

RZ Resources Exploration Leases			Monitoring/ Validation requirements
Final Land use	Light intensity grazing- until mining stage commences		
Closure objectives	Infrastructure -	All drill equipment to be removed and site clean, drill spoils buried onsite beside drill hole, pre existing tracks repaired as required to landholder satisfaction	
	Land Contamination-	Any contaminants to be removed from site, no visible signs of contamination following the removal of plant, equipment and materials, all rubbish removed from site	
	Landform Stability-	Landform consistent with surrounding area	
	Bushfire Objective-	Revegetation species and landforms as per existing environment	
Risk Assessment	Native Revegetation-	Species selection consistent with existing environment, no significant weed infestation	
	Attached		
	Temporary stabilisation	No significant erosion features that compromise landform stability or public safety	Monitoring reports
	Stable landform	Flora established via natural regeneration and seeding. Weed presence is not considered to adversely impact the stability of the landforms or have offsite impacts Bushfires - fuel loads maintained in accordance with Emergency Response Management Plan Landform stability - no significant erosion features to compromise stability or safety.	Vegetation monitoring reports Vegetation monitoring reports Vegetation monitoring reports Monitoring reports
Threats to rehabilitation	Threat/risk	Trigger	Mitigation measures
	Stabilisation fails and wind and water erosion occurs.	Erosion monitoring indicates lack of stability of landforms (minor gully erosion or rilling > 200 mm) occurring at greater frequency than surrounding area.	Landform, erosion and rehabilitation monitoring. Repair areas where erosion rills and gullies >200 mm occur.
	Major storm event resulting in flooding, geotechnical instability or major erosion	Weather warnings and monitoring show large storm events and flooding.	Undertake management works during stable weather periods.
		Erosion monitoring indicates lack of stability of landform (minor gully erosion or rilling > 200 mm).	Landform, erosion and rehabilitation monitoring.
	New regulatory requirements or evolving community expectations leading to difficulties negotiating or attaining completion criteria.	Changes in relevant legislation during the term of the RMP. Changes to landholder agreements.	Regular consultation with stakeholders (both regulators and landholders).
	Insufficient subsoil and topsoil to stabilise areas.	Loss of topsoil or damage to topsoil in stockpiles	Stripped topsoil and subsoil will be stockpiled appropriately for re-use.
	Unable to stabilise the final landform with vegetation.	Lack of progress against planned revegetation results.	Topsoil and subsoil management during operation. Soil drainage and erosion management. Management of soil contamination.
	Weed infestation.	Excessive weed populations.	Implementation of the weed management plan. Ensure all vehicles are clean and free of soil material and vegetation as per RZ Resources Biosecurity procedure (ie seeds) prior to accessing the activity areas to minimise the risk of spreading weeds.
	Feral infestation. Goat/Kangaroo	Excessive feral populations.	Undertake feral pest management to reduce the population density to an acceptable level Check exclusion fences and access to water points around the rehabilitation areas

