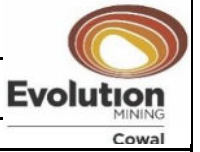


APPENDIX D

Environmental risk assessment



Appendix E - Proposed Environmental Management Framework Risk Assessment



Mine area	Aspect	Risk discription	Loss Scenario	Unmitigated risk			Key existing and/or proposed mitigation measures	Residual Risk		
Construction	Ground disturbance	Unauthorised or uncontrolled ground disturbance	Unapproved disturbance and impact on Aboriginal heritage and biodiversity including threatened species and communities.	Major	4	Very high	<p>TE09 - The boundary of the disturbance area will be clearly marked or fenced to prevent accidental damage to adjoining remnant native vegetation during vegetation clearance activities or construction works. The importance of respecting clearing and operation boundaries to be included in site inductions for all personnel. Areas of habitat containing retained Austral Pillwort (i.e. within the Project area but outside the additional disturbance footprint) are to be identified and marked out as a no go zone.</p> <p>TE05 - The approved BMP and CEMP will detail CGO / construction staff training requirements to ensures personnel are aware of the sensitive environment they are working in and the measures to minimise impacts including as relevant:</p> <ul style="list-style-type: none"> •Construction crew are to undertake training prior to commencement of work to inform them of sensitive biological areas, including threatened and migratory species and ecological communities. They are to be informed of the areas approved to be disturbed, delineated no go areas and the protocol to follow in the case of an unexpected threatened species find. •Education of staff during induction about abiding by above driving and vehicle speed rules to reduce fauna strike risk, including periods when vehicle strikes are more likely based on fauna behaviour (eg sunrise and sunset). •Staff working in the IWL are to undertake a wildlife observation training course, including bird identification. <p>GEN03 - Procedures to record, handle and respond to complaints, non-compliances and incidents will be documented within the Project's EMS and implemented for the life of the Project.</p>	Major	2	Moderate
Construction	Construction of LPB	Construction of the expanded LPB while Lake Cowal is inundated resulting in changes to lake water quality.	Potential impacts on aquatic and terrestriail ecology and surface water quality	Major	4	Very high	<p>SW01 - A DPHI approved CEMP will be prepared prior to commencement of the LPB and UCDS construction. The CEMP will include design details for the expanded Lake Protection Bund (LPB), construction activities, environmental management, monitoring and an adaptive management framework. The CEMP will include a trigger action response plan (TARP) for assessing water quality, including contingency measures, such as changes to water treatment.</p> <p>SW05 - During and for a period post construction of the expanded LPB, the intensity of Lake Cowal surface water monitoring would be increased. The frequency and monitoring locations would be discussed and agreed with DPHI / EPA and documented in the CEMP.</p> <p>SW06 - If the LPB is constructed while Lake Cowal is fully or partially inundated, dewatering may be required. In this case, water will be pumped from the mine side of the LPB into Lake Cowal. A detailed de-watering plan (DWP) will be included in the CEMP. Before and during discharge of lake water captured behind the expanded LPB, the following monitoring of discharge water would occur and water treated as required:</p> <ul style="list-style-type: none"> •Continuous monitoring of: pH, EC, turbidity, dissolved oxygen. •Monitoring of suspended solids, alkalinity, total iron, calcium, magnesium, potassium, sodium, chloride, sulphate, total phosphate, ortho phosphate, ammonium, nitrate and nitrite. •Monitoring of the total and dissolved metals: arsenic, cadmium, copper, chromium, molybdenum, mercury, nickel, lead, antimony, selenium, silver and zinc. <p>Water will only be discharged if it meets the agreed site specific guideline values (SSGV) derived in accordance with ANZG (2018) established using baseline water quality data from Lake Cowal.</p> <p>The frequency and monitoring locations would be discussed and agreed with DPHI / EPA and documented in a dewatering management plan within the CEMP.</p> <p>SW07 - The risk to lake water quality (from the placement of inert waste rock directly into Lake Cowal during initial construction of the lake isolation bund) will be mitigated by stockpiling the waste rock material to be used within the CGO existing disturbance area and undertaking a geochemical testing program to confirm that the material is inert (ie non-acid forming, not sodic/dispersive or saline and contains relatively low soluble environmentally significant constituents). The geochemical testing program will be detailed in the CEMP.</p> <p>SW08 - A continuous silt curtain will be established around the construction zone of the LPB, both inside and outside the LPB. The silt curtain is to be installed prior to construction to trap fine sediment and minimise / prevent suspended material migrating into the main body of the lake.</p> <p>AE02 - A Fauna Management Protocol (FMP) within the CEMP will be prepared detailing leading practices for capturing and releasing aquatic and terrestrial wetland fauna back into Lake Cowal from construction work areas or during LPB dewatering (if required). The FMP will include that fauna salvage will be undertaken by experienced and qualified ecologists and discuss capture and release methods (same as TE17).</p>	Major	2	Moderate

