

Environmental Management Plan (EMP) for the Proposed Mineral Exploration, and small-scale mining on Mining Claims (MCs: 74090 to 74098), Dâures Constituency, Uis, Erongo region.



Prepared by:

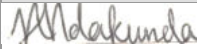


**Minera-Xplore Consultancy CC
P.O. Box 31671, Windhoek,
Contact: (+264) 085 761 4750**

Proponent:

**Ringmen Investment (Pty) Ltd
P.O. Box 90342
Klein-Windhoek, Namibia
Contact: (+264) 081 468 5578
METF Reference no.: App: 001054**

DOCUMENT DATA SHEET

Title	Environmental Management Plan (EMP) for the proposed mineral exploration, and small-scale mining on Mining Claims (MCs: 74090 to 74098), Dâures Constituency, Erongo Region, Uis, Erongo Region		
Report Status	Draft		
Proponent	Ringmen Investment (Pty) Ltd P.O. Box 90342 Klein-Windhoek, Namibia Contact Number: +264 81 468 5578 Email: Email: lixuanfaith@yahoo.com		
Environmental Practitioner	Minera-Xplore Consultancy CC P.O. Box 31671, Windhoek Contact Person: Ms Nangula Ndakunda Contact Number: +264 85 761 4750 Email: info@minera-xplore.com or frontdesk@minera-xplore.com		
MET Reference No.	App: 001054		
Date of release	March 2023		
	Name	Signature	Date
Author	Nangula Ndakunda		09/03/2023

7. Environmental Management Plan (EMP)

Overview

Ringmen Investment (Pty) Ltd (hereinafter referred to as the proponent), provisionally acquired mineral rights over the project area, Mining Claims (MCs 74090 to 74098). These Mining Claims (MCs 74090 to 74098) are located 43 km south west of Uis settlement accessible via C35 and D2342 gravel roads in Dâures Constituency, Erongo Region, western central Namibia. The project area is a state land, gazetted as the Tsiseb Conservancy by the Ministry of Environment, Forestry and Tourism in 2001. On these mining claims, the proponent plans to conduct exploration and mining operations for base and rare metals, industrial minerals and precious metals. The proposed exploration activities, which include desk research, geophysical surveys, geochemical surveys, geological mapping, trenching, drilling, geochemical sampling, and laboratory analysis with a goal of identifying mineral resources of economic interest, will take place during the first six (6) months of operation. Once determined to be commercially viable, the deposit will be developed into a conventional small-scale open pit mine with a beneficiation facility that utilized standard crushing, grinding, and concentration methods.

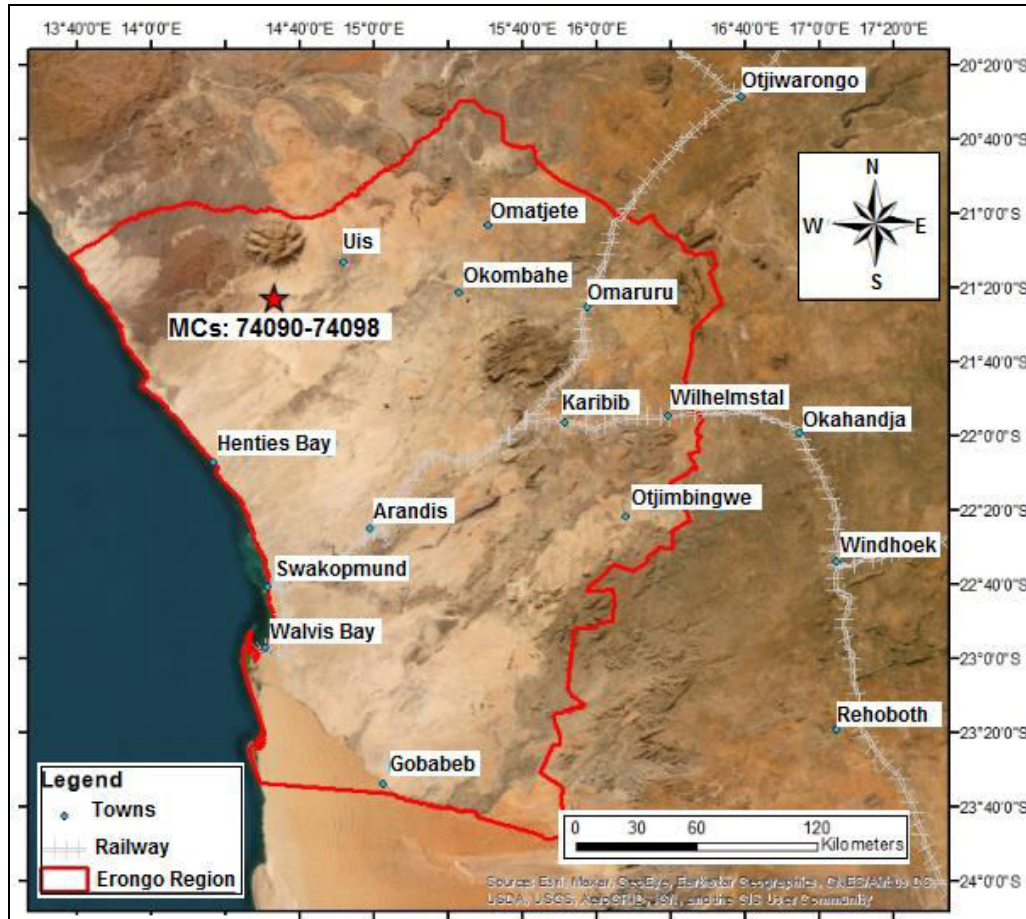


Fig. 1. Locality of Mining Claims (MCs 74090 to 74098) in Erongo Region, western central Namibia.

7.1 Purpose of Environmental Management Plan (EMP)

Environmental management plan (EMP) serves as a tool that can ensure sustainable mineral exploration, as it contains measures aimed at protecting, rehabilitating and restoring the environment to its productive state before, during and after exploration/mining. It serves as a risk strategy that contains logical framework, monitoring programs, mitigation measures and management control. The aim of an Environmental Management plan (EMP) is to develop procedures to implement project's mitigation measures and monitoring requirements. It is deemed as a risk strategy that contains logical framework and management control strategies to minimize potential environmental impacts to significant level. The EMP ensures the community that the

Environmental Management Plan for Mining Claims (MCs 74090-74098)

environmental management of the project is acceptable. As well as stipulating the roles and responsibilities of persons involved in the project. An EMP ensures that legal and policy requirements are well known and understood by the proponent, its employees and contractors and will be strictly enforced by its management team. Issues and concerns identified in the EIA will form a set of environmental specifications that will be implemented on site.

The control measures described in this EMP have been developed following consideration of the findings of the Environmental Impact Study (EIS), which concluded that a number of environmental values would be impacted by the proposed exploration activities. The intent of the proposed control measures is to ensure that project related activities will not negatively affect the environment or the health, welfare and amenity of people and land uses by meeting or exceeding statutory requirements.

Overall objectives of this EMP are:

The following overall environmental objectives have been set for proposed mineral prospecting and exploration project on Mining Claims (MCs: 74090 to 74098):

- To develop measures that will mitigate the adverse impacts of the proposed project
- Ensuring compliance with regulatory authority stipulations and guidelines
- To formulate measures to enhance the value of environmental components where possible.
- To formulate measures to protect environmental resources as well enhance the value of environmental components where possible.
- Responding to unforeseen events and providing feedback for continual improvement in environmental performance.

Project Phases Covered in the EMP

The following phases are addressed in this EMP:

- 1. Planning phase** - This is the stage of the proposed project during which the Proponent prepare all the administrative and technical requirements needed for the actual works on the ground. The planning includes things like obtaining the necessary permitting and authorization from relevant national and local stakeholders (such as affected communities, traditional authorities, etc.), facilitating the recruitment and procurement processes, etc., in preparation of the exploration activities (and site maintenance).
- 2. Prospecting and Exploration phase** - This is the phase where the proponent will be carrying out exploration of the targeted mineral commodities in the first six (6) months. It is also the phase during which maintenance of the area, equipment and machinery is done by the Proponent. This is also the phase when mitigation measures are implemented, and the monitoring plan put in place.
- 3. Mining phase**- Upon completion of a resource estimate with high level of indicated and measured mineral resources, the economic viability of the mineral resource will be assessed if it is economic to extract the resource, and then the exploration project will progress to mining. This is also the phase during which the worksites, project infrastructure, vehicles, equipment, and machinery will be maintained by the Proponent, as deemed necessary.
- 4. Decommissioning, site closure and rehabilitation:**
 - This is the phase when exploration activities cease as a result of either poor exploration results or loss of market demand for the targeted commodity. Rehabilitation measures will have to put in place during exploration and before decommissioning, or
 - The closure period will commence once the last planned blocks of the targeted commodity ore have been extracted from the pit, at the end of the active mining period.

7.1.1 Legal Implications and obligations under the EMP

The EMP will be sent to the Directorate of Environmental Affairs (DEA) of the Ministry of Environment, Forestry and Tourism (MEFT) for approval. Once the DEA is satisfied with the contents of the EMP, they will issue an Environmental Clearance Certificate (ECC) to the Proponent to commence with the exploration in the proposed area. The ECC is linked with the

recommendations of the Environmental Management Plan. Once the ECC is issued, the EMP becomes a legally binding document and each role-player including contractors and sub-contractors are made responsible to implement the relevant sections of the EMP and is required to abide by the conditions stipulated in this document. This Environmental Management Plan (EMP) document is designed to meet legal requirements and avoid or minimize the impacts associated with the implementation of the proposed mineral prospecting and exploration on Mining Claims (MCs: 74090 to 74098).

7.1.2 Environmental Management Principles

The proponent will ensure that all parties involved in the project uphold the following broad aims:

1. All persons will be required to conduct all their activities in a manner that is environmentally and socially responsible. This includes all consultants, contractors, and sub-contractors, transport drivers, guests and anyone entering the exploration area in connection with the exploration project.

2. Health, Safety and Social Well Being

- ❖ Safeguard the health and safety of project personnel and the public against potential impacts of the project. This includes issues of road safety, precautions against natural dangers on site, and radiation hazards; and,
- ❖ Promote good relationships with the local authorities and their staff.

3. Biophysical Environment

- ❖ Wise use and conservation of environmental resources, giving due consideration to the use of resources by present and future generations;
- ❖ Prevent or minimize environmental impacts;
- ❖ Prevent air, water, and soil pollution, Biodiversity conservation and due respect for the purpose and sanctity of the area.

To achieve these aims, the following principles need to be upheld.

Commitment and Accountability:

The proponent's senior executives and line managers will be held responsible and accountable for: Health and safety of site personnel while on duty, including while travelling to and from site in company vehicles and environmental impacts caused by exploration activities or by personnel engaged in the exploration activities, including any recreational activities carried out by personnel in the area.

Competence

The proponent will ensure a competent work force through appropriate selection, training, and awareness in all safety, health and environmental matters.