Area	Potential Risks	Cause of risk	Likelihood	Consequences	Risk Rating	Controls	Likelihood	Consequences	Risk Rating
General									
1	Insufficient skills and experience of rehabilitation personnel	Current high market demand for experienced people Limited mining activity in south western NSW, thus small pool of experience	Likely	Significant	Very High	Utilise services of experienced rehabilitation consultants, Correct training, Competent personnel, Procedures in place	Unlikely	Significant	Moderate
2	Insufficient funding for or prioritisation of rehabilitation activities	Budgeting, accounting and profitability may look better with the rehabilitation costs pushed out to end of exploration period. Operating profit may be to tight to allow rehabilitation costs	Likely	Moderate	High	Initial trials and ongoing progressive rehabilitation to be implemented as soon as area available to commence Internal budgeting mechanism to provision for rehabilitation expenditure Rehabilitation legal commitment of lease conditions	Unlikely	Moderate	Moderate
3	Community no acceptance of rehabilitation - loss of licence to operate	Stakeholder concerns change to a negative perception from community, or stakeholder concerns not adequately identified	Unlikely	Moderate	Moderate	Maintain effective community and stakeholder engagement throughout term of project	Rare	Moderate	Low
4	Green House Gas emissions - Increased	Use of machinery for rehabilitation works	Unlikely	Moderate	Moderate	Use modern properly maintained equipment	Rare	Negligible	Low
5	Ground Disturbance	Inadvertent clearing or accessing areas outside of the approved disturbance footprint	Possible	Moderate	High	Staff training and site inductions to include environmental component, hole locations and access tracks clearly mapped Implement Drill pad procedure - RZ Procedure : <i>SOP Exploration site rehabilitation</i>	Unlikely	Moderate	Moderate
6	Air Quality -Dust	Dust nuisance during and after rehabilitation phase causing community complaints	Likely	Minor	High	Limit machinery movement during high dust risk events such as high wind	Unlikely	Minor	Moderate
7	Noise	Complaint from landholder or community	Possible	Minor	High	noise monitoring protocol and ongoing monitoring	Rare	Minor	Low
8	Rehabilitation occurs at much slower rate than anticipated	Budget constraints, staffing issues, adverse weather events such as drought or wet weather, flooding	Possible	Moderate	High	Rehabilitation planning, budgeting and execution to take into consideration, adverse weather events and timing	Possible	Minor	Moderate
9	Rehabilitation criteria cannot be met - biodiversity and/or ecological	Poor quality control/ design of rehabilitation works, poor germination or establishment of native plant species	Possible	Moderate	High	Follow the RZ Rehab procedure: <i>SOP Exploration site rehabilitation</i> and ongoing monitoring of sites to be recorded in Fulcrum and rehabilitation criteria rating	Possible	Minor	Moderate
10	Rehabilitation sites disturbed or damaged	Inadvertent damage from persons or livestock	Possible	Moderate	High	Ongoing rehabilitation monitoring of sites to be recorded in fulcrum until relinquishment. Repair damaged rehabilitation sites.	Possible	Minor	Moderate
11	Rehabilitation doesn't support proposed final land use	Rehabilitation not close to surrounding areas or no erosion controls in place on tracks on hills	Possible	Moderate	High	Undertake rehabilitation trials, designs and commence progressive rehabilitation as early as possible to rectify or implement any learnings, Regular planned monitoring of rehabilitation sites to check for erosion	Possible	Minor	Moderate
12	Infrastructure remains onsite creating health, safety and/or environmental liability	Access by unauthorised persons, material or hydrocarbon spillage	Unlikely	Significant	Moderate	All infrastructure made safe and secure	Unlikely	Negligible	Low
13	Rehabilitation site becomes haven for feral/ kangaroos which affect rehabilitation results	Build up of populations of ferals and kangaroos	Likely	Moderate	High	Exclusion fence around station (or barricading around rehabilitation sites), Feral control program to manage kangaroos and goats as required in consultation with NSW Resources Regulator and Landholder	Unlikely	Minor	Moderate
14	Unplanned/ early project closure	Unsustainable due to poor economic, social, cultural, environmental or health and safety performance	Unlikely	Significant	High	RCE bond and internal financial provisioning as well as closure plans in place	Unlikely	Moderate	Moderate
