Attachment H - Mitigation register

Kalbar final proposed consolidated mitigation register, 2 August 2021

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Agriculture and horticulture

Identifier	Measure
AG01	Potential solutions to labour competition will be identified and pursued through continued communication and engagement with industry training bodies, such as TAFE Gippsland.
AG02	Local agriculture and horticulture industry bodies, such as Food and Fibre Gippsland and other appropriate industry bodies, will be consulted and engaged with to identify any potential issues at an early stage and enable effective solutions to be implemented.
AG03	Representation from local horticultural and agricultural producers will be sought for the environment review committee to provide input on concerns during project construction and operations.
AG08	A community engagement plan will be implemented that identifies approaches to actively manage and resolve as far as practicable issues with public perception, including providing objective and factual public communications.
AG10	A joint approach will be developed with local horticultural and agricultural producers to identify measures to attract and retain a local workforce.
AG11	A working group with growers will be established, as agreed with growers, and will meet on a periodic basis to discuss and resolve as far as practicable specific issues of concern and potential responses.
AG12	Kalbar will explore ways of supporting local growers, including without limitation through grants and training, to obtain EnviroVeg, Freshcare or other equivalent environmental certification to support evidence of production under an environmental management system.
AG13	Subject to feedback through consultation activities with industry bodies / growers, Kalbar may provide support/sponsorship for local community events such as a Harvest Festival, and/or support the East Gippsland Veg Innovation Day.
AG14	The amount of land clearance will be minimised wherever possible to minimise loss of agricultural land.
AG15	Progressive rehabilitation will be conducted to ensure that disturbed agricultural land in the project area can be restored to productive use as soon as possible.

Air quality

AQ01-A	Apply dust reduction measures to minimise the risk of harm to human health and the environment from air emissions so far as reasonably practicable.
AQ01	Areas will be cleared in a staged manner, and only as required, to reduce dust generation by minimising the area of exposed ground at any one time.
AQ02	Water of appropriate quality or appropriate suppressants will be applied to working surfaces, stockpiles, haul roads and other areas where rehabilitation is not yet practical, to minimise dust generation, and in particular, during drier months.
AQ03	Drop heights for topsoil and overburden will be minimised as far as practicable to reduce dust generation.
AQ04	Speed limits of 20 km/hr in the event of dusty conditions (which includes, without limitation, when dust levels exceed trigger levels specified in the air quality management plan, visual observation indicates dusty conditions, or weather forecasts or conditions indicate a risk of high levels of dust) and 50 km/hr under normal conditions will be implemented and enforced on unsealed project roads to minimise dust generation

AQ05	Topsoil stripping will be planned and conducted taking into account forecast and actual
AQ06	weather conditions to minimise dust generation. Public roads and new intersections will be constructed to standards used by the East Gippsland Shire Council to reduce generation of excess dust (Infrastructure Design
	Association, 2015) ¹ .
AQ07	The mine void will be progressively backfilled and rehabilitated to reduce generation of dust by minimising the area of exposed soil, including for topsoil and overburden stockpiles.
AQ08	Haul vehicles will travel on designated haul roads only and haul route lengths will be minimised where practicable.
AQ10	Haul vehicles will travel on designated haul roads only and haul routes will be minimised where possible. Haulage of product will be limited to daytime hours only (11hours a day)
AQ11	Ore will be processed as a slurry to reduce potential for dust emissions.
AQ12	No crushing or grinding of ore will occur to prevent the potential for emissions of respirable crystalline silica.
AQ13	High dust producing activities including but not limited to overburden excavation and transport of overburden and product, will be ceased, slowed or relocated (as necessary) to reduce dust to the extent reasonably practicable when real-time air quality monitoring or visual monitoring observations indicates that air quality trigger levels have been reached.
AQ14	High dust generating activities, will be scheduled to avoid excessive dust emissions during forecast adverse weather conditions.
AQ15	The option of identifying additional mitigations will be considered when preparing a final proposed Air Risk Treatment Plan submitted for approval as part of a Work Plan. Any further mitigations arising out of this work which minimise impacts and which are reasonably practicable will be adopted.
AQ16	Dust generation from haul roads will be controlled by applying water or chemical suppressants, if determined to be environmentally acceptable, cessation of haulage during adverse weather conditions, and as required in response to real-time air quality monitoring and visual monitoring observations.
AQ17	Construction of internal haul roads will use an optimal size grading of aggregate with road stabilisation and compaction agents.
AQ18	Plant, machinery and vehicles will be maintained regularly in accordance with manufactures' specifications to minimise emission of particulates.
AQ19	A principal contact person to whom community queries and complaints will be directed will be identified for the project. The complaints response procedure will be implemented to resolve any complaints received. Twenty-four-hour contact details for the principal contact person will be provided through letters and signage onsite.
AQ20	Activities will be restricted, as required, on days when modelling predicts exceedances of air quality criteria at one or more sensitive receptors. Activities to be restricted will include overburden extraction and haulage, ore extraction and grading of roads. Restrictions will be applied to these activities conducted across the whole or part of the project area where required to achieve compliance with air quality criteria.

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¹ Infrastructure Design Association. 2015. Infrastructure Design Manual, Version 4.4.2. Local Government Infrastructure Design Association. 14 October 2015. Tongala, Victoria.

AQ21	Contingency procedures will be implemented if (once air emissions have been minimised so far as reasonably practicable) real-time air quality monitoring and visual monitoring observations indicates that air quality trigger levels (e.g., hourly PM10 readings of 80ug/m3 and visible dust) have been reached. Contingency measures may include, ceasing, slowing or relocating high dust producing activities such as overburden excavation, transport of overburden / product and grading.
AQ22	Corrective actions must be implemented and authorities must be notified, if quarterly rainwater tank and dam monitoring, carried out at a minimum of 13 locations, surrounding properties exceeds Australian Drinking Water Guideline limits
AQ23	Apply industry best practice for mining as appropriate to the site and sensitive receptors including vegetable farming, as may be developed from time to time. This requires adoption of the best combination of eco-efficient techniques, methods, processes or technology used in an industry sector or activity that demonstrably minimizes the environmental impact of a generator of emissions in that industry sector or activity.
	Air quality management plans for must be reviewed annually to ensure best practice compliance and compliance with the general environmental duty and principles under the <i>Environment Protection Act 2017.</i>
AQ24	Continuous visual observation monitoring will be conducted (e.g. video monitoring and actively surveying visible dust) of high dust generation activities.
AQ25	Air quality monitoring must be undertaken to assess any potential impacts to the Woodglen Water Storage dams. If air quality measurements indicate emissions to the Woodglen Water Storage dams are at a level that may unacceptably impact on drinking water quality, then further analysis will be undertaken to refine the understanding of the impact. If such analysis concludes that there is a credible risk of unacceptable impact, corrective actions must be implemented to remove such impact.
	Will need to be reflected in a monitoring program, however for completeness is included below as a mitigation.
AQ26	 Apply measures to reduce dust so far as reasonably practicable, including: use of truck and shovel to extract overburden instead of scrapers; and limiting the duration of grading, product haul and overburden extraction hours per day (i.e. to reduce 24hr average exposure), particularly limiting to daytime hours (on the basis that dispersion potential is greater than at night).

Bushfire

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BF01	A fire and emergency management sub-plan will be prepared and implemented that includes
	site-specific bushfire mitigation measures, awareness actions, preparedness levels and fire
	response procedures for the site. The plan will be prepared in consultation with East
	Gippsland and Wellington shire councils and emergency service providers.

Cultural heritage

CH01	A cultural heritage management plan will be prepared and implemented in accordance with the <i>Aboriginal Heritage Act</i> 2006 (Vic) and the Aboriginal Heritage Regulations 2018 (Vic). The plan will include site-specific management and salvage procedures (e.g., collection of surface artefacts and excavation of archaeological sites of significance).
CH02	Cultural heritage training will be provided for all personnel involved in vegetation clearance and ground disturbance works prior to commencement of these activities.

CH03	Collected cultural heritage materials will be stored by a qualified heritage advisor.
CH04	Recovered Aboriginal cultural heritage materials will be repatriated to a Registered Aboriginal Party, e.g., the GLaWAC.
CH05	A cultural heritage chance finds protocol will be developed and implemented which addresses: Actions to be taken in the event of unexpected discovery of human remains, Aboriginal
	places or objects, low-density and non low-density artefact distribution.
	Actions to be taken in the event of unexpected discovery of non-Indigenous cultural heritage.
	Custody management of Aboriginal cultural heritage recovered.
	Compliance review with the protocol.
	Dispute resolution.
	Authority of personnel and handling sensitive information.
	Site specific management.
CH06	If cultural heritage sites are discovered, the following steps will be taken:
	The person who found the cultural heritage site will immediately notify the operations manager.
	 The operations manager will suspend relevant works to a distance of 50 m from the site and isolate the find via the installation of safety webbing, or other suitable barrier; the discovery is to remain in situ.
	If historical archaeological deposits, artefacts or features are discovered, all works that may cause harm will cease and Heritage Victoria will be contacted.
	The operations manager will notify a suitably qualified archaeologist of the find within 24 hours of the discovery.
CH07	For registered Aboriginal cultural heritage places VAHR 8422-0369 and VAHR 8322-0226, salvage procedures, such as surface salvage collection and controlled manual or mechanical salvage excavation, of flaked stone artefacts will be undertaken by a qualified archaeologist prior to commencing construction.
CH08	Properties within the project area or infrastructure options area that could not be accessed during the cultural heritage study will be investigated prior to ground disturbance activities to identify non-Indigenous cultural heritage values that may be present.
CH09	Kalbar will consult with GLaWAC on the cultural heritage values of the waterbodies in the region and how these values could be relevant to impacts of the Project on cultural heritage and / or inform the definition of water quality objectives to protect Traditional Owner cultural and spiritual values. The outcomes of such consultation will be reflected in management and risk treatment plans including particularly in respect of cultural heritage and water.