Risk Assessment, Prevention and Control

Identify, assess and prioritize potential environmental risks. Prevent or minimize priority risks through careful planning and design, allocation of financial resources, management and workplace procedures. Intervene promptly in the event of adverse impacts arising.

Performance and Evaluation

Set appropriate objectives and performance indicators. Comply with all laws, regulations, policies and the environmental specifications. Implement regular monitoring and reporting of compliance with these requirements.

Stakeholder Consultation

Create and maintain opportunities for constructive consultations with employees, authorities, other interested or affected parties. Seek to achieve open exchange of information and mutual understanding in matters of common concern.

Continual Improvement

Through continual evaluation, feedbacks, and innovation, seek to improve performance regarding social health and well-being and environmental management throughout the lifespan of the exploration project.

Financial Provisions for exploration

In line with Namibia’s environmental rehabilitation policy, the proponent shall make the necessary financial and technical provision for progressive rehabilitation and post-exploration/mining activities should be made in compliance with the EMP.

7.2 Organization plan: Roles and responsibilities

The environmental aspects which may be affected by the proposed project have been categorized into negative and positive impacts as an extension of the preceding sections. This section summarizes the objectives, indicators to be observed, schedules to be adhered to and roles and responsibilities of various stakeholders to the EMP.

Table 1: Roles and responsibilities of various stakeholders to the EMP.

Role	Responsibilities and duties
Proponent	<ul style="list-style-type: none"> - Responsible for the management and implementation of the EMP - Ensure environmental policies are communicated to all personnel throughout the proposed project and that employees understand the guidelines of the EMP - Responsible for providing the resources required to complete the project tasks - Appoint a safety health and environment manager and supporting officers, and - Ensure all workers are inducted on safety measures.
Safety Health and Environment management	<ul style="list-style-type: none"> - Oversee safety health and environment related activities - Monitor daily operations and ensure adherence by personnel to the EMP - Maintain the community issues and concerns register and keep records of complaints, and - Maintain an up-to-date register of employees who have completed site induction. - Receive, recording and responding to complaints - Ensure adequate resources are available for the implementation of the EMP - Ensure safe and environmentally sound operations, and - Responsible for the management, maintenance, and revisions of this EMP
Foreman on duty	<ul style="list-style-type: none"> - Ensure that all contract workers, sub-contractors and visitors to the site are aware of the requirements of this EMP, relevant to their roles and always adhere to this EMP

	<ul style="list-style-type: none"> - Report any non-compliance or accidents to the Safety Health and Environment Manager.
Employees	<ul style="list-style-type: none"> - Adhere to measures set out in the EMP - Ensure they have undertaken a site induction, and - Report any operations or conditions which deviate from the EMP as well as any non-compliant issues or accidents to the environmental manager

The table above is summarized below, with the following parties to aid in overseeing that the overall objective of this document is met;

- Management Committee
- Safety Health and Environment Manager
- Safety and Health Officer
- Environmental Officer
- Foreman on duty
- Personnel on duty/ employees

The following table emphasizes the role of each officer in the different management plans discussed in the previous section.

Table 2: Roles and responsibilities of various stakeholders, environmental indicators and objectives.

Objectives	Indicators	Responsibility
To avoid any form of hydrocarbon spills on and around the exploration site	No hydrocarbon spillage or/and remnants of hydrocarbon spillage shall be visible round the project site	SF,PS, ENC
To avoid any form of liter be it paper, metal, plastic and human waste on and around the exploration site	No litter or/and remnants of liter shall be visible around the project site	SF,PS, ENC
To minimize land and soil disturbance	Driving tracks and excavation shall be restricted and only be visible within the project site.	SM, SF, ENC
To protect and conserve fauna and flora within the project area	Minimum levels of habitat disturbance	SM,SF, ENC
To minimize dust generation on site and atmospheric pollution	Emissions/generation particulate content of the dust around the site and gravel roads shall not exceed maximum allowable concentration that may affect human being and animals	SM,SF, ENC
To ensure compliance with statutory requirements	Assurance measures shall be put in place and Periodic inspections aimed at corrective action undertaken, recorded and documented	EC, PP, ENC

Table 3: Implementation of the objectives should be adhered to as indicated in the table.

Objectives	Indicators	Responsibility
To avoid any form of hydrocarbon spills on and around the mining site	No hydrocarbon spillage or/and remnants of hydrocarbon spillage shall be visible around the project site	Personnel on duty, Foreman on duty
To avoid any form of liter be it paper, metal, plastic and human waste on and around the mining site	No litter or/and remnants of liter shall be visible around the project site	All employees, Environmental Officer, safety, Health and Environment Manager.

To minimize land and soil disturbance	Driving tracks and excavation shall be restricted and only be visible within the project site.	Personnel on duty, Foreman on duty and Environmental Officer.
To protect and conserve fauna and flora within the project area	Minimum levels of habitat disturbance	Safety, Health and Environment Manager, Environmental Officer and personnel on duty
To minimize dust generation on site and atmospheric pollution	Emissions/generation particulate content of the dust around the site and gravel roads shall not exceed maximum allowable concentration that may affect human being and animals	Foreman on duty, Environmental Officer and Safety Health and Environment Manager.
To ensure compliance with statutory requirements	Assurance measures shall be put in place and Periodic inspections aimed at corrective action undertaken, recorded and documented	Environmental Manager, Safety Health and Environment Manager.

Mitigation measures to be implemented during the phases of construction, operation, closure, and decommissioning are listed in the following tables.

Table 4: Summary of environmental impacts, mitigation measures and monitoring plan for all project phases.

Construction phase			
Environmental impacts	Proposed mitigation measures	Responsibility	Key Performance Indicator (KPI)
Air pollution: Dust generation Fumes emission	<ul style="list-style-type: none"> • Regular maintenance of vehicles and equipment. • Brief workers and contractors. • Control speed and operation of project vehicles. • Regular maintenance of vehicles, drill and excavating/blasting equipment and heavy machineries to ensure efficiency and so reduce dust generation. • Provide workers with dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) accessories should be provided to the workers on site. 	Personnel on duty, Foreman on duty and Environmental Officer	<ul style="list-style-type: none"> • No complaints from the public about vehicle emissions and dust generation. • Visible efforts to curb dust
Noise pollution	<ul style="list-style-type: none"> • All noise should be kept within reasonable levels. • Employees and neighbors should be notified of any scheduled unusual noise. • Regular maintenance of vehicles, equipment and heavy machinery. • Workers should be provided with personal hearing protection if working in a noisy environment. • Project activities should be restricted to between 8am and 5pm. 	Foreman on duty, Environmental Officer, Safety Health and Environment Manager.	<ul style="list-style-type: none"> • No complaints from residents about excessive noise • Few to no cases recorded in the complaint's logbook

Soils and water resources pollution	<ul style="list-style-type: none"> • Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training • Exploration and mining site areas where hydrocarbons will be utilized, the surface should be covered with an impermeable plastic liner (e.g. an HDPE liner), • Project machines and equipment should be equipped with drip trays to contain possible oil spills • All wastewater and hydrocarbon substances should be contained in designated containers on site and later disposed of at nearby approved waste site(s). • Vehicles and equipment should be well maintained to prevent oil leaks. • Contactor should have a sealed designated area where maintenance is carried out to prevent percolation of contaminants. 	Personnel on duty, Foreman on duty Environmental Officer and Safety Health and Environment Manager	<ul style="list-style-type: none"> • No complaints of pollutants on the soils and eventually in the water due to exploration and mining activities. • No visible oil spills on the ground or contaminated/polluted spots • Waste containers • Non-permeable material to cover the ground surface where hydrocarbons and potential pollutants are utilized. • Complaints logbooks
Solid waste	<ul style="list-style-type: none"> • Littering should be discouraged by having strategically placed bins and refuse skips on site. • Recycling plastic, paper and cans should be encouraged on site • The bins should be emptied on a regular basis by the proponent or an independent contractor. • The site should have containers with bulk storage facilities at convenient points to prevent littering. 	Personnel on duty, Environmental Officer and Safety Health and Environment Manager	<ul style="list-style-type: none"> • Amount of waste on site. • Availability of dust bins, waste collection point, • Presence of dust bins/waste collection points
First aid	<ul style="list-style-type: none"> • A well-stocked first aid kit shall be maintained by qualified personnel. 	Safety Health and Environment Manager, Safety and Health Officer.	<ul style="list-style-type: none"> • Contents of the first aid kits.

Visual	<ul style="list-style-type: none"> • Environmental considerations will be adhered to at all times before clearing roads and excavations • Implementation of continuous rehabilitation programme. • Carrying out of progressive working and restoration/rehabilitation over the shortest timescale possible, to avoid excessive area of disturbance 	Safety Health and Environment Manager Environmental officer Exploration/Mining Manager	<ul style="list-style-type: none"> • Employees to be trained on how to minimize visual impacts • No major contribution to the visual impact in the area. • No complaints from the locals regarding major eyesore due to unmanaged site restoration
Archaeological sites	<ul style="list-style-type: none"> • Buffer zones will be created around the sites. • Adhere to practical guidelines provided by the responsible archaeologist to reduce archaeological impacts of quarrying activities. • All archaeological sites to be identified and protected before development commences. 	All personnel on duty, Environmental officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> • Register of all archaeological sites identified.
Occupational health and safety	<ul style="list-style-type: none"> • Provide personal protective equipment, train workers on personal safety, and how to handle equipment and machines. • A well-stocked first shall be maintained by qualified personnel. • Report any accidents/ incidences and treat and compensate affected workers. • Provide sufficient and suitable sanitary conveniences which should be kept clean. 	Safety and Health Officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> • Workers using personal protective equipment. • Availability of a well-stocked first aid box. • Clean sanitary facilities.
Fauna	<ul style="list-style-type: none"> • Sensitive habitat areas such as the river and tunnel outcrops will be avoided wherever possible. • A fauna survey will be conducted to determine the effect of fragmented habitat to game species should the need arise. 	Personnel on duty, Environmental Officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> • Incident reports of illegal hunting of wildlife by the crew. • Regular monitoring of unusual signs of animal habitat throughout

	<ul style="list-style-type: none"> Noise levels should be kept at minimum in order to reduce interfere with the normal survival of wildlife especially those that use sound to navigate, to find food, mate or avoid predators. Environmental awareness on the importance of biodiversity preservation should be provided to the workers. No food stuff shall be left lying around as this will attract animals which may result in human-animal conflict. Site personnel should refrain from killing/poaching, capturing, snaring or intentionally disturbing any animals that may be found on and around the exploration and mining sites. 		exploration and mining phases
Alien invasive plants	<ul style="list-style-type: none"> Ensure vehicles and equipment are clean of invasive plants and seeds. Eradicating alien plants using area management plan. Contain neighboring infestations and restrict movement of invasive plants from adjacent lands Educating everyone on site on types of invasive plants. 	Environmental Officer, Environmental Manager	<ul style="list-style-type: none"> Regular monitoring of any signs of alien plants.
Impact on vegetation	<ul style="list-style-type: none"> Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating. The movement of vehicles on riverbeds, rocky outcrops and vegetation sensitive area will be avoided. The movement of vehicles will be restricted to certain tracks only. Vegetation found on the site, but not in the targeted mining areas should not be removed, but 	Environmental Officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> Warning signs on site Restored vegetation

