NOTE FOR USERS: Refer to Guidance Notes for assistance in completing the Assessment Tables. [This help text will not print].

Regional NSW

Part 5 Determination, *Environmental Planning and Assessment Act 1979*

Assessment:

Prepared by:	Chris Hammersley
Position:	Inspector Environment
Inspection Date:	NA
Evaluation Date:	29 August 2023
Determining Manager	Greg Kininmonth

Proposed Activity:

Title:	EL 7461
Proponent:	Peel Mining Limited
Project Name:	Mallee Bull Exploration Project
Activity:	Approval is sought for Proposed Exploration Decline Program - Non-CEA Application received for Peel Mining for Box Cut, Decline, 37ha clearing, Infrastructure including workshop complex & store, laydown and mobile parking areas, waste rock stockpile area of 325, 000t (35,000t PAF stockpile areas), soil stockpile areas, ROM pad, water management infrastructure including water storage facility (3.8ha - 7.7ML). The project includes: •37ha clearing (native vegetation) •A Box Cut - 25m below ground level (mbgl)), 300m in length, 100m wide with a volume of 86,000m3 □ •A decline (for exploration purposes) 400mbgl, 5,8m high x 5.5m wide, – 4.5km long •Ventilation rise (5m wide) & Escapeway (2m wide)? •Rock stockpile - 360,000t (producing 35,000t PAF & 325,000t NAF) •Ancillary Infrastructure including workshop complex & store, laydown and mobile parking areas, power station, compressor area, Office/administration, crib room, ablution facilities, fuel farm. •Soil stockpile areas, ROM pad •Water Management Infrastructure – water storage facility (3.68ha, 7.7ML) & sediment basins and sumps, clean and dirty water diversions. •Magazine storage area •Temporary Accommodation for mine employees •Haul road, site access road. •Exploration program to go for 4-5yrs and operate 7 days per week. Underground 24hrs operation. •Maximum number of people – up to 50 persons. (15 site construction and 30 exploration decline) RCE increases from $42,000 to $1,250,000 (rounded to nearest $1000) Decommissioning: depends on whether a Development Approval proceeds or not. If not, then backfilling is proposed and remove all site infrastructure, then recontouring back to near pre disturbance conditions.
Location:	Located at Gilgunnia approximately 100km south of Cobar
EIA document(s):	1. Application Form ESF4 - MAAG00155049 - Appendix 1 as submitted by Peel Mining Limited , and dated 22 December 2022 (Our Reference: RR23/12024), and (a) MAAG0015549 - 84704 Review of Environmental Factors and Appendices - Feb 2023.pdf (Our Reference: RR23/12024) (a) Mallee Bull Project Environmental Management Plan 2023 (RR23/39613) (b) Mallee Bull Exploration Project Environment and Community BBRA (RR23/39614) (c) Peel Mining Limited – Environmental Impact Permit Procedure (RR23/39615) (d) Peel Mining Limited – Environmental Impact Application Form (RR23/39616) (e) Peel Mining Limited – Company Vision Statement (RR23/39617) (f) Environment Inspection Form – RR23/39618) (g) RE_847_Mallee Bull Infrastructure Shape Files (RR23/47619) (h) Peel Mining Limited – 20230426 Response to RFI for MB REF – JY (RR23/55080)

		Physical Impacts	
Select whether the proposed activity is a Complying Exploration Activity (CEA) or Non-CEA:	**Non-CEA (Coal / Minerals)**	**Activity**	**Cumulative**
	Vegetation Clearing (m^2)	370000	370000
	Surface Disturbance (m^2)	370000	370000
	Excavations (m^3)	360,000	360,000
	Groundwater Extractions (ML)	183ML/year	183ML/year
	Expected Duration of Activity	5 years	

Summary of Environmental Impact Evaluation	Unlikely to have a significant impact on the environment and an EIS is not required

Is an EIS Required?	NO

Person responsible for deciding if an EIS is required:

Name: Greg Kininmonth

Title: MANAGER ENVIRONMENTAL OPERATIONS - TEAM 1

Signature: [Endorsed Electronically]

Date: 29-Aug-23

Characteristics of potential impacts (adverse & beneficial)	Type of potential impacts	EVALUATION CRITERIA Considering the extent and nature of the impacts on the environment, the potential significance of each impact should be ranked using selections from the drop-down lists.									Ranking of potential significance	Justification of Ranking
		Size, scope & intensity	Duration	What is the confidence in predicting impacts?	How resilient is the environment to cope with impacts?	Can the impacts be reversed?	Can the impacts be mitigated?	Do the operations comply with standards, plans, policies?	What is the level of public concern?	Are further studies required on impacts or mitigation?		Comments
1. PHYSICAL OR POLLUTION IMPACTS												
(a) Air impacts												
1. air quality impacts (including impacts on nearby sensitive receptors).	Particulates and emissions from vehicle exhausts, plant and machinery. Wind erosion and dust from disturbed soils during construction and operations. Dust from vehicles travelling over tracks. Dust generation from operating plant and machinery.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management*. Impacts of any drilling limited to immediate vicinity of drilling. Drilling activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* (impacts negligible due to nature of drilling activities). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	LOW	NO	LOW	Medium term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. An Air Quality Management Plan would be developed to assist with the management of dust emissions. It would include aspects such as key performance indicators (KPIs), monitoring methods, response mechanisms, compliance reporting and complaints management. Issue is to what standard and who approved this. Of note: Using the Todoroski (2022) model, it predicts that all assessed air pollutants generated by the REF would comply with the applicable assessment criteria at the assessed sensitive receivers, and therefore would not lead to any unacceptable level of environmental harm or impact to the surrounding area. Note Todoroski model - is a combination of the CALPUFF Modelling System and The Air Pollution Model (TAPM) - NSW EPA document Generic Guidance and Optimum Model Setting for the CALPUFF Modelling System for Inclusion into the 'Approved Methods for the Modelling and Assessments of Air Pollutants in NSW, Australia' (TRC, 2011).
2. greenhouse or ozone impacts.	Emissions from combustion of fuel associated with vehicles, plant and machinery during construction, operations and rehabilitation. Fugitive methane emissions from intercepted seams. Fugitive emissions of gases or vapour from drilling operations and the operation of flares.	CO2 emissions from activities are extremely limited and inconsequential in context of global emissions and impact. Restrictions on use of ozone depleting substances in NSW also limits ozone depletion. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Partly	YES	UNCERTAIN	NO	LOW	Medium term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period.. The project is short term - approximately 4 years with low mobile fleet numbers. If this project were to progress to the EIS stage Peel would be required to complete the greenhouse emissions assessment as part of the Air Quality Impact Assessment.
3. any other air impacts.												
										Summary of Air Impacts	LOW	**NA**
(b) Water impacts												
1. impacts from the use of surface or groundwater (including use of fracture stimulation injection water).	Water used for exploration not available for ecological, stock, domestic or irrigation purposes. Surface runoff can be sediment laden. Generally minimal surface water use (must be licensed or use of farm dams through landholder agreements). No use of groundwater but potential loss through produced water in drilling / deep excavation operations. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. Activities must not cause adverse impacts to livestock (including any adverse impacts on surface water supplies used by livestock). Water used for access track watering must be obtained from licensed source or farm dams (with consent of owner). Boreholes to be constructed, operated and decommissioned in accordance with authority/title conditions, Departmental Guidelines and Codes of Practice to protect groundwater/aquifers.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	MEDIUM	Medium term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. The Applicant submitted at Appendix 3 of the REF, the Mallee Bull Project Groundwater impact assessment Peel Mining Limited 31 January 2023. The groundwater levels are deep at the exploration site, with groundwater generally encountered below 50 m bgl. As part of the impact assessment, analytical modelling was undertaken to quantify groundwater inflows into the decline and the dewatering radius of influence. based on a review of aquifer parameters adopted by other nearby projects and inflows recorded at other mining operations in the region, the best estimate for groundwater inflow is 0.31 ML/day to 0.50 ML/day and the best estimate for the radius of drawdown is 0.9 km to 2.9 km. Interference impacts to existing groundwater users were assessed as being low, based on the lack of stock and domestic bores within 2.9 km radius of Mallee Bull.
2. impacts from storage of water	Negligible and only localised impacts from storage of water. Water used for exploration not available for ecological, stock, domestic or irrigation purposes. Surface runoff can be sediment laden. Generally minimal surface water use (must be licensed or use of farm dams through landholder agreements). No use of groundwater but potential loss through produced water in drilling / deep excavation operations.	Activities must comply with the title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. Activities must not cause adverse impacts to livestock (including any adverse impacts on surface water supplies used by livestock). All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*. Any impacts subject to compensation and landholder access arrangements (e.g. any impacts on land use from storage or water).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium term duration and generally satisfactory environmental practices to be employed during the operation period and rehabilitation period. Surface water impacts was completed by RWC and concludes the residual impacts are considered to be negligible. PAF waste rock and drill sample material being stored temporarily at surface prior to either being transported back underground to backfill the decline or transported to an off-site processing facility. Is a limited in terms of returning site to presurface conditions? Limited on dirty/clean water diversions. And there is no sighting of a sediment erosion control plan provided i.e. "to be developed" but approved by who? Proposed Storage Dam (to be a lined HDPE leach pond - 3.7ha & 7.7ML capacity) satisfies the ANCOLD and DSC spec for freeboard i.e. is determined to be a Flood Consequence Category (FCC) dam as "significant: with a freeboard of 0.3m. The capacity of the sediment basins and sumps would substantially exceed the minimum required capacity for a sediment basin under Managing Urban Stormwater – Volume 2E (Mines and Quarries). The sediment basins would include stabilised spillway in the unlikely event of rainfall that exceeds the 1 in 100-year AEP rainfall event.

