.</p> <p>Further, provide an alert-to-action trigger plan for bat collision or area exclusion. This plan must detail the nature of the action taken, the metric to act, and the minimum duration of the action.</p>		
8	<p><u>Birds</u></p> <p>From the information provided in the application documents it is unclear how the assessment of migratory species have been considered in relation to the relevant guidelines. Further information is required regarding how seasonal movements have been sampled or appropriately considered in the assessment. This information is required to assess and confirm the appropriateness of the sampling/monitoring undertaken and to ensure impacts to listed migratory species is managed or mitigated.</p>	<p>Provide an assessment of diurnal and nocturnal bird movements during the period of migration through the East-Asian Australian Flyway, considering the proposed operation. To note, this is best undertaken with elevated acoustic recording devices to identify bird movements.</p> <p>Further, provide an alert-to-action trigger plan for bird collision or area exclusion. This plan must detail the nature of the action taken, the metric to act, and the minimum duration of the action.</p>	<p>A bird collision risk assessment has been completed and provided.</p> <p>Impact triggers have been defined and an adaptive management plan has been prepared.</p>	<p>Section 4.1.10.3</p> <p>Appendix K</p> <p>Appendix L</p>

9	<p>Bird and Bat Management Plan</p> <p>As operational monitoring is proposed to be undertaken for the wind farm facility, this measure must be described in a bird and bat management plan. This plan must include survey details, collision risk modelling, the proposed thresholds for impacts and the proposed response measures. The principles of Before-After-Control-Impact (BACI) design principles are recommended for surveys for both birds and bats.</p>	<p>As stated above, provide an assessment of diurnal and nocturnal bird monitoring during the migratory period of migratory species.</p> <p>The information required to enable assessment of the bird and bat management plan includes provisions for Bird and Bat Collision Risk modelling. This modelling must specifically address species that have been identified as having a known or possible likelihood of occurrence, and include survey details, proposed thresholds and proposed response measures. The principles of BACI are recommended for surveys for both birds and bats.</p>	<p>A bird and bat management plan has been developed that incorporates collision risk modelling.</p> <p>Collision risk is also described in the Bird and Bat Utilisation Survey 2024 report.</p>	<p>Appendix L</p> <p>Appendix M</p>
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<p>10</p>	<p><u>Proposed adaptive management strategies for birds and bats</u></p> <p>Appendix L outlines the proposed management strategies to be implemented during the construction, operation and decommissioning phases of the renewables project. The strategies are generally supported, however detail is required on when the proposed measures will be implemented. This information must include details regarding the triggers proposed for the commencement of implementation and the monitoring of success in implementing.</p> <p>The NRG ultrasonic acoustic Bat Deterrent System is proposed as a management strategy to reduce impacts to flying fauna. Although this system has shown a 50% reduction in bat fatalities, the outcome still represented fatalities (the other half). The scale and species impacted requires further assessment to determine the appropriateness of this management mechanism.</p>	<p>Provide a detailed description on the mechanism and timing of monitoring impacts of the overall facility on bats and birds. This monitoring must include cadaver searches as well as monitoring the activity of birds and bats around the wind farm facility. A reporting schedule and triggers to instigate management changes must be included in this protocol.</p> <p>Further information and assessment is required to determine the appropriateness of the NRG ultrasonic acoustic Bat Deterrent System management mechanism. The scale and species impacted must be appropriately assessed.</p>	<p>A Bird and Bat Management Program has been developed.</p> <p>Potential options for acoustic deterrents were based on literature reviews of previous studies and the suitability for use with species identified in the BBUS. Ultrasonic Deterrent Systems are just one management tool to be considered; they are not intended to provide a 100% elimination of bat fatalities. Deterrent systems are proposed to be implemented in conjunction with other measures such as:</p> <ul style="list-style-type: none"> - Nature of proposed turbine design (turbine height, number of turbines, RSA, etc) - Removal of carcasses to limit attraction by predators - Maintaining clearance buffer around turbine pad to reduce nearby foraging - No lights to reduce insects 	<p>Appendix L.</p>
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11	<p>Noise The provided noise data focuses on A weighting which is a measure designed around the human auditory response. The impact of noise on fauna has not been addressed in detail. The monitoring program must address the potential impacts from noise and mitigation strategies proposed to manage these impacts to birds and bats.</p>	<p>Provide additional information regarding how the monitoring schedule will recognise the potential impact of noise on birds and bats and propose how this impact, if observed, will be mitigated.</p>	<p>The EPP Noise describes the following environmental values to be protected under the policy:</p> <ul style="list-style-type: none"> • the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; • the qualities of the acoustic environment that are conducive to human health and wellbeing; and • the qualities of the acoustic environment that are conducive to protecting the amenity of the community. <p>The noise assessment has concluded that the predicted wind farm noise levels comply with the EPP noise criteria at the surrounding sensitive receptors.</p> <p>Noise monitoring is proposed to be conducted annually during a Bird and Bat Utilisation Survey or PNRW survey during construction and operation to identify potential impacts of noise on fauna. If an impact is identified, adaptive management controls will be implemented as described.</p>	
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12	<p><u>Water management</u> Section 4.2.7.1.3. of the reports states diversion bunds will be erected upslope from disturbed areas and direct runoff into sediment basins and dams. These sediment dams or basins will be constructed to capture sediment and contaminants for treatment or retention. No further information is provided, and Appendix J (Erosion and sediment control plan) has not been attached.</p>	<p>Provide additional information regarding the proposed diversion bunds and sediments dams/basins. This information is required to understand the diversion of water around the site as a result of the proposed activity. This information includes:</p> <ul style="list-style-type: none"> • Details regarding the diversion of water as a result of the proposed activity. • Detailed information and mapping of all proposed diversion bunds, sediment basins and dams. Clarify if the proposed sediment basins or dams will receive clean stormwater runoff or, as suggested, it is expected to be receive contaminants. If so, further information is required regarding the potential impacts, proposed treatment, and management of this water. <p>Provide Appendix J.</p>	<p>No additional diversions, bunds or sediment basins are deemed necessary for the Project. The text within the Supporting Information Report has been amended for clarity.</p> <p>Erosion controls will consist of:</p> <ul style="list-style-type: none"> • Conducting construction works during the dry season where possible (April – November); • Minimising all surface disturbance. Large vegetation will be selectively cleared for the laydowns, STP, vent shaft and groundwater infrastructure to maintain as much groundcover as possible and stabilise soils; • Stabilisation of exposed soils as soon as practical. Hardstands will be constructed for the turbine pads as soon as practicable after topsoil is removed to prevent long term exposure and minimise erosion; 	<p>Section 4.2.7.3 Appendix O</p>
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			<ul style="list-style-type: none"> • Maintaining vegetative buffer zones where possible; • Delineating areas required to be disturbed and ensuring that disturbance is limited to those areas; • Transport any removed topsoil to existing stockpiles located away from operational areas; and • Revegetation of final landforms as soon as possible. <p>Appendix J has been attached to the Supporting Information Report (now Appendix O).</p>	
13	<p><u>Topsoil management</u> Section 2.2.1.1.5. of the report discusses the management of topsoil. It is noted topsoil will be stockpiled to the side of the pad disturbance, however, section 4.1.6.1.5 states that topsoil removed will be transported to existing stockpile listed in Schedule A – Table 1.</p>	<p>Clarify how topsoil will be managed as a result of the proposed activity. If topsoil is to be stockpiled at the pad disturbance area, provide details on how this will be managed. If topsoil is to be transferred to the existing topsoil stockpiles, demonstrate these existing features have capacity to hold the proposed material and if further management measures are required.</p>	<p>Topsoil will be removed as part of land preparation for the following features:</p> <ul style="list-style-type: none"> - Access roads - STP <p>Topsoil will be scraped and transported to an existing topsoil stockpile (STP) or rilled to side (roads) for storage until rehabilitation.</p> <p>The pads are located on the Knapdale range where topsoil is shallow and rocky. Topsoil is not</p>	<p>Section 2.2.1 Section 4.1.9</p>