	<p>preserved.</p> <ul style="list-style-type: none"> • Movement of vehicle and machinery should be restricted to existing roads and tracks to prevent unnecessary damage to the vegetation. 		
--	--	--	--

Operational Phase			
Environmental/Social Impact	Proposed mitigation measures	Responsibility	Key Performance Indicator (KPI)
Noise pollution	<ul style="list-style-type: none"> • All noise should be kept within reasonable levels. • Employees and neighbors should be notified of any scheduled unusual noise. • Regular maintenance of vehicles, equipment and heavy machinery. • Workers should be provided with personal hearing protection if working in a noisy environment. 	All employees, Safety Health and Environment Manager Environmental Officer	<ul style="list-style-type: none"> • Amount of noise produced
Visual	<ul style="list-style-type: none"> • Environmental considerations will be adhered to at all times before clearing roads and excavations • Implementation of continuous rehabilitation programme • Carrying out of progressive working and restoration/rehabilitation over the shortest timescale possible, to avoid excessive area of disturbance 	Safety Health and Environment Manager Environmental officer Exploration/Mining Manager	<ul style="list-style-type: none"> • Employees to be trained on how to minimize visual impacts • No major contribution to the visual impact in the area. • No complaints from the locals regarding major eyesore due to unmanaged site restoration

<p>Fauna</p>	<ul style="list-style-type: none"> • Sensitive habitat areas such as the river and tunnel outcrops will be avoided wherever possible. • A fauna survey will be conducted to determine the effect of fragmented habitat to game species should the need arise. • Noise levels should be kept at minimum in order to reduce interfere with the normal survival of wildlife especially those that use sound to navigate, to find food, mate or avoid predators. • Environmental awareness on the importance of biodiversity preservation should be provided to the workers. • No food stuff shall be left lying around as this will attract animals which may result in human-animal conflict. • Site personnel should refrain from killing/poaching, capturing, snaring or intentionally disturbing any animals that may be found on and around the exploration and mining sites. 	<p>Personnel on duty, Environmental Officer, Safety Health and Environment Manager</p>	<ul style="list-style-type: none"> • Incident reports of illegal hunting of wildlife by the crew. • Regular monitoring of unusual signs of animal habitat throughout exploration and mining phases
<p>Alien invasive plants</p>	<ul style="list-style-type: none"> • Ensure debris is properly disposed of. • Ensure vehicles and equipment are clean of invasive plants and seeds. • Contain neighboring infestations and restrict movement of invasive plants from adjacent lands • Educating everyone on site on types of invasive plants. <p>Eradicating alien invasive plants by using an area management plan.</p>	<p>Safety Health and Environment Manager Environmental officer Foreman and personnel on duty</p>	<ul style="list-style-type: none"> • Regular monitoring of any signs of alien invasive plants

Impact on vegetation	<ul style="list-style-type: none"> • Environmental considerations will be adhered to at all times before clearing roads, trenching and excavations. • Paths and roads will be aligned to avoid root zones. • Permeable materials will be used where ever possible. • Movement of vehicles in riverbeds, rocky outcrops and vegetation sensitive areas will be avoided and restricted to certain tracks only. 	Safety Health and Environment Manager	<ul style="list-style-type: none"> • Restored vegetation
Solid waste	<ul style="list-style-type: none"> • Minimize solid waste generated on site. • Encourage segregation of waste on site • Debris should be collected by waste collection contractor. • Excavated waste should be piled at a designated approved location. 	Safety Health and Environment Manager Environmental Officer All foremen, personnel on duty	<ul style="list-style-type: none"> • Amount of waste on site. • Availability of dust bins, waste collection point.
Oil leaks and spills	<ul style="list-style-type: none"> • Machinery should be well maintained to prevent oil leaks. • Contractors should have a designated area where maintenance is carried out and should be underlain by impermeable layer. • Workshops should be bounded by concrete 	Environmental Officer, Safety Health and Environment Manager, Foremen, personnel duty	<ul style="list-style-type: none"> • No observed/detected oil spills and leaks on site
Archaeological sites	<ul style="list-style-type: none"> • Buffer zones will be created around the sites. • Adhere to practical guidelines provided by an archaeologist to reduce archaeological impact of exploration activities. • All archaeological sites to be identified and protected before mineral prospecting/exploration commence 	Environmental and safety manager Foreman Archeologist	<ul style="list-style-type: none"> • Up to date register of all archaeological sites identified in the vicinity • Preservation of all artefacts discovered around project area

First aid	<ul style="list-style-type: none"> • A well-stocked first aid kit shall be maintained by qualified personnel. 	Safety and health Officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> • Contents of the first aid kit.
Fire preparedness	<ul style="list-style-type: none"> • Fire incidence firefighting emergency response plan. • Ensure all firefighting equipment are always available regularly maintained, serviced and inspected. • Fire hazard signs and directions to emergency exit, route to follow and assembly point in case of any. • No open fires to be created by exploration and mining personnel. 	Health safety officer Safety Health and Environment Manager	<ul style="list-style-type: none"> • Fire signs put up in strategic places. • Availability of well-maintained firefighting equipment. • No wildfires recorded (due to presence of workers).
Environmental health and safety	<ul style="list-style-type: none"> • Train workers on personal safety and disaster preparedness. • Provide sufficient and suitable sanitary conveniences which should be kept clean. • Conduct annual health and safety audits. • Report any accidents/incidences, treat and compensate affected workers. • A well-stocked first aid kit shall be maintained by qualified personnel 	Safety Health and Environment Manager	<ul style="list-style-type: none"> • Comprehensive health and safety plan for all exploration and mining activities compiled. • Provide sanitary facilities • Copies of annual audit

Decommissioning phase			
Impacts	Proposed mitigation measures	Responsibility	Monitoring plan/Indicator
Noise and air pollution	<ul style="list-style-type: none"> • Personal hearing protection must be worn by workers in noisy section. • Regular maintenance of vehicles, equipment, heavy machinery on regular basis. • Workers should be provided with dust mask to 	Health safety and Environment Manager Environmental Officer	-Amount of noise and dust generated

	<p>wear at all times.</p> <ul style="list-style-type: none"> Decommissioning work can only be carried out only during the day (8am-5pm). 		
Disturbed physical environment	<ul style="list-style-type: none"> Undertake a complete a complete environmental restoration programme and introducing appropriate vegetation for ground stabilization. All drilled boreholes and excavated pits related to the project activities should be capped and backfilled, respectively. The stockpiled topsoil should be leveled during exploration activities and subsequent mining. Any temporary work camps setup should be dismantled, and the area rehabilitated as far as practicable, to their original state. 	Health safety and Environment Manager Environmental Officer	<ul style="list-style-type: none"> -No sign of waste or littering seen on site and around site areas -No stockpiled topsoil (topsoil is levelled after completion of each work) -Campsite dismantled and materials taken away from site. -Capped boreholes and backfilled pits
Solid waste	<ul style="list-style-type: none"> Solid waste should be collected by contracted waste collection company. Project personnel should be sensitized to dispose of waste in a responsible manner and not to litter. Excavation waste should be used or backfilled 	Health safety and Environment Manager Environmental Officer	<ul style="list-style-type: none"> -Presence of well-maintained waste storage containers and central collection point. -No visible litter around the project area
Occupational health and safety	<ul style="list-style-type: none"> Train workers on personal safety and how to handle equipment and machines. Provide personal protective equipment (PEE). A well-stocked first aid kits shall be maintained by qualified personnel. Demarcate area under decommissioning. 	Health and safety officer, Environmental Officer, Health safety and Environment manager	<ul style="list-style-type: none"> • Workers using protective equipment. • Availability of a first aid box.

7.3. Assessment of Impacts

Overview

Environmental aspects and potential impacts were qualitatively assessed and identified by the Environmental Practitioner during the screening and assessment phases, in consultation with authorities, IAPs and the environmental team. This section provides a summary of activities associated with the proposed project in various phases as well as associated environmental aspects and potential impacts. The purpose of this document is, therefore, to guide environmental management throughout the different phases of the proposed exploration activities, namely: planning, prospecting & exploration, and decommissioning & rehabilitation phase:

Identified potential impacts

Positive impacts

- Employment creation
- Revenue generation through royalties and taxes
- Local development
- Increased support for local businesses through the procurement of locally available goods and services during project period.

Negative impacts

- Air quality: dust generation and fumes emission
- Noise and vibration impacts
- Occupational health and safety
- Impact on terrestrial biodiversity (fauna and flora)
- Impact on ground and surface water
- Heritage and archaeological impact
- Visual impact
- Occupational health, safety and security
- Fire and explosion hazards

- Solid waste management
- Vehicular traffic safety

7.3.1 Impact analysis and evaluation

In this section, the impacts of the exploration and mining activities on the human and biophysical environment were evaluated and analyzed. The identified impacts were assessed in terms of probability (likelihood of occurring), extent (spatial scale), magnitude (severity) and duration (temporal scale). The impact assessment methodology used to determine the significance of impacts prior and after mitigation. This methodology ensures uniformity and that potential impacts can be addressed in a standard manner. The following assessment methodology was used to examine each impact identified:

Mitigation measures

Where negative impacts are identified, mitigation objectives have been set, and practical, attainable mitigation measures must be recommended that will minimize or eliminate the impacts. Where mitigation is not feasible, this has been stated and reasons given. In the case of positive impacts, enhancement measures are recommended for optimizing the benefit to be derived.

Monitoring

Monitoring requirements with quantifiable standards to assess the effectiveness of mitigation actions have been recommended where appropriate. These must indicate what actions are required, by whom, and the timing and frequency thereof. If further investigations must be undertaken and monitoring programs implemented before, during and after operations.

7.4 Identified impacts

7.4.1 Identified impacts on bio-physical environment

Negative Impacts

The following potential effects on the environment during the construction, operation and decommissioning phase of the proposed project have been identified:

7.4.1.1 Air quality impacts: dust generation and fume emissions

During the operation phase dust will be generated onsite by earth moving equipment and also on the gravel road by heavy trucks and light motor vehicles. Vehicular movements from heavy vehicles such as trucks would potentially create dust even though it is not always so severe. Dust generated and air pollutants suspended in the air could be inhaled by the workers leading to respiratory diseases. Dust generated and fumes emissions do not only impact humans, but also flora. The fallout dust settling on vegetation is likely to affect rates of photosynthesis and transpiration in a long term.

Table 5: Qualitative assessment of air quality impacts.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	M/H	L	M	M	M
Mitigated	L	L	L	L	L/M	L

Mitigation Measures to be enforced

- Dust suppressants shall be applied to all the exploration activities as well as all off roads and gravel roads.
- The speed of project vehicles must be strictly controlled to reduce dust or prevent deterioration of the roads being used.
- All off roads in the project area should have a speed limit of 40km/h in order to minimize the amount of dust generated by vehicles.

