APPENDIX C

Appendix C - Project Risk Register

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Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Subsidence						
Unacceptable subsidence related impacts to natural features such as waterways, caves, escarpments, overhangs, aquifers and other local environmental features.	• Environmental and visual impacts. • Licence to operate jeopardised. • Unrealistic operating conditions	Subsidence, poor mine planning or inability to manage impacts.	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**14**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Ecology • Geomorphology • Groundwater • Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Cracking of cliff lines and activation of landslides	• Environmental and visual impacts. • Adverse visual impact • Safety concerns • Resulting damage to other features • Reputational and cost implications	Subsidence, poor mine planning or inability to manage impacts.	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Visual impact • Geomorphology • Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Terrestrial Ecology						
Vegetation clearance	• Habitat loss	Due to extension of the REA	• Mine planning being informed by technical studies • Utilise existing team knowledge • Engaged consultants for EIS * Development of Biodiversity Offset Strategy (reduces consequence of vegetation clearance in the footprint of the REA)	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Ecology • Prepare REA in consideration of Technical Specialists input, RMZs, and corporate requirements * Prepare Biodiversity Offset Strategy
Potential significant impact on threatened species or Endangered Ecological Communities	• Delay to approval • Reputational implications • Change to mine plan	Inadequate assessment scope, poor mine planning or through vegetation clearing required for the expansion of the REA.	• Baseline monitoring • Planned fieldwork • Specialist input to inform mine/REA design • Preliminary offset approach to be adopted	**Require Improvement**	**14**	• Early definition (identify scope and timeframe) of REA footprint --- Use existing? • Liaise with DEH • Offset strategy and method • Review land available
Damage to rock bars, reserves, ecological communities.	• Environmental impacts • Adverse visual impact	Subsidence	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Ecology • Geomorphology • Groundwater • Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Aquatic Ecology						

Changes to aquatic ecology and instream habitat	• Habitat loss
	• Environmental impacts
	• Reputational implications
		As a result of subsidence and mine water discharge	• Baseline monitoring
			• Planned fieldwork
			• Specialist input to inform mine/REA design
			• Preliminary offset approach to be adopted
				Satisfactory	**13**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report:
						  • Subsidence
						  • Ecology
						  • Geomorphology
						• Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements

Impacts to groundwater dependant ecosystems	• Habitat loss
	• Environmental impacts
	• Reputational implications
		Changes in groundwater chemistry and as a result of aquifer depressurisation.	• Plan and coordinate ongoing consultation with stakeholders
			• Mine planning being informed by technical studies
			• Utilise existing team knowledge
			• Undertake early identification of structures
			• Engaged consultants for EIS
				Satisfactory	**13**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report:
						  • Subsidence
						  • Ecology
						  • Groundwater
						• Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements
						• Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Groundwater						
Changes to volume and quality of inflows, particularly upland areas	• Environmental impacts • Reputational implications	Poor mine planning or inability to manage impacts	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**10**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Ecology • Groundwater • Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Impacts to local groundwater bore	- Impacts to local bore users. - Depressurisation of aquifers or changes to groundwater chemistry.	Poor mine planning or inability to manage impacts	- Plan and coordinate ongoing consultation with stakeholders - Mine planning being informed by technical studies - Utilise existing team knowledge - Undertake early identification of structures - Engaged consultants for EIS	**Satisfactory**	**13**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Groundwater • Social impact assessment - Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements - Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Impacts to aquifers	- Damage to private and commercial - Regional impacts to groundwater system - Baldhill claystone	Subsidence	- Plan and coordinate ongoing consultation with stakeholders - Mine planning being informed by technical studies - Utilise existing team knowledge - Undertake early identification of structures - Engaged consultants for EIS - Baseline monitoring ongoing - Review of hydrogeological parameters to be undertaken	**Satisfactory**	**8**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report • Subsidence • Groundwater • Social impact assessment - Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements - Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Inadequate discharge and treatment for bore dewatering	- Additional operational costs and limitations.	A lack of understanding of hydrogeology and inadequate options for dewatering and discharge.	- Groundwater impact assessment and measures to be undertaken	**Satisfactory**	**5**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Groundwater • Site water balance • Social impact assessment - Prepare mine plan in consideration of Technical Specialists input, RMZs, and corporate requirements

