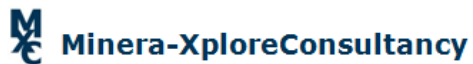


**Environmental Management Plan (EMP) for the Proposed Minerals  
Exploration / Prospecting in the Exclusive Prospecting License (EPL) No.  
8665, Karibib District, Erongo Region**



**Prepared by:**




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

**Proponent:**

**Wilhelmina Alugodhi  
P.O. Box 41497,  
Windhoek, Namibia  
+264 81 468 5578**

**APP-0010424**

## DOCUMENT DATA SHEET

<b>Title</b>	<b>Environmental Management Plan (EMP) for the Proposed Minerals Exploration / Prospecting in the Exclusive Prospecting License (EPL) No. 8665, Karibib District, Erongo Region</b>		
<b>Report Status</b>	Final		
<b>Proponent</b>	Wilhelmina Alugodhi P.O. Box 41497, Windhoek, Namibia Contact Person: Wilhelmina Alugodhi Contact Number: :+264 81 468 5578 Email: <a href="mailto:lixuanfaith@yahoo.com">lixuanfaith@yahoo.com</a>		
<b>Environmental Practitioner</b>	Minera-Xplore Consultancy CC P.O. Box 31671, Windhoek Contact Person: Ms Nangula Ndakunda Contact Number: +264 85 761 4750 Email: <a href="mailto:info@minera-xplore.com">info@minera-xplore.com</a> or <a href="mailto:frontdesk@minera-xplore.com">frontdesk@minera-xplore.com</a>		
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	<b>Name</b>	<b>Signature</b>	<b>Date</b>
<b>Author</b>	Nangula Ndakunda		18 July 2022

## **7. Environmental Management Plan (EMP)**

### **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. 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 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.

Furthermore, overall objectives of this EMP are:

- 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:

- **Exploration phase:** this is the phase where the proponent will be carrying out exploration of minerals. It is also the time when proponent has to undertake maintenance and care of the environment and machinery.
- **Environmental monitoring phase:** this is the phase when mitigation measures are implemented, and the monitoring plan put in place. This phase runs concurrently with the exploration and decommissioning.
- **Decommissioning phase:** 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.

#### **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

### **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 will make the necessary financial provision for 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 23:** Roles and responsibilities of various stakeholders to the EMP

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

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

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 24:** Roles and responsibilities of various stakeholders, environmental indicators and objectives.

<b>Objectives</b>	<b>Indicators</b>	<b>Responsibility</b>
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 25:** Implementation of the objectives should be adhered to as indicated in the table.

<b>Objectives</b>	<b>Indicators</b>	<b>Responsibility</b>
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 litter be it paper, metal, plastic and human waste on and around the mining site	No litter or/and remnants of litter 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.

The following tables gives the mitigation measures to be undertaken during construction, operation, closure and decommissioning phases with the proponent responsible for implementation.

**Table 26:** Summary of environmental impacts, mitigation measures and monitoring plan for all project phases.

<b>Construction phase</b>			
<b>Environmental impacts</b>	<b>Proposed mitigation measures</b>	<b>Responsibility</b>	<b>Monitoring plan</b>
<b>Air pollution</b>	<ul style="list-style-type: none"> <li>• Regular maintenance of vehicles and equipments.</li> <li>• Brief workers and contractors.</li> <li>• Control speed and operation of construction vehicles.</li> <li>• Regular maintenance of vehicles, construction equipments and heavy machineries.</li> <li>• Provide workers with dust masks.</li> </ul>	Personnel on duty, Foreman on duty and Environmental Officer	<ul style="list-style-type: none"> <li>• Amount of dust produced.</li> <li>• Level of landscaping executed.</li> </ul>
<b>Noise pollution</b>	<ul style="list-style-type: none"> <li>• All noise should be kept within reasonable levels.</li> <li>• Employees and neighbors should be notified of any scheduled unusual noise.</li> <li>• Regular maintenance of vehicles, equipments and heavy machinery.</li> <li>• Workers should be provided with personal hearing protection if working in a noisy environment.</li> </ul>	Foreman on duty, Environmental Officer, Safety Health and Environment Manager.	<ul style="list-style-type: none"> <li>• Amount of noise produced</li> </ul>
<b>Solid waste</b>	<ul style="list-style-type: none"> <li>• Littering should be discouraged by having strategically placed bins and refuse skips on site.</li> <li>• Recycling plastic, paper and cans should be encouraged on site</li> <li>• The bins should be emptied on a regular basis by the proponent or an independent contractor.</li> <li>• The site should have containers with bulk storage facilities at convenient points to prevent littering.</li> </ul>	Personnel on duty, Environmental Officer and Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Presence of dust bins/waste collection points.</li> </ul>