- During high wind conditions the proponent must make the decision to cease works until the wind has calmed down.
- Use of personal protective equipment for proper dust control for respiratory protection and other necessary PPE (gloves, work suits, sun hats etc.).
- Converting high-use vehicles to cleaner fuels, where feasible
- Installing and maintaining emissions control devices, such as catalytic converters.
- Implementing a regular vehicle maintenance and repair program.
- The movement of drilling related vehicles on unpaved access track will be on a small scale.
- Dust control measures such as water spray should be used on gravel road and near exploration sites to suppress the dust that may emanate from exploration activities such as drilling, trenching and test quarrying sites.
- Regardless of the size or type of vehicle, fleet owners /operators should implement the manufacturer recommended engine maintenance programs.

Monitoring

- Daily inspection by the ENC of the gravel roads and exploration site on possible dust creation that requires attention.
- Daily inspection on site by the ENC to ensure that all workers are wearing their protective clothes.

7.4.1.2 Noise and vibration impacts

Noise pollution and vibrations are most likely to be created by drilling and other earth moving activities on site. Noise pollution can be defined as any disturbing or unwanted noise that interferes or harms human or wildlife.

Table 6: Shows qualitative assessment of noise and vibration impact.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	L/M	L/M	M/H	M	M/H	M
Mitigated	L	L	M	L	L/M	L

Mitigation Measures to be enforced:

- Drilling will only be conducted during the day, where the drill-site is located close to a dwelling.
- Noise from project vehicles and equipment on the working sites of the project area should be at acceptable levels.
- Noise levels should not be equal to or exceed 85dBA for workers working an 8-hour shift (according to ISO 18000).
- Workers working near high noise machinery and vehicles should be provided with ear protection equipment such as ear muffs and earplugs.
- Reduction of noise from drilling rigs by using down hole drilling
- No noise generating activities should be undertaken before 8am and after 17:00 hours, over weekends and on public holidays.
- Employees should be limited to working hours only at most 8 hours per day.
- In the event that activities continue outside the stipulated hours the contractor will communicate such occurrences to potentially affected communities prior to commencing such activities.
- Do not allow the use of horns/hooters as a general communication tool, but use it only where necessary as a safety measure.
- Safe minimum distance from noise generating activities should be introduced.

Monitoring

Noise monitoring may be carried out for the purposes of establishing the existing ambient noise levels in the area of the proposed project, or for verifying operational phase noise levels. Noise monitoring programs should be designed and conducted by trained specialists. The type of acoustic indices recorded depends on the type of noise being monitored, as established by a noise

expert. Continuous monitoring of noise levels should be conducted to make sure the noise levels at the site does not exceed acceptable limits.

7.4.1.3 Impacts on terrestrial biodiversity

The transformation of land for any purpose results in the destruction of the site-specific biodiversity, the fragmentation of habitats, reduces its intrinsic functionality and reduces the linkage role that undeveloped land fulfils between different areas of biodiversity importance.

Biodiversity assessment relates to the impact that personnel have on the surrounding fauna and vegetation. Some of the activities of the proposed project such as vehicle movement, human movements, illegal hunting, poaching and the collection of firewood pose a risk to the integrity of baseline biodiversity as well as the biological productivity of the site and the immediate proximity. The following mitigations are to be undertaken to minimize further impact on the existing biodiversity:

Mitigation Measures to be enforced: flora

- The footprint of the area to be disturbed will be minimized as far as is practically possible.
- Exploration activity must be limited to the pre-identified/ mapped pegmatites within the Project area.
- Remove protected plant species and sensitive fauna before commencing with the development activities and relocate to a less sensitive/disturbed site if possible.
- Should the proponent require clearing, removal and transplantation of any protected plant species services of an appropriately qualified botanist / ecologists must be sought and relevant permissions obtained prior to any such activity being undertaken
- Disturbed areas must be kept to a minimum. Off-road driving should not be allowed and only existing tracks should be used.
- Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species and have important

ecological functions in terms of carbon sequestration from decomposing materials at the site.

- Disturbance of marginal vegetation in the mountains should be limited.
- Where it is clear that certain large species will be destroyed consideration should be given to offering to rescue the individuals involved and relocate them to nearby gardens.
- Transplant removed trees where possible, or plant new trees in lieu of those that have been removed.
- The protected and endemic species should be re-introduced in the area.

Mitigation Measures to be enforced: **fauna**

- Barriers/barricades confining driving trucks must be erected to avoid stray driving and trampling on habitat. Proper demarcation of the exploration area.
- Avoid disturbance on invertebrate on-site and along the gravel road stretch.
- Avoid the creation of multiples roads strips, which could result in the disturbance of breeding sites for various mammals.
- A fauna survey will be conducted to determine the effect of fragmented habitat on game species should the need arise.
- Care will be taken to ensure that no litter is lying around as these may end up being ingested by wild animals
- No workers will be allowed to collect or snare, hunt or otherwise capture any wild animal.
- No domestic animals will be permitted on the exploration site by means of erecting a perimeter fence; small stock should graze at designated areas.
- Birds or Nest sites will not be disturbed by any employee, visitor or contractor.
- If possible, encountered bird kills and nest removal should be registered in a biodiversity data-base and information should be made available to the general public.

- There should be limited movement of heavy-duty machinery and exploration equipment in the area to avoid interference.

Methods for monitoring:

- Regular monitoring of any unusual signs of animal habitat.

Table 7: Shows the qualitative impact assessment for terrestrial biodiversity.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	L/M	L/M	M	M	M
Mitigated	L	L	L	L	L	L

Alien invasive plants

Alien invasive plants are prevalent in areas affected by land transformation and anthropogenic disturbance. Mining and exploration activities have potential of introducing invasive species that can compete with native vegetation, leading to decline in biodiversity. The establishment of foreign invasive weed species is frequently encouraged by disruption to the natural environment. There are numerous ways in which invasive species can be introduced unintentionally. Plant or seed material that sticks to car tires, animals, or blow from waste cleared at sites are potential sources of invasive species.

Some of the plant species that could become invasive in the area are listed below:

- *Prosopis glandulosa*
- *Lantana camara*
- *Cyperus esculentus*
- *Opuntia imbricate*
- *Cereus jamacara*
- *Melia azedarach*
- *Harissia martini*

Table 8: Shows the qualitative impact assessment of alien invasive plants.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
------------	----------	----------	---------------	-------------	---------------------------	--------------

Unmitigated	L	M	M	L	M	L
Mitigated	L	L	L	L	L	L

Mitigation Measures to be enforced:

- The site manager will ensure that debris is properly disposed.
- Vehicle tires inspections can be carried out although this may not be a practical mitigation measure.
- The proponent should implement an alien plants awareness campaign to educate and sensitize the employees and the local community on the menace of planting alien vegetation in the area.
- Eradicating alien plants by using an Area Management Plan.
- Prevent the introduction of potentially invasive alien ornamental plant species.
- The proponent should adopt and support the implementation of an annual alien plants clearing campaign.

Methods for monitoring:

- Regular monitoring of any unusual signs of alien species.
- The proponent and local community should establish an alien plant task force to ensure that there is no planting of alien plants species in the area.

7.4.1.4 Land and soil disturbance

Exploration and mining activities such as land clearing, excavations, trenching, drilling and quarrying can potentially result in disturbance of landform and the soil cover in the immediate surroundings of the project site. This could potentially leave the site soils exposed to erosion. This undertaking has the potential of disturbing the structural composition and biological productivity of topsoil and if not taken care of this can lead to land degradation. However, most parts of the

project area are covered with grass and shrubs. Plant cover has the potential to prevent wind and water erosion by covering and binding the soil with their roots.

Table 9: Shows the qualitative impact assessment for land and soil disturbance.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	M/H	M	M	M/H	M
Mitigated	L	L	L	L	M	L

Mitigation Measures to be enforced:

- The footprint of the area to be disturbed will be minimized as far as is practically possible.
- The overburden, i.e., that layer of soil immediately beneath the topsoil, will be removed and stored separately from the topsoil.
- Where topsoil is pre-stripped, it should be stored for future site rehabilitation activities. Topsoil management should include maintenance of soil integrity in readiness for future use.
- Implementation of soil conservation measures during the project lifetime. Moreover, overburden should be handled more efficiently during exploration works to avoid erosion when subjected to erosional processes.
- Prevent creation of huge piles of waste rocks by performing sequential backfilling.
- Stockpiled topsoil and overburden waste rocks should be used to backfill the trenches, excavations and any disturbed sites on the project.
- The access road to the mining site must be established in consultation with the landowner and usage of existing roads shall be enforced.
- The design, construction, and location of access to main roads will be in accordance with the requirements laid down by the controlling authority.
- Land markings, vehicle tracks, trenches and excavations shall be restored to the original landform and, visual state as much as possible.

- In the case of dual or multiple uses of access roads by other users, arrangements for multiple responsibilities must be made with the other users. If not, the maintenance of access roads will be the responsibility of the proponent.
- Preventative measures such as earth embankments will be put up to prevent erosion will be established where appropriate.
- Pit slopes should be profiled to ensure that they are not subjected to excessive erosion but capable of drainage run-off with minimum risk of scour. A professional mining engineer should be employed to ensure that the slopes created are not endangering the lives and wellbeing of the employees that work directly in the pit.
- If necessary, diversion channels should be constructed ahead of the open cuts as well as above emplacement areas and stockpiles to intercept clean run-off and divert it around disturbed areas into the natural drainage system downstream of the mine.
- All mined areas (where works will take place) will be rehabilitated to control erosion and sedimentation.
- Existing vegetation must be retained as far as possible to minimize erosion.
- Rehabilitation of pits and waste dumps shall be planned and completed on a continuous basis in such a way that the run-off water (if any) will not cause erosion.
- Visual inspections shall be done on a regular basis with regard to the stability of water control structures, erosion and siltation (if required).

7.4.1.5 Groundwater and surface water contamination

The proposed project activities are associated with a variety of potential groundwater and surface water pollution sources. The main groundwater and surface water contaminants may include chemicals such as heavy metals, organic solvents, hydrocarbons (oil), microbiological contaminants as well as waste water/effluent discharge. Water resources contamination is greatly linked to land and soil contamination. Land contamination is considered contaminated when it contains hazardous materials or oil concentrations above background or naturally occurring levels from anthropogenic activities.

Table 10: Shows the qualitative impact assessment of surface and groundwater.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M/H	M	M/L	M	M	M
Mitigated	L	L	L	L	L	L

Mitigation Measures to be enforced:

- Non-toxic and biodegradable drilling lubricant will be used
- No dumping of waste products of any kind in or in close proximity to surface water bodies and possible recharge areas for groundwater.
- Wastewater should not be discharged directly into the environment
- Waste water / contaminated water should be contained for proper disposal.
- Drip trays must be placed underneath vehicles when not in use to contain all oil that might be leaking from these vehicles.
- Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site.
- In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there will be containment of spillages on impermeable floors and bund walls that can contain 110% of the volume of hazardous substances.
- All refueling and any maintenance of vehicles will take place on impermeable surfaces.
- Spill kits will be readily available on site. Employees and/or contractors will be trained to use the spill kits to enable containment and remediation of pollution incidents.
- Environmental awareness for contractor and employees to be included during inductions
- Accessibility to spill prevention and response equipment, such equipment should be visible and accessible to all employees at any given time.
- Avail a spill response action plan in case of accident and any spills will be cleaned up immediately to the satisfaction of the Environmental Manager by removing the spillage together with the polluted soil and by disposing of them at a recognized facility as stipulated in the spill response action plan.
- Designated waste collection tanks should be available on-site and away from waterways, and such isolation should be maintained at all times.