3. impacts from changes to natural water bodies, wetlands or runoff patterns.	Negligible and only localised changes to surface flows. Surface runoff can be sediment laden. Generally minimal surface water use (must be licensed or use of farm dams through landholder agreements). Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. c. Existing access tracks to be used/upgraded wherever possible. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. A number of intermittent watercourses and farm dams are located throughout the project areas. Hole 16 is located about 23m from a drainage line and therefore may be defined as being on waterfront land according to the Water Management Act 2000. In accordance with Natural Resources Access Regulator (NRAR) guidelines, the proposed exploration activity is exempt and a controlled activity approval is not required. All other drill holes are located more than 40m from the top bank of any water source. The proposed drilling will not adversely impact any surface water sources and no ground water will be extracted for the drilling program. Any rain water will disperse quickly absorbed into the ground cover or moving as sheet wash into the local drainage. No waterways are located in the development footprint. Three minor drainage lines
4. impacts from aquifer interference, including changes to inter-aquifer connectivity.	No use of groundwater but potential loss through produced water in drilling / deep excavation operations. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. Activities must minimise cross connection of aquifers or groundwater sources. c. Activities must minimise any depressurisation of aquifers or groundwater sources. d. Coal and petroleum title holders must prepare and implement and Groundwater Monitoring & Modelling Plan in consultation with NSW Office of Water. Boreholes to be constructed, operated and decommissioned in accordance with authority/title conditions, Departmental Guidelines and Codes of Practice to protect groundwater/aquifers.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	GHD Groundwater Report at Appendix 3 determined the predicted radius of drawdown influence to be approximately 0.9km to 2.9km. And groundwater is encountered 50m below the surface. The closest registered stock and domestic bore to the REF Area is 4.9km. Therefore, the impact of drawdown would not impact the surround stock and domestic bores. If the drawdown radius is larger than predicted, the impact to users of the stock bores is still considered low due to the intermittent use of the bores. The REF Area determined that the fractured rock groundwater source falls within the 'Level 1 Minimal Impact Considerations' for 'Less Productive, Porous and Fractured Rock Water Sources' under the NSW Aquifer Interference Policy (AIP). Dewatering for a period of approximately 2 years could result in the exposure of acid generating geological materials (GHD, 2023). A sink or depression would form in the regional water table due to the decline dewatering, creating a tendency for acid or metalliferous drainage to be collected, or its movement hydraulically controlled. It is proposed that Peel Apply for a works approval for the exploration decline and a Water Access Licence (WAL) for 183 ML/year from the Lachlan Fold Belt MDB groundwater source of the Water Sharing Plan for the NSW Murray Darling Basin Fractured Groundwater Sources.
5. impacts from any hydraulic fracturing (well stimulation), including through gas and fluid migration.	No use of groundwater but potential loss through produced water in drilling / deep excavation operations. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers.		Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	No hydraulic fracturing proposed. However exploration proposes blasting for construction of the box cut and decline. And will result in depressurisation of groundwater by factor of 0.9m over 2. Refer to line items 15-17 above
6. impacts from changes to flooding or tidal regimes.	Negligible and only localised changes to drainage flows/flooding regime. Surface runoff can be sediment laden.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise impacts on flooding or tidal regimes including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. c. Existing access tracks to be used/upgraded wherever possible. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Short to medium term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. Localised impacts The REF Area is not subject to flooding

7. impacts from changes in surface or groundwater quality and quantity.	Water used for exploration not available for ecological, stock, domestic or irrigation purposes. Surface runoff can be sediment laden from areas where vegetation has been removed. Generally minimal surface water use (must be licensed or use of farm dams through landholder agreements). No use of groundwater but potential loss through produced water in drilling / deep excavation operations. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers. Ford across creeks can cause stream bank erosion from vehicle wash. Inappropriate disposal of drilling wastes / overflow from drilling sumps.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. Activities must minimise cross connection of aquifers or groundwater sources. c. Activities must minimise any depressurisation of aquifers or groundwater sources. d. Coal and petroleum title holders must prepare and implement and Groundwater Monitoring & Modelling Plan in consultation with NSW Office of Water. e. All sediment and erosion controls to be in accordance with Blue Book to minimise off-site impacts.	Approximately 5 years	N/A	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium term duration. Drawdown will occur due to decline construction. GHD Groundwater Report - see Appendix 3) has advised that likely impacts will be - 1. Drawdown of 0.9m @ 2.9km. 2 no impact on GDE's (as groundwater is 50m below surface. 3 Dewatering for a period of approximately 2 years (the REF timeline) could result in the exposure of acid generating geological materials. As there are no mining operations currently operating within 20km of the REF Area (thus within the predicted radius of influence), no cumulative impacts are expected (GHD, 2023).
8. any other impacts on water or from the use or storage of water.												PAF water storage same proposed. •Surface Water Management Strategy to prevent impacts upon surface water resources and ensure compliance with the Water
										Summary of Water Impacts	LOW	**NA**
(c) Soil and stability impacts												
1. degradation of soil quality (including contamination, salinisation or acidification).	Soil erosion and sediment laden runoff from disturbed areas / areas where vegetation has been removed. Mobilisation of pollutants (such as hydrocarbons) in soils. Inappropriate disposal of drilling wastes / overflow from drilling sumps. Exposure of acid sulfate soils. Soil compaction from construction/operations.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise soil and stability impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. c. Existing access tracks to be used/upgraded wherever possible. d. Controls on sumps and management of chemicals to significantly reduce risk to soils. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium term duration. The project would disturb 26.9ha of soils with land Capability Class 5 Moderate – low capability land with high limitations for high-impact land uses. Land uses largely restricted to grazing, some horticulture (orchards), forestry and nature conservation.). Minimal proposal to store topsoil material. Following completion of exploration activities or subsequent mining operation, decommissioning of site infrastructure and rehabilitation of the REF Area, The surface area would return to its existing capability class and land use. - No acid sulphate soils lie within the area of proposed activity. - There is no Strategic Agricultural Land within the area of the proposed activity.
2. loss of soil from wind or water erosion.	Increased risk of erosion where vegetation has been removed. Potential erosion of disturbed areas.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. c. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. d. Existing access tracks to be used/upgraded wherever possible. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. Sediment and erosion controls proposed , routine monitoring regime proposed, and rehabilitation after program ceases. Proponent to Develop an Air Quality Management Plan to assist with management of dust submissions and air emissions controls.
3. loss of structural integrity of the soil and impacts on land with high agricultural capability.	Soil compaction from access traffic, use of plant and machinery. Soil erosion from disturbed areas / areas where vegetation has been removed. Mobilisation of pollutants (such as hydrocarbons) in soils.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. c. Existing access tracks to be used/upgraded wherever possible. d. Controls on sumps and management of chemicals to significantly reduce risk to soils. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur soon as practicable after completion of activity (including sealing of any boreholes). Deep ripping of any access tracks which need to be rehabilitated can remediate compaction impacts. Impact generally limited due to low traffic numbers	Approximately 1 year	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. Sediment and erosion controls proposed , routine monitoring regime proposed, and rehabilitation after program ceases. Proponent to Develop an Air Quality Management Plan to assist with management of dust submissions and air emissions controls. The project would disturb 26.9ha of soils with land Capability Class 5 (moderate - low capability land). Minimal proposal to store topsoil material. There is no Strategic Agricultural Land within the area of the proposed activity.

4. increased land instability with high risks from land slides or subsidence.	Minimal potential impacts. Soil erosion from disturbed areas / areas where vegetation has been removed.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise soil and stability impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. c. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book (includes controls to manage instability risks). d. Existing access tracks to be used/upgraded wherever possible. e. Controls on sumps and management of chemicals to significantly reduce risk to soils. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	The proposed exploration decline would not result in surface disturbance due to subsidence
5. any induced seismicity or ground movements associated with fracture stimulation or injection or extraction of groundwater.		Boreholes to be constructed, operated and decommissioned in accordance with authority/title conditions, Departmental Guidelines and Codes of Practice to protect groundwater/aquifers. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Seismic would result from Air-Blast overpressure and ground borne vibration - levels were calculated using equations from AS2187.2, adopting a Maximum Instantaneous Charge (MIC) of 152kg for a typical 50,000t blast within the box cut, with blasting locations assumed to be at the extremities of the decline to model a worst-case scenario. Results identify blasts of MICs up to 152kgs would satisfy relevant ANZEC overpressure and vibration criteria. Proponent to develop a Vibration Management Strategy.
6. any other impacts on soils.												
										Summary of Soil and Stability Impacts	LOW	**NA**
(d) Noise and vibration impacts												
1. results in increased noise or vibration.	Noise from vehicles, plant and machinery results in unacceptable impacts on nearby sensitive receivers, such as residences, educational establishments, medical facilities, places of worship, animal boarding/training establishments, intensive livestock agriculture, etc. Percussion drilling can have localised vibration impacts. Drilling unlikely to cause vibration impacts . Shots have vibration and overpressure impacts which may impact vibration sensitive sites. Vibroseis machinery has vibration impacts which may impact vibration sensitive sites.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Implementing all practicable measures to ensure noise levels meet acceptable criteria for sensitive receivers. b. Notifying potentially affected landholders at least 24hrs prior to detonating explosives. c. Compliance with Interim Construction Noise Guidelines and/or EPL and/or landholder agreements. d. Ground vibration thresholds limited to 5 mm/s (peak particle velocity) at any residence/sensitive receiver. e. Ground vibration thresholds limited to 3 mm/s for any item of Aboriginal / European heritage significance or cliff line greater than 4m in height. f. Vibrating machinery not to be used within 200m of sensitive receivers, item/place of Aboriginal / European heritage significance or any cliff line greater than 4m in height. Impacts limited to immediate vicinity of exploration activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. There are no sensitive receptors that this program will affect. Two of the closest receivers are Project-related, namely at “Wirchilleba” and “Wilkerboon”. The closest non-project related residence “Mount View” is located a minimum of 11km from the REF Area. A Noise and Vibration Impact Assessment (NVIA) for the Project was undertaken by Muller Acoustic Consulting Pty Ltd (MAC). The resulting report is presented as Appendix 7. Two scenarios to assess noise impacts, a construction scenario, and an operational scenario, were undertaken. Noise predictions from all operational sources at surrounding residential receivers conclude that the results comply with the relevant NPI criteria for all assessment periods at the most affected sensitive receivers. Blasting - calculated levels for overpressure and vibration in comparison to the relevant ANZEC criteria. The MAC Report advised that blasts of MICs up to 152kg would satisfy the relevant ANZEC overpressure and vibration criteria
2. affects sensitive receptors.	Noise from vehicles, plant and machinery results in unacceptable impacts on nearby sensitive receivers, such as residences, educational establishments, medical facilities, places of worship, animal boarding/training establishments, intensive livestock agriculture, etc. Percussion drilling can have localised vibration impacts. Drilling unlikely to cause vibration impacts . Shots have vibration and overpressure impacts which may impact vibration sensitive sites. Vibroseis machinery has vibration impacts which may impact vibration sensitive sites.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Implementing all practicable measures to ensure noise levels meet acceptable criteria for sensitive receivers. b. Notifying potentially affected landholders at least 24hrs prior to detonating explosives. c. Compliance with Interim Construction Noise Guidelines and/or EPL and/or landholder agreements. d. Ground vibration thresholds limited to 5 mm/s (peak particle velocity) at any residence/sensitive receiver. e. Ground vibration thresholds limited to 3 mm/s for any item of Aboriginal / European heritage significance or cliff line greater than 4m in height. f. Vibrating machinery not to be used within 200m of sensitive receivers, item/place of Aboriginal / European heritage significance or any cliff line greater than 4m in height. Impacts limited to immediate vicinity of exploration activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	The REF Area is located a minimum of 11km from the closest non-project related residence “Mount View”. The MAC report concludes the maximum noise level assessment for assessing sleep disturbance. The results identify that the maximum noise trigger level will be satisfied for all residential receivers, therefore awakening reactions due to maintenance activities are unlikely to occur. The traffic noise contribution during construction and operations is predicted to remain below the relevant day period assessment criteria for all dwellings along the travel routes.
3. any other impacts from noise, blasting or vibration.												
										Summary of noise and vibration Impacts	LOW	**NA**
(e) Any other physical or pollution impacts												