Active Exploration phase of works									
1	Biological resource salvage and maintenance through clearing, salvage and handling practices	Poor planning, sub standard quality control, poor conditions and/or execution	Possible	Moderate	High	RZ Rehabilitation management procedure <i>RZ Resources_Exploration_Site_Rehabilitation_V3.0_FINAL</i> , separation of topsoil and subsoil, rehabilitation as soon as practically possible, Appropriately trained and experienced personnel	Unlikely	Minor	Moderate
2	Excavation in adverse seasonal and weather conditions when salvaging biological resources	Poor planning, not being prepared in advance, change in prospecting requirements	Possible	Moderate	High	RZ Rehabilitation management procedure <i>RZ Resources_Exploration_Site_Rehabilitation_V3.0_FINAL</i> , separation of topsoil and subsoil, rehabilitation as soon as practically possible, Appropriately trained and experienced personnel	Unlikely	Minor	Moderate
3	Adverse surface quality and quantity	Poor drainage or water management allowing free flow of water, spoils and not appropriate containment of saline water affecting receiving environment	Possible	Minor	Moderate	Ensure spoils remain within spoil pits, no spoils into creeks or drainage areas. Remain at least 40m away from the main water courses. Follow guidelines and criteria in APOs where applicable.	Unlikely	Minor	Moderate
4	Impact on Heritage or Cultural Items	Tracks or excavations disrupting heritage items or cultural items	Possible	Moderate	High	Follow RZ Cultural heritage procedure <i>RZ_Resources_Cultural_Heritage_V4_FINAL</i> , all cultural heritage sites to be demarcated	Unlikely	Moderate	Moderate
5	Impact on Nulla Grass sites	Tracks or excavations taking place within Nulla Nulla grass locations	Possible	Moderate	High	Constant monitoring for new Nulla Nulla grass habitats or locations. Train new personnel in recognition of Nulla Nulla Grass, ensure no surface disturbance within 40m of known and identified Nulla Nulla Grass locations. Follow guidelines in APOs where applicable.	Unlikely	Moderate	Moderate
6	Bushfire	Overgrown spear grass, sparks from vehicles or plant, Smoking	Possible	Significant	High	Only smoke in designated smoking areas, use diesel vehicles only on existing and newly created tracks. Ensure fire extinguishers are present in all light vehicles and trucks.	Unlikely	Moderate	Moderate
7	Unauthorised creation of tracks	Not following APO, unnecessary environmental damage, no single file of tracks, unauthorised creation of tracks	Possible	Moderate	High	Follow and log RZ Resources Track app on Fulcrum, only authorised personnel to create new tracks. Follow APO for guidance in track creation, ground truth on site.	Unlikely	Moderate	Moderate
Decommissioning phase of exploration									
1	Impacts on heritage items	Known heritage item location not been marked or removed prior to operations, unknown item inadvertently impacted	Unlikely	Moderate	Moderate	Site inductions to include environmental component, heritage items marked or mapped clearly, APO planned works aware of heritage item locations and 50m buffer zone implemented	Rare	Moderate	Low
2	Hazards associated with retained infrastructure	Leakages or waste, contamination	Unlikely	Minor	Moderate	Retained infrastructure to be made safe and stable and identify any potential for contamination.	Rare	Negligible	Low
3	Contamination resulting from associated activities (eg storage/use of hydrocarbons, Spillage of saline water)	Spillages or inappropriate treatment/removal methods of hydrocarbon areas	Possible	Minor	Moderate	Hydrocarbon Management and Spill Response to be part of induction process, process in place for removal of hydrocarbon wastes offsite, Bunded storage or double skin requirements for storage of hydrocarbons.	Unlikely	Negligible	Low
4	Generation of material waste and waste products from the demolition process	Insufficient clean up to scrap or landfill	Possible	Minor	Moderate	Waste management and process developed and implemented, removal of all exploration equipment at the end of exploration phase.	Unlikely	Negligible	Low
5	Tracks and drill sites left unrehabbed	Missed tracks or drill sites, poor planning and management	Possible	Minor	Moderate	Drill sites rehabilitated as soon as practical, tracks to be rehabbed when weather allows, recording of which tracks are rehabbed and not on Fulcrum App and GIS	Unlikely	Negligible	Low