7.4.1.6 Fire and explosion hazard

All fuel storage and handling facilities as well as fire precautions and fire control measures at the site must comply with strict safety distances as prescribed by SANS 10089. SANS 10089 is adopted by the Ministry of Mines and Energy as the national standard. Hydrocarbons are volatile under certain conditions and their vapors in specific concentrations are flammable. If precautions are not taken to prevent their ignition, fire and subsequent safety risks may arise.

Mitigation Measures to be enforced

- Sufficient fire extinguishers will be installed on every project vehicle.
- A designated area needs to be identified as an assembly area where personnel meet in case of such incident. All employees, contractors and visitors should be made aware of this area through inductions conducted before entering the site.
- Personnel will be trained on how to use fire extinguishers. A fire and explosive management policy and procedures document for the site should be drafted and review on a regular basis and every employee should know the content of this document so that they can act accordingly when a fire or an explosion breaks out.
- Refresher courses on the content of the fire and management policy and procedure document should be given on a regular basis to ensure that the employees aware and are competent in reacting to such incidents.
- Sufficient fire extinguishers with sufficient length of hosepipes will be made available on site for fire protection.

Table 11: Shows the qualitative impact assessment of fire and explosion hazards.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	L	L	L	M	M	L
Mitigated	L	L	L	L	L	L

7.4.1.7 Hazardous waste and material management

Hazardous material can be classified according to the hazard as: explosives, compressed gases, including toxic or flammable gases; flammable liquids; flammable solids; oxidizing substances; toxic materials and corrosive substances. These substances are regarded by the Hazardous Substance Ordinance (No. 14 of 1974) as those substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances. When a hazardous material is no longer usable for its original purpose and is intended for disposal, but still has hazardous properties, it is considered a hazardous waste. The overall objective of hazardous materials management is to avoid or, when avoidance is not feasible, minimize uncontrolled releases of hazardous materials or accidents (including explosion and fire) during their production, handling, storage and use, this objective can be achieved by:

- ✓ Establishing hazardous materials management priorities based on hazard analysis of risky operations identified through Social and Environmental Assessment;
- ✓ Where practicable, avoiding or minimizing the use of hazardous materials
- ✓ Preventing uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion;
- ✓ Using engineering controls (containment, automatic alarms, and shut-off systems) commensurate with the nature of hazard;
- ✓ Implementing management controls (procedures, inspections, communications, training, and drills) to address residual risks that have not been prevented or controlled through engineering measures.

Table 12: Shows the qualitative impacts assessment of hazardous waste and materials.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	L	L	M	L	L
Mitigated	L	L	L	L	L	L

Mitigation Measures to be enforced

- All chemicals and other hazardous substances must be stored and maintained in accordance with the Hazardous Substances Ordinance (No. 14 of 1974), with all relevant licences and permits to be obtained where applicable.
- Given the potential harm to human health during handling and use of any of hazardous substances it is essential that all staff be trained with regards to the proper handling of these substances as well as First Aid in the case of spillage or intoxication.
- Storage areas for all substances should be bunded and capable to hold 120% of the total volume of a given substance stored on site.
- Job safety analysis to identify specific potential occupational hazards and industrial hygiene surveys, as appropriate, to monitor and verify chemical exposure levels, and compare with applicable occupational exposure standards.
- Hazard communication and training programs to prepare workers to recognize and respond to workplace chemical hazards. Programs should include aspects of hazard identification, safe operating and materials handling procedures, safe work practices, basic emergency procedures, and special hazards unique to their jobs Training should incorporate information from Material Safety Data Sheets for hazardous materials being handled. MSDSs should be readily accessible to employees in their local language.
- Provision of suitable personal protection equipment (PPE) (footwear, masks, protective clothing and goggles in appropriate areas), emergency eyewash and shower stations, ventilation systems, and sanitary facilities.
- Monitoring and record-keeping activities, including audit procedures designed to verify and record the effectiveness of prevention and control of exposure to occupational hazards, and maintaining accident and incident investigation reports on file for a period of at least five years.

7.4.1.8 Solid waste management

Exploration and mining activities generate a range of solid waste materials that can have significant environmental impacts if not properly managed. These waste materials can include waste rock, tailings, mine water and domestic waste generated by project personnel on site. Waste rock is the material that must be removed to access ore and can contain minerals and metals that can leach into the environment over time. Tailings are the finely ground rock and mineral slurry left over after processing ore, and can contain residual chemicals and metals that can contaminate soil and water if not properly contained. Proper solid waste management will involve full commitment by all the employees and contractors of the site

Mitigation Measures to be enforced:

- Waste generated will be handled in accordance with the contract signed with the landowner. This shall include: waste should be separated and recycled / re-used where possible. Where waste management procedures do not exist, a procedure should be developed.
- The collected solid waste should be disposed at registered and approved disposal site agreed upon by both Municipality and the proponent.
- Mandatory waste segregated right at the source of waste generation. The collection of segregated waste would be made from the site and amenity areas.
- The project site should be equipped with separate waste bins for general/domestic waste and hazardous waste.
- Employees and contractors will be shown the importance of correct waste disposal as well as waste minimization and recycling.
- Place priority on waste reduction, waste reuse and waste recycling, in that order.
- Sufficient waste storage bins on site and regular emptying of the waste storage bins.
- Strictly, no burning of waste on the site or at the disposal site, as it possesses environmental and public health impacts.

- The proponent should engage with local communities to ensure that their waste management practices are transparent and that community concern is considered.

Table 13: Shows qualitative impacts assessment for solid waste management

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	L	H	L	M	M	M
Mitigated	L	L	L	L	L	L

7.4.1.9 Heritage and archaeological impacts

The proposed prospecting and exploration area contain some archaeological significances, therefore, potential damage to archaeological sites may be impacted through unintentional destruction or damages are a result of vehicle tracks, footprints and actions of contractors, employees. This may include the excavation of subsurface graves or other archaeological objects.

Table 14: Shows heritage impact assessment.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M/H	M	L/M	M	M/H	M/H
Mitigated	L	L	L	L	M	L

Mitigation Measures to be enforced

- Adhere to practical guidelines provided by an archeologist on site to reduce archaeological impacts.
- The site location where archaeological features might be found should be marked with flag tape and the GPS coordinates should be recorded.
- No exploration activities should be conducted near these recorded areas' 1.5 km buffer zones.
- Notices/ information boards information will be placed on site.
- The proponent and contractors should be made aware of the provisions of section 55 of

the National Heritage act.

- Training employees regarding the protection of these sites in event significant heritage and cultural features are discovered while carrying out exploration activities.
- Obtain appropriate clearance or approval from the competent authority.
- In the event of such finds, all activities must stop and the project management or contractors should notify the National Heritage Council of Namibia immediately.
- The proponent should engage an archaeologist to survey the project site(s) before project commencement.
- Consultation with indigenous groups and local communities to understand the cultural heritage values associated with the land and develop appropriate management plans to mitigate impacts.

7.4.1.10 Visual impacts

Exploration and mining activities leave scars on the landscape and change the aesthetic appeal of the overall area resulting in negative visual impacts. Landscape alteration by off-road driving is a major concern, particularly with regard to uncontrolled use of 4x4 vehicles and construction of site access roads during exploration. Another process linked to landscape alteration is the removal of vegetation, topsoil and other natural features, resulting in significant changes to the landscape. During open pit mine construction and operation, the main anthropogenic impact from the implementation of the project will be on the landscape component. Installation of infrastructure, installation of mine equipment, stockpiles, waste facilities, waste rock dumps and production facilities can also contribute to visual pollution which can detract from the natural beauty of the surrounding landscape. Even though vegetation and rocky outcrops will screen some receptors the mining pit will be discernible from a distance.

Table 15: Shows visual impacts impact evaluation.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	L/M	M	M	M/H	M/H	H

Mitigated	L	L	L	L	L	L
-----------	---	---	---	---	---	---

Mitigation Measures to be enforced

- Screening and vegetation can be used to mitigate the visual impact of exploration and mining activities.
- The design, construction, and location of access to main roads will be in accordance with the requirements laid down by the controlling authority.
- The proponent should carry out progressive working and restoration/ rehabilitation over the shortest timescale possible, to avoid excessive areas of disturbance.
- When exploration and mining activities cease, restore the visual sense of the area to its natural state for instance all excavations, pits are to be backfilled and drillings holes to be capped when no longer in use.
- Care must be taken to ensure that all rehabilitated areas are similar to the immediate environment in terms of visual character, vegetation cover and topography and any negative visual impacts will be rectified to the satisfaction of the environmental consultant.
- Minimize disturbance to topsoil, keep existing trees, and introduce indigenous plants for re-vegetation.
- All vehicles, equipment and machinery that do not need to be parked within direct sight of the roads, visible to travelers.
- Overburden will be placed back into excavation as part of the rehabilitation programme.
- Restrict off road vehicles and equipment to designated areas.
- Maintain the small shrubs found on the site and only remove vegetation that has an impact on the development.
- Land markings, vehicle tracks, and excavations shall be restored to the original landform and, visual state as much as possible.
- In the case of dual or multiple uses of access roads by other users, arrangements for multiple responsibilities must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the Mining Claims/proponent.

- The access road to exploration sites must be established in consultation with the landowner and usage of existing roads shall be enforced.

7.4.1.11 Occupational health, safety and security

Exploration and mining activities are associated with serious health and safety risks to workers on site. The project site safety of all personnel will be the proponent's responsibility and should be adhered to as per the requirements of the Labour act (No11 of 2007) and the Public Health act (No.36 of 1919). Overall occupational health, safety and security are crucial aspects of mineral exploration and mining activities. Proper planning, training, and implementation of safety protocols can help prevent accidents, injuries, and illnesses, ensuring safe and secure work environment for all involved.

Mitigation Measures to be enforced:

- Ensure that all project personnel are properly trained depending on the nature of their work. They should be properly trained to ensure they fully understand the risks involved and how to safely operate equipment and machinery.
- Provide medical facilities and emergency response on site. In the event of an accident or injury, a first aid kit and a properly trained person to apply first aid should be available when necessary.
- Heavy vehicle, equipment and fuel storage site should be properly secured and appropriate warning signage placed where possible.
- Drilled boreholes that will no longer be used or to be used later after being drilled should be properly marked for visibility and be capped/closed off.
- Clearly demarcate the exploration (area of current activities e.g. drilling site) site boundaries along with signage of “no unauthorized access”.
- Clearly demarcate dangerous areas and no-go areas on site.
- Implement site security to prevent unauthorized access to the mining site and protect workers and equipment from theft and damage.