1. affects coastal processes and coastal hazards, including those under projected climate change conditions.	Activities along the coastline / floodways have the potential to exacerbate coastal erosion (rising sea levels and increased storm activity under projected climate change conditions could result in increased erosion along the coastline / floodways).	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. CO2 emissions from activities are extremely limited and inconsequential in context of global emissions and impact. Restrictions on use of ozone depleting substances in NSW also limits ozone depletion. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes to minimise any	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N.A
2. results in impacts associated with the use, generation, storage or transport of hazardous substances or chemicals.	Mobilisation of pollutants (such as hydrocarbons) in soils or waters. Inappropriate disposal of drilling wastes / overflow from drilling sumps. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Preventing contamination of the environment by the release of chemicals, fuels, other potential pollutants. b. Preventing any land degradation or pollution/contamination of land or water. c. Controls on sumps and management of chemicals to significantly reduce risk to environment. d. Use of pesticides, herbicides, fertilisers or other chemicals must comply with legislative requirements. e. Wastes+A34 (including any drilling by-products) to be collected, segregated and disposed of lawfully. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium impact - The hazardous substances proposed to be utilised within the REF Area would be stored according to Safety Data Sheets (SDS) and Australian Standards and removed from the REF Area when no longer required. All waste would be removed from the REF Area on a regular basis and recycled or disposed of by a licenced contractor at a licenced facility. Explosives would be managed in accordance with the Company's standard explosive and blasting management practices. Other chemicals likely to be used during the proposed exploration operations would be limited to hydrocarbons which would also be used and stored in accordance with the Company's standard procedures, including bunding and spill management procedures. As a result, environmental impacts associated with management of these materials would be negligible.
3. results in impacts to the environment resulting from the generation or disposal of wastes.	Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters. Inappropriate disposal of drilling wastes / overflow from drilling sumps. Fugitive emissions of gases or vapour from drilling operations or the operation of flares. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Preventing contamination of the environment by the release of chemicals, fuels, other potential pollutants. b. Preventing any land degradation or pollution/contamination of land or water. c. Controls on sumps and management of chemicals to significantly reduce risk to environment. d. Use of pesticides, herbicides, fertilisers or other chemicals must comply with legislative requirements. e. Wastes (including any drilling by-products) to be collected, segregated and disposed of lawfully. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer*. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	The wastes that would be generated are typical of mining operations and would be collected, stored and disposed of in accordance with the Company's standard waste management practices. All waste oil and petrochemical substances would be appropriately recycled at a licenced facility. All general waste would be disposed of at a licenced facility. As a result, environmental impacts associated with management of these materials would be negligible
									Summary of other physical and pollution Impacts	LOW	**NA**
(f) Location sensitive because of physical factors											
1. coastline and dune fields, alpine areas, deserts, caves or other unique landforms.	Negligible and only localised impacts on unique landforms. Mobilisation of pollutants in soils, surface water or aquifers. Short term noise, air quality and visual impacts. Particulate emissions from plant and machinery; fugitive emissions of gases or vapour from drilling operations and the operation of flares. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Exposure of acid sulfate soils. Spread of weeds, pest animals and animal/plant diseases. Damage to structures and sensitive features, such as unique landforms. Activities along the coastline / floodways have the potential to exacerbate coastal erosion (rising sea levels and increased storm activity under projected climate change conditions could result in increased erosion along the coastline / floodways).	Impact limited to activity site and subject to compensation and landholder access arrangements. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on the environment. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A

2. land with high agricultural capability.	Areas used for exploration activities, access tracks, etc not available for agricultural production. Temporary loss of use of land. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters. Inappropriate disposal of drilling wastes / overflow from drilling sumps. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Short term noise, air quality and visual impacts. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Exposure of acid sulfate soils. Spread of weeds, pest animals and animal/plant diseases.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on the environment (including livestock protection, control of weeds, pest animals, diseases, etc). Use of above-ground sumps required on BSAL. Impacts limited to activity site and subject to compensation and landholder access arrangements. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	NO	LOW	NO	LOW	Rural land capability assessments of the locality to be Class 5and is a level 1 AIS, hence does not need referral to DPI. Land used for low stock grazing. The area of proposed activity is not located with land classified as high agriculture capability and as per MOI with DPI, there is no need to refer to DPI and the activities when completed will return land back to near previous condition unless a State Significant Development is proposed and approved later. Impacts will be considered at this point. rehabilitation of the site is to return it back to predisturbed conditions or near to i.e. with land shaping, contouring and revegetation.
3. natural water bodies, riparian zones, wetlands, drinking water catchments or flood prone areas.	Negligible and only localised changes to drainage flows/flooding regime. Water used for exploration not available for ecological, stock, domestic or irrigation purposes. Surface runoff can be sediment laden from areas where vegetation has been removed. Generally minimal surface water use (must be licensed or use of farm dams through landholder agreements). No use of groundwater but potential loss through produced water in drilling / deep excavation operations. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers. Ford across creeks can cause stream bank erosion from vehicle wash. Inappropriate disposal of drilling wastes / overflow from drilling sumps.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer* . All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A	LOW	There are no well defined natural drainage channels within the Program site. The Program site is not located in a drinking water catchment managed by the Catchment Authority
4. groundwater recharge areas or areas with high water table.	Minimal impact on recharge and salinity. No use of groundwater but potential loss through produced water in drilling / deep excavation operations. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers. Inappropriate disposal of drilling wastes / overflow from drilling sumps. Vegetation clearance in recharge areas can increase salinity. Acid drainage due to exposure of acid sulfate soils.	Activities must comply with title conditions. For new IMER titles activities must also comply with the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. All management and storage of produced water must comply with the title conditions. In addition, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer* may apply to the management of produced water for new IMER titles. Boreholes to be constructed, operated and decommissioned in accordance with authority/title conditions, Departmental Guidelines and Codes of Practice to protect groundwater/aquifers. Drill holes to be cased where aquifers intercepted (minimal impact on recharge and salinity).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	UNCERTAIN	Partly	YES	UNCERTAIN	YES	LOW	Refer to water impacts section above. Groundwater likely to be intercepted and managed appropriately during the course of the exploration activity. Groundwater to be an ongoing monitoring program for possible future EIS consideration.
5. erosion prone areas, areas with slopes of greater than 18 degrees.	Minimal potential impacts. Soil erosion and sediment laden runoff from disturbed areas / areas where vegetation has been removed. Mobilisation of pollutants (such as hydrocarbons) in soils. Riverbed / riparian zone disturbance from use of poorly constructed or maintained river crossings.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise soil and stability impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. c. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book (includes controls to manage instability risks). d. Existing access tracks to be used/upgraded wherever possible. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Land is less than 18 degrees. Sediment Erosion Control plan proposed to be provided and will address operational aspects of the exploration site for the duration of the program.

6. subsidence or slip areas.	Soil erosion from disturbed areas / areas where vegetation has been removed may increase risk of slips. Drilling operations unlikely to contribute to slips.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise soil and stability impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. c. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book (includes controls to manage instability risks). d. Existing access tracks to be used/upgraded wherever possible. Disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion, including borehole sealing.	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		No subsidence or slip top result from the proposed exploration program
7. areas with acid sulphate, sodic or highly permeable soils.	Vegetation removal unlikely to exacerbate acid sulfate or sodicity issues. Drilling activities unlikely to exacerbate acid sulfate or sodicity issues. Soil erosion and sediment laden runoff from disturbed areas / areas where vegetation has been removed.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. c. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. d. Existing access tracks to be used/upgraded wherever possible. e. Controls on sumps and management of chemicals to significantly reduce risk to soils. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity. Impacts generally limited due to low traffic numbers and short term nature of exploration.	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Acid Sulphate Soils Risk: Yes PAF material may result from the construction of the decline. PAF material to be stored above site and contained in stockpile with drainage directed to a lined water storage pond.
8. areas with salinity or potential salinity problems.	Activities unlikely to exacerbate salinity problems. Vegetation removal may reduce vegetation drawdown of water table. Spills of saline produced water. Vegetation removal unlikely to exacerbate acid sulfate or sodicity issues. Soil erosion and sediment laden runoff from disturbed areas / areas where vegetation has been removed.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. c. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. d. Controls on sumps and management of chemicals to significantly reduce risk to soils. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity. Impacts generally limited due to low traffic numbers and short term nature of exploration.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. Acid Sulphate Soils Risk is a potential recognised risk in the area. Clean and dirty water diversions proposed. Potential acidification to be collected and reported in the lined storage pond.
9. areas with degraded air quality.	Potential for temperature inversions in winter to trap dust and air particulates. Wind erosion possible from exposed soils. Particulate emissions from vehicles and machinery. Dust generation from operating machinery, vehicles travelling over tracks, etc.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must comply with cumulative AQ criteria. b. Emissions from the activities should not result in cumulative PM10 levels exceeding 50ug/m3 (24hr) or 30 ug/m3 (annual average) at any occupied residence. c. Emissions from the activities should not result in cumulative PM2.5 emissions exceeding 25 ug/m3 (24hr) or 8 ug/m3 (annual average) at any occupied residence. d. Vehicle speeds limited to minimise dust. e. Roads watered during high traffic periods. f. Surface disturbance managed in accordance with Blue Book. Impacts of any drilling limited to immediate vicinity of drilling due to controls set out in title conditions and the *Exploration Code of Practice: Environmental Management* (impacts negligible due to nature of drilling activities). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Refer to Air Quality section above in report.
10. areas with degraded or contaminated soil.	Activity unlikely to result in any change to existing contaminated soils or migration of contaminants. Soil erosion and sediment laden runoff from disturbed areas / areas where vegetation has been removed. Mobilisation of pollutants (such as hydrocarbons) in soils. Inappropriate disposal of drilling wastes / overflow from drilling sumps. Exposure of acid sulfate soils. Soil compaction from construction / operations. Vegetation removal unlikely to have any impact on contaminated soils.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts including: a. Minimising vegetation clearing and surface disturbance. b. Prevent causing any land degradation or pollution/contamination of land or water. c. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. d. Controls on sumps and management of chemicals to significantly reduce risk to soils. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity. Impacts generally limited due to short term nature of exploration. Activity unlikely to exacerbate any	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. All chemical and hazardous substances will be stored in sealed containers with appropriate signage in place. Safety Data Sheets will be available on site for all chemicals present and storage guidelines adhered to strictly. Sediment Erosion Control Plan to be implemented and PAF material isolated on-site and managed accordingly.