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Surface Water						
Erosion during construction of REA	- Sedimentation of local waterways	Mobilisation of disturbed soils during construction of the REA	- Specialist input into mine/REA design	**Satisfactory**	**8**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report • Surface water • Soils • Ecology - Prepare REA design in consideration of Technical Specialists input and corporate requirements
Water quality degradation	- Water quality impacts such as changes to water chemistry, potential for iron staining. - Ecological impacts - Chemical change/altered water quality - Aesthetics (Iron straining) - Comms/ political/reputation cost - Water supply issues	Unmanaged operational discharge into local receiving environment	- Baseline monitoring ongoing - Water balance and salt balance study to be undertaken - Impact assessment planned - Regional understanding - utilise existing knowledge and identify knowledge gaps	**Require Improvement**	**12**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Surface water • Site water balance • Ecology
Site water balance surplus/deficit	- Water supply surplus/deficit. - Stop work, production impact. - Flow increase/decrease into receiving environment from discharge locations	Inadequate planning and management of mine water	- Water balance study planned	**Satisfactory**	**3**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Site water balance

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Surface drainage impacts on surrounding areas	- Erosion - Sedimentation - Increased flow velocity in receiving environment	Ineffective REA surface drainage design	- Baseline monitoring ongoing - Specialist input into mine/REA design	**Satisfactory**	**9**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Site water balance • Surface water • Geomorphology • Ecology • Groundwater • Agency consultation – NSW EPA
Water quality impacts in near-field receiving environments	- Ecological impacts - Chemical change/altered water quality - Aesthetics (Iron straining) - Comms/political/reputation cost - Water supply issues	Near-field subsidence-induced surface cracking, alteration in surface water/groundwater interaction, other catchment issues, or climatic influences.	- Baseline monitoring ongoing - Impact assessment planned - Regional understanding - utilise existing knowledge and identify knowledge gaps	**Require Improvement**	**13**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Site water balance • Surface water • Geomorphology • Ecology • Groundwater - Review of process data - Undertake GAP analysis - Agency consultation

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Water quality impacts in far-field receiving environments	- Impacts to far-field areas e.g. Thirlmere Lakes or Lake Avon - Community opposition - Damaged natural system + potable water supply - Regional downstream impacts to water quality - Significant impacts to Nepean river and catchment areas - Water users downstream - Compounded ecological uses	Poor mine planning and an inability to manage subsidence impact	- Plan and coordinate ongoing consultation with stakeholders - Mine planning being informed by technical studies - Utilise existing team knowledge - Undertake early identification of structures - Engaged consultants for EIS - Additional bore holes planned - Review of hydrogeological model parameters to be undertaken	**Satisfactory**	**15**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Site water balance • Surface water • Geomorphology • Ecology • Groundwater - Review of process data - Undertake GAP analysis - Agency consultation – WaterNSW - Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Hydrology Changes to surface flooding regime resulting in property and social impacts	- Safety - Reputation - Legal and cost	Alterations of local topography due to subsidence.	- Natural topography (dissected landscape) to be recorded (baseline) - Flood study planned - Baseline data ongoing	**Satisfactory**	**5**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Surface water • Hydrology

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Flow regime impacts	- Changes to Surface water and Groundwater flow - Ecological downstream impacts. Tea Tree Hollow, Bargo Rv, Nepean Rv - Safety - Reputation implications	Changes to flow from surface facilities and at the discharge location. Groundwater from mine REA runoff Coal processing plant	- Baseline monitoring ongoing - Water balance study planned	**Satisfactory**	**16**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Surface water • Groundwater • Hydrology
Changes to bedslope	- Velocity changes - Geomorphic changes - Erosion/ sedimentation - Vegetation/ ecology	Subsidence	- Subsidence prediction and modelling specialist engaged and scope of works confirmed - Mine planning currently being undertaken in consideration of feasibility studies from technical specialists - Natural remediation being considered - Planned river walks - Baseline flow data collection ongoing - Collaboration between specialists and Tahmoor Coal - Geomorphology technical specialist engaged	**Require Improvement**	**12**	- Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Surface water • Geomorphology • Hydrology