- Staff and visitors to the exploration site must be fully aware of all health and safety measures and emergency procedures.
- The contractor must comply with all applicable occupational health and safety requirements.
- The workforce should be provided with all necessary Personal Protective Equipment where appropriate.
- The contractor must comply with all applicable occupational health and safety requirements.
- All vehicular equipment operators must have valid licences for that particular vehicle class.
- Implement the use of alcohol detectors.
- A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases, hepatitis, etc. Encourage HIV counseling and testing and facilitate access to Antiretroviral (ARV) medication.
- Prevent diseases spread by biological agents by providing proper toilets and cleaning up facilities, proper waste removal, running water and detergent on site.

Table 16: Shows qualitative impacts assessment for occupational health, safety and security.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	M	M	M	M	M
Mitigated	L	L/M	L	L	L/M	L

7.4.1.12 Vehicular traffic use and safety

Traffic volume will increase on district roads including heavy vehicles such as truck and drilling equipment, as the project would need a delivery of supplies and services on site. These service and supplies will include but not limited to water, waste removal, procurement of exploration machinery, equipment, and others. Heavy vehicles will be frequenting the area to and from exploration sites on the Mining Claims; these can cause significant damage to roads, resulting in increased maintenance costs and potential safety hazards.

Table 17: Shows qualitative impacts assessment for road use (vehicular traffic).

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Pre-mitigation	M	M/H	M	M	M/H	M
Post mitigation	L/M	L/M	L	L	L/M	L

- The proponent should be responsible for maintaining the roads they use to transport materials and equipment. This includes repairing any damage caused by their vehicles and regularly maintain road surfaces to prevent accidents and minimize wear and tear.
- The proponent should explore alternative transportation method such as rail to minimize the amount of heavy vehicle on local roads.
- Drivers of all vehicles should be in possession of valid and appropriate driving licenses and adhere to the road safety rules.
- The transportation of exploration materials, equipment and machinery should be limited, to reduce pressure on local roads.
- The heavy truck loads should comply with the maximum allowed speed limit for respective vehicles while transporting materials and equipment/machinery on the public and access roads (40km/h).
- The Proponent should ensure that the site access roads are well equipped with temporary road signs conditions to cater for vehicles travelling to and from site throughout the project's life cycle.
- Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents owing to mechanical faults.
- Vehicle drivers should only make use of designated site access roads provided and as agreed.
- Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol.
- No heavy trucks or project related vehicles should be parked outside the project site boundary or demarcated areas for such purpose.

- Deliveries to and from the site should be carefully planned in order to manage traffic flow. It is best to do this on weekdays between the hours of 8am and 5pm.
- The site access road(s) should be upgraded to an unacceptable standard to be able to accommodate project related vehicles as well as farm vehicles.

7.4.2 Socio-economic impacts

7.4.2.1 Positive Impacts

1. Employment Creation

The project has the potential to create socio-economic benefits through employment creation and economic contributions. The benefits include employment opportunities, skills and development training and indirect capital injection into businesses in Uis and overall Erongo Region. The project has potential to create employment, particularly for unskilled and semi-skilled labour. Local recruitment will be encouraged during the lifespan of the project by the proponent with a target of at least 65% locals. This operation will contribute to the alleviation of unemployment which is severe due to recent retrenchments caused by Covid-19 economic recession. Employment on the new project will improve the livelihood of people and contribute to the local economy growth.

Enhancement measures:

- The proponent will introduce training programs (bursary schemes, on the job training etc) in order to boost the supply of local skills
- It is proposed that local people community members should be considered first when it comes to employment in order to promote social development and growth. Especially where no specific skills are required.
- Gender equality considerations during recruitment process.
- Employment preference will be afforded to previously disadvantaged Namibians.

2. Generation of revenue

According to the law of Namibia, operating companies are to pay taxes. The proponent will pay tax to the government hence this will benefit the nation at large given that money generated from taxes is diverted to the public by the government.

Enhancement measures:

- Continuous payment of taxes due as regulated in the Namibian laws.

7.4.2.2 Negative Social impacts

7.4.2.2.1 Disturbance of the grazing area

Livestock farming (cattle, goat and sheep) is the major agricultural activity taking place in the project vicinity, because the landscape is unsuitable for crop farming due to its aridity and poor soils. Extended exploration work may pose a threat to grazing pastures for local livestock farming. However, due to low spatial scale of the proposed project, the impact is minimal.

Table 18: Shows qualitative impacts assessment for grazing area.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	M	M	L	L/M	M
Mitigated	L	L/M	L	L	L	L

- Vegetation found on the site, but not on targeted exploration areas should not be removed but left to preserve biodiversity and grazing land.
- Agree on relevant compensation with landowners where land used for grazing purposes is impacted.
- Workers should refrain from driving off road and creating unnecessary tracks that may contribute to soil erosion and loss of grazing land.
- Any unnecessary removal or destruction grazing land, due to exploration activities should be avoided.
- Environmental awareness on the importance of grazing land for local livestock should be provided to the workers.

7.3.2.2.2 Socio-economic concerns

- As the movement of staff and contractors to and from the area increases, the risk of spread of HIV/AIDS and other STDs increases;
- Increased influx of jobseekers to the area as people come in search of job opportunities during the operational phase of the project. This could lead to potential increase in the unemployed people in the area and the establishment/growth in informal settlements which could exacerbate security issues due to increased crime rates.
- Impacts on the size and structure of the population. Increased informal settlement and associated problems;
- Negative impact on the health and safety of the surrounding community and workers
- Impact from loss of grazing for domestic livestock in “exclusive use zone”
- Impacts on cultural and spiritual values.
- Demographic factors: Attraction of additional population that cannot benefit from the project.
- Perception of Health and Safety risks associated with exploration.

Mitigation Measures to be enforced:

- The population change can be mitigated by employing people from the local community and encouraging the contractors to employ local individuals.
- Safeguard against the development of illegal settlements around the project area.
- The perception of risks will be mitigated by putting up safety signs wherever possible and ensuring that all employees and visitors to the site undergo a safety induction course.

Methods for monitoring:

- Public meetings will be held by the proponent whenever necessary.

Table 19: Shows the qualitative impacts assessment for socio economic.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	L	M	M	M	M
Mitigated	M	L	M	M	L	L

Actions/Mitigation measures:

- Honor agreements set out in the site-access contracts
- Consult and provide feedback regarding activities on the individual properties
- Provide contact details to a designated person, who will serve as liaison between landowners and the exploration teams
- Provide appropriate toilet facilities for the exploration workers on the site or agree with landowner to use certain facilities on the farm.

Municipal Service Impacts

Proposed exploration project will require provision of the following services:

- ❖ Potable water for domestic purposes
- ❖ Temporary toilets
- ❖ Solid waste management
- ❖ Bulk water and power supply

7.5 Monitoring, reporting and corrective action

7.5.1 Monitoring of EMP

Monitoring of the EMP performance for the proposed project by the Contractor emphasizes early detection, reporting, and corrective action. It is divided into three parts, namely:

- Monitoring of project activities and actions to be undertaken by the Environmental Coordinator (ENC) appointed by the Contractor.

- The Environmental Coordinator (ENC) shall report all incidents and situations which have the potential of jeopardizing compliance of statutory provisions as well as provisions of this EMP to the Project Proponent.
- The Environmental Coordinator (ENC) shall take corrective prompt measures, adequate and long-lasting in addressing non-compliance activities or behavior.
- To ensure compliance of the Contractor ENC to the implementation of the EMP, it is highly recommended that an External Environmental Expert is appointed by the proponent to ensure the implementation of the EMP.

7.5.2 Inspections and Audits

During the life of the project, performance against the EMP commitments will need to be monitored and corrective action taken where necessary, in order to ensure compliance with the EMP and relevant environ-legal requirements.

Internal Inspections/Audits

The following internal compliance monitoring programme will be implemented:

1. Project kick-off and close-out audits will be conducted on all contractors. This applies to all phases during exploration:
 - Before a contractor begin any work, an audit will be conducted by the applicable phase site manager to ensure that the EMP commitments are included in Contractors' standard operating procedures (SOPs) and method statements.
 - Following completion of a Contractors work, a final close-out audit of the contractor's performance against the EMP commitments will be conducted by the applicable phase site manager.
2. Monthly internal EMP performance audits will be conducted during the construction/initial and decommissioning phases.
3. Ad hoc internal inspections can be implemented by the applicable manager at his/her discretion, or in follow-up to recommendations from previous inspection/audit findings.

External Audits

- At the end of each project phase, and annually during the project lifetime, an independently conducted audit of EMP performance will be conducted.
- Specialist monitoring/auditing may be required where specialist expertise are required or in order to respond to grievances or authorities directives.
- Officials from the DEA may at any time conduct a compliance and/or performance inspection of exploration activities. The proponent will be provided with a written report of the findings of the inspection. These audits assist with the continual improvement of the exploration project and the proponent will use such feedback to help improve its overall operations.

Documentation

Records of all inspections/audits and monitoring reports will be kept in line with legislation. Actions will be issued on inspection/audit findings. These will be tracked and closed out.

Reporting

Environmental compliance reports will be submitted to the Ministry of Environment, Forestry and Tourism on a bi-annual basis.

Environmental management system framework

Environmental Management System (EMS) will be established and implemented by the proponent and their Contractors. This subchapter establishes the framework for the compilation of a project EMS. The applicable manager will maintain a paper based and/or electronic system of all environmental management documentation. These will be divided into policy and performance standards & Enviro legal documentation.

Policy and Performance Standards

A draft environmental policy and associated objective, goals and commitments has been included in the EMP. The project proponent may adapt these as necessary.

Enviro-Legal Documentation

A copy of the approved environmental assessment and EMP documentation will always be available by the proponent. Copies of the Environment Clearance Certificate and all other associated authorizations and permits will also be kept with the exploration team. In addition, a register of the legislation and regulations applicable to the project will be maintained and updated as necessary.

Impact aspect register

A register of all project aspects that could impact the environment, including an assessment of these impacts and relevant management measures, is to be maintained. This Draft EMP identifies the foreseeable project aspects and related potential impacts of the proposed project, and as such forms the basis for the Aspect Impact Register; with the Project Activity. It should however be noted that during the life of the project additional project aspects and related impacts may arise which would need to be captured in the Aspect-Impact Register.

Procedures and Method Statements

In order to affect the commitments contained in this EMP, procedures and method statements will be drafted by the relevant responsible exploration staff and Contractors. These include, but may not be limited:

- Standard operating procedures for environmental action plan and management programme execution.
- Incident and emergency response procedures.
- Auditing, monitoring and reporting procedures, and
- Method statements for EMP compliance for ad hoc activities not directly addressed in the EMP action plans.

All procedures are to be version controlled and signed off by the applicable manager. In addition, knowledge of procedures by relevant staff responsible for the execution thereof must be demonstrable and training records maintained.