11. area with degraded or contaminated water (ground or surface).	Activities unlikely to have any additional impacts on areas with existing degraded or contaminated water (ground or surface). Boreholes to be cased when aquifers intercepted. Surface runoff can be sediment laden from areas where vegetation has been removed. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers. Inappropriate disposal of drilling wastes / overflow from drilling sumps. Excavations excluded from acid sulfate soils.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. Activities must minimise cross connection of aquifers or groundwater sources. c. Activities must minimise any depressurisation of aquifers or groundwater sources. d. Coal and petroleum title holders must prepare and implement and Groundwater Monitoring & Modelling Plan in consultation with NSW Office of Water. e. All sediment and erosion controls to be in accordance with Blue Book to minimise off-site impacts. Boreholes to be constructed, operated and decommissioned in accordance with authority/title conditions, Departmental Guidelines and Codes of Practice to protect groundwater/aquifers. All management and storage of produced water must comply with the title conditions and, where relevant, the *Exploration Code of Practice: Produced Water Management, Storage and Transfer* . All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes). Activities unlikely to exacerbate any existing surface or groundwater contamination.	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Yes identified as potential from decline process - water encountered at depth & oxidation process, and PAF material transferred to surface and stored above surface. Water production to be managed and isolated into dirty water regime and stored in lined water storage pond. PAF material stored above surface and isolated.
12. any other factors.												
										Summary of sensitive location because of physical factors	LOW	**NA**
						2. BIOLOGICAL IMPACTS						
(a) Fauna impacts* [* A Species Impact Statement will be required if the activity is likely to significantly affect critical habitats, threatened species, populations or ecological communities or their habitats].												
1. any clearing or modification of vegetation (including habitat for species of conservation significance).	Vegetation removal can decrease available foraging/ sheltering/ breeding habitat for species and displace species from regular place of residence. Areas used for exploration activities, access tracks, etc not available for fauna habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna. Drilling sumps can be a hazard for fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Short term noise and air quality impacts. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Exposure of acid sulfate soils. Spread of weeds, pest animals and animal/plant	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	UNCERTAIN	Fully	YES	UNCERTAIN	NO	MEDIUM	Yes medium to large scale clearing proposed - up to 37ha of native vegetation proposed to be cleared, of which Residual biodiversity impacts would be offset in accordance with the Biodiversity Assessment Methodology to achieve a 'no net loss standard'. Peel Mining has elected to "opt in" to the NSW Biodiversity Offset Scheme for the Project. It was identified that a total of 683 ecosystem credits would be required for the Project. Peel Mining would retire these credits prior to undertaking vegetation disturbance associated with Project. • PCT 103_Open - Poplar Box - Gum Coolabah - White Cypress Pine shrubby woodland mainly in the Cobar Peneplain Bioregion ..... 30.0ha • PCT 104_Disturbed - Gum Coolabah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion ..... 4.9ha • PCT 104_Open - Gum Coolabah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion ..... 1.4ha • PCT 176_Recovering - Green Mallee - White Cypress Pine very tall mallee woodland on gravel rises mainly in the Cobar Peneplain Bioregion ..... 0.63ha Note PCT 103_Open - Poplar Box on grassy Alluvial Plains is listed as Endangered by Commonwealth but not listed for
2. any significant effect on: - threatened species, - critical habitats / areas of outstanding biodiversity value, - an endangered ecological community or critically endangered ecological community, or - habitat of a threatened species or ecological community.	Vegetation removal can harm threatened species or reduce local abundance of species. Areas cleared for exploration activities, access tracks, etc not available for fauna habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Spread of weeds, pest animals and animal/plant diseases.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	UNCERTAIN	Fully	YES	UNCERTAIN	NO	MEDIUM	The following three threatened fauna species, all of which was listed a Vulnerable under the NSW Biodiversity Conservation Act 2016 (BC Act) [not also EPBC listed], were positively identified during fauna surveys: • Little Eagle Hieraaetus morphnoides detected by spotlight foraging / resting in the study area • Grey-crowned Babbler (eastern subspecies) Pomatostomus temporalis temporalis heard calling in the study area • Little Pied Bat Chalinolobus picatus confidently recorded in bat call analysis. Little Eagle and Grey-crowned Babbler are already accounted for as Ecosystem credit species and Little Pied Bat was added to the calculator as an Ecosystem credit species (it is not a dual credit species). Little Eagle is a dual credit species, but no breeding site was identified in accordance with the BAM 2020, so this species could be excluded as a candidate species credit species. The Company contends that the

3. any potential to endanger, displace or disturb fauna (including fauna of conservation significance) or create a barrier to their movement.	Vegetation removal can decrease available foraging/ sheltering/ breeding habitat for species and displace species from regular place of residence. Access tracks can act as a barrier to movement of small fauna species. Fauna crossing access tracks may be killed or injured if hit by vehicles. Vegetation removal can remove connective corridors used for wildlife movement. Areas used for exploration activities, access tracks, etc not available for fauna habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna. Drilling sumps can be a hazard for fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Short term noise and air quality impacts. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Spread of weeds, pest animals and animal/plant	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	No - not identified in the Biodiversity Development Assessment Report Peel Mining Limited, Mallee Bull Project - Appendix 4 of the REF and Peel Mining will implement the following biodiversity-related management and mitigation measures:
4. any other impacts on fauna.												
										Summary of fauna impacts	MEDIUM	**Refer to Line Items 58 and 59 above**
(b) Flora impacts* [* A Species Impact Statement will be required if the activity is likely to significantly affect critical habitats, threatened species, populations or ecological communities or their habitats].												
1. any clearing or modification of vegetation (including vegetation of conservation significance).	Vegetation removal can harm threatened species or reduce local abundance of species. Areas cleared for exploration activities, access tracks, etc not available for flora habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Spread of weeds, pest animals and animal/plant diseases.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	UNCERTAIN	Fully	YES	UNCERTAIN	NO	MEDIUM	Yes 37ha clearing of native vegetation proposed. The Biodiversity Development Assessment Report - Appendix 4 advises that The project will impact native vegetation. The Results from exploration may justify the development of the site as a mining operation and potentially become a State Significant Development (SSD), and as such the proponent has chosen to opt into the NSW Biodiversity Offsetting Scheme. Vegetation within the development footprint has been assessed as aligning with the BioNet Vegetation Classification Plant Community Types (PCTs), however there are no Threatened Ecological Communities (TECs) associated with the PCTs identified in the development footprint. No TEC's listed under the BC Act or EPBC Act were found to occur in the study area. The Company anticipates that the potential for impacts to biodiversity would result in removal of approximately 37ha of native vegetation and habitat. The "opt in" to the NSW Biodiversity Offset Scheme for
2. any significant effect on: - threatened species, - critical habitats / areas of outstanding biodiversity value, - an endangered ecological community or critically endangered ecological community, or - habitat of a threatened species or ecological community.	Vegetation removal can harm threatened species or reduce local abundance of species. Areas cleared for exploration activities, access tracks, etc not available for flora habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Spread of weeds, pest animals and animal/plant diseases.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	MEDIUM	Yes 37ha clearing of native vegetation proposed. The Biodiversity Development Assessment Report - Appendix 4 advises that The project will impact native vegetation. Results from exploration may justify the development of the site as a mining operation and potentially become a State Significant Development (SSD), and as such the proponent has chosen to opt into the NSW Biodiversity Offsetting Scheme. There are no Threatened Ecological Communities (TECs) associated with the PCTs identified in the development footprint. No TEC's listed under the BC Act or EPBC Act were found to occur in the study area. There are no areas within the development footprint that do not trigger an offsetting obligation under the NSW Biodiversity Offsetting Scheme. There are no serious and irreversible impacts associated with the project. There are no impacts on threatened species (species credits) triggering an offsetting obligation
3. any other impacts on flora.												
										Summary of flora impacts	MEDIUM	**Refer to line items 63 and 64 above.**
(c) Ecological and Biosecurity impacts* [*A Species Impact Statement will be required if the activity is likely to significantly affect critical habitats, threatened species, populations or ecological communities or their habitats].												
1. any threat to the biological diversity or ecological integrity of species or communities, including: Whether the activity constitutes or is part of a "key threatening process" outlined in Schedule 4 of the Biodiversity Conservation Act 2016 and including: • alteration, removal, clearing or degradation of habitat and native vegetation, • loss of hollowing bearing trees, • removal of dead wood and dead trees, and • invasion and establishment of exotic species. Whether the activity likely to impact on any of the following matters of national environmental significance under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*: • listed threatened species and communities, • listed migratory species, • Ramsar wetlands of international importance, • Commonwealth marine environment, • world heritage properties, • national heritage places, • Great Barrier Reef Marine Park, • nuclear actions, or • a water resource, in relation to coal seam gas development and large coal mining development	Vegetation removal can decrease available foraging/ sheltering/ breeding habitat for species and displace species from regular place of residence. Areas used for exploration activities, access tracks, etc not available for flora / fauna habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna / flora. Drilling sumps can be a hazard for fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Exposure of acid sulfate soils. Spread of weeds, pest animals and animal/plant diseases. Fauna crossing access tracks may be killed or injured if hit by vehicles. Surface disturbance may result in removal of/damage to seed stock.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. c. Setbacks from steep slopes/cliffs to limit impact of shots on cave dwelling fauna. Noise impacts / disruption to fauna are temporary. Vehicle movements are limited and unlikely to have significant injury/mortality impacts. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Low to Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. Addressed in Section 3.5.11 Ecological Management Strategy and includes - Develop and implement a Biodiversity Management Strategy and a Biosecurity Management Strategy prior to construction.