Geotechnical

GEO02	Stability and displacement monitoring of mine slopes will be undertaken adjacent to roads using one or a combination of:
	Survey targets (prisms) located on mine slopes, read by a robotic total station from various fixed survey pillars.
	Radar, for safety-critical situations where a rapid response may be required.
GEO03	Daily visual assessments around mining areas near infrastructure will be undertaken, including checks for signs of deformation (e.g., cracks, compressional ridges), over steepening of slopes, and poor management of surface water (e.g., pooling).

GEO04	All mined slopes adjacent to infrastructure will be surveyed to check they are within acceptable tolerances of specified slope designs.
GEO05	Surface water run-off controls will be incorporated into mine designs, including the following, where applicable:
	 Preventing uncontrolled ponding of surface water from rainfall within the specified stand- off distance from slope crests.
	 Preventing any surface water run-off over mine slopes with crest windrows, including no ponding behind the windrows.
	For the 5 m berm in mine slopes, if necessary, collecting any rainfall run-off and seepage water in drains along the toes, and re-direct it down the slope via a lined drain to the mine void floor.
	Managing water storage and ponding areas on the mine void floor well away from slope toes, and away from areas that will form foundations for road pillars.
GEO06	Visual assessments of surface water controls will be undertaken on a regular basis, and after rainfall, to check that any ponding, seepage or run-off meets design specifications.
GEO07	Earthquake motion (acceleration) will be accounted for in mine slope designs.
GEO08	Visual assessments of excavations will be undertaken to check for any variability from expected geological conditions, with particular focus on weaker than expected materials or features.
GEO09	Excavation visual assessments for evidence of slope instability or deformation, and any interactions with slopes will be routinely completed by an experienced geologist or mining engineer with geotechnical understanding.
GEO10	Following an earthquake event, the following checks will be completed:
	Visually assessing mining areas and surrounds for evidence of slope instability or deformation, and any water interactions with slopes including seepage, liquefaction and infiltration into new cracks or depressions.
	Visually assessing of roads adjacent to mining areas and roads on road pillars for evidence of cracking and subsidence; could include a drive-along at a safe speed to check surfaces for serviceability.
	Checking the functioning of all slope stability and deformation monitoring equipment.
GEO11	Deformation and settlement monitoring of mine slopes around mining operations will be undertaken, and horizontal strain and tilt at margins of existing roads will be assessed, measured by strain gauges and tilt meters.
GEO12	Deformation and settlement monitoring of road pillars around mining operations will be undertaken, including:
	Horizontal strain and tilt on completed road pillars, measured by strain and tilt gauges, initially prior to formation of the roads to confirm that residual deformations are below tolerances, and prior to, during and post filling the voids adjacent to the road pillar.
	Settlement of constructed road, either by surveying and/or settlement plates.
GEO13	Road pillars will be constructed from Haunted Hills Formation gravel or sand tailings.
GEO14	Trials will be conducted during the early stages of road pillar construction to verify construction methods and achieved densities.
GEO15	Construction and monitoring of all road pillars will be documented, reviewed and quality controlled, including:
	Assessing the construction of road pillars against planned construction methods. Tricilian various approach and to describe a describe a describe a describe and approach approach and approach and approach and approach approach approach and approach approach and approach approach and approach approach approach and approach approach and approach approach approach approach and approach approach approach and approach
	Trialling various compaction methods to document and assess performance outcomes.

	Formally reviewing road pillar construction methods prior to constructing high road pillar, including specifications of Haunted Hills Formation gravel, coarse sand tailings dewatering and compaction, any additives (e.g., fly ash), achieved strengths, and deformation moduli and settlement times for each stage.
GEO16	Where practicable, exclusion zones will be put in place for the geotechnical risk zones around each mining area, and public access will be limited in affected areas.
GEO18	Overburden and sand tailings will be placed on a stable and well drained floor after removal of weaker materials or deep ripping.
GEO19	If excess materials are placed on natural surfaces, weak materials such as topsoil, alluvium, and dune sand will be removed prior to placement.
GEO20	Slopes of landforms will be constructed from Haunted Hills Formation gravel, particularly for slopes with a gradient of 1:3 or steeper. For slopes of 1:4 or flatter, dewatered, stacked and compacted coarse sand tailings can be placed within the outer zone of the slope, with Haunted Hills Formation gravel forming an armouring layer.
GEO21	Haunted Hills Formation clay will be placed well within the landform away from the final landform slope profile to maintain slope stability.
GEO22	The next lift of material on top of sand tailings will be constructed only when the deposited sand tailings have achieved a partially-dewatered state (i.e., such that rapid loading will not induce a pore pressure increase).
GEO23	Haunted Hills Formation gravel will be nominally compacted, such as under the weight of machinery, to minimise latent settlement of the landform that may affect the final rehabilitated landform profile.
GEO24	Surface watercourses will be directed away from the landform during construction and operations, so rainfall does not pond or cause localised infiltration.
GEO25	Geotechnical assessments of the tailings cell structures will be conducted. Assessments may be undertaken during operations to also observe and test the tailings being produced.

Greenhouse gasses

GHG01	Where practical, solar photovoltaic technology will be used to supplement electricity requirements for applications such as lighting.
GHG02	Energy efficient technology will be used where practicable, including low energy lighting (e.g., LEDs).
GHG03	The power factor of mains electricity will be improved by reducing the phase difference between the voltage and the current. The on-site power factor correction will be optimised for grid electricity usage.
GHG04	Vehicle diesel consumption will be reduced where practicable through equipment selection, load and route optimisation and production scheduling, and minimising idle time.
GHG05	Equipment will be maintained and operated according to manufacturer/supplier guidelines and recommendations.
GHG06	Generator diesel consumption will be reduced by selecting a flexible configuration that allows for electricity output to be adjusted in line with demand.
GHG07	The amount of land clearance will be minimised as far as practicable to reduce greenhouse gas emissions.
GHG08	Kalbar will regularly consider and implement new greenhouse gas mitigation opportunities and/or technologies, where reasonably practicable.

GHG09	Energy efficiency principles will be integrated in building and facility design.
GHG10	Materials and equipment will be sourced locally wherever feasible to minimise fuel use for transportation.
GHG11	Kalbar will comply with the commitments set out in the document titled 'Kalbar commitment to Carbon Reduction at the Fingerboards Project'. (Tabled Document 339 in the EES IAC hearing). In accordance with this document, Kalbar will reduce net scope 1 and 2 greenhouse gas emissions from the Project to achieve a reduction in net greenhouse gas emissions of 26-28% below the Project baseline levels by 2030 in line with Australian government policy, with subsequent emission targets to be set in line with Australian government policy at the time.

Groundwater

Groundwater	
GW01	The freshwater and contingency water storage dams will be constructed with an engineered liner to reduce infiltration to groundwater.
GW02	The conditions of any licence or approval issued under the Water Act 1989 will be complied with.
HZ-GW04	Minimise quantities of chemicals to be stored onsite as far as reasonably practicable. Any hazardous materials, such as laboratory chemicals, will be sorted in designated areas in accordance with their safety data sheets.
HZ-GW05	Handling of concentrated flocculant and any hazardous materials will be done in accordance with safety data sheet recommendations.
HZ-GW06	Hazardous waste will be removed from site by a licensed contractor for treatment or disposal in an approved facility in accordance with licence and regulatory requirements.
HZ-GW08	Inductions and training will be provided to all relevant project personnel on the safe storage, handling and transport of dangerous goods and in emergency management.
HZ-GW09	Waste will be removed from site and disposed of by licensed contractors (except for septic waste).
HZ-GW10	Waste hydrocarbons will be stored in suitable containers for removal from the project area for disposal at either an EPA-approved hydrocarbon waste site or a recycling depot.
HZ-GW11	Spills of fuels or chemicals will be managed in accordance with requirements set out in the Spill Response and Clean-up Procedure.
HZ-GW12	Hazardous materials will be transported in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission, Edition 7.7, 2020)
GW15	Management techniques, such as underdrains, sumps and water recovery pumps will be used to maximise recovery of water from the mine void and Perry Gully.
GW16	The open voids will be progressively backfilled with sand tailings and fines tailings and covered with overburden, subsoil and, in areas other than Grassy Woodland revegetation, topsoil. Revegetation with crop, pasture or native vegetation will be undertaken where required.
GW17	A Groundwater Dependent Ecosystem (GDE) management plan will be developed prior to construction. The plan will include establishment of baseline conditions and periodic monitoring (including eco system health monitoring) at high value GDEs, including the Chain of Ponds in the Perry River catchment, Saplings Morass and areas of Gippsland Red Gum Grassy Woodland identified in the Groundwater Dependent Ecosystem Impact Assessment.
	monitoring (including eco system health monitoring) at high value GDEs, including the C of Ponds in the Perry River catchment, Saplings Morass and areas of Gippsland Red G