Construction	Construction of LPB	Construction noise and visual impacts on wetland birds.	Potential adverse noise and visual impacts on wetland birds including threatened and migratory species.	Moderate	4	High	<p>SW01 - A DPHI approved CEMP will be prepared prior to commencement of the LPB and UCDS construction. The CEMP will include design details for the expanded Lake Protection Bund (LPB), construction activities, environmental management, monitoring and an adaptive management framework. The CEMP will include a trigger action response plan (TARP) for assessing water quality, including contingency measures, such as changes to water treatment.</p> <p>TE08 - Impacts where there is uncertainty over its likelihood of occurrence, and the level of impact that may occur, are best dealt using by adaptive management techniques. Table 8.4 of the BDAR details adaptive management measures that should be adopted in these situations. It should be noted that many of these adaptive management measures, set out in Table 8.4 of the BDAR, have been, or continue to be used already used at CGO to reduce, minimise or eliminate impacts. Measures include monitoring of :</p> <ul style="list-style-type: none"> •noise impacts to threatened/ migratory waterbirds in Lake Cowal during construction and operation to see how the birds react •noise impacts to threatened/ migratory waterbirds in Lake Cowal during blasting to see how the birds react •potential impacts on fauna associated with IWL during operation, including cyanide casualties •cyanide concentrations within the IWL and other relevant monitoring points to ensure levels stay within guidance levels •potential impact of dust and particulate matter on threatened/ migratory waterbirds in Lake Cowal •impacts of construction/ operations on retained Austral Pillwort adjacent to additional disturbance area •potential impacts on fauna associated with IWL during operation, including cyanide. <p>TE04 - Where feasible, noisy construction activities will be scheduled to occur away from the northern side of the LPB construction area (ie area closest to known waterbird breeding areas) during the October to March period, when waterbird breeding and migratory shorebird visitation mostly occurs.</p> <p>TE05 - The approved BMP and CEMP will detail CGO / construction staff training requirements to ensures personnel are aware of the sensitive environment they are working in and the measures to minimise impacts including as relevant:</p> <ul style="list-style-type: none"> •Constructions crew are to undertake training prior to commencement of work to inform them of sensitive biological areas, including threatened and migratory species and ecological communities. They are to be informed of the areas approved to be disturbed, delineated no go areas and the protocol to follow in the case of an unexpected threatened species find. •Education of staff during induction about abiding by above driving and vehicle speed rules to reduce fauna strike risk, including periods when vehicle strikes are more likely based on fauna behaviour (eg sunrise and sunset). •Staff working in the IWL are to undertake a wildlife observation training course, including bird identification. <p>NV04 - The following measures will be included in the CEMP to manage construction noise:</p> <ul style="list-style-type: none"> •regular reinforcement (such as at toolbox talks) of the need to minimise noise •review and implementation of feasible and reasonable mitigation measures to reduce noise •avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby residents •where possible, avoid the use of equipment that generates impulsive noise •notify potentially affected residents prior to the commencement of construction works. 	Moderate	3	Moderate