Area	Potential Risks	Cause of risk	Likelihood	Consequences	Risk Rating	Controls	Likelihood	Consequences	Risk Rating
Landform establishment phase									
1	Surface subsidence is greater than predicted	Results of subsidence monitoring show greater impact than predicted	Possible	Moderate	High	Investigate parameters to determine causal effects and modify processes as required	Unlikely	Moderate	Moderate
2	Stabilisation of landforms fails due to erosion	Wind or Water erosion occurring >200mm at greater frequency than surrounding area Poor design, batter angles, lack of water management Major storm event	Possible	Moderate	High	Tracks that are prone or predicted to be at risk of erosion have erosion controls in place, constant monitoring	Possible	Minor	Moderate
8	Landform aspect not suitable for intended target plant species	Not understanding species selection and growth requirements in relation to suitability of rehabilitated landforms	Possible	Moderate	High	Seeds collected from surrounding area, Competent operators in rehabilitation and seed placement, seed mix obtained from supplier for times with lack of natural seed, uneven surface to gather windblown seed, ongoing monitoring, trials recorded in Fulcrum App	Unlikely	Moderate	Moderate
Growth medium development phase									
1	Physical and structural properties of substrate not stable or suitable for plant growth	poor handling techniques as using not fit for purpose equipment	Possible	Moderate	High	Fit for purpose equipment utilised for topsoil handling, trained and competent operators, follow RZ rehabilitation procedure	Unlikely	Moderate	Moderate
2	Topsoil compaction in stockpiles	Compaction from heavy machinery, compaction from animal traffic or human traffic, compaction from heavy rain events	Possible	Moderate	High	Selecting fit for purpose and appropriate machinery to strip topsoils, spoil pits to be filled as soon as practical, areas around spoil pits demarcated, training for staff about the importance of topsoil	Unlikely	Minor	Moderate
4	Substrate inadequate to support revegetation or agricultural land capability (eg lack of organic matter, nutrient deficiency, lack of soil biota, adverse soil chemical properties, exposed hostile geochemical materials and any other factors impeding the effective rooting depth)	lack of quality due to incorrect handling techniques, Material characteristics wrong	Possible	Moderate	High	Selecting fit for purpose and appropriate machinery to strip topsoils, spoil pits to be adequate design size and to be filled as soon as practical, areas around spoil pits demarcated, training for staff about the importance of topsoil	Possible	Minor	Moderate
Ecosystem and land use establishment phase									
1	Lack of availability and quality of target seed resources, including genetic integrity	No long term plan for seed collection and storage	Possible	Minor	Moderate	Current plan is for using locally sourced seeds, failing this a contractor supplies a secure seed store of rehabilitation species	Unlikely	Negligible	Low
2	Poor seed viability, seed dormancy	Lack of understanding and planning for seed security	Possible	Minor	Moderate	Ensure seeds purchased are from a reliable source and undertake tests for viability. Ensure seed storage is appropriate. Ensure all seeds are sewn underground for when conditions are correct for germination conditions	Unlikely	Minor	Low
3	Damage to seed through revegetation process	Splitting or damage or bury too deep -poor seed soil contact	Unlikely	Minor	Moderate	Use appropriate techniques and equipment for seed sowing during rehabilitation	Rare	Minor	Low
4	Poor quality tubestock	Tubestock wont grow or are stunted, root bound or underdeveloped root system	Unlikely	Negligible	Low	Plan in advance so tubestock is grown specifically for the project	Rare	Negligible	Low
5	Weed infestation associated with both introduction and control (or lack thereof)	Poor soil handling and management allowing weeds to proliferate	Unlikely	Negligible	Low	Monitor and treat as required. Weeds are a coloniser species and can assist early in rehabilitation as a ground cover to protect the soil from erosion.	Unlikely	Negligible	Low
6	Adopting inappropriate or inadequate rehabilitation techniques, including equipment fleet	Lack of understanding of rehabilitation requirements	Possible	Minor	Moderate	Follow RZ Rehabilitation procedure, competent operators, monitoring different trials and methods	Unlikely	Minor	Moderate
7	Inappropriate revegetation species mix for targeted final land use	Lack of knowledge of plant/seed selection, unable to attain seeds - budget or environmental factors such as drought	Possible	Minor	Moderate	Seed selection based on local endemic species and during rehabilitation trials, or purchase applicable seed from recognised supplier	Unlikely	Negligible	Low
8	Poor establishment of target species and limited species diversity	Species abundance and diversity don't meet expected completion requirements	Possible	Minor	Moderate	Seed selection based on local endemic species and during rehabilitation trials, or purchase applicable seed from recognised supplier	Unlikely	Negligible	Low
9	Weather and climate influences affect the germination and establishment of the revegetation	Drought - extended periods, extreme wet weather event affect supply or ability to collect seeds or effects seed germination	Possible	Moderate	High	South western NSW is in a low rainfall area and the local environment is adaptive to drought periods, progressive rehabilitation to spread the rehabilitation risk over successive years	Unlikely	Minor	Moderate
12	Habitat structures for colonisation or use	Not collecting and storing materials during clearing process	Unlikely	Minor	Moderate	Include the salvage of timber as rehabilitation resource into the rehabilitation methods	Unlikely	Negligible	Low
Ecosystem and land use post rehabilitation									
1	Weather and climate influences adversely impacting rehabilitation success	Revegetated areas (seedlings) not established enough to survive drought or fire effects Seedlings not established enough to withstand heavy rain or flood impact and are washed out or drowned	Possible	Significant	High	Progressive rehabilitation as well as the ability to go back and re-seed areas that haven't established effectively, Ongoing monitoring	Possible	Minor	Moderate
2	Damage to rehabilitation (fauna, stock, vandalism, fire etc)	Exclusion fence around potential mining area	Possible	Moderate	High	Fencing and feral management to be incorporated, signage, Bushfire Management	Unlikely	Negligible	Low
4	Re-disturbance of established areas	Poor planning and re drilling through areas rehabilitated - change in plan or resource outline due to economics etc	Possible	Moderate	High	Planning to ensure we are not re drilling holes where rehabilitation has already been completed.	Unlikely	Negligible	Low
5	Insufficient establishment of target species and limited species diversity	Poor seed quality or management of seed stocks, lack of rain to promote seed germination, adverse weather during initial growth stages of seedlings	Unlikely	Minor	Moderate	Rehabilitation trials and progressive rehabilitation to determine appropriate seed mix, or purchase applicable seed from recognised supplier	Unlikely	Negligible	Low
6	Limited vegetation structural development and habitat for targeted fauna species	Poor selection of seed stock or poor establishment of integral species	Possible	Minor	Moderate	Rehabilitation trials and progressive rehabilitation to determine appropriate seed mix, or purchase applicable seed from recognised supplier	Unlikely	Negligible	Low
7	Erosion and failure of landform, drainage and water management/storage structures	Lack of or poor planning for surface water flow management, extreme rain events unanticipated	Possible	Significant	High	Monitoring of areas at risk of erosion, erosion controls in place when rehabilitating.	Unlikely	Minor	Moderate