<b>Oil leaks and spills</b>	<ul style="list-style-type: none"> <li>• Contactor should have a sealed designated area where maintenance is carried out to prevent percolation of contaminants.</li> <li>• Oil products should be handled carefully on bounded surfaces; in case it leaks.</li> <li>• Vehicles and equipment should be well maintained to prevent oil leaks.</li> </ul>	Personnel on duty, Foreman on duty, Environmental Officer and Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Absence of oil spills and leaks on site.</li> </ul>
<b>First aid</b>	<ul style="list-style-type: none"> <li>• A well-stocked first aid kit shall be maintained by a qualified personnel.</li> </ul>	Safety Health and Environment Manager, Safety and Health Officer.	<ul style="list-style-type: none"> <li>• Contents of the first aid kits.</li> </ul>
<b>Visual</b>	<ul style="list-style-type: none"> <li>• Environmental considerations will always be adhered to before clearing roads, trenching and excavation.</li> </ul>	Safety Health and Environment Manager, Environmental Officer	<ul style="list-style-type: none"> <li>• Employees to be trained on how to minimize impacts that can easily be identified with the eye.</li> </ul>
<b>Archaeological sites</b>	<ul style="list-style-type: none"> <li>• Buffer zones will be created around the sites.</li> <li>• Adhere to practical guidelines provided by the responsible archaeologist to reduce archaeological impacts of quarrying activities.</li> <li>• All archaeological sites to be identified and protected before development commences.</li> </ul>	All personnel on duty, Environmental officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Register of all archaeological sites identified.</li> </ul>
<b>Occupational health and safety</b>	<ul style="list-style-type: none"> <li>• Provide personal protective equipments, train workers on personal safety, and how to handle equipments and machines.</li> <li>• A well-stocked first shall be maintained by qualified personnel.</li> <li>• Report any accidents/ incidences and treat and compensate affected workers.</li> </ul>	Safety and Health Officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Workers using personal protective equipments.</li> <li>• Availability of a well-stocked first aid box.</li> </ul>

	<ul style="list-style-type: none"> <li>• Provide sufficient and suitable sanitary conveniences which should be kept clean.</li> </ul>		<ul style="list-style-type: none"> <li>• Clean sanitary facilities.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>• Some habitat areas such as the river and tunnel outcrops will be avoided wherever possible.</li> <li>• A fauna survey will be conducted to determine the effect of fragmented habitat to game species should the need arise.</li> <li>• No animals shall be killed, capture or harmed in any way.</li> <li>• No food stuff shall be left lying around as this will attract animals which may result in human-animal conflict.</li> </ul>	Personnel on duty, Environmental Officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Regular monitoring of any unusual signs of animal habitat.</li> </ul>
<b>Alien invasive plants</b>	<ul style="list-style-type: none"> <li>• Ensure vehicles and equipment are clean of invasive plants and seeds.</li> <li>• Eradicating alien plants using area management plan.</li> <li>• Contain neighboring infestations and restrict movement of invasive plants from adjacent lands</li> <li>• Educating everyone on site on types of invasive plants.</li> </ul>	Environmental Officer, Environmental Manager	<ul style="list-style-type: none"> <li>• Regular monitoring of any signs of alien plants.</li> </ul>
<b>Loss of vegetation</b>	<ul style="list-style-type: none"> <li>• Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating.</li> <li>• The movement of vehicles in riverbeds, rocky outcrops and vegetation sensitive area will be avoided.</li> <li>• The movement of vehicles will be restricted to certain tracks only.</li> </ul>	Environmental Officer, Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Warning signs on site</li> <li>• Restored vegetation</li> </ul>