Construction and operations	Erosion and sediment control	Poor erosion and sediment control practices or failure to recognise and mitigate erosion leading to erosion of key landforms.	Erosion of key landforms leading to instability of landforms or impacts on receiving environment.	Major	4	Very high	<p>SL01 - Erosion and sediment controls will be designed, installed and maintained in accordance with the best management practice guidance series Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008).</p> <p>SL06 - To mitigate potential erosion impacts, the following mitigation measures should be adopted:</p> <ul style="list-style-type: none"> •minimise the area disturbed and restrict access to non-disturbed areas •rehabilitate roads and hardstand areas no longer required for operations •avoid soil stripping operations during particularly wet or dry periods, to minimise compaction during soil excavation and use ameliorants where required (e.g. gypsum application to dispersive soils) •use of silt fences and temporary sediment traps to minimise sediment movement •use of diversion banks, channels and rip-rap structures to divert surface water around disturbed areas and control runoff velocity •use of spoon drains, table drains and concrete culverts to control surface runoff from access roads •leave more saline and dispersive soil horizons in-situ beneath mine landforms, where possible. <p>RE05 - Identified erosion hazard areas will be reshaped where possible. In instances where reshaping is not possible, as well as addressing any related groundwater and additional land surface protection, beyond the CGO soil-rock matrix cover system will be implemented to include one or more of the following:</p> <ul style="list-style-type: none"> •chemical treatment (eg using lime / gypsum) •revegetation using species such as vetiver grass <i>Chrysopogon zizanioides</i> •use of geofabric coverings •rock armouring. <p>RE06 - Any legacy landform features such as berms and bullnoses, identified by erosion and landform evolution modelling to increase erosion beyond acceptable rates will be removed or modified where possible. If not, Evolution will consider increasing the proportion of rock to soil in the rock/soil matrix.</p> <p>RE04 - A staged open pit closure strategy will be detailed in the DPHI approved Rehabilitation Strategy which outlines a staged work program that will ensure a viable, stable final landform is developed for the open pits prior to mine closure. The staged work program will be actively progressed over the mine life using data and knowledge gathered in RE02 and RE03.</p>	Major	3	Moderate

Construction and operations	Fire management	Uncontrolled fire (either natural or caused by mine activities).	Health and safety impacts on CGO workforce, impacts on biodiversity, mine activities and/or local infrastructure	Major	4	Very high	<p>HM05 - The design and construction of the relocated explosive compound and magazine will comply with AS 2187.1:1998 Explosives – Storage, Transport and Use. Storage will be in accordance with Clause 84(2)(c) of the Explosives Regulation, 2013.</p> <p>HM06 - All storage facilities have been designed in accordance with relevant Australian Standards and with the protection of the environment as well as health and safety in mind. Safety features that have been incorporated into the design of reagent storage areas include:</p> <ul style="list-style-type: none"> •installation of ventilation systems in areas where dispensing and mixing of chemicals occurs •installation of drain valves and pipework to facilitate the removal of rainwater from bunded areas •provision of portable pumps within the processing area for use in pumping any chemical spills within bunded areas back to the storage tanks or emergency holding tanks •provision of appropriate fire protection facilities compatible with the volatility and flammable properties of the stored reagents/chemicals •provision of eyewash and emergency showers for process plant workers to be used for immediate wash down should an accident occur. <p>BF01 - A Bushfire Management Plan will be prepared for the Project. The Plan will be developed in consultation with the RFS and Bland Temora Bushfire Management Committee.</p> <p>BF02 - Asset Protection Zones (APZ) will be installed and managed as inner protection areas for the life of the Project including a minimum APZ of 10 m around new Project infrastructure and an APZ of 50 m where practical.</p> <p>BF03 - Management of APZ will manage fuel loads as required. The Bushfire Management Plan will guide landscape and APZ management, including monitoring and managing potential fuel loads surrounding the Project area.</p> <p>BF04 - Any new buildings associated with the Project will reduce the risk of ignition from a bushfire in accordance with AS3959-2018</p> <p>BF05 - Fire water supplies at CGO will continue to be maintained and will be detailed in the Project's Bushfire Management Plan.</p> <p>BF06 - The main CGO access, alternate access and internal site roads will be maintained to provide for safe reliable, and unobstructed passage by a Cat 1 firefighting vehicle.</p>	Major	3	Moderate