GW18	Groundwater monitoring and management will be carried out in accordance with an approved Water Risk Treatment Plan (forming part of the Work Plan) and any development and operating licence issued by EPA.
GW19	Groundwater models prepared in relation to the groundwater licence application will assess impacts on all known bores within the predicted drawdown zone (registered and unregistered).
	Kalbar will consult with landowners to identify potentially unregistered bores within the predicted drawdown zone.
	Kalbar will work with Southern Rural Water to encourage owners of unregistered bores to have their bores licensed.
	In accordance with the <i>Water Act 1989</i> and conditions on any groundwater licence, Kalbar will compensate any person whose existing authorised use of water may be adversely and materially affected by the allocation or use of water under the licence.
	Groundwater models prepared in relation to the groundwater licence application will be based on the best information available at the time the models are prepared.
GW20	Investigate and produce information (to EPA satisfaction) on the re-use of process water and its quality, with specific consideration given to total and dissolved metals, as well as other water quality parameters such as total dissolved solids, nutrients and other solutes. Information, including monitoring through the commissioning will be included in any EP Act 2017 development licence.
GW21	Groundwater modelling will be revised annually with up-to-date monitoring data and site water balance data. Additional modelling iterations will be carried out if monitoring yields results that are materially different to those predicted. Specific triggers for remodelling will be identified in the Water Risk Treatment Plan (forming part of the Work Plan).
GW23	The Water Risk Treatment Plan will require visual inspection of the escarpment to the north and east of the mine site on a daily basis for the emergence of water.
GW24	Prior to submission of any application to extract groundwater, Kalbar will undertake a further pumping test in accordance with SRW guidelines for a period of more than four days, including monitoring pH, redox, and TDS. Results of the pumping test will be taken into account in subsequent modelling.
GW25	In further modelling:
	 Quantify and assess lag period for seepage to report to the water table; Quantify effect of increased baseflow discharge as a result of mounding on dissolved metals and nutrient concentrations in the Mitchell River;
GW26	Update the Water Risk Treatment Management Plan to include procedures for managing potential Acid Sulfate Soils, including:
	 Sampling procedures for PASS where perched groundwater is encountered; and Specifying procedures to be undertaken in the event that PASS is encountered.
GW27	Identify potentially spring fed dams by identifying dams with catchments potentially affected by changes to the landform as a result of the project. Where a dam is identified as potentially spring fed, Kalbar will consult with the landholder and undertake testing to establish whether the dam is spring fed.
GW28	Protect confirmed spring fed dams to the extent reasonably practicable. Where spring fed dams are unable to be practicably protected, Kalbar will enter into a compensation agreement with the relevant landholder prior to carry out activities that will affect the dam.

Land use and planning

LUP08	Landholder compensation will be in accordance with the Mineral Resources (Sustainable
	Development) Act 1990 and based on a full inventory of on-farm assets.

Noise and vibration

NV01	Implement all reasonably practicable controls to minimise the risk of harm to human health or the environment from noise during construction and operation.
NV03	When noise from pumping units may give rise to a risk of harm to a noise sensitive area, then noise impacts will be reduced so far as reasonably practicable, including by using temporary acoustic barriers, such as earth bunds or other portable barriers (with the barrier height to exceed the pump height by at least 0.5 m).
NV06	Contingency procedures will be implemented if residual noise during construction (once noise emissions have been minimised so far as reasonably practicable) exceed construction noise criteria adopted in NV17. Contingency measures may include, temporary mobile noise screens, scaling back operations, or, subject to NV17, when high noise levels from construction occur at night and there are no feasible ways of reducing noise levels or rescheduling the activity, consideration of short term, temporary relocation for noise-affected occupants.
NV09	Noise and vibration sub-plans will be prepared and implemented. The sub-plans will be informed by best practice and the need to reduce risk of harm to human health and the environment from noise as far as reasonably practicable. At a minimum, the sub-plans will include:
	Location of nearby noise sensitive areas and other sensitive land uses
	 Approved construction working hours and/or shift rotations, and inclusion of construction activities, work areas and mobile plant and equipment locations during each working shift.
	Best practice work practices to minimise noise emissions so far as is reasonably practicable
	Best practice vibration mitigation strategies to minimise vibration so far as is reasonably practicable
	 Community consultation strategy required for the construction phase and any associated high noise and vibration generating works.
	 Complaints handling process, with the complaints management system per SE22, including contact details, follow-up inspection, monitoring and corrective action processes once a complaint is made.
	 Noise monitoring procedures focused on the noise-sensitive receptors, including noise monitoring from the project area and along the HMC transportation route.
	 Contingency procedures if noise emissions during operations adopted noise criteria in the relevant sub-plan, including alternatives to be considered during less favourable meteorological conditions that may enhance noise emissions to receivers.
	Requirements for recording actions taken in response to exceedances of adopted noise criteria, and evaluation of their effectiveness.
	 Adaptive management of noise levels from the project, where identified exceedances will inform the required control strategy.
NV10	Mobile plant items will be fitted with broadband reversing signals to avoid tonal characteristics associated with traditional reversing beepers at nearby sensitive receptors.

NV11	As mining progresses, or moves into a new situation with respect to natural or reconstructed topography, or proximity to noise sensitive receivers, noise modelling will be used to predict noise at nearby sensitive receptors and natural areas.
	Contingency procedures will be implemented if residual noise during operation (once noise emissions have been minimised so far as reasonably practicable) is modelled and/or observed to exceed noise limits Contingency measures may include ceasing night shift overburden operations.
NV12	Earth bunds will be constructed to reduce noise sensitive receptors to the extent reasonably practicable and, at a minimum, to the extent needed to comply with adopted noise criteria.
NV13	All reasonably practicable noise controls which may minimise the risk of harm to human health or the environment from noise will be implemented for plant and equipment including noise reduction kits (for example, muffler treatments, engine bay attenuation, air intake and exhaust silencers) and screening and cladding of fixed plant and equipment, including but not limited to mining unit plant, centrifuges and the wet concentrator plant.
NV14	Noise mitigation measures such as bunding, walls or cladding will be installed at the wet concentrator plant to minimise noise emissions from the plant to the extent reasonably practicable and, at a minimum, to achieve compliance with adopted noise criteria. In the event that noise limits are exceeded or the wet concentrator plant gives rise to unreasonable noise, additional noise controls will be applied.
NV15	Consultation with affected residents located in the vicinity of the site will be conducted during the course of the project to investigate the need for alternative or additional noise control measures depending on each individual situation (e.g., acoustic treatment for dwellings).
NV16	Commissioning noise tests will be undertaken at regular intervals and prior to work starting, including checking that bunds have been constructed to specifications required for site compliance with EPA guidelines adopted noise criteria.
NV17	Construction noise
	Option 1 – apply Noise Protocol
	All noise from the Project must not exceed the noise limits specified in EPA Publication 1826.4 (Noise Protocol) applicable to earth resources for both operation and construction (irrespective of the exemption for construction noise provided at rule 117 of the Environment Protection Regulations 2021).
	Option 2 – Apply Chapter 4 of EPA Publication 1834 in full
	Construction noise from the Project must be in accordance with guidance provided at chapter 4 of EPA Publication 1834 (Civil construction, building and demolition guide).
	Construction noise that is audible inside a habitable room of a residence is permissible if approved by the ITR as 'unavoidable works', 'low-noise works' or 'managed impact works' in accordance with Chapter 4.4 of EPA Publication 1834.
	Notify residents at least 24 hours prior to "unavoidable works", "low noise impact works" or "managed impact works" commencing.
	Option 3 – apply Chapter 4 of EPA Publication 1834, but define 'low noise impact works' by reference to a decibel standard
	Construction noise from the Project must be in accordance with guidance provided at chapter 4 of EPA Publication 1834 (Civil construction, building and demolition guide). For the purpose of applying this Guide, works will be considered "low-noise impact works" if the predicted noise levels from construction activity are equal to or less than 26dB inside a residential receiver, the noise does not present a tonal, impulsive or intermittent character and, does not include low frequency content that presents a risk of intrusiveness.
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NV17A	Noisier activities will be scheduled for less sensitive times of day where practicable and works will be limited as much as practicable during the night and at weekends.
NV18	Residents at noise-sensitive receptors will be informed of the timing and location of each construction stage and associated noise reduction measures and given advance notice and details of periods of noisy activities (such as excavation).
NV19	Managerial processes will be implemented (such as 'push-back' mining operations) to optimise the direction of mine void excavation so the terrain provides maximum natural attenuation noise from plant and equipment.
NV20	All personnel will be informed about the measures required to minimise noise including through regular toolbox talks. Adherence to the relevant practices and requirements will be verified by an inspection and audit program.
NV22	All pneumatic tools used near residential areas will be fitted with an effective silencer on the air exhaust port.
NV23	Plant will be turned off when not in use.
NV24	Plant, machinery and vehicles will be maintained and operated in accordance with manufacturers' specifications and industry best practice to minimise emission of noise.
NV25	All trucks left standing on site will, as far as practicable, have their engines switched off afte no more than five minutes.
NV27	All project vehicles will be maintained in accordance with manufacturers' specifications.
NV28	Trucks will be equipped with adequate and functioning mufflers.
NV29	Project vehicles will be driven to the speed limit and in a careful manner, avoiding strong acceleration/deceleration, and restricting the use of compression brakes to situations where justified on safety grounds, such as along long downhill slopes.
NV31	A permanent power supply will be secured as early as possible to minimise the time diesel generators are used.
NV32	Equipment and processes that do not exhibit characteristics of tonality, intermittency or impulsiveness will be selected, where reasonably practicable. The risk of intrusive low frequency noise within noise sensitive areas is to be minimised as far as reasonably practicable.
NV33	The quietest available plant and equipment will be selected for the project, so far as reasonably practicable.
NV34	Construction of the proposed Fernbank East rail siding will be restricted to daytime hours (Monday to Friday (7:00 a.m. to 6:00 p.m.) and Saturday (7:00 a.m. to 1:00 p.m.)).
NV35	Project inductions will include briefings for all employees and contractors on the key principles and requirements of the noise and vibration sub-plan as relevant to their work. Adherence to the relevant practices and requirements will be verified by an inspection and audit program.
NV36	B-double movements on the private haulage road and rail loading activities at the Fernbank East rail siding will be restricted to the day and evening periods as defined under the Noise Protocol.