2. creates a biosecurity risk or introduces genetically modified organisms into an area. Includes impacts from the introduction of: a. animal pests, b. plant pests and diseases, c. animal diseases, d. noxious weeds, or e. genetically modified organisms.	Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna / flora. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Spread of weeds, pest animals and animal/plant diseases. Surface disturbance may result in removal of/damage to seed stock. Weed growth in disturbed areas.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. c. Requirement to prevent introduction and spread of weeds, pest animals & animal and plant diseases (required to implement "come clean, go clean" protocols). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (includes weed growth management. Legislative requirement for landholder access	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration. Proponent to develop and implement a Biodiversity Management Strategy and a Biosecurity Management Strategy prior to construction.
3. high bushfire risk impacts.	Plant and machinery comprises a potential ignition source.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including undertaking a risk assessment and implementing suitable controls to manage risks (e.g. implementation of controls on activities during Extreme or Catastrophic Fire Conditions will largely negate risk). Activities must comply with WHS legislative requirements. Any existing/proposed access tracks can be used as firebreaks in event of fire.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. Peel Mining would implement the following management strategies in the vicinity of the ventilation rise to manage the risk of bush fire. • Maintain and operate machinery in a manner that would minimise the potential to start a fire. This would include ensuring that spark-free exhausts are fitted and that all fuel, electrical and braking systems are maintained in good order. • Permit smoking only within designated, cleared areas. • Ensure appropriate fire extinguishers and other
6. any other impacts.												
										Summary of ecological impacts	LOW	**NA**
(d) Location sensitive because of biological factors												
1. corals and sea grass beds, wetland communities (coastal, peatlands or inland), native forests, urban bushland, arid and semi arid communities.	Mobilisation of pollutants in soils, surface water or aquifers. Short term noise, air quality and visual impacts. Particulate emissions from plant and machinery; fugitive emissions of gases or vapour from drilling operations and the operation of flares. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Exposure of acid sulfate soils. Spread of weeds, pest animals and animal/plant diseases. Damage to sensitive features, such as unique landforms. Vegetation removal may remove/harm some native vegetation.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
2. critical habitats or the habitats of threatened fauna or flora species, populations or ecological communities.	Vegetation removal can harm threatened species or reduce local abundance of species. Areas cleared for exploration activities, access tracks, etc not available for flora habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Spread of weeds, pest animals and animal/plant diseases.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. c. Setbacks from steep slopes/cliffs to limit impact of shots on cave dwelling fauna. Noise impacts / disruption to fauna are temporary. Vehicle movements are limited and unlikely to have significant injury/mortality impacts. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	No endangered ecological community or critically endangered ecological community present on site. No areas of outstanding biodiversity on site (BC Act) and no areas of critical habitat on site (FM Act). Medium to Short term program.
3. habitat of species listed under international agreements.	Vegetation removal can harm species or reduce local abundance of species. Areas cleared for exploration activities, access tracks, etc not available for fauna habitat. Mobilisation of pollutants (such as hydrocarbons) in soils, air or waters can potentially impact fauna. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water habitats. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation thereby negatively affecting habitats. Spread of weeds, pest animals and animal/plant diseases.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	None identified

4. wildlife corridors and remnant vegetation.	Vegetation removal and activities can temporarily impact wildlife corridors and remnant vegetation. Areas cleared for exploration activities, access tracks, etc not available for flora habitat. Use of pesticides, herbicides, fertilisers or other chemicals have the potential to build up residues in the environment, including in soils and water. Soil erosion and sediment laden runoff from disturbed areas, that could lead to soil or water contamination or land degradation. Spread of weeds, pest animals and animal/plant diseases. Removal of vegetation, barriers created by access tracks, etc can interrupt movement of fauna species	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Minimise extent of vegetation clearing and surface disturbance to as low as practicable. b. Prevent adverse impacts to fauna caused by vegetation clearing, including relocation of resident fauna. c. Access track widths unlikely to pose significant barrier to fauna. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Yes was identified and project has been designed to avoid areas where possible i.e. rocky outcrops.
5. habitat of protected aquatic species or those with conservation status.	Negligible and only localised changes to drainage flows/flooding regime. Water used for exploration not available for ecological purposes. Surface runoff can be sediment laden from areas where vegetation has been removed. Generally minimal surface water use (must be licensed or use of farm dams through landholder agreements). No use of groundwater but potential loss through produced water in drilling / deep excavation operations. Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers. Ford across creeks can cause stream bank erosion from vehicle wash. Inappropriate disposal of drilling wastes / overflow from drilling sumps	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. c. No significant impact on any threatened species, threatened populations, threatened ecological communities, or their habitats. d. No removal of vegetation in waterfront land. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation is to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Nil
6. fishing grounds and commercial fish breeding or nursery areas.	Negligible and only localised changes to drainage flows/flooding regime. Surface runoff can be sediment laden from areas where vegetation has been removed. Generally minimal surface water use (must be licensed or use of farm dams through landholder agreements). Interception, cross contamination and/or depressurisation of groundwater systems in drilling operations. Groundwater depressurisation effects on surface water. Mobilisation of pollutants (such as hydrocarbons) in surface water or aquifers. Ford across creeks can cause stream bank erosion from vehicle wash. Inappropriate disposal of drilling wastes / overflow from drilling sumps.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including: a. Activities must implement all measures to prevent causing any adverse impacts on water quality or quantity. b. All sediment and erosion controls (including drainage from roads/access tracks) to be managed in accordance with Blue Book. c. No significant impact on any threatened species, threatened populations, threatened ecological communities, or their habitats. d. No removal of vegetation in waterfront land. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Nil
7. bushfire prone areas.	Plant and machinery may be an ignition source.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including undertaking a risk assessment and implementing suitable controls to manage risks (e.g. implementation of controls on activities during Extreme or Catastrophic Fire Conditions will largely negate risk). Activities must comply with WHS legislative requirements. Any existing/proposed access tracks can be used as firebreaks in event of fire.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Refer to bushfire Management - row 71.
8. any other sensitive areas.												
										Summary of sensitive location because of ecological impacts	LOW	**NA**
3. RESOURCE USE IMPACTS												
(a) Community resources												
1. any degradation of infrastructure or significant increase in the demand for services and infrastructure resources.	Limited potential for any significant increase in demand for resources. Negligible potential for degradation of infrastructure, such as roads and bridges.	Negligible impacts likely. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment, culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (includes weed growth management. Legislative requirement for landholder access arrangements and compensation.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. Localised resources will predominately be sought from Hera Mine and will not place additional burden on local community (e.g. catering and accommodation)

2. any significant resource recycling or reuse schemes to reduce resource usage.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	LOW	None noted
3. any diversion of resources to the detriment of other communities or natural systems.	Limited potential for any significant diversion of resources to the detriment of other communities or natural systems. Negligible impacts and only localised changes. Areas used for exploration activities, temporarily removed from natural systems and / community use.	Negligible impacts likely. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment, culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (includes weed growth management. Legislative requirement for landholder access arrangements and compensation.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration. Most impact may be upon Hera Mine.
4. any other impacts.												
										Summary of community resource impacts	LOW	**NA**
(b) Natural resources												
1. any disruption, depletion or destruction of natural resources.	Limited potential for any significant diversion of resources to the detriment of other communities or natural systems. Negligible impacts and only localised changes. Areas used for exploration activities, temporarily removed as a natural resource. Vegetation removal may remove potential timber resources. No significant impacts on other natural resources other than positive in terms of increased knowledge of geological resources.	Negligible impacts likely. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment (water, land, soil, air), culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity. Legislative requirement for landholder access arrangements and compensation limit any potential impacts.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. The proposed activity would not significantly deplete natural resources, with water and soils being protected and no vegetation significant clearing would be undertaken. The proposed activity would not deplete ore materials, rather it would better define the resource for future beneficial exploitation. Therefore, as the proposed activity would not significantly disrupt, deplete or destroy natural resources, the impact would be negligible
2. any disruption of existing activities (or reduction of options for future activities).	Limited potential for any significant disruption of existing activities (or reduction of future activities). Negligible impacts and only localised changes. Areas used for exploration activities, temporarily removed as a natural resource but no long term impacts on future availability of forestry, agricultural land, soils or water resources. Vegetation removal may remove potential timber resources.	Negligible impacts likely. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment (water, land, soil, air), culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity. Legislative requirement for landholder access arrangements and compensation limit any potential impacts.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period.
3. any use which results in the degradation of any area reserved for conservation purposes.		Negligible impacts likely. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment (water, land, soil, air), culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity. Legislative requirement for landholder access arrangements and compensation limit any potential impacts.	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A		None noted
4. any other impacts.												
										Summary of Natural Resource Impacts	LOW	**NA**
(c) Location sensitive because of conservation factors												
1. national parks and other areas reserved or dedicated under the *National Parks and Wildlife Act 1974*.	Activity not permitted in area.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	**Nil**
2. land reserved or dedicated within the meaning of the *Crown Lands Act 1989* for preservation or other environmental protection purposes.		N/A	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	TSR adjacent to site and will be used for Light Vehicle Access - licence to be pursued by proponent with Crown land.
3. World Heritage areas.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	N/A
4. environmental protection zones in environmental planning instrument (such as the Council's Local Environmental Plan) as being of biodiversity / conservation significance or zoned for environmental conservation, protection and/or management. Coastal Wetlands or Littoral Rainforests protected under State Environmental Planning Policy (Resilience and Hazards) 2021		N/A	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	Site is zoned Rural
5. land identified as wilderness under the *Wilderness Act 1987* or declared as wilderness under the *NPW Act* or a Wildlife Refuge agreement under the *Biodiversity Conservation Act 2016*.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	N/A
6. aquatic reserves reserved or dedicated under the *Fisheries Management Act 1994*.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	N/A
7. wetland areas dedicated under the Ramsar Wetlands Convention.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	N/A
8. heritage items identified on the Register of the National Estate, under the NSW *Heritage Act* or an environmental planning instrument.		N/A	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	Site not identified in planning instrument i.e. LEP
9. community land under the *Local Government Act* (for which a plan of management has been prepared).		N/A	Approximately 5 years	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	Site not identified in LGA
10. land subject to a "conservation agreement" under the *NPW Act* and/or *Biodiversity Conservation Act 2016*.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	LOW	Nil
11. any other factors.												
										Summary of Location Sensitive because of Conservation Factors	LOW	**NA**
4. COMMUNITY IMPACTS												
(a) Social factors												