Register of roles and responsibilities

During project planning and risk assessments, relevant roles and responsibilities will be determined. These must be documented in a register of all environmental commitment roles and responsibilities. The register is to include relevant contact details and must be updated as required.

Environmental management schedule

A schedule of environmental management actions is to be maintained by the applicable phase site managers and/or relevant Contractors. A master schedule of all such activities is to be kept up to date by the manager. Scheduled environmental actions can include, but are not limited to:

- Environmental risk assessment;
- Environmental management meetings;
- Soil handling, management and rehabilitation;
- Waste collection;
- Incident and emergency response equipment evaluations and maintenance
- Environmental training;
- Stakeholder engagement;
- Environmental inspections and
- Auditing, monitoring and reporting

Change Management

The environmental management schedule must have a procedure in place for change management. In this regard, updating and revision of environmental documentation, of procedures and method statements, actions plants etc. will be conducted as necessary in order to account for the following scenarios:

- Changes to standard operating procedures (SOPs);
- Changes in scope;
- Ad hoc actions;
- Changes in project phase; and

- Changes in responsibilities or roles

All documentation will be version controlled and require sign off by the applicable phase site managers.

7.6 Environmental code of conduct

The Code of Conduct outlined in this section of the EMP applies to, sub-contractors, visitors, permanent and temporal workers. Therefore, anybody within the boundaries of the project site must adhere to the Environmental Code of Conduct as outlined in this section of the EMP. The Environmental Coordinator ENC will implement on-site environmental guidelines and has the authority to issue warnings as well as discipline any person who transgresses environmental rules and procedures. Persistent transgression of environmental rules will result in a disciplinary hearing and thereafter continued noncompliance behavior will result in permanent removal from the construction sites.

7.7 Site closure and rehabilitation

This is the phase when exploration activities cease as a result of either poor exploration results or loss of market demand for the targeted commodity. Rehabilitation measures will have to put in place during exploration and before decommissioning. Rehabilitation has been planned with a main aim of returning disturbed environment close to its original state. It is also planned to cater for the access road, vehicle tracks around the site, removal, and restoration of areas covered by stockpile and rock piles. The closure vision for the proposed project is to establish a safe, stable and non-polluting post-prospecting landscape that can facilitate integrated, self-sustaining and value generating opportunities, thereby leave a lasting positive legacy.

Site closure and rehabilitation activities

All waste (such as hazardous and domestic) waste will be transported offsite for disposal in licensed landfills in Omaruru town. Disturbed or/and contaminated areas will be cleaned up, treated where necessary and restored to its pristine state.

- Demolition of camping structures.

- Removing of equipment on site.
- Removal of associated infrastructures such as storage tanks, solar panels and heavy-duty generators.
- Where access tracks have been developed in cases where there are no roads, these will be rehabilitated and closed as part of normal closure actions in consultation with landowners.
- Existing secondary roads in the area should be used to prevent damages of the main road.
- The recovered topsoil and subsoil should be utilized to reconstruct the original soil profile.
- All power and water services to be disconnected and certified as safe prior to commencement of any decommissioning works;
- All remaining inert equipment and decommissioning waste will be disposed to the nearest licensed general waste disposal facility;
- Salvageable equipment will be removed and transported offsite prior and during decommissioning;
- Transporting all machinery and equipment as well as vehicles to designated offsite storage facilities;
- All tanks, pipes and sumps containing hydrocarbons to be flushed or emptied prior to removal to ensure no hydrocarbon/chemical residue remains;
- Backfilling of trenches and or pits in such a way that subsoil is replaced first, and topsoil replaced last.
- Closing off and capping of all exploration drilling boreholes.

The rehabilitation actions intended to be undertaken at the end of the life of the proposed exploration and mining project as are described below.

Remediation of Contaminated Areas

All soil, contaminated with hydrocarbons, will be identified, excavated and disposed in accordance with nearest town council disposal requirements at appropriate sites.

- Removed soils will be managed as determined by the nature and extent of the contamination.
- All equipment in which chemicals have been stored or transported will be cleaned and disposed of in a suitable disposal facility.

Waste Management

Waste management activities will include:

- Hazardous waste will be managed handled, classified and disposed.
- No burring and burying of waste.
- Nonhazardous substances will be disposed in the nearby landfill sites.
- It may be necessary to fence temporary salvage yards for security reasons, particularly where these are located close to public roads.

8. Public Consultation

8.1 Legal framework

Public consultation is an important part of an environmental impact assessment process. Public consultation gives an opportunity to stakeholders or interested members of the public to get more information on the proposed project and to raise any issues or concerns. The Environmental Management Act 2007 and its EIA regulations of 2012 are the tools governing environmental impact assessment in Namibia. Among the important objectives of the Act is to prevent and mitigate the significant effects of activities on the environment by ensuring that interested and affected parties are afforded opportunity to participate throughout the assessment process; and

ensuring that the findings of an assessment are considered before any decision is made in respect of activities.

In terms of Section 21 of the EIA Regulations, the person conducting a public consultation process must give notice to all potential interested and affected parties by:

(a) As part of efforts to ensure public awareness of the project in general, site notices informing the general public as well as affected land owners about the Environmental Assessment process, and providing details of the scheduled consultation meetings were placed at the following strategic locations such as: The Tsiseb Communal Conservancy offices, Dâure Daman Traditional Authority office, Uis Settlement Office and well-known supermarkets in Uis.

(b) Giving written notice to:

- The local authority council, regional council and traditional authority, as the case may be, in which the site or alternative site is situated, these include: Erongo Regional Council, Dâures Constituency Office, Uis Town Council, Dâure and Daman Traditional Authority.
- Any other organ of state having jurisdiction in respect of any aspect of the activity: Tsiseb Communal Conservancy.
- Central or national government: Ministry of Environment, Forestry & Tourism; Ministry of Mines & Energy; Ministry of Agriculture & Land Reform; Ministry of Urban & Rural Development; National Heritage Council of Namibia (under the Ministry of Education, Arts & Culture).
- Government Parastatals: Namwater (environmental section), Roads Authority (Legal & Road Network Planning Section), Erongo Red, National Heritage Council, Namibian Chamber of Mines, National Botanical Research Institute, Nampower.
- The owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site;
- Interested public members

(c) In line with the provisions of the regulations, the public notices (attached) were published in two widely local newspapers in Namibia (Windhoek Observer newspaper and Confidante

newspaper) during the months of January and February 2023 for three consecutive weeks, from 18 January to 2 February 2023. Appendix C provides tear sheets of the adverts. The closing date for registration and submission of written objections, comments, inputs to Mining Claims (MCs: 74090 to 74098), environmental assessment process was postponed to 24 March 2023. The EIA Regulations clearly state that potential interested and affected parties must be provided with a reasonable opportunity (21 days) to comment on the application under Section 21(6) of the EIA Regulations, which was provided.

The public were invited through the newspaper advertisements (annexed to this report) to submit written comments / inputs / objections on the proposed minerals exploration activities. Apart from BID request, no comments / inputs / objections were received on the proposed project. The background information document (BID) annexed to this report was provided to the entire registered stakeholder and to all identified I&APs, so far, no submissions were received.

Table 20 (a): Register of Organs of State as per section 22(c) of the EIA regulations of 2012.

No.	Name	Position	Organization
1	Teofillus Ngitila	Executive Director	Ministry of Environment, Tourism and Forestry
2	Timoteus Mufeti	Environmental Commissioner	Ministry of Environment, Tourism and Forestry
3	Maria Amakali	Director: Water Resources Management	Ministry of Agriculture, Water and Land reform
4	Isabella K. Chirchir	Mining Commissioner	Ministry of Mines and Energy
5	N P Du Plessis	Senior Environmentalist	NamWater

(b) Registered stakeholders (register was made available from January 2023).

No.	Name	Affiliation	Contact Details
1	Mr Allan Gurirab	Daure Daman Traditional Authority	Contact no.: +264 855 29 692
2	Benjamin Howaseb	Daure Daman Traditional Authority	Contact no.: +264 81 8576 560
4	Elina Hamatwi Lumbu	Roads authority	lumbue@ra.org.na
5	Chief Seibeb	Daure Daman Traditional Authority	Contact no.: +264 81 330 983

6	Jaco Swart	Rent-A-Drum Commercial Manager	cm@rent-a-drum.com.na
7	lipinge Ndelimona	Namibia Environment and Wildlife Society	ndelimonachox@gmail.com

The information given below was shared the concerned parties to shade more light in response to concerns raised:

- Entry only with Knowledge and permission of the landowner.
- Initial stages: thematic mapping to delineate various land use zones and patterns to help improve the multiple land use practices and promote coexistence for all the possible land use options.
- In the initial stages: mainly desktop studies (aerial geophysics, remote sensing and Landsat images interpretations) supported by probably 1- or 2-days field verifications.
- Once more information on target areas has been obtained frequent field target verifications: mapping/ sampling visits/ trenching/ drilling, but this will only be over specific areas of interest and not the entire project area.
- The only parts to be physically visited are areas of interest and this tends to be a localized involving only small area where mineralization occurs.
- Field verifications of targets will only be done with the permission and knowledge of the landowner.
- A land/farm access Agreement will be negotiated between the Proponent and the landowner (s) stipulating conditions of access.
- The land access agreement will include among other important issues such as adherence to Environmental Management Plan which focuses on environmental mitigation measures.
- EMP will cover issues raised by interested and affected parties (I&APs)
- The project can only advance in to mining if resources of economic potential are discovered.
- Statistics shows that the likelihood of any EPL/Mining Claim(s) to advance to a mining stage is less than 0.01 or 1%.

- If the exploration activities were to advance to mining stage, it's a process that would take time (on average up to 10 years) and landowners as well as I&APs will be consulted throughout the whole development process.
- If the proposed exploration activities lead to a discovery of a mineral resource of economic potential, prefeasibility and feasibility studies will then be carried out over the local area hosting the mineralization.
- During the prefeasibility and feasibility studies, a detailed site-specific Environmental Impact Assessment (EIA) study will be carried out and an Environmental Management Plan (EMP) report will be prepared and these will be done in consultation with all interested and affected parties including the landowner.
- If a deposit of economic potential was to be discovered, the benefits would be big. It would boost the economy of the constituency and it will better the livelihood of many people in the region

9. Conclusion

The proponent provisionally acquired mineral rights on Mining Claims (MCs: 74090 to 74098), from the Ministry of Mines and Energy (MME). Therefore, the proponent intends to carryout exploration activities on Mining Claims (MCs: 74090 to 74098), for Base and rare metals, industrial minerals and semi-precious stones on Cape-Cross-Uis pegmatites. The proponent plans

to implement these activities as soon as the clearance certificate has been issued of operation and this include: geophysical surveys, geochemical survey, geological mapping, trenching, drilling and geochemical sampling as well as laboratory analysis aimed discovering mineral resources of economic interest. Once the mineral deposit has been identified and proven to be economically feasible the next step is to open a small scale mine. Conventional open pit mining method will be utilized. Potential positive and negative impacts of the proposed exploration and mining activities on the Mining Claims (MCs: 74090 to 74098), were identified assessed, and mitigation measures are provided in the EMP. These mitigation measures and recommendations provided are deemed sufficient to minimize the identified impacts to acceptable levels.