	Specific measures will be included in the Operational Noise Management Plan to address the risk of impacts due to short term high noise levels and low frequency noise from truck bypasses to properties near the proposed haulage road. Specific measures will be included in the Operational Noise Management Plan to address the risk of noise from train horns at the siding impacting on nearby properties. Specific measures will be included in the Operational Noise Management Plan to address the risk of impacts from vehicles travelling on the rumble and shaker strips to properties near the proposed roundabout and rail siding.
NV38	Acoustic treatments will be applied to the centrifuge plant building (and associated ancillary equipment) such as cladding and screens to reduce noise emissions to sensitive receivers.
NV39	Earth mounds will be constructed to shield centrifuge cake haul noise emissions to sensitive receivers.

Radiation

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RD01	Radiation exposure to workers will be minimised by implementing standard operating procedures for handling and transport of radioactive materials, use of safety apparatus and industrial gauges
RD02	Workers will be provided with training specific to their role on potential radiation risks and measures to be implemented to reduce or minimise radiation exposures. All training will be documented and will include:
	Job-specific training and additional training for supervisors.
	 Induction programs relating to the dangers of working near radioactive material and procedures to prevent radiation exposure.
	Specific ongoing training and professional development of radiation safety personnel.
RD03	Exposure to gamma radiation will be minimised through:
	Providing site security and signage to restrict unauthorised access.
	Locating product stockpiles at sufficient distances from other operations.
	Only loading trucks immediately prior to departure from the site.
	Transporting HMC in accordance with the Code of Practice for Safe Transport of Radioactive Material.
RD04	Generation and inhalation of radioactive dust will be minimised through:
	Ensuring HMC stockpile material is damp.
	 Progressively backfilling and revegetating the worked-out mine void to minimise the area of mine materials exposed to the environment.
	Pumping ore as a slurry to the WCP and returning tailings as a slurry.
	Retaining sufficient moisture content in concentrates during processing.
	Transporting concentrate in fully sealed containers or covered for bulk shipments
	Storage of HMC at the wet concentrator plan within silo(s)
RD05	The project will be operated in accordance with a management licence addressing radiation safety in accordance with the provisions of the Radiation Regulations, including likely conditions such as compliance with the Radiation Protection Series No. 9 and preparation of a radiation sub-plan for all operations. The plan would account for any special conditions or exemptions from specific provisions of the Radiation Regulations that might apply to the project.
RD06	Ingestion of radioactive material will be minimised through:

Providing hand washing facilities and encouraging good hygiene practices. Restricting smoking and eating onsite to designated areas only. Providing sufficient hose-down points and sumps to allow clean-up of product. RD07 Runoff and erosion of soil (which could contain ore) will be minimised through: Adequate bunding of operations and storage areas to avoid the transport of spilled or stored material into the surrounding terrestrial, freshwater or marine environment. Constructing stockpile slope angles as low as practicable and mulch materials and contour ripping will be strategically used. Locating stockpiles to avoid overland flow pathways. Diverting runoff from stockpiles to the process water dams for reuse. Vegetating overburden stockpiles where appropriate to minimise erosion. RD08 Radiation exposure at the port through handling of HMC will be minimised through: Adopting remote handling of concentrate from other cargo, including providing adequate signposting. Adopting remote handling of concentrate and minimising exposure times wherever possible. Using rotator boxes to load bulk shipments of concentrate into vessels. RD09 Radiation exposure to personnel will be minimised through: Engineering controls, such as ventilation, dust control, and appropriate machinery shielding. Limiting occupancy in identified higher risk areas and/or restricting time spent on identified higher risk activities. Providing warning signs and labels in higher risk areas. Providing personal protective equipment for certain procedures where higher potential radiation doses might necessitate its use. RD10 Generation of dust and inhalation of dust by project personnel and members of the public will be minimised through: Limiting vehicle speed on unsealed roads. Suppressing dust by applying water to unsealed roads in the project area as required. Passing trucks through a wheel wash prior to leaving the site. Minimising the drop height of truck dumping as far as practicable.		
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Rehabilitation

RH01	Stripped topsoil will be transferred directly to nearby rehabilitation areas, or stockpiled separately to overburden adjacent to the active mining area within the disturbed area. Actions to reduce weed seed burden in stripped topsoil will be applied.
RH02	Site inductions for mining and rehabilitation personnel will include information on the different soil types present across the project area and their corresponding management, including for stockpiling.
RH03	Fines tailings will be placed at depth in the backfilled mine void so that any restrictions to drainage are far enough below the soil to avoid impacts on vegetation growth and grazing

	animals. This applies to the direct placement of find tailings in the mine void. It does not apply to any fine tailings material used in a manufactured sub-soil.
RH04	Construction of stockpiles will be designed to avoid flow pathways to minimise erosion.
RH06	Rocks will be included in rehabilitated channel beds, where appropriate, to increase critical shear of the bed, resist initiation of scour and increase channel stability to storm flows and minimise erosion.
RH07	Rehabilitation will be designed to ensure plateau tops are consistent in form togenerally reflect pre-mining landforms. Swales will be designed to be broad, U-shaped, no steeper than current stable drainage paths, and consistent in shape with the most stable drainage paths currently present.
RH08	A revegetation programme for revegetation of all gullies downstream of mining activities will be commenced at the first autumn after commencement of the Project (i.e., as early as possible and prior to mining commencement to minimise risks of erosion).
RH09	High rates of vegetation establishment will be prioritised in rehabilitated flow channels (especially in the first three years of rehabilitation) to maximise surface cover and minimise erosion.
RH10	Rehabilitation activities will be timed in consultation with landholders and based on analysis of long-term rainfall patterns to maximise the rate of successful vegetation establishment and rehabilitation performance.
RH11	Hydromulches or tackifiers will be used where appropriate to prevent erosion and the more effective use of incident rainfall by germinating seeds.
RH12	Hydroseeding will be used in rehabilitation areas, where appropriate, to stabilise the soil surface and minimise erosion.
RH13	Site/local experience will be considered when determining seed timings and rates to achieve maximum reliability of vegetation establishment. Seed will be re-applied at a later date in areas where rehabilitation performance does not meet established targets when suitable conditions, such as rainfall, are likely to occur.
RH14	Rehabilitated areas will be irrigated where required to promote satisfactory performance and vegetation establishment.
RH15	Larger plants that are less susceptible to grazing damage will be used in rehabilitation areas where practicable.
RH16	Guards will be placed on tubestock where required to prevent damage by rabbits, cockatoos and other pest animals.
HZ-RH18	Hazardous materials will be managed (including storage, handling, transport and disposal) in accordance with relevant safety data sheets.
HZ-RH19	Mobile plant and vehicles will be maintained regularly and in accordance with manufacturers' specifications. Maintenance will include inspections for leaks and spills.
HZ-RH20	Personnel will be trained in management of hazardous materials and spill response procedures prior to commencement of work.
RH21	Where practicable, ameliorants such as organic mulches and fertilisers will be spread on insitu topsoils prior to stripping to increase soil fertility.
RH22	Stockpiles will be vegetated where appropriate to minimise erosion.
RH23	Stockpile slope angles will be constructed as low as practicable and mulch materials and contour ripping will be used strategically to stabilise stockpiles, prevent runoff and minimise erosion.