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Water loss in streams (Hydro regime change)	- Loss of farm dam supplies - Impact on SCA catchment - Ecological impact - Aesthetic impact - Political and community fallout - Stop mining and remediate	Poor mine planning, inability to manage impacts, or a lack of understanding of the geomorphology and natural process.	- Plan and coordinate ongoing consultation with stakeholders - Mine planning being informed by technical studies - Utilise existing team knowledge - Undertake early identification of structures - Subsidence prediction and modelling specialist engaged and scope of works confirmed - Natural remediation being considered - Planned river walks - Baseline flow data collection ongoing - Collaboration between specialists and Tahmoor Coal - Geomorphology technical specialist engaged * Calibrated data for local and regional experiences (modelling undertaken and determined predicted impacts - causes of water loss are well understood) * increased understanding of the extent and consequence of impacts (localised)	**Require Improvement**	**17**	- • Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Surface water • Geomorphology • Hydrology - Conversation between Hydrologist and Tahmoor Coal to review of mining plan and sites - Agency consultation regarding baseline monitoring - Mine Plan + TARP - Develop acceptable level of impact table - Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Geomorphology						
Changes to bedslope	• Velocity changes • Geomorphic changes • Erosion/ sedimentation • Vegetation/ ecology	Poor mine planning, inability to manage impacts, or a lack of understanding of the geomorphology and natural process.	• Subsidence prediction and modelling specialist engaged and scope of works confirmed • Mine planning currently being undertaken in consideration of feasibility studies from technical specialists • Natural remediation being considered • Planned river walks • Baseline flow data collection ongoing • Collaboration between specialists and Tahmoor Coal • Geomorphology technical specialist engaged	**Require Improvement**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Ecology • Geomorphology

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Damage to rock bars and pools	• Environmental impacts • Adverse visual impact • Reputational and cost implications	Subsidence	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Subsidence prediction and modelling specialist engaged and scope of works confirmed • Natural remediation being considered • Planned river walks • Baseline flow data collection ongoing • Collaboration between specialists and Tahmoor Coal • Geomorphology technical specialist engaged	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Ecology • Geomorphology • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Noise and vibration						
Construction noise impacts	• Environmental impacts • Reputational and cost implications	During construction of the REA and intersection upgrade.	• Engaged noise specialist for EIS • Plan and coordinate ongoing consultation with stakeholders	**Require Improvement**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Noise • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Operational noise impacts	• Environmental impacts • Reputational and cost implications	Noise generated by the operation of ventilation fans on top of upcast shafts.	• Currently working on existing issues. • Outcomes to be applied to new shafts * Concept design that alleviates previous issues with T2 - incorporated into TSC1 and TSC2	**Require Improvement**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Noise
Rail noise impacts	• Environmental impacts • Reputational and cost implications	Noise associated with the increase in rail movements	• Engaged noise specialist for EIS • Plan and coordinate ongoing consultation with stakeholders	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Noise • Rail • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Exceeding noise criteria	• Potential impacts to properties in close proximity to the REA. • Operational stoppages - financial impact. • Complaint to EPA • Operation potential community risk of continued action • Environmental impact	REA operation. Lack of implementation of environmental management plans and policies by site personnel.	• Affected properties managed in accordance with measures identified for noise management zones and noise affected zones. * REA redesigned increase distance to sensitive receptors to reduce noise impacts	**Satisfactory**	**5**	• Early construction continuing through EIS process. • Maintenance/upgrades and replacement of existing plant as part of ongoing operations and captured in the EIS
Traffic and transport						
Service impacts - road	• Reputational implications	Increase in vehicle movements during construction mainly during peak staffing movements	• Engaged Traffic Specialist • Traffic Assessment and Management Plan to be prepared.	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Road traffic