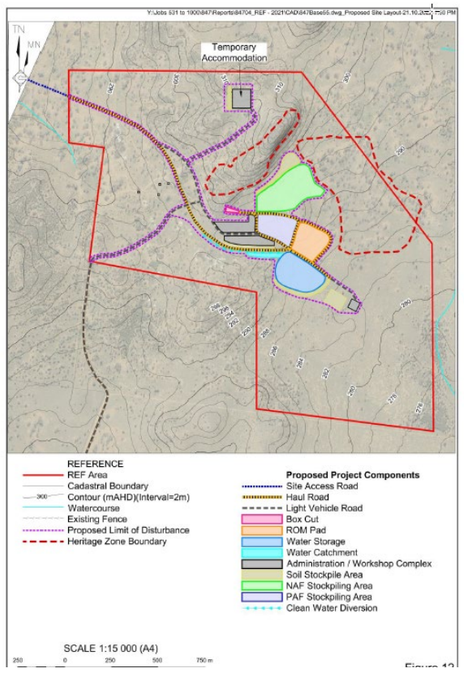
1. any impacts which result in a change in the demographic structure of the community.	Limited potential for any significant change in the demographic structure of the community. Negligible impacts and only localised changes.	Negligible impacts likely due to low personnel numbers and temporary nature of exploration.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	No - And is medium to short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. The workforce would be drawn from existing local population centres, potential impacts upon the demographic structure of the community are considered negligible.
2. any environmental impact that may cause substantial change or disruption to the community.	Environmental impacts from activities not of a nature to cause any significant or long term change or disruption to community. Areas used for exploration activities, temporarily removed from natural systems and / community use. Short term noise, air quality and visual impacts.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	No - and is medium to short term duration. Site is remotely located and management plan employed will minimise environmental harm and impact to neighbours
3. any impacts which result in some individuals or communities being significantly disadvantaged.	Impacts from activities not of a nature to cause any significant or long term change or disruption to community. Limited potential to significantly impact on individuals or communities - short term impacts only. Areas used for exploration activities, temporarily removed from natural systems and / community use. Short term noise, air quality and visual impacts.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment (water, land, soil, air), culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity. Legislative requirement for landholder access arrangements and compensation limit any potential impacts. Compensation under Mining Act available to mitigate compensation. Activities must comply with WHS legislative requirements.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Not likely - and is Medium to Short term duration
4. any impacts on the health, safety, privacy or welfare of individuals or communities.	Activities not of a nature to cause any significant or long term health, safety, privacy or welfare impacts. Limited potential to significantly impact on individuals or communities - short term impacts only. Short term noise, air quality and visual impacts.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment (water, land, soil, air), culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity. Legislative requirement for landholder access arrangements and compensation limit any potential impacts. Compensation under Mining Act available to mitigate compensation. Activities must comply with WHS legislative requirements.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Not likely - Medium to Short term duration and satisfactory
5. any impacts that result in a change in the level of demand for community resources (e.g. community facilities, community services and labour force).	Negligible potential to significantly change level of demand for community resources - short term impacts only. Minimal increase in demand for accommodation, food, mechanical and fuel supplies, etc. Not large enough to warrant significant changes in supply.	Negligible impacts likely due to low personnel numbers and temporary nature of exploration. Generally positive for suppliers of services and goods utilised.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Not likely - Medium to Short term duration and satisfactory
6. any other social impacts.												
											Summary of Social Factors	LOW	**NA**
(b) Economic factors (including impacts on employment, industry and property value)												
1. any impacts which may affect economic activity (positive or negative), including a decrease to net economic welfare.	No significant impacts predicted. Minimal increase in demand for accommodation, food, mechanical and fuel supplies, etc. Not large enough to warrant significant changes in supply.	Negligible impacts likely due to low personnel numbers and temporary nature of exploration. Generally positive for suppliers of services and goods utilised.	Approximately 5 years	HIGH	HIGH RESILIENCE	YES	Fully	YES	LOW	NO	LOW	Medium to Short term duration and it is expected that there would be a positive economic impact from activities including the purchase of consumables, and spending on local goods and services.
2. any impacts that result in a decrease in the economic stability of the community.	Activities not of a scale to warrant changes in supply side. Temporary increase in demand will result in increased income for some suppliers.	Negligible impacts likely due to low personnel numbers and temporary nature of exploration. Generally positive for suppliers of services and goods utilised.	Approximately 5 years	HIGH	HIGH RESILIENCE	YES	Fully	YES	LOW	NO	LOW	No not likely - Medium to short term impact
3. any impacts which result in a change to the public sector revenue or expenditure base.	Rehabilitation security bond covers any future public liability for rehabilitation. Investment in exploration may lead to significant mining investment. Limited long term negative economic impacts from exploration.	Small increase in public revenue associated with exploration, including taxes from wages	Approximately 5 years	HIGH	HIGH RESILIENCE	YES	Fully	YES	LOW	NO	LOW	No not likely - Medium to short term impact
4. any other economic impacts.												
											Summary of Economic Factors	LOW	**NA**
(c) Heritage, aesthetic, cultural impacts												

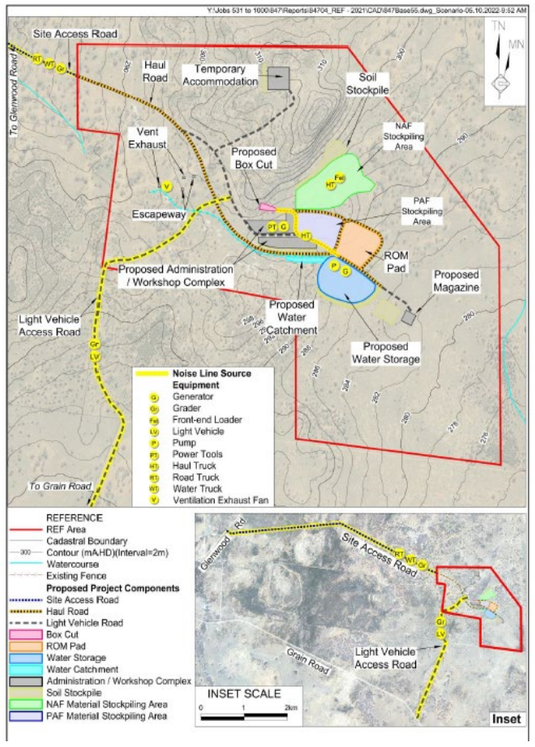
1. any impacts on a locality, place, landscape, building or archaeological relic of heritage significance.	Damage to structures and sensitive features. Limited potential to significantly impact on locality, places, landscapes or buildings. Short term noise, air quality and visual impacts. Potential for temporary impact on aesthetics of a locality.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air), culture and heritage (Aboriginal and Non-Indigenous heritage). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	NO	Partly	YES	UNCERTAIN	NO	MEDIUM	An Archaeological Survey for the Project has been submitted with the REF at Appendix 5. That survey identified 41 sites of Aboriginal heritage significance within the area surveyed. Only one identified site would be partially impacted by the Project (AS05). Site AS05 is a large stone artefact scatter comprising hundreds of artefacts in the central portion of the proposed limit of disturbance. Peel Mining would apply for an Aboriginal Heritage Impact Permit (AHIP) prior to any disturbance within the REF Area.
2. any impacts on the visual or scenic landscape.	Limited potential to significantly impact on visual or scenic landscape. Short term noise, air quality and visual impacts. Potential for temporary impact on aesthetics of a locality. Lighting during night time operations and use of access tracks by vehicles at night may affect local amenity .	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air), culture and heritage (Aboriginal and Non-Indigenous heritage). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	REF states in Section 4.4.4 -The REF Area is well vegetated and the proposed disturbance areas are set well back from the only publicly accessible vantage point on Glenwood Road and Grain Road. No proposed activities would be visible from surrounding residences. As a result, the Project would have a negligible aesthetic impact. The Exploration Activity is short to medium term, unless project becomes state significant as an operational mine.
3. any disturbance of the ground surface or any culturally modified trees (e.g. a scar tree).	Short term ground disturbance. Potential for temporary impact on aesthetics of a locality.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air), culture and heritage (Aboriginal and Non-Indigenous heritage). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Partly	YES	UNCERTAIN	NO	LOW	No culturally significant trees noted in immediate REF project surface disturbance site area as per the Archaeological Survey for the Project as submitted with the REF at Appendix 5.. However is noted that there are many scare trees within the vicinity of the project area which will be avoided. Peel Mining to develop mitigation measures and management plan to address archaeological survey results and minimise impacts i.e. by developing heritage zones, fencing off known areas (Aboriginal sites within 100 metres of proposed impacts would be fenced off using standard farm fencing with a buffer of ten metres from the trunk of the Culturally Modified Trees and five metres from the boundaries of the Open Stone Artefact Sites.) , and induct all site personnel on the presence, significance and management of the cultural heritage sites identified by AREA (2022b).
4. any impacts on known Aboriginal objects or Aboriginal places.	Short term ground disturbance. Potential for impact on Aboriginal objects and places through ground disturbance, excavations, vegetation clearing, etc.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air), culture and heritage (Aboriginal and Non-Indigenous heritage). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	MEDIUM	Yes - One site of Aboriginal cultural heritage would be partially impacted by the Project. Peel Mining would apply for an AHIP prior to any disturbance within the REF Area. Impacts to twelve sites within 100m of the development footprint were avoided, however mitigation measures are required to reduce the likelihood of indirect impacts. The remaining 28 sites are more than 100m away from the development footprint and would be avoided by the Project
5. affects areas where the landscape features indicate the likely presence of Aboriginal objects.	Short term ground disturbance. Potential for impact on Aboriginal objects and places through ground disturbance, excavations, vegetation clearing, etc.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air), culture and heritage (Aboriginal and Non-Indigenous heritage). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* applies to new IMER titles. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Yes - identified in the Archaeological Survey for the Project has been submitted with the REF at Appendix 5..
6. affects areas subject to native title claims, indigenous land use agreements or joint management arrangements.	Condition of exploration title/authority prohibits exploration on any land or waters on which Native Title has not been extinguished, unless the prior consent of the Minister has been obtained.	Condition of exploration title/authority prohibits exploration on any land or waters on which Native Title has not been extinguished, unless the prior consent of the Minister has been obtained.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	The REF Area is within the registered native title application NC2012/001 – Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan. All land within the REF Area is under Western Lands Lease and, as a result, Native Title has been extinguished.
7. any other heritage, aesthetic or cultural impacts.												
										Summary of heritage, aesthetic, cultural impacts	MEDIUM	**Refer to Line item 126-130**
(d) Land use impacts												