Table C.2 Likelihood rating

Likelihood	Indicators			
Descriptor	Rating	Description	Probability	Frequency
Rare	1	The event may occur only in exceptional circumstances	< 10%	Less than once in 25 years
Unlikely	2	The event could occur at some time	10 - 25%	At least once in 25 years
Possible	3	The event should occur at some time	26 - 75%	At least once in 5 years
Likely	4	The event will probably occur in most circumstances	76 - 90%	At least once a year
Almost certain	5	The event is expected to occur in most circumstances	>90%	At least once per month

Table C.3 Risk matrix

Likelihood rating	5 Almost Certain	5	10	15	20	25
	4 Likely	4	8	12	16	20
	3 Possible	3	6	9	12	15
	2 Unlikely	2	4	6	8	10
	1 Rare	1	2	3	4	5
		1 Negligible	2 Minor	3 Moderate	4 Significant	5 Major

Consequences Rating

Table C.4 Risk reporting and approval

Current risk level	Descriptor	Required reporting	Required approval
17 - 25	Extreme	Board / Audit & Risk Committee / Exec	Approval of Board
13 - 16	Very High	Board / Audit & Risk Committee / Exec	Approval of Exec
7 - 12	High	Responsible General Manager Operations Manager / Registered Mine Manager for EHS risks assessed via JHA	Approval of General Manager or Team Leader / Coordinator / Supervisor authorisation for EHS risks assessed via JHA
4 - 6	Moderate	None	None
1 - 3	Low	None	None