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Traffic impact to local roads during operation	• Reputational implications	Extended duration of mining operations under the proposed development	• Engaged Traffic Specialist • Traffic Assessment and Management Plan to be prepared.	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Traffic • Social impact
Service impacts - rail	• Reputational implications	Associated with increased rail movements under the proposed development	• Rail Assessment and Management Plan to be prepared.	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Rail
Aboriginal Heritage						
Impacts to Aboriginal heritage e.g. Aboriginal paintings, standing rock.	• Delay = Increased cost • Increased offset cost • Reputation • Change to mine plan • Delay – Approval/Permits • Mine plan change • Adverse community reaction/opposition to project • Environmental impacts	As a result of subsidence, poor mine planning, inability to manage impacts, or a lack of assessment information.	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**14**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Aboriginal heritage • Subsidence • Geomorphology • Undertake consultation with registered Aboriginal Stakeholders • Agency consultation – NSW OEH

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Discovery or impact to unregistered significant Aboriginal heritage items	• Delay = Increased cost • Increased offset cost • Reputation • Change to mine plan • Delay – Approval/Permits • Mine plan change • Adverse community reaction/opposition to project • Environmental impacts	Inadequate consultation, reliance on existing data, or misinterpretation of assessment information.	• Clear and known process to be followed • Guidelines to be adhered to	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Aboriginal heritage • Subsidence • Geomorphology • Undertake consultation with registered Aboriginal Stakeholders • Agency consultation – NSW OEH • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Impacts to unknown items of Aboriginal heritage	• Delay – Approval/Permits • Increased cost • Mine plan change • Potential impacts to unknown items at Dogtrap Creek	Resulting from subsidence, poor mine planning	• Clear and known process to be followed • Guidelines to be adhered to	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Aboriginal heritage • Subsidence • Geomorphology • Undertake consultation with registered Aboriginal Stakeholders • Agency consultation – NSW OEH

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Non-aboriginal heritage						
Inadvertent impact to heritage on the pit top	• Potential reduction in heritage values should items be found to be notable as an item of non-aboriginal heritage. • Change to mine plan • Increased cost – Delayed approval • Decreased community support	Surface infrastructure design has not been assessed against heritage values as part of any previous approval.	• Clear and known process to be followed • Guidelines to be adhered to • RMZs to be identified for the mine plan and project area • Good design to be prepared • Iterative design to be prepared	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • European heritage • Subsidence • Agency consultation – NSW OEH • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Unacceptable impacts to locally listed items of non-aboriginal heritage (including the cemetery)	• Community – Reputation • Delay – Submission = PAC • Increased cost • Loss of Heritage. • implications for reputation • Penalties/cost (Stop mining + remediation + penalties) • Loss of licence? • Safety	Ineffective mitigation measures or an inability to predict and manage subsidence in the specific locality of the item	• Experience in prediction and management to be considered in terms of assessment • Previous PAC's to be considered and recommendations followed.	**Satisfactory**	**9**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • European heritage • Subsidence • Agency consultation – NSW OEH • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Unacceptable impacts to State listed items of non-aboriginal heritage	• Change to mine plan • NGO and Regulator objection • Increased cost• Community – Reputation • Delay – Submission = PAC • Increased cost • Loss of Heritage. • Loss of Reputation • Penalties/cost (Stop mining + remediation + penalties) • Safety	Ineffective mitigation measures or an inability to predict and manage subsidence in the specific locality of the item	• Experience in Redbank tunnel to be considered as part of assessment • Assessment process scoped • Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Existing team knowledge to be utilised and knowledge gaps identified • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • European heritage • Subsidence • Agency consultation – NSW OEH • Prepare Consultation Plan - Plan and coordinate ongoing consultation with stakeholders
Visual / Landscape						
Visual and landscape impacts	• Environmental impacts • Reputational implications	Due to the increase in size of the REA	• Early identification of visual landscape • Engage consultants for EIS	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Visual impact assessment
Visual and landscape impacts	• Environmental impacts • Reputational implications	From visible alterations to surface infrastructure	• Early identification of visual landscape • Engage consultants for EIS	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Visual impact assessment
Visual and landscape impacts at new observer locations	• Environmental impacts • Reputational implications	Installation of additional ventilation shafts at new locations	• Early identification of visual landscape • Engage consultants for EIS	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Visual impact assessment