			<p>present a depths valuable for stripping or reserved. No topsoil will be removed.</p> <p>Topsoil is not required to be stripped for the following features:</p> <ul style="list-style-type: none"> - groundwater bore infrastructure - vent shaft 9 - powerlines - meteorological masts - laydowns - switchyard 	
14	<p><u>Rehabilitation – PRC Plan</u></p> <p>It is proposed the renewables project will be rehabilitated to a native ecosystem. Rehabilitation activities will include removal of all infrastructure above and below ground, landform reshaped to a convex slope profile during construction and the area ripped and seeded, with no topsoil requirement.</p> <p>Section 3.3.43 of the PRC Plan states any pads with potential for erosion will have crests rounded (minor) to a convex slope profile during construction. However, the milestone criteria suggest landform development and re-shaping will occur during rehabilitation.</p> <p>It is unclear from the information provided when landform shaping will occur and how this will be determined. For example, what will constitute 'potential erosion' or 'erosion</p>	<p>Provide a revised PRC Plan that includes additional information regarding rehabilitation of the wind farm facility. This information includes:</p> <ul style="list-style-type: none"> • A detailed description of any additional disturbance that may be required during the decommissioning phase. • If diversion bunds and sediment dams/basins are required as suggested, clarify when and how these will form part of the rehabilitation process. • Define which pads/areas will require landform reshaping to convex slope profile and how this has been determined. • Provide a detailed design of the final landform from the proposed 	<p>During construction of the turbines, pads are required to be levelled for stability. Hardstands will be constructed for the assembly, construction and erection of the turbines. These hardstands will be retained throughout the life of operations for maintenance and decommissioning purposes. On closure, the hard stands will be removed. All pads will recontoured slightly to prevent water ponding. This will prevent water flows from accumulating and concentrating energy to create gullies. No other landform design or earthworks is required.</p> <p>Wind farm pads are located on the crest of the Knapdale Range. The Knapdale soil management unit is described as being very shallow, rocky soils. Disturbances on the</p>	<p>PRCP – Section 3.3.43</p>

	<p>risk’.</p> <p>Further, it is unclear if land disturbance will be required during the decommissioning/ rehabilitation phase of the renewables project. For example, ‘removal of all infrastructure above and below ground.’</p> <p>Based on the information above, the administering authority is unable to determine if a stable condition can be achieved for all components of the renewables projects.</p>	<p>activity. This is required to understand how landform development can achieve the proposed PMLU.</p> <p>Further justification to support the proposal that no topsoil is required for these areas.</p>	<p>Knapdale Range will not be topsoiled, consistent with the natural profile of the range. The areas will be ripped and seeded with pasture species.</p>	
Other amendments				
15	<p><u>Conditions B14, B15 and B16</u></p> <p>It is proposed conditions B14, B15 and B16 (see below) of the EA are removed.</p> <p><i>B14: The buildings and structures in place at the licensed place for the storage, stockpiling and loading of mineral concentrate must be constructed and maintained to withstand a Category 2 cyclone.</i></p> <p><i>B15: The construction and state of the buildings and</i></p>	<p>Conditions under Concentrate Management of the EA relate to buildings and structures used for storage, stockpiling and loading mineral concentrate. The argument that the concentrate shed is not used for storage of concentrate but instead used as a transfer point still falls under the proposed intent of these conditions. Given the structure will receive mineral concentrate at some point to then be transferred out, further information is required to justify the removal of these conditions. Further, although the likelihood of Category 2 Cyclone is low, it is not uncommon. The intent of the condition is to ensure any buildings or structures storing, stockpiling and loading mineral concentrate are secured to prevent the release of concentrate to the environment during such an event. Further information is required to justify the removal of these conditions.</p>	<p>Concentrate is deposited into the concentrate transfer shed from the processing plant where it is collected by a front-end loader and transferred into two half height shipping containers. This occurs as one continuous process; material is not stockpiled within the shed and transferred to the containers at a later date.</p> <p>As noted in the Supporting Information Report, in the unlikely event that a cyclone did occur in the region, there would be no concentrate stored within the shed, and therefore the risk of loss of concentrate is negated.</p> <p>The risk of release of contaminants to the environment</p>	Table 3