Table C.1 Consequence rating

Consequence	Indicators								
	Descriptor	Rating	Financial (AUD)	Company objective	Injury and illness	Environment	Stakeholder	Reputation	Compliance
Negligible	Minor	1	<100K	The impact can be dealt with by routine operations.	No medical treatment required.	Limited damage to minimal area of low significance.	Low-level repairable damage to commonplace structures.	Public concern restricted to local complaints.	Technical breach of legal obligations without penalties or damages claims.
		2	100K – 1M	The impact would threaten the ability to achieve current year objectives.	First aid with no permanent disability.	Minor effects on biological or physical environment.	Minor medium-term social impacts on local population. Mostly repairable.	Minor, adverse local public or media attention and complaints.	Breach of legal obligations resulting in minor penalties or damages claims.
	Moderate	3	1M – 10M	The impact would threaten the ability to meet strategic objectives in short term.	Medically treated injury with no permanent disability.	Moderate, short-term effects but not affecting ecosystem function.	Ongoing social issues. Permanent damage to items of cultural significance.	Attention from media and/or heightened concern by local community. Criticism by NGOs.	Breach of legal obligations resulting in moderate penalties, or damages claims.
		4	10M - 100M	The impact would threaten the ability to meet strategic objectives in medium term.	Permanent disabling injury or Lost Time Injury.	Serious medium term environmental effects.	Ongoing serious social issues. Permanent damage to items of cultural significance.	Significant adverse national media /public/NGO attention.	Breach of legal obligations resulting in significant penalties or damages claims.
	Major	5	>100M	The impact is beyond ability to manage or resource and threatens the survival of the company.	Fatality or serious permanent disabling injury.	Very serious, long-term environmental impairment of ecosystem function.	Very serious widespread social impacts. Irreparable damage to highly valued items.	Serious public or media outcry (International coverage).	Breach of legal obligations resulting in major penalties or damages claims, or prosecution of the Company.

Rehabilitation Risk	Consequence/Hazard	TARP	Contingency Response
Biological resource salvage – topsoil and timber	Loss of topsoil or damage to topsoil in stockpiles	Trigger	Monitoring identifies topsoil stockpiles damaged due to rain events, or compacted from trafficking of vehicles, or weed incursion
		Action	- Undertake investigation including soil sampling if required - Stripped topsoil and subsoil will be stockpiled appropriately for re-use. - Spray weeds as required
	Timber resource not collected	Trigger	Timber resources damaged (burnt) or not sufficient for rehabilitation
		Action	- Ensure timber resource importance is included in environmental inductions - Ensure timber resources are collected and stored appropriately
Landform stability Erosion and sedimentation control	Stabilisation fails and erosion/sedimentation occurs	Trigger	- Landform design parameters are inadequate allowing run off to cause erosion - Erosion monitoring indicates lack of stability with gully erosion or rill erosion >200mm occurring
		Action	- Review procedures to ensure tracks are built with erosion in mind. - Repair areas of erosion >200mm
Ground disturbance and heritage items	Non-approved disturbance areas – potential impact on heritage and flora fauna	Trigger	Clearing or access to areas not approved
		Action	- Stop work and undertake investigation - Ensure Flora and Fauna and Heritage requirements and potential impacts included in site inductions - If heritage item identified, follow cultural heritage procedure
Infrastructure	Unauthorised access	Trigger	Site has been accessed by unauthorised persons
		Action	- Inspect access points and ensure integrity of fences, signage and locks - Undertake more regular site inspections
	Material or hydrocarbon spill	Trigger	Material spill
		Action	- Follow hydrocarbon management procedure - Undertake regular site inspections
Vegetation establishment	Self-regeneration from topsoil seed bank ineffective	Trigger	Rehabilitation monitoring determines that the recruitment of native vegetation from natural regeneration is less than adequate
		Action	- Investigate and implement as required reseeding/tubestock options - Undertake soil samples to check soil quality parameters which may inhibit plant growth - Compare against analogue site and climatic conditions as well as previous monitoring results
Weeds	Excessive weed growth	Trigger	Rehabilitation monitoring determines excessive weeds present which are detrimental to the rehabilitation program
		Action	- Undertake weed control or management as per the weed management plan - Will need to be timed for appropriate season for spraying and preferably before seed set
Ferals		Trigger	Increase in population abundance as identified through regular inspections and/or the rehabilitation monitoring
		Action	- Check exclusion fences and access to water points around the rehabilitation areas - Undertake feral pest management to reduce the population density to an acceptable level
Weather and climate influences	Weather conditions turn dry and not conducive to vegetation establishment (drought conditions) or alternatively adverse conditions such as flooding, or bushfire affect rehabilitation	Trigger	- Dry conditions delay vegetation germinations - Dry conditions damage vegetation after initial establishment - Adverse conditions prevent germination or damage vegetation
		Action	- Review affected areas and outline actions to rectify - Ensure progressive rehabilitation to spread risk over various seasons