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Visual and landscape impacts to streams, topography, cliffs, and items of Aboriginal and non-aboriginal heritage.	• Environmental impacts • Reputational implications	Resulting from subsidence, poor mine planning	• Early identification of visual landscape • Engage consultants for EIS	**Satisfactory**	**4**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Visual impact assessment
Air quality						
Air quality impacts	• Penalties - cost • Operational stoppages - financial impact. • Complaint to EPA • Operation potential risk of continued community action • Environmental impact	Associated with the operation of additional ventilation shafts	• Engaged consultants for EIS • Assessment process scoped	**Require Improvement**	**13**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Air quality impact assessment
Dust generation during construction	• Penalties - cost • Operational stoppages - financial impact. • Complaint to EPA • Operation potential risk of continued community action • Environmental impact	From expansion of the REA and construction of the intersection upgrade	• Engaged consultants for EIS • Assessment process scoped	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Air quality impact assessment
Operational dust impacts	• Penalties - cost • Operational stoppages - financial impact. • Complaint to EPA • Operation potential risk of continued community action • Environmental impact	Due to lack of adequate controls e.g. dust from train wagons during transport	• Old loading facility that leaves higher mounds of coal above wagon height. Reassess facility.	**Require Improvement**	**5**	• Ensure design upgrades loading facilities to mitigate this risk

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Exceeding air quality criteria for dust	• –Property owners affected • Operational stoppages - financial impact. • Complaint to EPA • Operation potential risk of continued community action • Environmental impact	Dust impacts exceeding criteria from REA where an increase in deposited dust is anticipated, in conjunction with continued operation of the surface facilities area.	• * REA redesigned increase distance to sensitive receptors to reduce air quality impacts Implement dust management measures	**Satisfactory**	**5**	• Early construction continuing through EIS process.
Unacceptable odour impacts	• Delaying approval • Cost implications • Complaint to EPA - Operation potential community risk of continued action	From new upcast ventilation shaft locations and gas releases. May be exacerbated by weather.	• Currently working on existing issues. • Outcomes to be applied to new shafts * Concept design alleviates previous issues with T2 - incorporated into TSC1 and TSC2 (better disbursement)	**Require Improvement**	**8**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Air quality impact assessment • Modification of stack design
Land use						
Increase in land-take	• Cost implications	Expansion of the REA and installation of additional ventilation shafts	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Land use • Early consultation with land owners
Limitation of future land use of the REA	• Sterilisation of land • Management in perpetuity	Poor planning for future use. Opposition from regulators. Limited availability of quality soil and landscaping materials for the REA size.	• Rehabilitation & closure planning/assessment scoped • Plan and coordinate ongoing consultation with stakeholders	**Satisfactory**	**2**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Land use • Early consultation with land owners

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Infrastructure and services						
Impacts to infrastructure (road, rail, pipes, civil)	• Fatality/Safety (Public and Workforce) • Loss of reputation • Cost (Stop mining + remediation + penalties) • Disruption (Cost of service)	Due to subsidence, unknown characteristics of the infrastructure or an inability to manage the impact.	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**9**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Early consultation with service providers
Impacts to property	• Safety/ Fatality • Loss of reputation • Cost (Stop mining + remediation + penalties) • Disruption (Cost of services)	Due to subsidence, unknown characteristics of the property or an inability to manage the impact.	• Plan and coordinate ongoing consultation with stakeholders • Mine planning being informed by technical studies • Utilise existing team knowledge • Undertake early identification of structures • Engaged consultants for EIS	**Satisfactory**	**9**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Subsidence • Early consultation with land owners
Social and economic						
Exceeding criteria for noise and dust	• Unacceptable impact. • May cause impacts to property owners in close proximity to the REA.	Noise and dust impacts exceeding criteria from REA where an increase in deposited dust is anticipated, in conjunction with continued operation of the surface facilities area.	* REA redesigned increase distance to sensitive receptors to reduce air and noise impacts Dust and noise management measures	**Satisfactory**	**8**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Air quality impact assessment • Noise • Social impact assessment • Consultation with EPA