	<p><i>structures in place at the licensed place for the storage, stockpiling and loading of mineral concentrate must be checked for compliance with condition B14 by an appropriately qualified person at least once every three (3) years.</i></p> <p><i>B16: A wash bay for mobile equipment must be installed as part of the mineral concentrate storage facility, for cleaning machinery before exit from the area and to prevent the movement of mineral concentrate outside the building.</i></p> <p>Justification provided by DRM states the concentrate shed is a concentrate transfer point and not used for the storage of concentrate. It is asserted there is no movement of vehicles in or out of the concentrate shed, instead, concentrate is deposited into the concentrate transfer shed from the processing plant and collected by a front-end loader and transferred into two half</p>		<p>is adequately managed by the following existing conditions:</p> <ul style="list-style-type: none"> • Condition A5, The holder of this environmental authority must: <ul style="list-style-type: none"> (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; (b) maintain such measures, plant and equipment in a proper condition; and (c) operate such measures, plant and equipment in a proper manner • Condition B1, Unless authorised by this environmental authority, the release of noxious or offensive odour, dust or any other airborne contaminant resulting from the mining activity must not cause environmental harm. • Condition C1, Contaminants that will, or have the potential to cause environmental harm, must not be released directly or indirectly to any waters except as permitted under 	
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	<p>height shipping containers. Further, in the unlikely event that a cyclone did occur in the region, there would be no concentrate stored within the shed, and therefore the risk of loss of concentrate is negligible. From this information it is unclear how a 'concentrate transfer point' differs from the recommendations and intent of these conditions.</p>		<p>the conditions of this environmental authority.</p> <ul style="list-style-type: none"> • Condition C3, Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters. • Condition I1, Unless authorised by this environmental authority contaminants that will or may cause environmental harm must not be directly or indirectly released to land. 	
16	<p><u>Sediment Dam G and D</u></p> <p>It is proposed Schedule C – Table 1 (Release Points) is amended to remove reference to 'runoff from PAF waste rock dumps and Stage 1 and 2' from the Sediment Dam G release point. It is stated by DRM, Sediment Dam G does not and has never received runoff from the PAF waste rock dumps. Given the</p>	<p>Provide further information and clarification regarding the locations receiving runoff from the PAF waste rock dumps. Please clarify all release points receiving runoff/stormwater from the PAF waste rock dumps and ensure these are in line with the stipulated release point locations identified in Schedule C - Table 1.</p> <p>Given, schedule C- Table 3 is not a comprehensive list of the release points specified in schedule C – Table 1, further information is required to support the proposal that these amendments are clerical in nature.</p>	<p>Sediment Dam G receives water from the clean water diversion, located to the west of the PAF dump as well as drainage from the clean catchment to the south of Sediment Dam G. This is displayed on Figure 3 of the DRM Water Management Strategy and provided as Appendix B to this response.</p> <p>Runoff from the PAF waste rock dump is contained and directed to the Stage 2 PAF Runoff Dam for evaporation.</p>	Table 2

	<p>location of Sediment Dam G, further information is required to support this statement.</p> <p>It is also proposed to include Sediment Dam G and Sediment Dam D to Schedule C – Table 3 (Contaminant Release during Flow Events), and these amendments are suggested to be clerical in nature. Upon assessment, it is identified several release points specific in Schedule C – Table 1, do not appear in Schedule C – Table 3 (see table below). It is unclear at this stage why incorporation of all release points are not required to be included in this amendment.</p>	<p>Provide information regarding the stream flow monitoring plan specified in conditions C10 to C13 of the EA for the Dugald River Mine. This may be in the form of a water management plan for the site. This information is required to demonstrate all release points listed in the EA are appropriately conditioned.</p>	<p>Schedule C – Table 3 (Contaminant Release during Flow Events) defines streamflow monitoring locations to record releases from structures authorised in Schedule C – Table 1 (Release Points). The application has been revised to include additional locations (Sediment Dam C, Sediment Dam G, STP Dam Stage 1, STP Dam Stage 2 and Raw Water Dam) to this table.</p> <p>The TSF and seepage collection pond have been excluded from this table as there are no requirements for stream flow monitoring on Cabbage Tree Creek. Releases from these two structures are still monitored in accordance with Schedule C Table 1, Schedule C – Table 2 and the DRM Surface Water Monitoring Procedure.</p> <p>The amendment does not propose any change to monitoring requirements; it is intended to provided clarity to show all release locations that contribute to the stream flow to be identified at each gauging station. It is considered to be administrative in nature.</p>	
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<p>17</p>	<p><u>Condition C28</u></p> <p>It is proposed to remove condition C28 of the EA as condition A7 requires any management plan to be reviewed every three (3) years. DRM state “Due to the nature of activities (underground extraction) and limited surface disturbance, a review every three years is sufficient to capture any changes on site that may influence water management controls.” Given the proposed amendment requires significant surface disturbance, it is unclear that this statement is supported.</p> <p>Further, the intent of condition A7 is differs from the intent of condition C28 (see below).</p> <p><i>A7 - Any management or monitoring plans, systems, programs or reports required to be developed and implemented by a condition of this environmental authority must be reviewed for</i></p>	<p>Provide further justification regarding why the water management plan can be captured under condition A7. Consider the proposed additional disturbance to be undertaken, and the potential impacts to water management (i.e., erosion and sediment controls, creek crossings, etc).</p>	<p>The proposed amendment is specifically regarding the requirement for a routine annual review. A routine annual review of the water management plan is administratively onerous and duplicates other management processes already implemented by MMG.</p> <p>MMG implements an Asset Modification Management (Management of Change) Process that requires that all changes on site trigger a review of relevant management processes and documentation. All proposed water management changes must be reviewed and approved by an appropriately qualified water management professional prior to implementation. This process provides another avenue for the Water Management Plan to be reviewed, in response to changes on site.</p> <p>Any proposed temporary or permanent change to DRM’s water management network as a result of the proposed works (e.g. windfarm), will trigger this requirement and a review of all relevant documentation will be completed.</p> <p>The requirement of C28 to “ensure that proper and effective</p>	<p>Table 2</p>
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	<p>effectiveness in minimising the likelihood of environmental harm every 3 years and amended immediately if required. The review must be documented and completed by an appropriately qualified person.</p> <p><i>C28 - The holder of this environmental authority must undertake a review of the water management plan before 1 November each year to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.</i></p>		<p>measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised” is fundamentally the same as A7, that requires “management plans be reviewed for effectiveness in minimising the likelihood of environmental harm”. Both achieve the same outcome of ensuring that the Project operates in a way that minimises environmental harm.</p>	
18	<p><u>Removal of Cyanide</u> Appendix A includes an amendment to Schedule C – Table 8 (Groundwater Trigger Levels and Contaminant Limits) for the removal of cyanide as a parameter. This amendment</p>	<p>Provide information regarding if this amendment is intended. If so, provide justification for this amendment.</p>	<p>Cyanide is proposed to be removed from Schedule C – Table 8 (Groundwater Trigger Levels and Contaminant Limits). The Supporting Information Report has been amended to reflect this.</p>	Table 3