LPB	Interaction between Lake Cowal and CGO	Breach of lake protection bund. Flood event and/or extreme weather.	Inrush to CGO from Lake Cowal. Habitat degradation, contamination of lake.	Extreme	2	High	<p>GEN02 - The expanded LPB will continue to be designed, constructed and maintained in accordance with ANCOLD Guidelines including ongoing geotechnical monitoring using visual inspections, InSAR satellite movement.</p> <p>SUB01 - A qualified structural or civil engineer will be engaged to review the following detailed subsidence forecasts for all pieces of major mining-related infrastructure, including but not limited to the final LPB, major plant in the processing precinct and tailings storage facilities etc, in order to confirm that the forecast strains, displacements and angular distortions do not exceed the service limits of any assets.</p> <p>SUB02 - The underground mine design will be reviewed and where necessary updated to ensure that no stopes are excavated beneath the open pit with a fresh rock crown pillar height of less than 20-30 m (i.e. maintain a minimum stope width to fresh rock crown pillar ratio of 1:2). Where any non-compliant stopes do exist in the mine plan it is suggested that they should be removed. The recommendations made in Beck Engineering 2022 (Appendix E of the Modification Report for SSD 10367 Mod 1) and Beck Engineering 2020 (Appendix E of the EIS for SSD 10367) will be generally followed as relevant to the current mine design.</p> <p>SUB03 - When backfilling the E46 open pit, the fill material types used and the sequence of the deposition will be considered in order to avoid creation of voids within the fill, which might lead to subsidence over time. Ideally, fill material(s) with minimal porosity should be used to backfill the E46 pit.</p>	Extreme	1	Moderate
IWL	Water	Release to the environment via seepage, overtopping, structural failure.	Contaminated groundwater, surface water.	Major	3	High	<p>GEN01 - The IWL, including IWL northern expansion, will continue to be designed, constructed and operated in accordance with ANCOLD and NSW Dam Safety Requirements</p> <p>GW01 - A revised Water Management Plan (WMP) will be prepared in consultation with NSW DCCEEW and EPA and approved by DPHI prior to the commencement of Project operations. The revised WMP will include the outcomes of the revised Groundwater impact assessment (Appendix G of this Submissions Report) and any additional related approval requirements.</p> <p>GW03 - Groundwater level monitoring at Project monitoring bores will be undertaken through the Project life to monitor and confirm model predictions and assess groundwater quality trends. The monitoring network is established and relates to groundwater monitoring in aquifers beneath the ML area and regionally within the Bland Creek Palaeochannel aquifer.</p> <p>SW02 - A revised Water Management Plan (WMP) will be prepared in consultation with NSW DCCEEW and EPA and approved by DPHI prior to the commencement of Project operations. The revised WMP will include the outcomes of the surface water assessment (Appendix G of the EIS) and any additional related approval requirements.</p> <p>SW03 - Surface water monitoring will continue to be undertaken at specific areas within the Mining Lease area including the contained water storages (existing and proposed), UCDS, ICDS, open pit(s) and TSFs/IWL. The monitoring program will be revised to also include monitoring of total and dissolved chromium. It is also proposed that monitoring of metals includes contained water storages D1 and D4.</p> <p>SW04 - Surface water monitoring will continue to be undertaken in Lake Cowal (when lake water levels permit) to enable evaluation of water quality data against records of baseline monitoring.</p> <p>SW12 - The site water balance model will be updated on a regular basis to maintain the model as a reliable tool for assessing the effectiveness of the site water management system. At a minimum this should occur every three years. Annual forecast water balance modelling will inform near term water supply reliability for the Project as it progresses.</p> <p>SW13 - The results from the monitoring programs will continue to be maintained in a database for review and assessment and used to assist in the management of the quality and quantity of surface and groundwater within and around CGO. The monitoring report results and any specialist interpretations of trends observed in the monitoring data will be reported as part of the annual review process.</p> <p>HM04 - Cyanide monitoring will continue and include:</p> <ul style="list-style-type: none"> •monitoring of CNWAD levels of the aqueous component of the tailings slurry stream at the process plat •monitoring CNWAD levels in the decant water of the tailings storages/IWL an on-site laboratory for quickly establishing CNWAD levels in the liquid at the process plant and in the decant ponds for monitoring purposes •a monitoring regime for the detection of cyanide movement beneath and adjacent to the IWL 	Major	2	Moderate