RH24	The density of deep-rooted trees and shrubs will be increased in areas at risk from tunnel erosion by minimising the volume of seepage flows reaching valley slopes and channels.
RH25	Grazing will be excluded in rehabilitated native grass woodland areas (Zone E) channels and riparian areas (Zone D) and on steeper valley slopes (Zone C) to maintain sufficient levels of vegetation cover and prevent disturbance of soils by trampling by livestock, thereby increasing stability and minimising erosion.
RH26	Topsoil stockpiles scheduled to be in place for four months or longer (or for an unknown duration) will be restricted to a height of 2 m and treated with a soil stabiliser or revegetated immediately following their construction.
RH27	Tree densities in areas planned for grazing land use, particularly in swale areas, will be increased to reduce deep drainage and seepage flows, and to maximise erosion stability.
RH28	Gypsum will be applied in sufficient quantity to a depth of at least 500 mm as part of a constructed subsoil where material likely to disperse is placed (such as Haunted Hills Formation overburden); to reduce exchangeable sodium and magnesium to acceptable levels (ESP <4 and Ca/Mg ratio >0.5).
RH29	Revegetated areas will be fenced (electric fencing with multiple closely spaced tapes) to prevent damage by stock or kangaroos.
RH30	Revegetation will be conducted over as large an area as practicable at one time to spread potential impacts of animal grazing over larger areas.
HZ-RH31	Triple interceptor traps will be used to prevent release of hazardous materials from bunded areas into rehabilitated areas.
RH33	Planting of tubestock will be scheduled to maximise initial growth, including in spring to take advantage of warmer growing conditions, or in autumn to take advantage of the wet winter.
RH34	Seeds will be spread to achieve a stem density significantly higher than the target to allow for losses due to animal damage and other causes; thinning will occur at a later date to achieve the target number of stems per hectare, particularly in areas where a higher (moderate) density of trees is proposed and where there is inclusion of understorey species.
RH35	In relation to the intersected portion of the unnamed tributary of Honeysuckle Creek and the mine site, mitigate impacts of upstream headwaters entering the rehabilitated mine area, by providing an appropriate slope planform of the waterway channel. If additional measures are needed to achieve stability, augment with other engineered features, such as grade control structures and / or a permanent dam / water feature.
RH36	If fine tailings from the centrifuges are used in preparing manufactured subsoil, then a procedure to break up dried lumps of fine tailings into aggregates having a nominal particle size of less than 5 mm would be implemented to ensure thorough and even mixing.
RH37	Internal compliance / performance reviews will be conducted annually by Kalbar to check whether rehabilitation and closure actions proposed in this plan are being carried out as required providing reliable evidence of progress towards agreed closure outcomes. An independent audit of rehabilitation and closure activities will be conducted every 3 years to measure performance against the monitoring schedule and standards shown in the rehabilitation plan.
RH38	The Native Grassy Woodland Restoration area will be legally secured, with provision made for appropriate management and maintenance in the long term. Delivery of the Woodland Restoration Project will achieve the following minimum
	requirements: • completion of 20% of the restoration area by end of year 5;
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- completion of 40% of the restoration area by end of year 8;
- completion of 55% of the restoration area by end of year 12;
- completion of the remaining restoration area post year 12 through to closure of the mine.

Once areas have been restored for the Woodland Restoration Project, they will be managed to retain the restored structure and features and will not be used for any activities that would degrade their quality or purpose.

Socioeconomic

SE01	Community access will be provided to information on potential project impacts, and the process for the EES, land access and acquisition in a range of ways, such as through community meetings, personal meetings, newspaper advertisements and website information.
SE02	Dust, noise and water monitoring results will be made available at regular intervals on the project website along with information on how any peaks or exceedances have been responded to.
SE03	Regular meetings will be held with nearby residents to discuss any issues or concerns.
SE04	A community fund will be established to support community events and initiatives that encourage social interaction such as sporting teams and community festivals.
	Resolve detailed arrangements for the community fund to the value of \$250,000 per annum in partnership with East Gippsland Shire Council and relevant community stakeholders. In particular, there must be community led involvement in:
	identifying a Committee of Management drawn from the local area.
	 selecting which communities will benefit from the programs and projects to be funded.
	selecting appropriate projects and activities.
	identifying how the fund will be established, managed and governed.
	devising and implementing processes to monitor and evaluate the fund's effectiveness in addressing socio-economic disadvantage and offsetting adverse social impacts.
	Appoint an independent facilitator to assist the establishment of the community fund and its governance.
	The operation of the fund should commence as soon as all relevant permissions are finalised to commence construction of the Project and continue until the conclusion of mining.
	The costs of administering the community fund, including the funding of the independent facilitator must be borne by the Project proponent, separate to the \$250,000 per annum fund amount.
SE05	The community engagement plan and associated activities will be regularly reviewed and adapted based on community feedback so that the community has different ways to receive information on the performance of the project.
SE06	A range of avenues will be provided for those with concerns to contact Kalbar to express their concerns or ask questions, including phone, email, social media, website and in person attendance at a Kalbar office.
SE08	Regular updates will be provided to local communities on the progress of the EES.
SE09	Regular community updates will be provided on how bushfire mitigation measures are being adopted on site.

SE11	Incentives will be provided to encourage employees to become emergency services volunteers. For example, Kalbar will pay its employees for their time to attend training and respond to incidents on behalf of these organisations.
SE12	Prior to construction and operations, all residents adjacent to affected roads will be engaged with to discuss any concerns they have and how road safety can be maintained.
SE13	The need for a cycleway/foot path on Lindenow-Glenaladale Road to provide greater protection for cyclists and pedestrians on this road within the township will be investigated as a part of the traffic management plan.
SE14	If Bairnsdale Siding is utilised, Bairnsdale Racing Club and East Gippsland Shire will be engaged regarding when public events are held at Bairnsdale Racecourse and the measures that can be adopted to improve pedestrian safety.
SE15	All adjacent landholders will be engaged prior to construction and operations to discuss any concerns that these residents have and dust emissions will be minimised.
SE16	The use of low beam lights on vehicles will be promoted except in emergencies or for safety reasons.
SE17	Site-specific visual impact management will be discussed with affected residents located close to the project area.
SE18	Current levels of access to national parks and other natural assets will be maintained.
SE19	An environmental review committee will be established to involve the community in reviewing the environmental performance of the project throughout its life.
SE20	A community reference group (CRG) will be established to provide a point of liaison and communication with the local community during project construction and operations.
	The purpose of the CRG is to provide a consultative forum through which to:
	 Establish an effective and efficient two-way communication process with stakeholders and the community.
	Identify issues and manage them collaboratively.
	Consider project improvement opportunities and initiatives.
	The goals of the CRG must include, without limitation, to:
	Develop community trust and confidence in Kalbar and the Fingerboards project.
	Strengthen long term relationships with stakeholders and community.
	 Provide a vehicle to disseminate information to and from stakeholders and the community.
	 Provide a process to raise and address concerns, and for Kalbar to demonstrate how those concerns have been taken into consideration.
	 To review and evaluate the effectiveness of the CRG to ensure it is meeting the expectations of the community and Kalbar.
	Operate as a transparent, representative and accessible forum.
	The CRG will have a broad membership including members of Kalbar, local government, key regulators of the mine, industry bodies, and local community representatives.
SE21	Close dialogue with East Gippsland and Wellington Shire councils will be maintained to identify opportunities to encourage social interaction.
SE22	Timely responses will be provided to any community complaints raised.
	A community complaints procedure will be developed and implemented.
	The complaints management system will be consistent with Australian Standard AS/NZS 10002: 2014 Guidelines for Complaint Management in Organisations and document:
	 To review and evaluate the effectiveness of the CRG to ensure it is meeting the expectations of the community and Kalbar. Operate as a transparent, representative and accessible forum. The CRG will have a broad membership including members of Kalbar, local government regulators of the mine, industry bodies, and local community representatives. Close dialogue with East Gippsland and Wellington Shire councils will be maintained to identify opportunities to encourage social interaction. Timely responses will be provided to any community complaints raised. A community complaints procedure will be developed and implemented. The complaints management system will be consistent with Australian Standard AS/NZ

	name of persons receiving complaint
	name of person or stakeholder making the complaint
	 location, date and time of complaint. nature of the complaint
	 nature or the complaint actions taken to rectify
	actions to avoid and minimise risk of reoccurrence
	 name of person(s) responsible for undertaking the required actions communication of response to the complaint.
SE23	Kalbar will work with the East Gippsland Shire Council to determine the way Kalbar can meet objectives of the Lindenow and District Community Plan.
SE24	Incentives will be provided for personnel to participate in local community activities and organisations.
SE25	An employment code of conduct, pre-employment screening and fit for work procedures will be developed and implemented.
	Police checks will be conducted on potential project personnel.
SE29	A local employment and procurement guideline will be developed and implemented that gives preference to local residents and businesses in the East Gippsland and Wellington Shire regions.
SE30	Incentives for new residents to buy locally will be established, working work with the Chamber of Commerce and local industry representative groups.
SE31	Capacity and capability of the local community will be built through implementing training courses as required to fill mining roles to the extent possible from a local workforce. This will include working with local training providers, including TAFE and training providers, to develop and deliver general or tailored training where needed.
SE32	Local landholders will be engaged on how land is rehabilitated to ensure compatibility with future stocking requirements.
SE33	Access will be maintained to the Fingerboards information board and a similar meeting point re-established.
SE35	Tourism authorities, such as Business & Tourism East Gippsland and East Gippsland Marketing Inc., will be engaged regularly to identify economic and business opportunities for the region.
SE36	Local businesses providing short-term accommodation will be engaged to discuss the timing of project works and potential peak periods.
SE37	All agricultural landholders within 5 km of the project area will be consulted to understand where, when and how the local road network is used for the transport of machinery and stock so that strategies can be introduced to reduce potential impacts.
SE38	Education and training providers will be consulted to identify suitable work placement applicants and provide opportunities to work on the project.
SE39	Local applicants will be targeted for employment opportunities on the project, working with GROW Gippsland and other organisations, including to encourage applicants from disadvantaged or vulnerable groups.
SE40	Opportunities will be provided for apprentices to work on the project and work with support networks such as the Australian Apprenticeship Support Network to increase the likelihood that these apprentices will complete their program.