	has not been discussed in the report.			
19	<p><u>Stage 2 PAF Pad Run Off Dam</u></p> <p>The hydraulic performance criteria specified in Schedule D – Table 2 (Hydraulic performance criteria for Regulated Dams) for the Stage 2 PAF Pad Run Off Dam was assessed as significant under the scenario ‘failure to contain – overtopping’ in 2015 (see footnote 1 of this table). It is proposed the hydraulic performance criteria is removed for the Stage 2 PAF Run Off Dam in accordance with the revised consequence category assessment (CCA) provided (Appendix F) which has assessed the Stage 2 PAF Pad Run Off Dam as low under the</p>	<p>Provide further information concerning the change in the CCA for the Stage 2 PAF Pad Run Off Dam for the ‘failure to contain – overtopping’ scenario from 2015 to 2023.</p> <p>Provide clarification regarding the CCA in terms of an overtopping event and the direction of flow suspected under this scenario.</p> <p>Provide information regarding the impacts of an overtopping or partial/full collapse of sediment dam G in the ‘failure to contain – dam break’ scenario for the Stage 2 PAF Pad Run Off Dam. Clarify the expected capacity of sediment dam G under this scenario, the type of waters directed and reporting to this sediment dam, and the potential impacts of such an overtopping or partial/full collapse event of this sediment dam to the receiving environment.</p> <p>Provide information on the intended hydraulic performance objectives for ‘failure to contain -dam break’ for the Stage 2 PAF Run Off Dam.</p>	<p>The original Failure to Contain assessment for the Stage 2 PAF Run Off Dam determined a hazard category of “significant” based on a presumed “significant” impact of “general environmental harm” and “loss of stock”. The initial risk assessment was completed prior to the construction of the dam and prior to any water quality testing being conducted.</p> <p>The results of water quality testing were available and assessed in subsequent assessments in 2014, 2015, 2019 and 2023. Each assessment determined a “low risk” rating for overtopping. There has been no change to how the dam is operated.</p> <p>In the event of an overtopping of PAF Stage 2 Dam, flows would initially pass northeast where they would enter the unnamed tributary of the Dugald River (North Creek). When the unnamed tributary of the Dugald River (North Creek) enters the Dugald River, flow IS directed in a southerly direction.</p>	Table 3 Appendix G

	<p>'failure to contain – overtopping' scenario. It is unclear how this assessment has changed since 2015 with further information is required to support this proposal.</p> <p>It is stated in section 4.2.3.1.3. of the report “in the event of an overtopping failure from the PAF Stage 2 Run Off Dam, flows would pass south entering Dugald River via the unnamed Dugald River tributaries.” Further on it is stated “in the event of a dam break failure of the PAF Stage 2 Runoff, flows would pass north east entering Dugald River via the unnamed Dugald River tributaries.” However, in Appendix F table 6, it is noted that in the event of an overtopping failure, flows would pass to the north or east. From the information provided, it is unclear the direction of flow under each scenario.</p> <p>Appendix F details in the</p>		<p>The Dugald River then flows north towards the Gulf of Carpentaria. Refer to Appendix G of the Supporting Information Report for a visual depiction of the flow direction.</p> <p>The overtopping location was assumed to occur at the northeast corner of the structure for the following (conservative) reasons:</p> <ul style="list-style-type: none"> • Overtopping at the northeast corner will result in the largest potential impact area and was thus considered a conservative assessment methodology. • Overtopping into the North Creek will result in a impact area currently not authorised for impact, as described in 'Schedule A – Table 1' and 'Schedule K – Figure 1a' of the EA • Overtopping to the south and southeast will impact existing mine infrastructure. Additionally, ground rises to the south of the PAF Stage 2 Dam, and it is therefore not considered a credible failure location. • Overtopping to the east will enter an unnamed tributary of North Creek prior to entering North Creek, and thus results in 	
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	<p>event of dam break from the Stage 2 PAF Pad Run Off Dam, sediment dam G would be impacted resulting in an overtopping or partial/full collapse of sediment dam G. Limited information is provided to understand the potential impacts this may have on the receiving environment, and if this further exacerbates a dam break scenario for the Stage 2 PAF Pad Run Off Dam. Additionally, hydraulic performance objectives for 'failure to contain – dam break' scenario are specified in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933, Version 5.03) (the Manual). No information has been provided to demonstrate the application of the design criteria required for significant dam break scenarios.</p>		<p>a reduced potential impact area.</p> <p>Sediment Dam G is located immediately downstream of the PAF Stage 2 Dam and is not a regulated structure. It is approximately 44 m wide, 130 m long, and 2 m deep, with a sandy base. Sediment Dam G receives runoff from upstream mine impacted areas, whereupon it infiltrates and/or evaporates. It contains waters after periods of rainfall sufficient to produce runoff in the mine infrastructure area and is generally empty.</p> <p>In a dam beak scenario, water would flow northeast entering Dugald River via the unnamed Dugald River tributaries. As sediment Dam G is located immediately downstream of the PAF Stage 2 Run Off Dam, it would likely be impacted by a dam break scenario. Hydraulic modelling has assumed a 'Sunny Day Failure' in assessing the potential impact of a dam break. In this scenario the Sediment Dam G would be dry. As such, no additional mine-impacted waters would be released into North Creek. There is, however, expected to be additional sediment release in this event. The consequence category has</p>	
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			<p>been assessed as “significant” due to the expected water quality and sediments released to the environment. The Sediment Dam G has been already included in this assessment and potential impacts are not likely to meet the threshold for a ‘High’ consequence category .</p> <p>As the risk for the ‘Failure to Contain – Overtopping’ scenario is low there is no requirement for the dam to accommodate the Design Storage Allowance (DSA) at the start of the wet season (1 November). Nor does the dam require a Mandatory Reporting Level (MRL). Hydraulic performance criteria have been provided in the Supporting Information Report. The PAF Stage 2 Runoff Dam spillway has been designed and constructed to meet this criterion.</p>	
20	<p><u>PRC Plan – Post mine land use (PMLU)</u> It is identified that several Rehabilitation Area (RA) sizes and mine features have been amended which has resulted in the change of the previously approved PMLU for these features. For example, the footprint of RA5 (Mining and Processing Areas) is proposed to be increased to 209.55 ha from</p>	<p>Provide justification and clarification for the proposed change. If this change is proposed, provide supporting information that demonstrates the land/features subject to the change will achieve the proposed PMLU and establish a safe, stable, non-polluting landform. Ensure all information to be provided is line with the legislative requirements specified in the <i>Environmental Protection Act 1994</i> and in the Guideline <i>Progressive rehabilitation and closure plans (PRC Plans)</i> (ESR/2019/469,</p>	<p>Rehabilitation areas have been reviewed as part of ongoing review and improvement of the PRCP.</p> <p>In the previous PRCP, a number of RA5 features were incorrectly included in the spatial data for RA1. The PRCP accurately described the features, rehabilitation methods and milestone criteria for RA5,</p>	<p>Appendix C of this report – Technical Memorandum PMLU Options Analysis</p>