<b>Operational Phase</b>			
<b>Environmental /Social Impact</b>	<b>Proposed mitigation measures</b>	<b>Responsibility</b>	<b>Monitoring plan</b>
<b>Noise pollution</b>	<ul style="list-style-type: none"> <li>All noise should be kept within reasonable levels.</li> <li>Employees and neighbors should be notified of any scheduled unusual noise.</li> <li>Regular maintenance of vehicles, equipment and heavy machinery.</li> <li>Workers should be provided with personal hearing protection if working in a noisy environment.</li> </ul>	All employees, Safety Health and Environment Manager Environmental Officer	<ul style="list-style-type: none"> <li>Amount of noise produced</li> </ul>
<b>Visual</b>	<ul style="list-style-type: none"> <li>Environmental considerations will be adhered to at all times before clearing roads and excavations</li> </ul>	Safety Health and Environment Manager Environmental officer	<ul style="list-style-type: none"> <li>Employees to be trained on how to minimize visual impacts</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>Some habitat areas will be avoided where possible.</li> <li>A fauna survey will be conducted to determine the effects of fragmented habitat game species should the need arise.</li> <li>No animal shall be kept, captured, killed or harmed in any way.</li> <li>No food stuff will be left lying around as these will attract animals which may result in human-animal conflict.</li> </ul>	All employees, Environmental officer Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>Regular monitoring of unusual signs of animal habitat.</li> </ul>
<b>Alien invasive plants</b>	<ul style="list-style-type: none"> <li>Ensure debris is properly disposed of.</li> <li>Ensure vehicles and equipment are clean of invasive plants and seeds.</li> <li>Contain neighboring infestations and restrict movement of invasive plants from adjacent lands</li> <li>Educating everyone on site on types of invasive plants.</li> <li>Eradicating alien invasive plants by using an area</li> </ul>	Safety Health and Environment Manager Environmental officer Foreman and personnel on duty	<ul style="list-style-type: none"> <li>Regular monitoring of any signs of alien invasive plants</li> </ul>

	management plan.		
<b>Loss of vegetation</b>	<ul style="list-style-type: none"> <li>• Environmental considerations will be adhered to at all times before clearing roads, trenching and excavations.</li> <li>• Paths and roads will be aligned to avoid root zones.</li> <li>• Permeable materials will be used where ever possible.</li> <li>• Movement of vehicles in riverbeds, rocky outcrops and vegetation sensitive areas will be avoided and restricted to certain tracks only.</li> </ul>	Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Restored vegetation</li> </ul>
<b>Solid waste</b>	<ul style="list-style-type: none"> <li>• Minimize solid waste generated on site.</li> <li>• Encourage segregation of waste on site</li> <li>• Debris should be collected by waste collection contractor.</li> <li>• Excavated waste should be piled at a designated approved location.</li> </ul>	Safety Health and Environment Manager Environmental Officer All foremen, personnel on duty	<ul style="list-style-type: none"> <li>• Amount of waste on site.</li> <li>• Availability of dust bins, waste collection point.</li> </ul>
<b>Oil leaks and spills</b>	<ul style="list-style-type: none"> <li>• Machinery should be well maintained to prevent oil leaks.</li> <li>• Contractors should have a designated area where maintenance is carried out and should be underlain by impermeable layer.</li> <li>• Workshops should be bounded by concrete</li> </ul>	Environmental Officer, Safety Health and Environment Manager, Foremen, personnel duty	<ul style="list-style-type: none"> <li>• No observed/detected oil spills and leaks on site</li> </ul>

<b>Archaeological sites</b>	<ul style="list-style-type: none"> <li>• Buffer zones will be created around the sites.</li> <li>• Adhere to practical guidelines provided by an archaeologist to reduce archaeological impact of quarrying activities.</li> <li>• All archaeological sites to be identified and protected before further quarrying commences.</li> </ul>	Environmental and safety manager	<ul style="list-style-type: none"> <li>• Up to date register of all archaeological sites identified in the vicinity.</li> </ul>
<b>First aid</b>	<ul style="list-style-type: none"> <li>• A well-stocked first aid kit shall be maintained by qualified personnel.</li> </ul>	Safety and health Officer,  Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Contents of the first aid kit.</li> </ul>
<b>Fire preparedness</b>	<ul style="list-style-type: none"> <li>• Fire incidence firefighting emergency response plan.</li> <li>• Ensure all firefighting equipments are always available regularly maintained, serviced and inspected.</li> <li>• Fire hazard signs and directions to emergency exit, route to follow and assembly point in case of any.</li> </ul>	Health safety officer Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Fire signs put up in strategic places.</li> <li>• Availability of well-maintained firefighting equipments.</li> </ul>
<b>Environmental health and safety</b>	<ul style="list-style-type: none"> <li>• Train workers on personal safety and disaster preparedness.</li> <li>• Provide sufficient and suitable sanitary conveniences which should be kept clean.</li> <li>• Conduct annual health and safety audits.</li> <li>• Report any accidents/incidences, treat and compensate affected workers.</li> <li>• A well-stocked first aid kit shall be maintained by qualified personnel.</li> </ul>	Safety Health and Environment Manager	<ul style="list-style-type: none"> <li>• Provide sanitary facilities.</li> <li>• Copies of annual audit.</li> </ul>