SE41	Information sessions will be provided for potential employees, presentations given at career events and local schools, and careers counsellors will be engaged on job opportunities available on the project.
SE42	Partnerships will be formed with local labour hire providers to fill short-term and contract jobs.
SE43	A database of businesses based in Gippsland with services and supplies that could support construction, operations and closure of the project, such as Industry Capability Network (ICN) and Gippsland Business Connect, will be established and maintained.
SE44	A range of people working on the mine (including construction, operations and closure) and/or featured roles on the mine will be profiled to give people information on the types of roles available and general competencies and skills that are required. This information will be distributed to education and training providers and advertised in local newspapers to assist people in getting job ready.
SE45	Industry Capability Network (ICN) and GROW industry briefings and tender writing workshops will be provided to assist local suppliers navigate the tender process for work associated with the mine.
SE46	Skill shortages and training requirements will be identified to allow local people to gain qualifications within these areas. Ongoing training will be encouraged and supported through local partnerships with a view to keep abreast of the changing landscape of the mining industry.
SE47	A labour force strategy will be prepared in consultation with local employment networks prior to construction commencing; including targeted strategies to manage potential impacts of project employment on other sectors.
SE49	Pre-employment medicals and drug testing will be conducted through contracts with local hospitals or medical practices.
SE50	Local health service providers, education providers and relevant support networks will be engaged with prior to construction, and on a six-monthly basis during construction and operations, to monitor and identify strategies to manage any potential peaks in demand.
SE52	Targeted strategies will be implemented to reduce potential impacts on housing availability and affordability during construction; including for example working with East Gippsland and Wellington shires to source holiday homes that could be rented to workers during the construction period, and/or assisting community housing agencies in securing short-term accommodation for use as crisis accommodation during construction.
SE53	A housing strategy will be developed in consultation with local housing support agencies prior to construction commencing to identify targeted strategies associated with accommodating the non-local workforce.
SE54	Workers living in long-term accommodation will be encouraged to share with other project workers.
SE55	Regular consultation will be conducted with local housing support agencies and house prices will be monitored.
SE56	Transport contractors will be engaged about opportunities to adopt vehicle management systems which enable drivers to detect school buses.
SE57	One-on-one meetings will be held with nearby landholders on a regular basis to provide project updates and discuss any issues of concern.
SE59	 Kalbar will work with GROW Gippsland to support local economic development, including: Developing an individualised GROW Gippsland Action Plan with an annual statement of outcomes for publication on the GROW Gippsland website.

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Surface water

SW01	Surface water will be extracted from the Mitchell River in line with the conditions, timings,
	and limits detailed in any licence issued by Southern Rural Water.

SW02	The design and placement of infrastructure in the project area will consider potential for flow accumulation and increased flood risk, and associated prevention measures.
SW03	Mine contact water from outside of the mine void, or process water dams that is retained in water management dams will be offset by releasing the same volume of water from the freshwater storage dam in accordance with any development or operating licence issued by EPA. Records must be kept of the quantity of mine contact water retained on site and the timing and quantity of freshwater releases.
SW04A	A surface water and groundwater sub-plan Risk Treatment Plan will be developed and implemented to minimise impacts from mine contact water (including runoff from construction activities). The sub-plan will include measures such as:
	Directing surface runoff around or away from areas of land disturbance, stockpiles, embankments or nearby sensitive areas, where practicable.
	 Capturing runoff (via water management dams) that comes into contact with disturbed areas and directing it to water management dams. If required, flocculant treatment will be used to reduce suspended sediment levels. [a PAM flocculant will be used]
	Controlling erosion within gullies prior to completion of water management dams using primary and secondary sediment traps constructed at appropriate sites.
	 Retaining water on site from disturbed catchments via water management dams [spill frequencies addressed more specifically in SW11 below]
	Designing and flow lines to reduce water flow velocity and erosion.
SW04B	The Construction Management Plan approved under the Incorporated Document will include best practice measures to minimise impacts associated with discharge of stormwater from construction areas.
SW05	Freeboards on the freshwater storage dam, process water dam and water management dams will be maintained to allow for storm events and high rainfall periods, in accordance with relevant licence, permit and approval requirements.
SW06	Areas will be inspected for nearby stream bed instability prior to construction where infrastructure such as water storages and haul roads are to be installed on or close to a watercourse.
SW07	If required, bed instability will be addressed through appropriately designed grade controls, such as the use of rock chutes.
SW08	All stream bed instability areas within and immediately downstream of the project area will be inspected prior to, and annually, during construction to determine movement rates of unstable areas and potential risks posed to mine infrastructure.
SW09	Surface water management infrastructure designed to capture runoff (and eroded soils) will be maintained until vegetation is fully established has stabilised the landscape.
SW10	Stockpile slope angles will be constructed as low as practicable; and seeding or mulch materials and contour ripping will be used to stabilise stockpiles, prevent runoff and minimise erosion of soils.
SW11	A daily water balance approach will be applied to dam design to achieve a probability of spillway activation of once per 100 years on average (1% average-exceedance probability) for Perry River catchments, and three times per 100 years on average (3.3% average-exceedance probability) for Mitchell River catchments.
SW12	The design, construction and operation of the freshwater storage dam and water management dams will follow the Australian National Committee on Large Dams (ANCOLD) Guidelines on the Consequence Categories for Dams.
SW21	Rainfall runoff water from vehicle workshop floors, vehicle service areas and fuelling areas will be captured and directed to an interceptor trap to extract hydrocarbons, prior to treated

	water being discharged to the drain and sump network. The trap will be emptied of hydrocarbons routinely by a licensed contractor for disposal offsite at a licensed facility.
SW22	[deleted – TSF]
SW23	Water will be recovered and reused where practicable (such as runoff from ore stockpiles and within the mine voids and Perry Gully).
SW24	Water running off undisturbed ground will be diverted around disturbance areas where practicable.
SW28	Surface water will be managed through an adaptive management strategy that includes trigger levels for surface water quantity and quality that determine when remedial action is required (in consultation with affected stakeholders).
SW30	Appropriate outlet scour protection will be placed on all stormwater outlets, chutes, spillways and slope drains to dissipate flow energy and minimise risk of soil erosion.
SW32	Pumping from mine contact water management dams will commence when any dams reach a trigger 10% of the dam's capacity or when high rainfall is forecast that is likely to increase the risk of spill.
	Pumping operations would occur at a discrete number of dams at any one time (ie 1 or 2 dams, not all dams simultaneously), with the dams selected for dewatering assessed daily on the basis of location and stored volume.
	From the dams triggered, those in the Perry River catchment will be emptied as a priority over those located in the Mitchell River catchment. Amongst dams within the same catchment, dams filled to a higher percentage of total volume would be dewatered with higher priority.
SW33	If water management dams are required to be drawn down at a rate greater than can be achieved by the process water demand, mine contact water will be treated at a rate of up to 24 ML/day in the Dissolved Air Flotation plant (DAF) prior to discharge to the freshwater storage dam. Mine contact water will be treated to meet development or operating licence requirements prior to discharge offsite.
SW34	 Ephemeral drainage gullies will be revegetated in areas downstream of future mining activities prior to operations commencing to increase landscape stability and specifically mitigate: Effects of a moderate increased flow velocity downstream of the mine operations and the final landform. Potential effects of tunnel erosion downstream of the mine void boundary where soil treatment is not planned. Effects of sediment starvation by reducing sediment transport and encouraging deposition.
SW35	An adaptive management strategy will be implemented, based on water quality and quantity monitoring results, to determine whether offset water that would typically be returned to the Mitchell River may be directed to ephemeral drainage gullies in a controlled manner.
SW36	Aquatic and riparian vegetation will be established in minor waterways between the water management dams and major receiving waterways to reduce potential water quality impacts from release of mine contact water.
SW37	Natural surface water drainage courses will be re-routed to avoid post-mining landforms, where practicable.
SW38	Surface water ponding on post-mining landforms will be avoided, where practicable, through appropriate slope profile design and topsoil treatments.

The downhill side of containment structures, such as surface water drains and road batters, will undergo soil conditioning and be spread with topsoil and revegetated as soon as practicable to minimise erosion and sediment laden runoff.
Sediment traps and dams will be cleaned at regular intervals, and following storm events and high rainfall events, to maintain the efficiency of the infrastructure.
Riparian vegetation will be retained where possible to maintain aquatic ecosystem habitat and prevent sedimentation of watercourses.
Access tracks and roads will be regularly maintained and clearly marked to prevent establishment of secondary tracks and reduce soil erosion; existing roads will be used where practicable.
Surface water monitoring and management will be carried out in accordance with an approved Water Risk Treatment Plan (forming part of the Work Plan) and any development and operating licence issued by EPA.
Water discharges will be undertaken in accordance with conditions imposed in a development and operating licence issued by EPA.
In order to limit the risk of impacts arising due to nitrogen or phosphorus in discharged water, treated water from the Dissolved Air Flotation (DAF) circuit will not be released to the Mitchell River when daily Mitchell River water flows are less than 50 ML/day or as specified in the development and operating licence issued by EPA.
The DAF plant will be tested at least to annually confirm operability during low rainfall periods when it is not in active use or as specified in the development and operating licence issued by EPA.
In preparation for the licence application to SRW Kalbar in consultation with key stakeholders will assess potential impacts on farm dams and where a potential impact is identified, identify options for delivery mechanisms of offset water.
A site water balance will be maintained. It will incorporate weather data, monitoring and all material sources of loss and input including seepage and evaporation from tailings.
SW49: Undertake dam failure impact assessment in accordance with ANCOLD guidelines.
SW50: Revised flood modelling, including modelling of Perry Gully, will be prepared to inform detailed design and will be revised as needed to inform future mine works and operations.
Bunding for the fuel storage area (fuel farm) will be in accordance with Australian Standard 1940:2017 (Standards Australia, 2017) ² . The capacity (i.e., bund height), storage, stormwater control and maintenance, and operation of bunded areas will comply with EPA bunding guidelines (Environment Protection Authority Victoria, 2015) ³ . If a leak or spill occurs, contaminated soil will be excavated and disposed of by a qualified specialist at a licenced facility.