	<p>19.52 ha by relocating a number of features previously under RA1 (Ancillary Infrastructure and Services). As a result, the relocated mine features have been amended from the PMLU of native ecosystem to low intensity grazing. This change is determined to significantly change the way the PMLU will be achieved in a way likely to result in significantly different impacts on environmental values compared to the impacts on the values previously approved under the PRCP Schedule. No assessment or reasoning has been provided to support this change.</p>	<p><i>Version 3.00</i>) (PRCP Guideline). This includes:</p> <ul style="list-style-type: none"> • Information specified in section 3 Rehabilitation planning part of the PRCP Guideline, including design for closure for features subject to the change. • Information outlined in section 3.2 Post-mining land use of the PRCP Guideline, including outcome of consultation with the community regarding the proposed changed and consideration of PMLU options (options analysis). • Information specified in section 3.5 Community consultation of the PRCP Guideline to demonstrate the proposed changes have undergone community consultation and details of the outcomes of this consultation have been considered. • Information outlined in section 3.6 Rehabilitation and management methodology of the PRCP Guideline. This information is required to demonstrate the proposed PMLU, subject of the change, can achieve a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP schedule. It is noted, the proposed milestone criteria in the PRCP Schedule have not been 	<p>however the total areas within the schedule were incorrect.</p> <p>The PRCP schedule has been amended to accurately reflect the disturbance areas discussed in the PRCP. There is no change to the way in which the PMLU is to be achieved and no change to potential impacts. The correct areas were assessed in the PRCP, however were incorrectly transcribed to the spatial data and schedule. The current PRCP assessment remains valid.</p> <p>Proposed new disturbances, related to the wind farm project, have been assigned a new RA of RA7. Existing access tracks are currently captured in RA5. These tracks will be widened for the project and have been reassigned to RA7 for completeness.</p> <p>A PMLU assessment was completed, and it was determined that native habitat was the most suitable PMLU for the entire Knapdale Range (RA1, RA6 and RA7). This PMLU is supported by community consultation.</p>	
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		<p>amended since the approved PRCP Schedule.</p> <p>Considering this, further information is required to demonstrate the rehabilitation methodologies are still fit for purpose for the proposed amendments.</p> <ul style="list-style-type: none">• A detailed risk assessment (section 3.7 of the PRCP Guideline), in relation to the proposed changes.• Information specified in section 3.8 Monitoring and maintenance of the PRCP Guideline to demonstrate the monitoring measures have been considered in relation to the proposed changes and the monitoring regimes are able to achieve the milestone criteria. <p>Information outlined in section 4 PRCP schedule of the PRCP Guideline. Given the proposed changes, the final site design maps, rehabilitation timing and relevant milestone criteria may require amending. If changes are proposed to criteria, this will require justification for the changes which are supported by relevant evidence.</p>		
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21	<p><u>Field trials – Condition PRCP5</u> It is proposed to amend condition PRCP5 of the PRCP Schedule to allow field trials to commence within 5 years of the PRCP approval as opposed to 3 years. The justification provided by DRM is ‘the timeline is proposed based on the long life of the operation with anticipated closure being 2048. Upon assessment, this life of mine timeline has not changed since the previous PRCP approval, therefore it is considered further justification for the extension of the rehabilitation trials is required.</p>	<p>Provide justification for the proposed extension relating to the commencement of field trials under condition PRCP5.</p>	<p>The proposed amendment does not relate to a change in mine life.</p> <p>The proposed amendment is a result of ongoing review of the approved PRCP schedule with a view to optimise outcomes.</p>	PRCP
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Appendix B – Water Management Strategy