Mining and processing operations	Water management	Water use exceeds allocated and licenced entitlement and/or use predicted in the EIS	Water security for CGO, local water users	Major	3	High	<p>SW02 - A revised Water Management Plan (WMP) will be prepared in consultation with NSW DCCEEW and EPA and approved by DPHI prior to the commencement of Project operations. The revised WMP will include the outcomes of the surface water assessment (Appendix G of the EIS) and any additional related approval requirements.</p> <p>SW12 - The site water balance model will be updated on a regular basis to maintain the model as a reliable tool for assessing the effectiveness of the site water management system. At a minimum this should occur every three years. Annual forecast water balance modelling will inform near term water supply reliability for the Project as it progresses.</p> <p>GW01 - A revised Water Management Plan (WMP) will be prepared in consultation with NSW DCCEEW and EPA and approved by DPHI prior to the commencement of Project operations. The revised WMP will include the outcomes of the revised Groundwater impact assessment (Appendix G of this Submissions Report) and any additional related approval requirements.</p> <p>GW02 - Evolution will implement make good provisions if water supply is significantly affected at private bores and an investigation confirms the Project is the cause of the impact</p> <p>GW03 - Groundwater level monitoring at Project monitoring bores will be undertaken through the Project life to monitor and confirm model predictions and assess groundwater quality trends. The monitoring network is established and relates to groundwater monitoring in aquifers beneath the ML area and regionally within the Bland Creek Palaeochannel aquifer.</p> <p>GW04 - Groundwater extraction from the Bland Creek Palaeochannel borefield will continue to be managed via groundwater trigger levels developed in consultation with NSW DCCEEW and other water users within the BCP, including stock and domestic users and irrigators. The revised WMP will include procedures to manage extraction from the Bland Creek Palaeochannel Borefield, including ceasing of pumping if required to meet the trigger levels. Should the groundwater levels look to be approaching the trigger levels, alternate water supplies would be considered such as the Lachlan River water entitlements.</p> <p>GW05 - The need for groundwater model updates will be assessed every three years based on evaluation of groundwater monitoring data and findings of impact verification.</p>	Major	2	Moderate
Underground mining	Subsidence	Inadequate ground control and backfill practices.	Subsidence of ground surface and lake bed as a result of mining activities.	Major	3	High	<p>SUB01- A subsidence monitoring program will be implemented for the life of the Project inclusive of detailed measures and controls that will be implemented to avoid and/or minimise subsidence, through management of risk associated with stope overbreak and/or stope failure, a risk assessment and trigger action response plan (TARP) to identify and manage stope instability and an adaptive management process.</p> <p>SUB02 - A qualified structural or civil engineer will be engaged to review the following detailed subsidence forecasts for all pieces of major mining-related infrastructure, including but not limited to the final LPB, major plant in the processing precinct and tailings storage facilities etc, in order to confirm that the forecast strains, displacements and angular distortions do not exceed the service limits of any assets.</p> <p>SUB03 - The underground mine design will be reviewed and where necessary updated to ensure that no stopes are excavated beneath the open pit with a fresh rock crown pillar height of less than 20-30 m (i.e. maintain a minimum stope width to fresh rock crown pillar ratio of 1:2). Where any non-compliant stopes do exist in the mine plan it is suggested that they should be removed. The recommendations made in Beck Engineering 2022 (Appendix E of the Modification Report for SSD 10367 Mod 1) and Beck Engineering 2020 (Appendix E of the EIS for SSD 10367) will be generally followed as relevant to the current mine design.</p> <p>SUB04 - When backfilling the E46 open pit, the fill material types used and the sequence of the deposition will be considered in order to avoid creation of voids within the fill, which might lead to subsidence over time. Ideally, fill material(s) with minimal porosity should be used to backfill the E46 pit.</p> <p>SUB06 - Rock mass characterisation data will continue to be collected and interpreted from the open pit and underground mining domains, especially regarding the strength properties of the various lithologies as well as the location, orientation and characteristics of the geological structures.</p>	Major	2	Moderate