<b>Decommissioning phase</b>			
<b>Impacts</b>	<b>Proposed mitigation measures</b>	<b>Responsibility</b>	<b>Monitoring plan/Indicator</b>
<b>Noise and air pollution</b>	<ul style="list-style-type: none"> <li>• Personal hearing protection must be worn by workers in noisy section.</li> <li>• Regular maintenance of vehicles, equipments, heavy machinery on regular basis.</li> <li>• Workers should be provided with dust mask to wear at all times.</li> <li>• Decommissioning work can only be carried out during the day.</li> </ul>	Health safety and Environment Manager  Environmental Officer	<ul style="list-style-type: none"> <li>• Amount of noise and dust generated</li> </ul>
<b>Disturbed physical environment</b>	<ul style="list-style-type: none"> <li>• Undertake a complete a complete environmental restoration programme and introducing appropriate vegetation for ground stabilization.</li> </ul>	Health safety and Environment Manager  Environmental Officer	
<b>Solid waste</b>	<ul style="list-style-type: none"> <li>• Solid waste should be collected by contracted waste collection company.</li> <li>• Excavation waste should be used or backfilled</li> <li>• Open pit must be fenced of o avoid animals and unauthorized people from entering.</li> <li>• Waste dumps must be sloped and lined with top soil to allow re-germination of grasses</li> </ul>	Health safety and Environment Manager  Environmental Officer	<ul style="list-style-type: none"> <li>• Amount of waste on site.</li> <li>• Presence of well-maintained receptacles and central collection point.</li> </ul>
<b>Occupational health and safety</b>	<ul style="list-style-type: none"> <li>• Train workers on personal safety and how to handle equipments and machines.</li> <li>• Provide personal protective equipments (PEE).</li> <li>• A well-stocked first aid kits shall be maintained by</li> </ul>	Health and safety officer,  Environmental	<ul style="list-style-type: none"> <li>• Workers using protective equipments.</li> <li>• Availability of a first aid box.</li> </ul>

	qualified personnel. <ul style="list-style-type: none"><li>• Demarcate area under decommissioning.</li></ul>	Officer, Health safety and Environment manager	
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### **7.3. Identified impacts, monitoring and proposed mitigation measures**

#### **7.2 Identified impacts on bio-physical environment**

##### **Negative Impacts**

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

##### **7.2.1 Air quality: Dust emissions**

###### **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 exploration 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 50km/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.
- Water sprays should be used around the lay-down area when drilling, especially when performing reverse circulation, where water is not used.
- 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 at all time during the exploration process and the dry skin contact with gloves is prevented.

**Table 1.** Qualitative assessment of air quality impacts for the movement of vehicles on un-paved roads and drilling activities.

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

## 6.2.2 Noise pollution from vehicles, drilling and other activities

### Mitigation Measures to be enforced:

- Drilling will only be conducted during the day, where the drill-site is located close to a dwelling.
- Workers working near high noise exploration machinery will be provided with ear protection equipment such as ear muffs and earplugs.
- Reduction of noise from drilling rigs by using downhole 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.
- Noise levels should not be equal to or exceed 85dBA for workers working an 8-hour shift (according to ISO 18000).

**Table 2.** Shows the qualitative assessment of noise.

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

### 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.

### 7.2.3 Impacts on terrestrial biodiversity

#### Flora/ Vegetation

##### Mitigation Measures to be enforced: **flora**

- The footprint of the area to be disturbed will be minimized as far as is practically possible.
- Remove unique fauna and sensitive fauna before commencing with the development activities and relocate to a less sensitive/disturbed site if possible.

- Disturbed areas must be kept to a minimum. Off-road driving should not be allowed and only existing tracks should be used.
- Remove unique fauna and sensitive fauna before commencing with the development activities and relocate to a less sensitive/disturbed site if possible.
- 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**

- Honour agreements set out in the site-access contracts, specifically relating to the areas utilized for professional hunting. Special consideration should be given to the sensitive hunting season.
- 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 3.** Shows the qualitative impact assessment for biodiversity related to the exploration activities and the impact of personnel on biodiversity.

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

**Alien invasive plants**

**Mitigation Measures** to be enforced:

- The site manager will ensure that debris is properly disposed.
- Vehicle tyres 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.