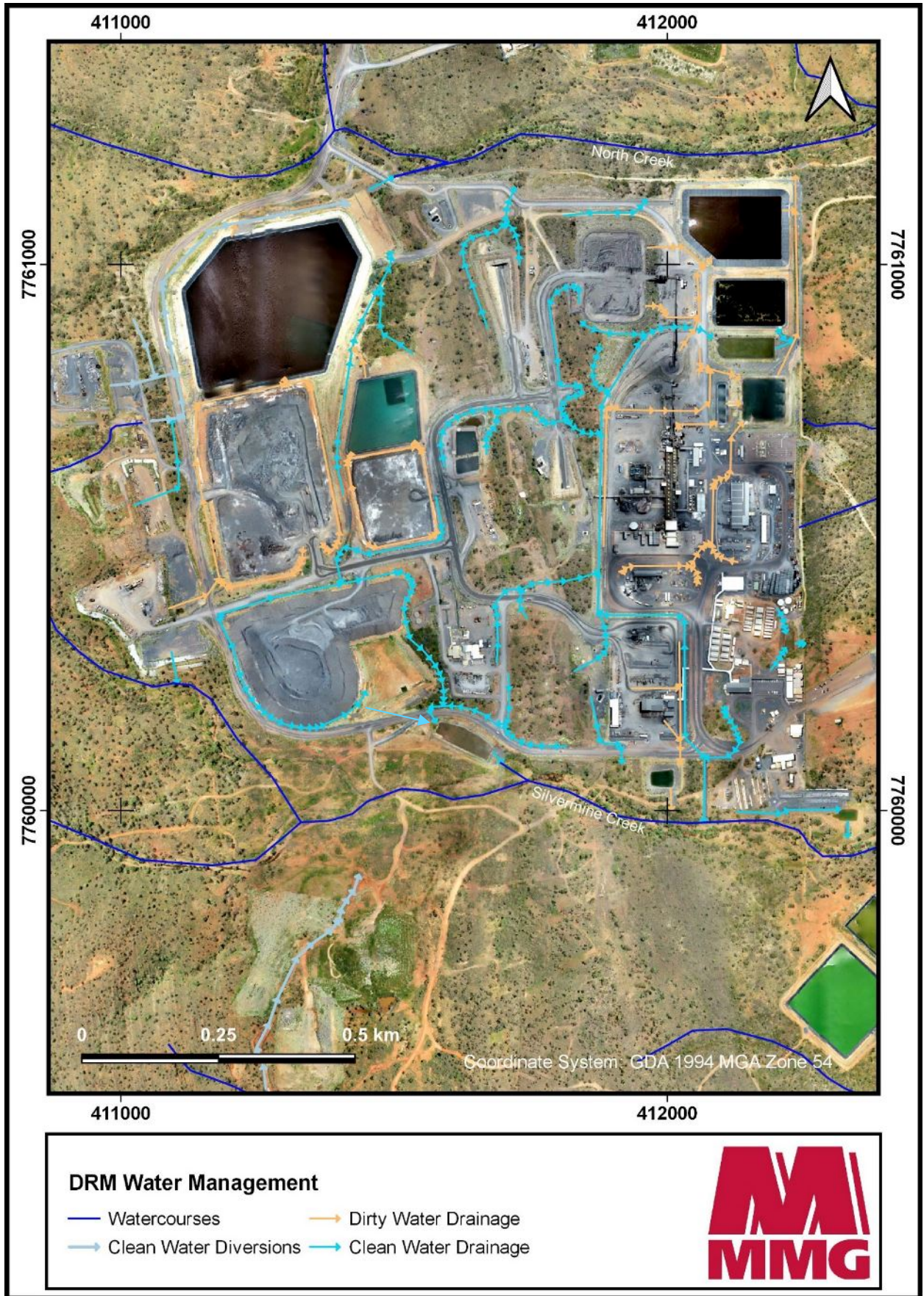


Figure 3: DRM Clean Water Diversions and Drainage Systems

Appendix C – Technical Memorandum, PMLU Options Analysis

Technical Memorandum

TO	Mikaela Dry – Senior Environmental Advisor	COMPANY	Department of Environment, Science and Innovation
FROM	Madison Jackson	OFFICE	Wulguru Technical Services Pty Ltd
EMAIL	madison@wulgurutechservices.com.au	PHONE	0407 491 814
PROJECT TITLE	Dugald River Mine – Progressive Rehabilitation and Closure Plan (PRCP)		
SUBJECT	Post Mine Land Use Options Analysis		
DATE	23 May 2024	REF	2023.03002

1. Introduction

MMG Dugald River Pty Ltd (MMG) have an approved Progressive Rehabilitation and Closure Plan (PRCP-EPML00731213-V1) for activities conducted at the Dugald River Mine (DRM). A PRCP amendment application was submitted to the Department of Environment, Science and Innovation (DESI) on 8 August 2024. This amendment proposed additional disturbance related to MMG’s proposed wind farm project. The PRCP was revised to incorporate the additional disturbance.

The previous PRCP schedule and spatial data incorrectly assigned rehabilitation areas (RA) and post mining land uses (PMLUs). The PRCP was revised to correct erroneous disturbance areas. This technical memorandum provides additional information to justify this proposed amendment.

2. Context

The RA’s and PMLUs currently approved in the PRCP schedule are presented in Table 1. Currently, existing light vehicle access tracks that will be utilised for the wind farm are included in *RA5 – Mining and processing area*, with a PMLU of low intensity grazing. These light vehicle access roads will be widened to support the proposed wind farm project. In the proposed PRCP, these access tracks have been removed from RA5 and assigned to a new RA, *RA7 – Renewable Energy Infrastructure*, along with the proposed turbine pads.

The naturally steep slopes of the Knapdale Range inhibit cattle from accessing these areas for grazing. This inherently makes the current PMLU of low intensity grazing, unsuitable. The Knapdale Range cannot sustainably support a PMLU of grazing. RA7 has therefore been assigned a PMLU of native ecosystem.

Whilst preparing the revised PRCP, it was identified that incorrect disturbance areas had been used in the original PRCP schedule and spatial data. In the previous PRCP, a number of RA5 features were incorrectly included in the spatial data for RA1. The PRCP accurately described the features, rehabilitation methods and milestone criteria for RA5, however the total areas within the schedule were transcribed incorrectly.

The PRCP schedule has been amended to accurately reflect the disturbance areas discussed in the PRCP. There are no changes to the way in which the PMLU is to be achieved and no change to potential impacts to environmental values. The correct areas were assessed in the PRCP, however were incorrectly transcribed to the spatial data and schedule. The current PRCP assessment remains valid.