1. any major changes in land use, including: - curtailment of other beneficial land uses, and - whether the activity is consistent with any applicable local strategic planning statements, regional strategic plans or district strategic plans made under Division 3.1 of the *Environmental Planning and Assessment Act 1979*..	Limited potential for any major changes in land use due to short term and temporary nature of exploration. Exploration comprises development that does not need development consent pursuant to *State Environmental Planning Policy (Resources and Energy) 2021* and is temporary in nature. The activity will be consistent with the applicable local strategic planning statements, regional strategic plans or district strategic plans made under Division 3.1 of the Environmental Planning and Assessment Act 1979.. Negligible impacts and limited to immediate vicinity of site. Areas used for exploration activities, temporarily removed from existing land use/s but no long term impacts. Vegetation removal may remove potential timber resources.	Minimal impacts likely and limited to immediate site of the activity. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including protection of all elements of the environment (water, land, soil, air), culture and heritage. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* applies to new IMER titles. Rehabilitation to occur as soon as practicable after completion of activity. Legislative requirement for landholder access arrangements and compensation limit any potential impacts.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium Short term duration, though notes that the future might be a SSD mine? However has not been applied for at the time of assessment.
2. any property value impacts with land use implications.	Magnitude of permitted vegetation clearing and disturbance unlikely to result in decline of property values. Limited potential to significantly impact on visual or scenic landscape. Short term noise, air quality and visual impacts. Potential for temporary impact on aesthetics of a locality. Activities should not result in decline of property values over the long term.	Minimal impacts likely and limited to immediate site of the activity. Impacts are compensable under relevant legislation, including Mining Act 1992 and Petroleum (Onshore) Act 1991. Access tracks may increase value of property through improved access. Subject to landholder agreement and any compensation. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* . Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Not known
3. any other land use impacts.											
										Summary of land use impacts	LOW	**NA**
(e) Transportation impacts (during construction and operation)											
1. substantial impacts on existing transportation systems.	Short term additional traffic during exploration activity, primarily during set-up/construction stage.	Short term additional traffic during exploration activity, primarily during set-up/construction stage. Limited to immediate site. Subject to landholder agreement and any compensation.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to Short term duration and satisfactory environmental practices to be employed during the operation period and rehabilitation period. A Traffic Impact Assessment for the Project is provided in Appendix 8 of the REF prepared by TTPP (2022). The Project-generated vehicles are not considered to trigger a need to upgrade the Kidman Way and Glenwood Road intersection. The Project would generate only light vehicle movements at the intersection of Kidman Way with Grain Road. An approval under Section 138 of the Roads Act 1993 from Cobar Shire Council for the widening, installation of signage would be sought prior to those works commencing. Peel Mining propose to implement the following traffic and transport-related management measures: Prepare and implement a Traffic Management Plan
2. impacts associated with direct or indirect additional traffic.	Short term additional traffic during exploration activity, primarily during set-up/construction stage.	Short term additional traffic during exploration activity, primarily during set-up/construction stage. Limited to immediate site. Subject to landholder agreement and any compensation.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Low to Medium impact anticipated from exploration activity - A Traffic Impact Assessment for the Project is provided in Appendix 8 of the REF prepared by TTPP (2022). The Project-generated vehicles are not considered to trigger a need to upgrade the Kidman Way and Glenwood Road intersection. The Project would generate only light vehicle movements at the intersection of Kidman Way with Grain Road.
3. any other impacts on transport or traffic.											
										Summary of transportation impacts	LOW	**NA**
(f) Location sensitive because of community factors											
1. Aboriginal communities or areas subject to land rights claims.	Condition of exploration title/authority prohibits exploration on any land or waters on which Native Title has not been extinguished, unless the prior consent of the Minister has been obtained.	Condition of exploration title/authority prohibits exploration on any land or waters on which Native Title has not been extinguished, unless the prior consent of the Minister has been obtained.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	The REF Area is within the registered native title application NC2012/001 – Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan. All land within the REF Area is under Western Lands Lease and as a result, Native Title has been extinguished. Representatives of the Claimants completed the archaeological survey for the Exploration Decline Program. The Claimants requested that Peel Mining avoid and fence off the “Heritage Zones” as discussed in Section 2.7 of the REF. The Registered Native Title claimants have also advised that other Aboriginal sites identified during the archaeological survey be avoided, however, where this is not possible, a surface collection of Aboriginal objects at risk of direct or indirect harm would be conducted and the artefacts placed within one of the ‘Heritage Zones’ under an approved Aboriginal Heritage Impact Permit (AHIP). Peel Mining has agreed to this request.
2. communities with strong sense of identity.	Community likely to include members who have concerns about possible future mining following any exploration program. Short term and temporary impacts only.	Short term impacts on the community and predominantly limited to immediate site. Subject to landholder agreement and any compensation. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation* applies to new IMER titles. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Yes - refer to above row 144 is subject to Native Title Application NC2012/001 .

3. disadvantaged communities.	No negative impacts predicted.	Short term impacts on the community and predominantly limited to immediate site. Subject to landholder agreement and any compensation. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity.	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Not known
4. areas with degraded amenity from noise, traffic congestion or odour.	Potential for temperature inversions in winter to trap dust and air particulates. Particulate emissions and noise from vehicles and machinery. Dust generation and noise from operating machinery, vehicles travelling over tracks, etc. Short term additional traffic during exploration activity, primarily during set-up/construction stage.	Short term impacts predominantly limited to immediate site. Subject to landholder agreement and any compensation. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* including cumulative noise and air quality criteria. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to short terms activity. Location is relatively isolated and remote so impact anticipated to be low to negatable.
5. areas or items of high anthropological, archaeological, architectural, cultural, heritage, historical, recreational or scientific value.	Short term and temporary impacts only.	Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air), culture and heritage (Aboriginal and Non-Indigenous heritage). Aboriginal or European heritage objects/items/areas to be demarcated and avoided. All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Yes - identified site contains 41 sites - 1 Aboriginal site (Mallee Bull AS05) would be partially impacted by the Project, impacts to twelve sites within 100m of the development footprint were avoided, however mitigation measures are required to reduce the likelihood of indirect impacts. The remaining 28 sites are more than 100m away from the development footprint and would be avoided by the Project.
6. areas or items of high aesthetic or scenic value.	Limited potential to significantly impact on aesthetic or scenic value. Short term noise, air quality and visual impacts. Potential for temporary impact on aesthetics of a locality. Lighting during night time operations and use of access tracks by vehicles at night may affect local amenity . Exploration activities, including any removal of vegetation and access track locations, may impact on visual amenity.	Short term impacts predominantly limited to immediate site. Activities must comply with title conditions and the *Exploration Code of Practice: Environmental Management* to minimise potential impacts on all aspects of the environment (including water, land, air), culture and heritage (Aboriginal and Non-Indigenous heritage). All disturbed areas to be rehabilitated in accordance with title conditions and the *Exploration Code of Practice: Rehabilitation*. Rehabilitation to occur as soon as practicable after completion of activity (including sealing of any boreholes).	Approximately 5 years	HIGH	MEDIUM RESILIENCE	YES	Fully	YES	UNCERTAIN	NO	LOW	Medium to short terms activity. Location is relatively isolated and remote so impact anticipated to be low to negliable.
7. any other factors.												
											Summary of location sensitive because of community factors	LOW	**NA**

Ranking
LOW
MEDIUM
HIGH





Elevation Data Source: Geoscience Australia
Photo Source: Sixmap (3 August 2014)

Figure 12
PROPOSED SITE LAYOUT

RWCorkerysco

SCALE 1:15 000 (A4)

250 0 250 500 750 m

Elevation Data Source: Geoscience Australia
Photo Source: Sixmap (3 August 2014)

Figure 20
OPERATIONAL SCENARIO

Part 7 of Biodiversity Conservation Act 2016 and Section 1.7 of Environmental Planning and Assessment Act 1979 **Determining Whether the Activity is Likely to Significantly Affect Threatened Species, or Ecological Communities, or their Habitats**	
For the purposes of the *Environmental Planning and Assessment Act 1979* and, in particular, in the administration of sections 5.5 and 5.7, the following must be taken into account in deciding whether there is likely to be a significant effect on threatened species or ecological communities, or their habitats:	
a) In the case of a threatened species, is the proposed activity likely to have an adverse effect on the life cycle of a species such that a viable local population of the species is likely to be placed at risk of extinction?	**No**
b) In the case of an endangered ecological community or critically endangered ecological community, is the proposed activity:	
(i) likely to have an adverse effect on the extent of an ecological community such that its local occurrence is likely to be placed at risk of extinction?	**No**
(ii) likely to substantially and adversely modify the composition of an ecological community such that its local occurrence is likely to be placed at risk of extinction?	**No**
c) In relation to the habitat of a threatened species or ecological community:	
(i) is the extent to which habitat is likely to be removed or modified as a result of the proposed activity significant?	**Yes**
(ii) is an area of habitat likely to become fragmented or isolated from other areas of habitat as a result of the proposed activity?	**Yes**
(iii) is the habitat to be removed, modified, fragmented or isolated important to the long-term survival of the species or ecological community in the locality?	**No**
d) Is the proposed activity likely to have an adverse effect on any declared area of outstanding biodiversity value/critical habitat (either directly or indirectly)?	**No**
e) Does the proposed activity constitute or form part of a key threatening process or is likely to increase the impact of, a key threatening process?	**No**

NOTE FOR USERS: Almost all fields in this page are automatically generated from previous worksheets.
Only the Yellow boxes and the signature field need to be completed.
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Part 5 - Evaluation of Likely Significance of Potential Impacts on the Environment

Title:	EL 7461
Proponent:	Peel Mining Limited
Site/Project Name:	Mallee Bull Exploration Project
Activity:	des: •37
Location:	Located at Gilgunnia approximately 100km south of Cobar

Potential impacts	Potential significance considering the extent and nature of impacts (including impacts on environmentally sensitive areas)	Justification of Impacts
PHYSICAL & POLLUTION		
a) air impacts	LOW	**NA**
b) water impacts	LOW	**NA**
c) soil & stability impacts	LOW	**NA**
d) noise & vibration impacts	LOW	**NA**
e) any other physical or pollution impacts	LOW	**NA**
f) sensitive location because of physical or pollution factors	LOW	**NA**
BIOLOGICAL		
a) fauna	MEDIUM	**Refer to Line Items 58 and 59 above**
b) flora	MEDIUM	**Refer to line items 63 and 64 above.**
c) ecological & biosecurity	LOW	**NA**
d) sensitive location because of biological factors	LOW	**NA**
RESOURCE USE		
a) community resources	LOW	**NA**
b) natural resources	LOW	**NA**
c) sensitive location because of conservation factors	LOW	**NA**
COMMUNITY		
a) social impacts	LOW	**NA**
b) economic impacts	LOW	**NA**
c) heritage, aesthetic, cultural impacts	MEDIUM	**Refer to Line item 126-130**
d) land use impacts	LOW	**NA**
e) transportation impacts	LOW	**NA**
f) sensitive location because of community factors	LOW	**NA**
ACTIVITY AS A WHOLE (including cumulative environmental effects with other existing or likely future activities)	**Unlikely to have a significant impact on the environment and an EIS is not required**	

YES	**An Assessment of Significance has been conducted as required by s.1.7 of the *Environmental Planning & Assessment Act 1979*.**	**SIS Required?**	**SIS Not Required**
YES	**Regard has been paid to Declared Areas of Outstanding Biodiversity Value/Register of Critical Habitat as required by s.1.7 of the *Environmental Planning & Assessment Act 1979 and Part 7 of the Biodiversity Conservation Act 2016.***		

Person responsible for identifying, analysing and evaluating the potential impacts:

Name: Chris Hammersley Date: 8 August 2023

Position: Inspector Environment Signature:

SIS Required
SIS Not Required

FRM-208-A1: Assessment and Recommendation Briefing for Decision Maker

To:	Greg Kininmonth
Brief and letter PREPARED by:	Chris Hammersley
Date:	29 August 2023
Subject:	**Part 5 Determination: EL 7461, Authority Holder - Peel Mining Limited, Exploration Project - 'Mallee Bull Exploration Project' – Activity Approval; and Security Assessment**

Issue:

Title Holder has sought an activity approval in respect of Project Name: Mallee Bull Exploration Project, within EL 7461 at Location - Located at Gilgunnia approximately 100km south of Cobar.