² Standards Australia. 2004. AS 1940:2004. The Storage and Handling of Flammable and Combustible Liquids. Standards Australia. Sydney, New South Wales.

³ Environment Protection Authority Victoria.2018. Liquid Storage and Handling Guidelines Publication 1698 Environment Protection Authority Victoria, Southbank, Victoria.

SW52 (former TE25)	Strategies will be implemented during construction and operations to control sediment runoff (and reduce the potential for increased turbidity in downstream aquatic habitats) and reduce the potential for spills.
SW53	Wastewater from ablutions and the office will be treated with a wastewater treatment system. There will be sufficient capacity to cater for the operations workforce and visitors.
SW53	All waste excluding septic waste will be removed from site and disposed of by licensed contractors.
SW53	Waste hydrocarbons will be stored in suitable containers for removal from the mine site for disposal at either an EPA-approved hydrocarbon waste site or a recycling depot.
SW54	Permanent and long-term drains and bund walls will be topsoiled and vegetated with suitable vegetation as soon as possible

Terrestrial and aquatic biodiversity

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TE01	Prior to any vegetation removal, a native vegetation management plan and offset management plan must be prepared and approved by DELWP.
TE02	Prior to clearing, artificial hollows and nest boxes will be created / installed in areas of potential habitat adjacent to the project footprint to compensate for the removal of hollow-bearing trees and impacts on hollow-dependant fauna known or potentially present (yellow-bellied sheathtail bat, powerful owl, masked owl and eastern pygmy possum).
	Salvaged or artificial hollows will be installed (under the supervision of an ecologist) in retained vegetation adjacent to the project footprint where hollow-bearing trees are lost.
TE03	Appropriate offsets will be secured in accordance with state and Commonwealth legislation and policy.
TE04	The biodiversity RTP and Construction Management Plan (under the Incorporated Document) must identify no go zones. These zones must include, where practicable: • Saplings morass; • Areas surrouding the Fernbank Rail siding; • Gullies containing native vegetation with a strategic biodiversity score of 0.6 or
	more not included in the mining area.
	The extent of clearance and buffers around no-go areas will be clearly defined to avoid disturbance within areas to be retained.
TE05	Access tracks and roads will be clearly marked to prevent establishment of secondary tracks and disturbance to adjacent vegetation; existing roads will be used where practicable.
TE06	Access tracks expected to experience heavy traffic will not be located adjacent to areas of high ecological sensitivity (comprising areas of the Gippsland Red Gum Grassy Woodland and Associated Native Grassland ecological community and 11 EVCs (refer to Table 9.3); hollow-bearing trees; known occurrences and identified potential habitat for swamp everlasting, dwarf kerrawang, gaping leek-orchid, slender wire-lily, blue mat-rush, slender tick-trefoil and sandfly zieria; identified habitat for the giant burrowing frog and Australian grayling; and downstream waterways and wetlands).
TE07	Parking areas, stockpiles, machinery depots and site buildings will be located in areas of low ecological value (such as blue gum plantations).
TE08	Large trees will be retained adjacent to the project footprint and clearly marked; Tree Retention Zones will be identified and marked.

TE09	Areas will be revegetated and managed in accordance with the rehabilitation sub-plan to increase overall native vegetation cover in the project area, native vegetation patch size and habitat connectivity, and to exclude stock from such areas.
TE10	Disturbed areas will be revegetated to recreate pre-existing vegetation communities, where agreed and practicable, to increase habitat value and visual amenity while reducing the likelihood for weeds to establish and proliferate, and for soil erosion to occur.
TE11	Revegetation of mined areas will include:
	 Planting locally occurring native shrubs, trees and groundcover plants, selected in consultation with DELWP, to recreate the target vegetation community.
	 Including rocks, logs, dead trees, and stumps in the restoration and rehabilitation works to provide fauna habitat.
	Maintaining plantings in accordance with the rehabilitation sub-plan.
	Managing weeds and pest animals.
TE12	Staff/contractor inductions will incorporate an environmental component signed off by a suitably qualified representative (e.g., site environmental advisor/specialist).
TE13	Sensitive areas, such as those with fauna habitat, will be cleared of fauna (as far as practicable) by a suitably trained ecologist or other qualified environmental specialist prior to construction and operations activities commencing.
TE14	Pre-clearing activities will remove the understorey and smaller non-hollow-bearing trees to disturb fauna and encourage them away from the clearing area.
TE15	Animals disturbed during clearing works will be relocated, with appropriate authorisation under the Wildlife Act 1975.
TE16	All trenches will have escape ramps to avoid fauna entrapment and allow animals to escape.
TE17	Appropriate speed-limits will be applied in areas containing remnant native vegetation to reduce the risk of fauna mortality from vehicle strike.
TE18	Traffic movements will be minimised during the night, dusk and dawn periods in remnant native vegetation areas.
TE19	Hollow-bearing trees will be retained around project infrastructure, where construction permits.
TE20	Pre-clearance surveys will be carried out by a competent environmental professional in all areas of vegetation to be cleared that have large trees (as defined in the Guidelines for the removal, destruction or lopping of native vegetation, 2017) or that are likely to support flora or fauna species listed under the EPBC Act and/or FFG Act.
TE21	[Delete]
TE22	Isolation and fragmentation of habitat will be minimised when planning activities with potential to remove vegetation.
TE23	Appropriate erosion and sediment control strategies will be implemented to prevent gully erosion in areas adjoining the project footprint.
TE24	No-go zones with buffers will be established around waterbodies adjoining the project footprint to prevent any disturbance to the biodiversity values present within these areas. The width of buffer areas will be determined on a case-by-case basis.
TE25	[deleted – moved to SW52]
TE26	[deleted – moved to SW51]
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TE27	Additional targeted surveys for specified species, including the Giant Burrowing Frog (active searching, installation of song meters over multiple days after significant rainfall) as part of approval conditions recommended through the EES assessment process.
	Surveys should be undertaken as soon as practicable following the Minister's Assessment, having regard to any available information on appropriate timing of surveys for relevant species (e.g., flowering periods, breeding periods, etc.) and in any event prior to the submission of the Native Vegetation Management Plan, Biodiversity RTP or CEMP, as relevant.
TE28	Plans for activities which have the potential to adversely affect fauna will incorporate (either expressly or by reference) salvage and relocation/translocation procedures.
TE29	Use of underpasses/culverts and overpasses will be investigated to allow ground dwelling species and arboreal marsupials to move between areas of native vegetation that are bisected or crossed by access roads and linear infrastructure.
TE30	All remaining areas of ecological value near the project area and infrastructure options area will be managed under the supervision of a suitably qualified ecologist to enhance habitat features and compensate for those lost; including installing nesting boxes and logs, and other large woody debris relocated from cleared areas.
TE31	Fauna escape features and refuges (including ramps and damp sandbags) will be provided where remnant patches of vegetation are adjacent to construction and operational areas.
TE32	Any water and other suppressants (applied to reduce dust) will not directly enter nearby waterbodies or remnant native vegetation.
TE34	Construction machinery, vehicles and pedestrians will be confined to formed tracks and designated areas, where practicable.
TE35	Excessive noise or vibration emitting equipment or machinery will be located away from sensitive ecological values. Where relocation is not feasible, control measures such as mufflers or baffles will be employed.
TE36	Lighting systems will be designed and used in a way that minimises potential impacts on fauna species, particularly nocturnal species (mammals such as possums, gliders and bats, and birds); including, where applicable, use of light shields and directional lighting to avoid interference with foraging or roosting activities.
TE37	Project infrastructure and activities will be micro-sited to avoid threatened flora species and native vegetation; including for example, if vegetation of high quality is identified during preclearance searches, where practicable, the location will be adjusted to avoid it.
TE38	Limits of clearing sensitive areas (e.g., listed species habitat) will be marked to avoid unnecessary vegetation and habitat removal.
TE39	All trenches and other excavations will be checked daily and any trapped animals removed by a competent environmental professional before works commence.
HZ-TE41	Areas used for handling and/or storage of concentrated flocculent and hazardous materials will be bunded appropriately to avoid spilled or stored material reaching the surrounding environment and will contain spill response equipment.
HZ-TE42	Mobile plant and vehicles will be maintained regularly and in accordance with manufacturers' specifications; including inspections for leaks and spills.
HZ-TE44	If a leak or spill occurs, contaminated soil will be excavated and disposed of by a qualified specialist at a licenced facility.

TE45	Biosecurity procedures will be implemented to avoid introducing and spreading weeds, pests and diseases into the project area and surrounds.
TE46	Disturbed areas will be revegetated to increase habitat value and visual amenity while reducing the likelihood of weeds to establish and proliferate.
TE47	Revegetation of mined areas will include management of weeds and pest animals.
TE48	Currently known extant populations of gaping-leek orchid will be avoided, and project activities will be designed to minimise potential for indirect impacts to these populations.
TE49	Construction machinery will not be permitted to access Cowells Lane to avoid potential indirect impacts to swamp everlasting, native vegetation and low-lying areas within the infrastructure options area.
TE50	Progressive rehabilitation will aim to increase the extent of native vegetation cover and habitat connectivity within and adjoining the project area prior to clearing and fragmenting habitat in other areas.
TE51	Faunal habitat features, such as logs and hollows, will be included as part of habitat restoration works. Features will be implemented in accordance with the Fauna Impact Mitigation and Landscape Plan
TE52	Populations of listed or rare native plant species from EVCs within the project area will be increased through targeted recovery programs.
TE53	A detailed flora and fauna survey will be undertaken in accordance with relevant state and Commonwealth legislative requirements in the unsurveyed portion of the project area, located in the northwestern corner, prior to commencement of ground disturbance.
TE54	Pre-clearance searches for fauna will be conducted by a competent environmental professional prior to vegetation removal.
TE55	Construction activities will be delayed if significant weather events are forecast.
TE56	Felling of large hollow-bearing trees will be supervised by a competent environmental professional.