The following changes were made in the amended PRCP:

- RA1 incorrectly included disturbance features for RA5 within the spatial mapping and PRCP schedule. The PRCP schedule has been revised to be consistent with the PRCP.
- The area assigned to RA2 in the schedule did not previously include all approved borrow pits permitted on the EA. The PRCP schedule has been revised to be consistent with the PRCP and EA maximum disturbance allowance.
- RA3 was calculated based on on-ground disturbance, not the maximum disturbance allowance permitted in the EA. The PRCP schedule has been revised to be consistent with the PRCP and EA maximum disturbance allowance.
- Access roads for the wind farm project have been removed from RA5 and assigned to RA7.
- RA6 was calculated based off on-ground disturbance, not the maximum disturbance allowance permitted in the EA. The PRCP schedule has been revised to be consistent with the PRCP and EA maximum disturbance allowance.
- RA7 - Exploration has been removed as a RA.
- RA7 - Wind farm infrastructure has been added.

The proposed revised rehabilitation areas and PMLUs are presented in Table 2.

Table 1. Current RAs and PMLUs

Relevant Activity	Area (ha)	PMLU
RA1 – Ancillary infrastructure and services	179.88	Native ecosystem
Accommodation village		
Pipeline and accommodation village road		
RA2 – Borrow pits and stockpiles	21.71	Low intensity grazing
TSF borrow pit A		
Topsoil stockpile A		
Topsoil stockpile B		
RA3 – Dams and diversion structures	31.63	Low intensity grazing
Sediment dams		
Containment dam		
PAF pad runoff dams		
Underground mine water collection dam		
STP dams		
ROM runoff dam		
Process plant runoff dam		
Mine workshop runoff dam		
Raw water dam		
Diversion drains		
RA4 - Mineralised waste	20.11	Low intensity grazing
Temporary ore laydowns		
PAF WRD		
NAF WRD		
RA5 – Mining and processing area	19.52	Low intensity grazing
ROM pad		
ROM haul road		
Processing plant and conveyor area		
Underground portal and support infrastructure		
Switchyard		
Office and administration services		
Sewage treatment plant		
Workshop and vehicle maintenance		
Laydowns		
Raw water pipeline		
Core yard		
Emergency response training		
Explosives magazine		
Communication tower		
Barmingo project area		
Powerlines		
Roads and tracks		
RA6 - TSF	207	Native ecosystem

Relevant Activity	Area (ha)	PMLU
TSF and seepage collection pond		
TSF pipelines and roads		
TSF topsoil stockpile		
RA7 - Exploration	8.32	Low intensity grazing
Drill holes and pads		

Table 2. Proposed RAs and PMLUs

Rehabilitation Area	Area (ha)	PMLU
RA1 – Ancillary infrastructure and services	30.3	Native ecosystem
Accommodation village		
Pipeline and accommodation village road		
RA2 – Borrow pits and stockpiles	43.34	Low intensity grazing
Borrow Pit/Topsoil Stockpile, Borrow Pit A, and Topsoil Stockpile A		
Borrow Pit B		
Borrow Pit C1		
Borrow Pit C2		
Access Road Borrow Pit(s)		
TSF Borrow Pit A		
Topsoil Stockpile B		
Spoil Stockpile 1		
Spoil Stockpile 2		
RA3 – Dams and diversion structures	41.6	Low intensity grazing
Diversion Drains		
Stage 1 PAF PAD Run Off Dam		
Stage 2 PAF PAD Run Off Dam		
Underground Mine Water Collection Dam		
STP Dam Stage 1		
STP Dam Stage 2		
ROM Area Run Off Dam		
Raw Water Dam		
Sediment Dam A		
Process Plant Run Off Dam		
Containment Dam		
Mine Workshop Run Off Dam		
Sediment Dam C		
Sediment Dam D		
Sediment Dam F		
Sediment Dam G		
RA4 - Mineralised waste	20.2	Low intensity grazing
PAF WRD		

Rehabilitation Area	Area (ha)	PMLU
NAF WRD		
RA5 – Mining and processing area	201.59	Low intensity grazing
ROM pad		
ROM haul road		
Processing plant and conveyor area		
Underground portal and support infrastructure		
Switchyard 1 and 2		
Construction Laydown, Warehouse, Mobile Equipment Laydown and Core Shed		
Office and administration services		
Exploration camp		
Sewage treatment plant		
Workshop and vehicle maintenance		
Raw water pipeline		
Emergency response training		
Explosives magazine		
Communication tower		
Powerlines		
Roads and tracks		
Groundwater infrastructure		
Fuel storage		
West laydown area		
Waste transfer station		
Temporary waste laydown		
Laydown		
Temporary laydown east		
RA6 - TSF	216.9	Native ecosystem
TSF and seepage collection pond		
TSF pipelines and roads		
TSF Borrow Pit B/TSF Stockpile		
RA7 – Renewable Energy Infrastructure	68.35	Native ecosystem
Wind farm pads and ancillary infrastructure		
Roads and tracks (Knapdale Range)		
Laydown west		

3. PMLU Options Assessment

The following two PMLUs have been assessed for the proposed new disturbance for the wind farm project:

1. Low intensity grazing (currently approved for existing access tracks)

2. Native ecosystem (proposed)

For a proposed PMLU to be accepted, the PRCP must demonstrate that the land can be rehabilitated to a stable condition, defined in Section 111A of the EP Act as being safe and structurally stable, non-polluting and can sustain a PMLU. The proposed PMLU has been assessed against these criteria in Table 1.

The *Guideline – Progressive Rehabilitation and Closure Plans (PRC Plans)* defines additional considerations to assess if a proposed PMLU is suitable. These additional considerations have been assessed in Table 2.

The PMLUs have been assessed for their suitability to provide a safe, stable, non-polluting landform, considering the requirements of the *Environmental Protection Regulation 2019* and the *Guideline – Progressive Rehabilitation and Closure Plans (PRC Plans)*. A PMLU of native ecosystem was determined to be the highest rank and preferred PMLU across the entire Knapdale Range (RA1, RA6 and RA7).