A prospecting title (such as an exploration licence or assessment lease) granted under the *Mining Act 1992* or the *Petroleum (Onshore) Act 1991* is subject to a statutory condition that the title holder must not carry out an 'assessable prospecting operation' unless an exploration activity approval has been obtained from the Minister (or delegate).

A mining title (such as a mining lease) granted under the Mining Act 1992 is subject to a condition that the holder must not carry out any assessable prospecting operations on land over which the title has been granted unless:

- it is carried out in accordance with any necessary development consent; or
- if development consent is not required, the prior written approval of the Minister has been obtained for the carrying out of the assessable prospecting operation.

A duty is imposed on determining authorities under Part 5 of the Environmental Planning and Assessment Act 1979 (Planning Act) to:

- consider the environmental impacts of the proposed activity; and
- if the activity is likely to significantly affect the environment, examine and consider an environmental impact statement in respect of the activity.

The Minister is the determining authority for all exploration activities subject to environmental assessment under Part 5 of the Planning Act under EL 7461.

The Manager Environmental Operations, under delegation from the Minister, is required to assess whether the activity:

- is not likely to significantly affect the environment, including threatened species or ecological communities (or their habitats), or declared areas of outstanding biodiversity value/critical habitat. In such cases the Minister (or delegate) is able to approve the activity.
- is likely to significantly affect the environment. In such cases an environmental impact statement (EIS) is required to be prepared by the proponent and considered by the Minister (or delegate) prior to any determination.
- is likely to significantly affect threatened species or ecological communities (or their habitats), or impact on declared areas of outstanding biodiversity value/critical habitat, but no other significant impacts are likely. In such cases a species impact statement (SIS) and/or a biodiversity development assessment report (BDAR) is required to be prepared by the proponent and considered by the Minister (or delegate) prior to any determination.

Activity and assessment summary:

• Summary of proposed prospecting operation and the need for the activity:

Approval is sought to conduct a large scale Exploration Program that includes the following:

•37ha clearing (native vegetation)

•A Box Cut - 25m below ground level (mbgl)), 300m in length, 100m wide with a volume of 86,000m3

•A decline (for exploration purposes) 400mbgl, 5,8m high x 5.5m wide, – 4.5km long

•Ventilation rise (5m wide) & Escapeway (2m wide)?

•Waste Rock stockpile - 360,000t (producing 35,000t PAF & 325,000t NAF)

•Ancillary Infrastructure including workshop complex & store, laydown and mobile parking areas, power station, compressor area, Office/administration, crib room, ablution facilities, fuel farm.

•Soil stockpile areas, ROM pad

•Water Management Infrastructure – water storage facility (3.68ha, 7.7ML) & sediment basins and sumps, clean and dirty water diversions.

•Magazine storage area

•Temporary Accommodation for mine employees

•Haul road, site access road.

•Exploration program to go for 4-5yrs and operate 7 days per week. Underground 24hrs operation.

•Maximum number of people – up to 50 persons. (15 site construction and 30 exploration decline)

Need for the Activity: to define mineral resource as per Jorc requirements - Ore body starts below 150m. A lot of investment has already been undertaken to date. Drilling accuracy diminishes beyond 400m below surface and cost prohibited. This project would be cost saving. Drill to also define metallurgical data, geotechnical data; and groundwater and aquifer properties, and Collection of data that would be used for mine planning purposes and to support a State significant development application.

• Location, site description & aspects of the environment that are of particular sensitivity to any impacts

Site is located at Gilgunnia approximately 100km south of Cobar. The REF Area topography is typically flat, with two topographical features that rise on the eastern side of the REF area (rocky outcrop - to be avoided) and Surface water drainage characterised by sheet wash with mapped drainage features limited to indistinct, discontinuous ephemeral watercourses. REF area has been used for grazing native vegetation - low intensity intermittent grazing.

• Key impacts on the environment - AHIP required for partial destruction of aboriginal site containing numerous artefacts, clearing of 37ha of native vegetation requiring 683 ecosystem credits, depressurisation of groundwater, storage of PAF material and a lined water storage containment pond. 4-5 yr. operation proposing a decline with up to 360,000t of waste rock produced and stored. Pseudo mine development (i.e. box cut portal, decline, vent shaft and ancillary structures to support exploration activity, including accommodation.

• Outcomes of any consultation with other relevant agencies - None. Proponent engaged Agencies prior to submission of the REF. Proponent has ongoing consultation with various

Assessment of Security Deposit (Assessed Deposit):

The proposed prospecting operation Project Name: Mallee Bull Exploration Project, has triggered an assessment of the security deposit required to secure funding for the fulfilment of obligations under EL 7461 in relation to Mallee Bull Exploration Project, if approved.

The Assessed Deposit for EL 7461, including fulfilment of obligations in connection with Project Name: Mallee Bull Exploration Project is: $42,000.00 and is based upon a staged surface disturbance approach as the Title Holder is required to obtain other approvals from other Govt Agencies prior to commencing physical disturbances activities relating to the project.

This is based upon the Procedural Fairness Letter with proposed conditions, and a request from the Title Holder to delay the RCE due to post approval condition requirements prior to commencing surface disturbances. It was accepted that RCE could be staged in relation to staging to project. Refer to conditions in the approval letter and as such the assessed security will remain as $42,000.00 (as no surface disturbance activities will commence until relevant post approval are obtained from other Agencies)

Assessment of Impacts for Non-Complying Exploration Activities:
An assessment of the significance of environmental impacts associated with the proposed activity was undertaken in accordance with the requirements of Part 5 of *the Environmental Planning and Assessment Act 1979* . The results of this assessment are documented in the attached Part 5 Assessment Tables.

• Comment on significance of proposed impacts associated with the activity.
AHIP required for partial destruction of aboriginal site containing numerous artefacts,
Clearing of 37ha of native vegetation requiring 683 ecosystem credits,
Depressurisation of groundwater resulting from decline,
Storage of PAF material
Construction of a lined water storage containment pond.
Up to 360,000t of waste rock produced and stored.
4-5 yr. operation proposing a decline

• Identify any impacts which were considered to be high or requiring additional mitigation measures or conditioning (in Activity Approval terms).
Yes provided in LETT0008446. i.e. Post Activity Approvals such as Approval from Council 138 permits, Development Approvals and licences under the Local Government Act, AHIP, Biodiversity Offsets, WAL, Crown Lands permit & possibly EPA licence.

Summary:
Based on the information provided in the Application, the Review of Environmental Factors (REF) and the assessment undertaken in the Part 5 Assessment Tables, the proposed activity has been assessed as:

• not likely to significantly affect the environment, including threatened species or ecological communities (or their habitats), or declared areas of outstanding biodiversity value/critical habitat.
The application for approval of the Assessable prospecting operation has also been assessed as **being suitable**.

Included with this submission (provide ACES/CM9 Refs):	1. Application Form ESF4 - MAAG00155049 - Appendix 1 as submitted by Peel Mining Limited , and dated 22 December 2022 (Our Reference: RR23/12024), and (a) MAAG0015549 - 84704 Review of Environmental Factors and Appendices - Feb 2023.pdf (Our Reference: RR23/12024) (a) Mallee Bull Project Environmental Management Plan 2023 (RR23/39613) (b) Mallee Bull Exploration Project Environment and Community BBRA (RR23/39614) (c) Peel Mining Limited – Environmental Impact Permit Procedure (RR23/39615) (d) Peel Mining Limited – Environmental Impact Application Form (RR23/39616) (e) Peel Mining Limited – Company Vision Statement (RR23/39617) (f) Environment Inspection Form – RR23/39618) (g) RE_847_Mallee Bull Infrastructure Shape Files (RR23/47619) (h) Peel Mining Limited – 20230426 Response to RFI for MB REF – JY (RR23/55080)

Certification:

I (Chris Hammersley) certify that I have reviewed and endorsed the contents of the application, the Review of Environmental Factors document and Part 5 Assessment and, to the best of my knowledge, it is in accordance with the Environmental Planning and Assessment Act 1979, the Environmental Planning and Assessment Regulation 2020 and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading.

Recommendation:

The Manager Environmental Operations, under delegation from the Secretary:

• in accordance with s.261BC of the Mining Act 1992, assesses the amount of the security deposit required by a security deposit condition for EL 7461

• determines that the assessed deposit for EL 7461 is $42,000.00

The Manager Environmental Operations, under delegation from the Minister:

• assesses the environmental impact of the activity and determines that the activity is not likely/likely to significantly affect the environment under Part 5 of the Environmental Planning and Assessment Act 1979; and

• grants the activity approval pursuant to section 23A(4) of the Mining Act 1992

• varies the security deposit condition of EL 7461 as the exploration activities on the authority

Determination under Part 5 of the Environmental Planning and Assessment Act 1979:

In accordance with s5.5 and s5.7 of the Environmental Planning and Assessment Act 1979 and having examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the Project Name: Mallee Bull Exploration Project, I have determined that the activity is **not likely** to significantly affect the environment or threatened species, or ecological communities or their habitats and an environmental impact statement is **not required**. *(Endorse and date Part 5 Tables on Coversheet)*

In accordance with s.261BC of the Mining Act 1992, I have assessed the amount of the security deposit required by a security deposit condition for EL 7461 to be $42,000.00.

Activity Approval: [Endorsed Electronically on 29 August 2023]
Granted

NAME: Greg Kininmonth
Manager Environmental Operations

Signed under delegation from the Minister

29-Aug-23