The Environmental Management Plan should be used as an on-site reference document during all phases of the proposed project, and auditing should take place in order to ensure compliance with the EMP of the proposed project. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken. Overall, the severity of potential environmental impacts of the proposed project activities on the receiving environment (physical, biological, socioeconomic environments and ecosystem functions) will have low probability of occurrence, localized extent, and low magnitude and temporally duration. This report should be viewed as a framework for integrating mitigation measures and applicable legal tools to ensure both compliance and sustainability. It is therefore very important that the proponent provides adequate support for human and financial resources, for the implementation of the proposed mitigations and effective environmental management during the planned activities.

10. Recommendations

The proposed operations is considered to have, overall low negative environmental impacts and potential for the enhancement of socio-economic benefits provided all protocols including the proposed mitigation measures are adhered to. It is therefore recommended that the mineral prospecting and exploration activities on Mining Claims (MCs: 74090 to 74098), be granted an Environmental Clearance Certificate, provided that: All mitigations provided in this EMP should be implemented as stipulated and where required and emphasized, improvement should be

effectively put in place. The Proponent and all their workers comply with the legal requirements governing this type of project and its associated activities.

In a summary the following are to be observed to:

- The proponent should take all the necessary actions to implement the EMP to minimize adverse impacts on the environment.
- The proponent should take responsibility for ensuring that all contractors and employees are fully informed of the EMP provisions, guidelines and legislative requirements and must ensure that adequate insurance cover is in place prior to entry.
- The environmental risks associated with all mineral prospecting and exploration activities on Mining Claims (MCs: 74090 to 74098), should be considered and planned for. Best practice procedures should be implemented to minimize any environmental impact and these procedures should be clearly outlined and communicated to all contractors and employees prior to commencing any activity.
- In cases where baseline information, national or international guidelines, or mitigation measures have not been supplied or do not adequately address the site-specific project effect, the proponent must use the precautionary approach/principles.
- There should be full consideration and close liaison with relevant landowners and regulatory authorities. The proponent is required to give advance notices and obtain permission to have access from the landowners.
- The exploration and mining activities should be conducted in line with the EMP, thus implementing the necessary mitigation measures, monitoring and stipulated rehabilitation measures.
- In a case where portable water is discovered during boreholes drilling operations, the proponent shall support other land users in the area in terms of access to freshwater supply for both human consumption, wildlife and agricultural support as may be requested by the local community / landowners/s. Relevant underground water abstraction permit/s be obtained from the Ministry of Agriculture, Water and Land Reform (MAWLR) and abstraction and monitoring conditions thereof be observed.

- Any damage to vegetation, land surface or landowner property that may occur as a result of exploration should be corrected without undue delay.
- Site areas where exploration activities have ceased are rehabilitated, as far as practicable, to their pre-exploration state.

11. References

- 'ACACIA', 2002. Atlas of Namibia Project. Directorate of Environmental Affairs, Ministry of Environment and Tourism.
- Ashmole, I., & Motloun, M. (2008). Mineral: the latest trends in exploration and production technology. In *Proceedings of the International Conference on Surface Mining* (Vol. 5, No. 8).

- Aung, T. S., Shengji, L., & Condon, S. (2019). Evaluation of the environmental impact assessment (EIA) of Chinese EIA in Myanmar: Myitsone Dam, the Lappadaung Copper Mine and the Sino-Myanmar oil and gas pipelines. *Impact assessment and project appraisal*, 37(1), 71-85.
- Careddu, N., Di Capua, G., & Siotto, G. (2019). Mineral industry should meet the fundamental values of geothics. *Resources Policy*, 63, 101468.
- Černý, P.; Ercit, T. S. (2005). "The Classification of Granitic Pegmatites Revisited". *The Canadian Mineralogist*. 43 (6): 2005–2026. [doi:10.2113/gscanmin.43.6.2005](https://doi.org/10.2113/gscanmin.43.6.2005).
- Černý, P. and London, D., 1983. Crystal chemistry and stability of petalite. *TMPM Tschermarks Mineralogische und Petrographische Mitteilungen*, 31, 81-96.
- Barnard, P., 1998. *Biological diversity in Namibia - a country study*, Windhoek: Namibian National Biodiversity Task Force.
- Brown, C. & Lawson, J., 1989. *Birds and electricity transmission lines in South West Africa/Namibia*, Windhoek: Madoqua.
- Burke, A., 2003. *Floristic relationship between inselbergs and mountain habitats in the Central Namib.*, s.l.: Dinteria.
- Calcutt, V., 2001. *Introduction to Copper: Mining & Extraction*, s.l.: Copper Development Association.
- Christian, C., 2005. *Spitzkoppe Lodge Proposal Final Report*, Windhoek: Eco Plan (Pty) Ltd.
- Coats Palgrave, K. 1983. *Trees of Southern Africa*. Struik Publishers, Cape Town, RSA.
- Curtis, B. and Mannheimer, C. 2005. *Tree Atlas of Namibia*. National Botanical Research Institute, Windhoek, Namibia.
- Diehl, M., 1986. Preliminary report on the Cape Cross-Uis Pegmatite field. *Communications of the Geological Survey of South West Africa/Namibia*, 2, 37-42.
- Fuchsloch, W.C., Nex, P.A.M. and Kinnaird, J.A., 2018. Classification, mineralogical and geochemical variations in pegmatites of the Cape Cross-Uis pegmatite belt, Namibia. *Lithos*, 296-299, 79-95.
- Government Gazette, 27 December 2007. No. 3966, Act No. 7, 2007 Environmental Management Act 2007.
- Griffin, E., 1998. *Species richness and biogeography of non-acarine arachnids in Namibia*, Windhoek: Biodiversity and Conservation.
- Kaunda, R. B. (2020). Potential environmental impacts of lithium mining. *Journal of energy & natural resources law*, 38(3), 237-244.
- Keller, P., Robles, E.R., Pérez, A.P. and Fontan, F., 1999. Chemistry, paragenesis and significance of tourmaline in pegmatites of the southern tin belt, central Namibia. *Chemical Geology*, 158, 203-225.
- Kisters, A., 2008. *Introduction to the Damara Orogen*, Windhoek: Isotope Geology of Namibia.
- Levinson, O., 1983. *Diamonds in the Desert*. Cape Town: Tafel berg.
- Lim, S., 2017. *50,000 years of vegetation and climate change in the Namib Desert* (Doctoral dissertation, Université Montpellier).
- Lohe, C., Amster, R. and Swartz, B. (2021). (editors). *Groundwater in Namibia: An Explanation to the Hydrogeological Map*. Windhoek: Ministry of Agriculture, Water and Land Reform.

- Mannheimer, C. and Curtis, B. (eds) 2009. Le Roux and Müller's field guide to the trees and shrubs of Namibia. Macmillan Education Namibia, Windhoek.
- Marshall, T. & Baxter-Brown, R., 1995. Basic principles of alluvial diamond exploration. *Journal of Geochemical Exploration*, pp. 278-293.
- Mendelsohn, J., Jarvis, A., Roberts, C. & Robertson, T., 2002. *Atlas of Namibia: a portrait of the land and its people*, Cape Town: David Philip.
- Miller, R.M. 1983. The Pan-African Damara Orogen of S.W.A./Namibia. *Special Publication of the Geological Society of South Africa*, 11, 431-515.
- Miller R. McG. (1992). Mineral resources of Namibia. Geological Survey of Namibia.
- Miller, R.M., 2008. Neoproterozoic and early Palaeozoic rocks of the Damara Orogen. In: Miller, R.M. (Ed.). *The Geology of Namibia*. Geological Survey of Namibia, Windhoek vol. 2, pp. 13-1–13-410. References.
- Monadjem, A., Taylor, P.J., F.P.D. Cotterill and M.C. Schoeman. 2010. Bats of southern and central Africa. Wits University press, Johannesburg, RSA.
- Müller, M.A.N. 2007. Grasses of Namibia. John Meinert Publishers (Pty) Ltd, Windhoek, Namibia.
- Namibia Statistics Agency, 2014. Namibia Intercensal Demographic Survey 2016 Report. Namibia Statistics.
- Schneider, G. & Seeger, K., 1992. Copper. In: s.l.:The Mineral Resources of Namibia, pp. 2.3, 1-172.
- Skinner, J.D. and Chimimba, C.T. 2005. The mammals of the southern African sub region. Cambridge University Press, Cape Town, RSA.
- Taylor, P.J. 2000. Bats of southern Africa. University of Natal Press, RSA.
- Van Oudtshoorn, F. 1999. Guide to grasses of southern Africa. Briza Publications, Pretoria, South Africa.

Appendix A: Registered IAP's

Name	Organization	Tel	Email
------	--------------	-----	-------

Allan Gurirab	Dâure Daman Traditional Authority	+264 855 29 692	
B. Korhs	Earth life Namibia	061-2022041	earthl@iway.na
C. Sisamu	Nampower	061-2052350	Calvin.Sisamu@nampower.com.na
Benjamen Howaseb	Dâure Daman Traditional Authority	+26481 8576 560	
Chief Seibeb	Dâure Daman Traditional Authority	+264 81 330 983	
C. Tubalike	MURD	061-2975062	ctubalike@murd.gov.na
Coleen Mannheimer	061-2022021	manfam@iafrica.com.na	
E de Paauw	Roads Authority - Specialized road Legislation, Advise & Compliance	061-2847027	dePaauwe@ra.org.na
E Muremi	Ministry of Health and Social Services Director Khomas Region	061-2035001	Elizabeth.Muremi@mhss.gov.na
E. Shivolo	Min. of M&E - Mining Commissioner	061-2848111	Erasmus.Shivolo@mme.gov.na
Esmerialda Strauss	CHIEF FORESTER National Botanical Research Institute (NBRI)	061-2022017	Esmerialda.Strauss@mawf.gov.na
F Kreitz	Namibian Environment and Wildlife Society - Media, website and newsletter	061-306450	Information@NEWS-Namibia.org;
F. Sikabongo	MET - Deputy Director of Directorate of Environmental Affairs	061-2842701	frederick.Sikabongo@mef.gov.na
Fransiska Nghitila	NWR-Environmental and Compliance Specialist	061-2857190	Fnghitila@nwr.com.na; fnghitila@gmail.com
Elina H Lumbu	Roads authority		lumbue@ra.org.na
Jaco Swart	Rent-A-Drum Commercial Manager		cm@rent-a-drum.com.na
Sonja Loots	Manager: Threatened Plants Programme,	061-2022014	Sonja.Loots@mawlr.gov.na

	National Botanical Research Institute		sonja.loots.solo@gmail.com
Thomas Rathenam			tirathenam@hotmail.com

Appendix B: Proof of Advertisements, Letters and Notices

Appendix C: CV of EAP

Environmental Management Plan for Mining Claims (MCs 74090-74098)

Appendix D: BID