Table 3. Achievement of a safe, stable, non-polluting landform that can sustain a PMLU

	Low intensity grazing - current	Native ecosystem - proposed
Safe	<p>The Knapdale Range is not accessible to cattle. The PMLU cannot practically be achieved.</p> <p>Cattle may present an erosion risk to lower slopes as they attempt to access.</p> <p>Score = 1</p>	<p>Native wildlife are generally more agile and will be able to safely traverse the steep slopes of the embankments.</p> <p>Native wildlife are generally less likely to produce erosive forces.</p> <p>The purple necked rock wallaby is known to inhabit the steep slopes and rock terrain of the Knapdale Ranges.</p> <p>Score = 3</p>
Stable	<p>Native grass species will increase soil development assisting with stability.</p> <p>Cattle may present an erosion risk to lower slopes as they attempt to access the range.</p> <p>Score = 1</p>	<p>Native shrub and tree species will increase soil development assisting in stability.</p> <p>Native wildlife are less likely to produce erosive forces.</p> <p>Score = 3</p>
Non-Polluting	<p>Cattle may present an erosion risk to lower slopes as they attempt to access the range.</p> <p>No contaminants are expected to be present on RA7. If present, all contaminants will be removed on closure.</p> <p>Score = 2</p>	<p>Native wildlife are less likely to produce erosive forces. No contaminants are expected to be present on RA7. If present, all contaminants will be removed on closure.</p> <p>Score = 2</p>
Ability to sustain the PMLU	<p>Livestock will not be able to traverse the steep slopes resulting in underutilisation of range.</p> <p>Pastoralists may find land management activities unsustainable due to access limitations.</p>	<p>Once vegetation is established, landform will support a self-sustaining native ecosystem with no intervention.</p>



	There is no natural water source for cattle on the Knapdale Range. Score = 1	Score = 3
Total Score	5	11
Rank	2	1

Table 4. Options Analysis

Considerations from the PRCP Guideline	Low intensity grazing - current	Native ecosystem - proposed
any regulatory constraints on, or objectives for, the proposed land use (e.g. Indigenous Land Use Agreements, site management plan (contaminated land), local and regional land use plans, endangered species, or registered heritage places)	There are no regulatory constraints on, or objectives for a PMLU of grazing. Score = 3	There are no regulatory constraints on, or objectives for a PMLU of native ecosystem. Score = 3
physical constraints (e.g. slopes, voids, geology)	Cattle may not be able to traverse steep slopes of the Knapdale Range. Steep slopes may affect ongoing land management activities for future pastoralist, eg mustering. Score = 1	No physical constraints considering the final landform proposed. Score = 3
chemical characteristics (e.g. residual contamination from tailings or other waste disposal)	No residual contamination is expected for RA7. Score = 3	No residual contamination is expected for RA7. Score = 3
available rehabilitation methods, including best practice (e.g. backfill, profile, capping)	Infrastructure will be removed, and waste disposed. The areas will be ripped and seeded with appropriate species. There is no requirement for significant landform development. No contaminants is expected in this RA, and there is no requirement to cap landforms.	Infrastructure will be removed, and waste disposed. The areas will be ripped and seeded with appropriate species. There is no requirement for significant landform development. No contaminants is expected in this RA, and there is no requirement to cap landforms

	Score = 3	Score = 3
relative costs of each rehabilitation option	Ongoing costs to remediate erosion caused by livestock on the lower slopes. Score = 2	Native ecosystem seeding is more expensive however requires less ongoing maintenance costs . Score = 3
potential economic benefits of each option for the community or landholder (e.g. tourism, public use, grazing)	Promotes an economic outcome and increases profitability of future pastoralist with additional land available for grazing. However the range may not be suitable for livestock access and ongoing maintenance is required. Increased difficulty and cost association with pastoral activities. Score = 3	A self-sustaining native ecosystem with reduced risk and cost associated with long-term maintenance for landholder however no additional land is made available for economic activity. Score = 2
potential environmental benefits of each option; (e.g. create wildlife corridors, revegetation)	Provides modified habitat for native species. Score = 1	Provides a wildlife habitat and corridors. Revegetation of native ecosystems in areas that have been impacted by significant grazing impacts. Increased rate of soil development. Provides suitable habitat for the PNRW, known to inhabit the Knapdale Range. Score = 3

potential social benefits of each option (e.g. recreational use, public amenity, employment)	Contribute to minor increase in employment opportunities in pastoral activities. Score = 2	Improves visual amenity with the surrounding environment. Score = 1
compatibility with surrounding land uses (e.g. agriculture, ecosystem)	Compatible with surrounding land use of grazing and historic mining however Knapdale Range may be underutilised. Score = 2	Provides local wildlife habitat. Score = 1
the land use before the mining activity commenced	The Knapdale Range has not previously been utilised for grazing, as it is not suitable. Score = 1	The PMLU of native ecosystem and habitat is consistent with the pre-mining land use of the area. Score = 3
options for retaining/transitioning infrastructure and utilities such as road and rail transport accessibility as well as power, communications and water management systems.	N/A - All mine related infrastructure decommissioned.	N/A - All mine related infrastructure decommissioned.
Total score	21	25
Rank	2	1

4. Stakeholder Engagement

In 2023, MMG consulted with the landholders and Kalkadoon People regarding the PRCP, and the proposed changes to the post mining land use on the Knapdale Range. Both parties were supportive of the proposed post mining land uses across the entire Project. The minutes from the consultation is provided in Appendix I and Appendix J of the PRCP.

5. Conclusion

Rehabilitation areas have been reviewed as part of ongoing review and improvement of the PRCP. The PRCP schedule has been amended to accurately reflect the maximum disturbance areas permitted in the EA and assessed within the PRCP.

Proposed new disturbances, related to the wind farm project, have been assigned a new RA of RA7. Existing access tracks are currently captured in RA5. These tracks will be widened for the project and have been reassigned to RA7 for completeness. A PMLU assessment was completed, and it was determined that native habitat was the most suitable PMLU for the entire Knapdale Range (RA1, RA6 and RA7). This PMLU is supported by community consultation.