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Increased demand for local services	• Reputational implications • Community	Due to increase in production and peaks in staffing levels	• Utilise existing team knowledge • Engaged consultants for EIS	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Economic impact assessment • Social impact assessment • Consultation with local businesses and community
Ongoing creation of new employment opportunities	• Reputational implications • Community	Due to increase in production and required staffing levels	• Utilise existing team knowledge • Engaged consultants for EIS	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Economic impact assessment • Social impact assessment • Consultation with local businesses and community
Waste						
Inappropriate disposal of rejects and construction waste	• Sterilisation of land • Cost • EPA and licencing implications • Adverse visual impact	Waste from intersection upgrade, installation of ventilation shafts, or exploratory works.	• Construction waste management plan to be prepared • REA design to be informed by technical specialists where applicable	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Waste • Prepare waste management plan • Consider waste reuse/recycling/disposal in design

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Excessive operational waste creation	• Reputational implications • Cost • Adverse visual impact	Due to lack of waste reduction process or preferential reuse in procurement, or as a result of inappropriate management and disposal of operational waste.	• Operational waste management plan to be applied and amended as required	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Waste • Update operational waste management plan
Inappropriate management of waste	• Reputational implications • Cost • Adverse visual impact	Waste associated with the coal washery and the REA	• Operational waste management plan to be applied and amended as required * REA to be utilised instead of other disposal options (cost effective to expand REA) * REA to be progressively revegetated - viewpoints of REA are limited	**Satisfactory**	**5**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Waste • Update operational waste management plan
Hazard						
Impact to operations	• Safety • Cost	Due to bushfire	• Operational hazard management plan to be applied and amended as required	**Satisfactory**	**14**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Waste • Update operational waste management plan
Hazardous event	• Safety • Cost (Stop mining + penalties)	Associated with the on-site storage of dangerous goods	• Operational hazard management plan to be applied and amended as required	**Satisfactory**	**14**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Hazard • Update hazards management plan

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Spontaneous combustion in underground workings	• Safety • Cost	Inadequate operations management	• Operational hazard management plan to be applied and amended as required	**Satisfactory**	**9**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Hazard
Greenhouse gases						
Carbon consumption during construction	• Reputational implications • Cost	Construction of the REA, intersection upgrade, ventilation shafts	• Utilise existing team knowledge • Engaged consultants for EIS	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Greenhouse Gas assessment • GHG assessment to consider DGR's and best practice
Carbon consumption during operation	• Reputational implications • Cost	Operation of the colliery	• Utilise existing team knowledge • Engaged consultants for EIS	**Satisfactory**	**12**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Greenhouse Gas assessment • GHG assessment to consider DGR's and best practice
Increase in Scope 3 emissions	• Reputational implications • Environmental impact	Downstream end use of coal products from the proposed development	• Utilise existing team knowledge • Engaged consultants for EIS * Greenhouse Gas assessment prepared for EIS to identify Scope 3 emissions * Compliance with relevant legislation * Minimal alternatives for coking in steelmaking (end use)	**Satisfactory**	**17**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Greenhouse Gas assessment • GHG assessment to consider DGR's and best practice

Risk Description	Consequence	Causes	Existing Control Description	Risk Control Effectiveness	Risk Rating	Treatment plans/tasks (Description)
Increase in Scope 1 emissions	• Financial cost for operational expenditure	Due to a potential operational breakdown of the flare plant and a resultant increase in emissions.	• Flare plant management plan • Operation of WCMG Power Plant • In stack monitoring of GHG	**Satisfactory**	**9**	• Undertake the following specialist assessments ensuring consideration of this risk is incorporated into the scope of the report: • Greenhouse Gas assessment • GHG assessment to consider DGR's and best practice