Mining and processing operations	Hazardous Chemicals/ Dangerous Goods Storage and use including Cyanide	Spill of hazardous chemical (including reagents, process liquid, hydrocarbons etc) outside of containment infrastructure	Impacts to Surface water/groundwater Soil contamination Safety risks to Evolution employees and contractors	Major	3	High	<p>HM01 - Evolution will continue to maintain a Hazardous Chemicals and Dangerous Goods Register and Chemaalert 3 System detailing all hazardous materials used, stored and produced in-site. In accordance with the NSW Work Health and Safety Regulation 2017 (WHS Regulation), the register will be maintained to include the following information (where applicable):</p> <ul style="list-style-type: none"> •the SDS provided by the supplier of the chemical •the common name or trade name of the chemical •the formal chemical names of the components of the chemical •copies of the risk assessments carried out for the chemical •toxicological information •safe storage and handling information •information concerning the health effects •first aid treatment information •a response plan, indicating an appropriate means for dealing with a dangerous incident such as spillage or poisoning in relation to the chemical. <p>HM03 - Sodium cyanide will continue to be managed in accordance with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (2021) and the AS/NZS 4452:1997 The Storage and Handling of Toxic Substances. The latter sets out the requirements for storage and handling of toxic substances in bulk. This includes:</p> <ul style="list-style-type: none"> •design and construction requirements for containers •requirements for portable and fixed tanks •bunds and compounds •locations of bulk containers •filling of bulk containers •storage areas, tanks, pipelines, pumps and valves have high visibility labelling and are inspected regularly for signs of leakage, presence of solution outside of the tanks in the bunded areas and integrity of the containment. Any aspects requiring maintenance or repair are recorded along with corrective measures. <p>HM08 - The Project's ICDS will continue to be designed, constructed and maintained to capture potentially contaminated surface water generated on-site and no disposal of water from the ICDS is permitted to drain into Lake Cowal under any circumstances.</p> <p>HM13 - All Evolution employees and contractors will continue to be trained in the appropriate use of chemicals relevant to their tasks and duties, including:</p> <ul style="list-style-type: none"> •hazardous chemical/dangerous good awareness •job hazard analysis preparation and use •use of SDS information •measures to prevent accidental release •potential environmental impacts •use and maintenance of PPE •emergency spill response and containment •clean-up techniques. 	Major	2	Moderate
Traffic and transport	Hazardous Chemicals/ Dangerous GoodsTransport including Cyanide	Improper storage securing processes during transport, vehicle accident involving transport vehicle leading to spill	Contaminated soil, groundwater, surface water. Community impacts	Major	3	High	<p>HM12 - Transport of hazardous materials including Cyanide will continue to be in accordance with Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) (National Transport Commission, 2018) and International Cyanide Management Code For the Manufacture, Transport, and Use of Cyanide In the Production of Gold.</p> <p>HM13 - Transport of hazardous goods to and from the CGO will be via designated transport routes outlined in the Transport Management Plan prepared in Consultation with TfNSW, Bland Shire Council, Forbes Shire Council and Lachlan Shire Councils. The only transport routes relevant to the local road network for the delivery of the hazardous materials to the CGO will continue to be (unless otherwise agreed with DPHI):</p> <ul style="list-style-type: none"> •the Newell Highway (from Dubbo) into West Wyalong and then the approved Mine Access Route from West Wyalong to the CGO. •the Newell Highway (from Narrandera/Mirrool) into West Wyalong and then the approved Mine Access Route from West Wyalong to the CGO. •Goldfields Way (from Temora) into West Wyalong, and then the approved Mine Access Route from West Wyalong to the CGO. •Burley Griffin Way (from Temora) to Mirrool, the Newell Highway (from Mirrool) to West Wyalong, and then the approved Mine Access Route from West Wyalong to the CGO. <p>GEN03 - Procedures to record, handle and respond to complaints, non-compliances and incidents will be documented within the Project's EMS and implemented for the life of the Project.</p>	Major	2	Moderate
Mining and processing operations	Waste (excluding waste rock and tailings)	Poor waste segregation and disposal. Employees and contractors unaware of waste management requirements/obligations	Impact on receiving environment, poor sustainability outcomes.	Minor	4	Moderate	<p>WA01 - All waste will be classified in accordance with the Waste Classification Guidelines (EPA, 2014) (or latest version) and disposed of at appropriately licensed waste facilities.</p> <p>GEN04 - All staff and contractors will continue to receive General Environmental Awareness training.</p>	Minor	2	Low