Traffic and transport

[Note: The EES assessed three product (HMC) transport options.

Option 1 – haul via private road to a new siding at Fernbank East;

Option 2 – truck transport to the Bairnsdale (Fenning) siding (either via Racecourse Road or via Main Street / Collins Street / Bosworth Road);

Pre-Avon River bridge - Truck transport to a Port via Princess Highway.

Kalbar no longer pursues the Pre-Avon River Bridge option. Option 1 and 2 continue to form options to be assessed. Some mitigations are specific to either Option 1 or 2 and are differentiated accordingly.]

TT01	Option 2: The intersection of Princes Highway and Lindenow-Glenaladale Road will be upgraded to roundabout control to increase road safety and avoid excessive slowing of traffic due to B-doubles turning left from Lindenow-Glenaladale Road onto Princes Highway (if required under the Bairnsdale rail and road and rail scenarios).
TT02	A traffic management plan will be prepared in accordance with industry standards to address general driver awareness and safety for the project workforce and the inherent risks associated with driving; the plan will be updated as required based on annual driver surveys of the project workforce and in response to recommendations from relevant incident investigations.

TT03	Standard road lighting will be provided at the following intersections to increase the visibility on approach to the intersection and improve safety:
	Fernbank-Glenaladale Road and Bairnsdale-Dargo Road (Both Options, noting that this lighting also required for construction phase)
	Lindenow-Glenaladale Road and Princes Highway. (Option 2)
	Fernbank-Glenaladale Road and the private haulage road (Option 1).
	Racecourse Road and Princes Highway (if required under the Bairnsdale rail scenario) (Option 2)
TT04	Flag lighting (a small number of lights to indicate the presence and location of an intersection without providing lighting to any particular level) will be provided at the following intersections to increase visibility on approach and improve safety:
	Fernbank-Glenaladale Road and Bairnsdale-Dargo Road
	Fernbank-Glenaladale Road and private haulage road. (Option 1 only)
TT05	Prior to the movement of oversize and overmass vehicles:
	An audit will be completed to assess route options, safety, and clearance between the vehicle and potential obstructions such as wires, trees, structures and rail crossing infrastructure, and then plan the route accordingly.
TT06	Oversize and overmass vehicle movements will avoid peak hours and school bus operation hours.
TT07	A channelised right-turn treatment for traffic turning from Bairnsdale Dargo Road onto the diverted section of Fernbank-Glenaladale Road north of Bairnsdale-Dargo Road will be provided at this 'T' intersection.
TT10	Diverted and realigned roads will be constructed to the same or better standard as existing roads.
	All roads and or surrounding or road related infrastructure altered, diverted or realigned will be constructed to a standard approved by the relevant road authority at the Proponent's costs
TT11	New intersections, including new intersections that have been created by diverted roads, will be constructed to Austroads standards.
TT12	The no overtaking line marking west of the intersection of Lindenow-Glenaladale Road and Bairnsdale-Dargo Road will be extended to just west of Lindenow-Glenaladale Road to reduce the risk of vehicles trying to overtake B-doubles on the approach to the crest of the hill near the intersection.
TT13	Boom gates will be installed at the level crossing on Lindenow-Glenaladale Road in accordance with AS 1742.7 Manual of uniform traffic control standards, Part 7 Railway crossings.
TT14	Rumble or shaker strips will be provided on approach to the new Fingerboards roundabout and on the Fernbank East rail siding access road to prevent mud tracking onto the public road network.
TT15	The proposed new Fingerboards roundabout will be designed so that the angle between each leg is approximately equal, such that the legs are distributed generally evenly around the roundabout.
TT17	Where roadworks require closure of roads, alternative routes will be identified in consultation with East Gippsland Shire Council and Department of Transport to provide the public with adequate access at all times.

TT18	New intersections will be constructed such that through-traffic movements are maintained to the satisfaction of the responsible road authority. Temporary traffic signals will be used as required to safely control traffic flow through the work site.
TT19	Roadworks and temporary traffic management on the public road network will be implemented in accordance with a traffic management plan submitted to and approved by the responsible road authority prior to commencement of works.
TT20	Emergency services will be advised where significant delays are expected and contact details for the operations manager will be provided to allow emergency services to arrange access across an area of delay.
TT21	Option 2: Roadworks affecting the Princes Highway, if required under the Bairnsdale rail scenario will be avoided during peak periods, including peak hours and peak times such as school and public holidays, wherever practicable.
TT22	A dedicated travel plan will be prepared that encourages personnel to travel to and from the mine site by bus, or to carpool.
TT23	Option 2: Based on the outcomes of pedestrian surveys at Lindenow South, which must be conducted prior to commencement with results utilised in the Traffic and Transport Management Plan approved under the Incorporated Document, B-double operating times will be limited (i.e., avoiding peak times), speed limits will be revised and driver training and familiarisation will be undertaken as required to minimise risks to pedestrian safety within the town.
TT24	[Deleted]
TT25	Option 2: Heavy mineral concentrate haulage via Lindenow South will be scheduled to avoid school bus routes during times of school bus movements and school pick-up and drop-off times (i.e., 8:00 a.m. to 9:30 a.m. and 2:30 p.m. to 4:00 p.m. on school days)
TT26	Where any pavement damage occurs and requires treatment, remedial pavement works will be undertaken as agreed with the responsible road authority.
TT28	Option 1: For B-double movements to Fernbank East rail siding, an operational overlay to the traffic management plan will be introduced that requires B-doubles to stop before crossing Chettles Road and Cowells Lane.
TT29	Option 2: For B-double movements to Bairnsdale rail siding, shoulders will be widened, and line marking will be reinstated on the Racecourse Road bend to reduce the potential for rear end collisions (if required under the Bairnsdale rail scenario).
TT30	Option 2: For B-double movements to Bairnsdale rail siding, shoulders will be widened, and line marking will be reinstated on the Forge Creek Road bend to reduce the potential for crashes (if required under the Bairnsdale rail scenario).
TT31	Option 2: For B-double movements to Bairnsdale rail siding, the intersection of Princes Highway and Racecourse Road will be upgraded to roundabout control to increase road safety and avoid excessive slowing of traffic due to B-doubles turning right from Princes Highway onto Racecourse Road (if required under the Bairnsdale rail scenario).
TT32	Option 2: Heavy mineral concentrate haulage via Lindenow South will be scheduled to avoid school bus routes during times of school bus movements and school pick-up and drop-off times (i.e., 8:00 a.m. to 9:30 a.m. and 2:30 p.m. to 4:00 p.m. on school days)
TT33	Where any pavement damage occurs and requires treatment, remedial pavement works will be undertaken as agreed with the responsible road authority.

TT34	Option 1: For B-double movements to Fernbank East rail siding, an operational overlay to the traffic management plan will be introduced that requires B-doubles to stop before crossing Chettles Road and Cowells Lane.
TT41	Option 2: For B-double movements to Bairnsdale rail siding, shoulders will be widened, and line marking will be reinstated on the Racecourse Road bend to reduce the potential for rear end collisions (if required under the Bairnsdale rail scenario).

Visual and landscape

VL01	Visual bunds and screen plantings will be established at locations around the perimeter of the project area to visually screen project activities from sensitive viewpoints.
VL02	Fixed lighting on plant and buildings will be designed to reduce the potential for light spill through measures such as focussed/targeted lighting and installation of shields or baffles and will be designed so as not to exceed 0.1 lux at any surrounding dwelling (assessed in accordance with AS24282:2019), including under cloudy conditions.
VL03	Buildings and roofs will be clad with non-reflective materials of a colour that mimics those found in the landscape to reduce visual contrast with the landscape setting.
VL04	Works will be scheduled wherever practicable during daylight hours to avoid night-time activities in areas directly visible from nearby residences.
VL05	The mine void will be progressively backfilled, and rehabilitation will be progressive to reinstate pre-mining landforms and re-establish vegetation.
VL06	Fixed buildings will be located to take advantage of existing vegetation screening. Additional vegetation screening will be planned to minimise future visual impacts.
VL07	The landscape will be restored to reduce visual impacts from elevated viewpoints.
VL08	Regular slopes and/or sharp transition angles will be rounded to provide a natural appearance to the final landform.
VL09	Disturbed areas (e.g., road reserves) will be revegetated with local indigenous vegetation.
VL10	Displaced plantation timber and vegetation will be replaced around properties in consultation with relevant landholders.
VL11	Topsoil will be managed and maintained throughout rehabilitation activities to promote successful re-grassing and tree planting.
VL12	Containers will be stacked at the rail siding to the maximum height of adjacent screening vegetation and/or topography.
VL13	Temporary visual bunds will be placed to screen operations within the mine void.
VL14	A program of voluntary landscape mitigation works must be offered, and if accepted, made available, to the owners of dwellings within 1km of the mine. The offered mitigation works must include planting and/or other works on the owner's land to reduce direct views of mining activity from dwellings.
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