Rehabilitation and mine closure	Rehabilitation resources	Insufficient suitable soil and waste rock materials for mine rehabilitation.	Rehabilitation does not meet SSD or ML approval conditions including rehabilitation objectives/completion criteria for final land use.	Major	3	High	<p>SL01 - The existing general strategy of soil resource management at the CGO will be continued for the Project. This strategy involves stripping suitable soil resources from the proposed disturbance areas within the ML areas and directly replacing on rehabilitation areas or storing in dedicated stockpiles for re-use during progressive rehabilitation works. Management measures for soil stripping and stockpiling for the different soil units within the additional disturbance area will be documented in the Project's EMS as per the recommendations in the Project's Land and Soil Assessment (Appendix T of the EIS).</p> <p>RE01 -The rehabilitation objectives and closure criteria will be refined over the life of the Project in response to advances in rehabilitation techniques, outcomes of rehabilitation trials or changes to the agreed final land uses.</p> <p>RE02 - Ongoing rehabilitation trials and research will be an extension of the trials undertaken to date and will include:</p> <ul style="list-style-type: none"> •Material Amelioration – Continued investigation into the chemical and physical properties of soil resources and the optimum rates of gypsum application to improve suitability for plant growth and use on rehabilitation areas •Rehabilitation Media – Continued monitoring of the effectiveness of various applications associated with the rock mulch, topsoil and hay cover materials stabilising landform slopes (ie controlling erosion) and providing a suitable medium for revegetation. •Revegetation – Ongoing trials and research to determine the most appropriate revegetation species suited to substrate materials of the CGO's final landforms including: <ul style="list-style-type: none"> –Implementation of new vegetation growth trials to investigate revegetation species suited to the top surface rehabilitation materials of CGO final landforms, including the IWL and WREs, open pit crests to refine revegetation objectives; –Investigations and implementation of a trial to determine the most effective methods for direct seeding rehabilitation areas following the establishment of the initial Wimmera Ryegrass cover crop; and •Implementation of research and a revegetation trial to investigate revegetation methods and species suited to the final slopes and rehabilitation media of the IWL embankments. •Soil/rock matrix application and mixing – trialling the soil/rock matrix application and mixing techniques detailed in section 5.2.4ii to determine which methods provides the greatest level of erosion protection and vegetation establishment. 	Major	2	Moderate
Rehabilitation and mine closure	Final landform	Inadequate final WRE landform design, inadequate drainage and inadequate rehabilitation of WRE	WRE instability and erosion resulting in rehabilitation not meeting SSD or ML approval conditions including rehabilitation objectives/completion criteria for final land use.	Major	3	High	<p>RE02 - Ongoing rehabilitation trials and research will be an extension of the trials undertaken to date and will include:</p> <ul style="list-style-type: none"> •Material Amelioration – Continued investigation into the chemical and physical properties of soil resources and the optimum rates of gypsum application to improve suitability for plant growth and use on rehabilitation areas •Rehabilitation Media – Continued monitoring of the effectiveness of various applications associated with the rock mulch, topsoil and hay cover materials stabilising landform slopes (ie controlling erosion) and providing a suitable medium for revegetation. •Revegetation – Ongoing trials and research to determine the most appropriate revegetation species suited to substrate materials of the CGO's final landforms including: <ul style="list-style-type: none"> –Implementation of new vegetation growth trials to investigate revegetation species suited to the top surface rehabilitation materials of CGO final landforms, including the IWL and WREs, open pit crests to refine revegetation objectives; –Investigations and implementation of a trial to determine the most effective methods for direct seeding rehabilitation areas following the establishment of the initial Wimmera Ryegrass cover crop; and •Implementation of research and a revegetation trial to investigate revegetation methods and species suited to the final slopes and rehabilitation media of the IWL embankments. •Soil/rock matrix application and mixing – trialling the soil/rock matrix application and mixing techniques detailed in section 5.2.4ii to determine which methods provides the greatest level of erosion protection and vegetation establishment. <p>RE05 - Identified erosion hazard areas will be reshaped where possible. In instances where reshaping is not possible, additional land surface protection, beyond the CGO soil-rock matrix cover system will be implemented.</p> <p>RE06 - Any legacy landform features such as berms and bullnoses, identified by erosion and landform evolution modelling to increase erosion beyond acceptable rates will be removed or modified where possible. If not, Evolution will consider increasing the proportion of rock to soil in the rock/soil matrix.</p>	Major	2	Moderate