**Table 4.** Shows the qualitative impact assessment of alien invasive.

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
Mitigated	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>

#### 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.

#### 7.2.4 Land-use and land contamination

**Table 5.** Shows the qualitative impact assessment for land use related to the exploration activities.

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

#### Actions/Mitigation measures:

- The footprint of the area to be disturbed will be minimized as far as is practically possible.
- Areas used as lay down areas are to be raked and/or ploughed to encourage re-vegetation
- Agree on relevant compensation with landowners where land used for hunting purposes are impacted.



## 7.2.5 Groundwater and surface water contamination

**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.
- 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 the 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
- Avail a spill response action plan in case of accident and any spills will be contained and cleaned up immediately.
- Accessibility to spill prevention and response equipment, such equipment should be visible and accessible to all employees at any given time.
- 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.
- Storage of the hazardous substances in a bounded area,

**Table 6.**Shows the qualitative assessment of surface water and groundwater impacts:

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

## 7.2.6 Fire and explosion hazard

### Mitigation Measures to be enforced

- Sufficient fire extinguishers will be installed on every exploration 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.
- Exploration 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 7.**Shows the qualitative assessment of fire and explosion hazard impacts:

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
Mitigated	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>

## 7.2.7 Hazardous waste and materials management

**Table 8.** Shows the qualitative assessment of hazardous waste and materials impacts:

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

### 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.

### 7.2.8 Solid waste management

**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.
- Suitable receptacles for waste disposal will be provided at appropriate locations on site. These receptacles will be clearly marked for different waste types.
- Mandatory waste segregated right at the source of waste generation. The collection of segregated waste would be made from the site and amenity areas.
- 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 collected solid waste should be disposed at registered and approved disposal site agreed upon by both Municipality and the proponent.

**Table 9.** Shows the qualitative assessment impacts from waste management

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

## 7.2.9 Heritage Impacts

### 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 d marked with flag tape and the GPS coordinates should be recorded.
- Notices/ information boards information will be placed on site.
- Training employees regarding the protection of these sites.
- 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.

### Monitoring

- An archaeologist will inspect any identified archaeological sites before project commencement.

**Table 10:** Impact evaluation for heritage impact.

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

## 7.2.10 Visual impacts

### Mitigation Measures to be enforced

- The access road to exploration sites 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.

- Negative visual effects can further be prevented through mitigations (i.e. keep existing trees, introduce tall indigenous trees).
- When exploration 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.
- 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 exclusive prospecting licence (EPL).

**Table 11.** Impact evaluation for visual impacts.

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

### 7.2.11 Health, safety and security

**Mitigation Measures** to be enforced:

- All vehicular equipment operators must have valid licences for that particular vehicle class.
- Ensure that all exploration personnel are properly trained depending on the nature of their work.
- Provide for a first aid kit and a properly trained person to apply first aid when necessary.
- A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases as described above.
- Emergency medical treatment should be available on site. Provide for a first aid kit and a properly trained person to apply first aid when necessary.
- A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases, Covid 19, 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.
- 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.
- 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.
- Implement the use of alcohol detectors.

**Methods for monitoring:**

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

- Regular meeting with the Interested and affected parties, where they can air their concerns should be done four times in a year.
- The outcome of these meeting should be recorded in a form of a report and the proponent needs to address the issues raised in this meeting.

**Table 12:** Impact evaluation for health, safety and security.

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

## 7.3 Socio-economic impacts

### 7.3.1 Positive Impacts

#### 1. Employment Creation

##### 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 from Karibib, Arandis and surrounding areas should be considered first for employed. 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.

### **7.3.2 Negative Impacts**

#### **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 13.** Shows the qualitative socio economic impacts.

Mitigation	Severity	Durati on	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	<b>M</b>	<b>L</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>M</b>
Mitigated	<b>M</b>	<b>L</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>

### Actions/Mitigation measures:

- Honour 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
- Ensure gates are closed after entry and exit.
- 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

## **7.4 Monitoring, reporting and corrective action**

### **7.4.1 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.

### **7.4.2 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 exploration phase, 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 & Environmental 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.

### **7.5 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.

## **7.6 Site closure and rehabilitation**

Rehabilitation is the process of repairing the damage done by exploration activities. Rehabilitation plan has been developed with a main aim of returning disturbed environment close to its pre exploration 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 Karibib 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.



The rehabilitation actions intended to be undertaken at the end of the life of the proposed exploration activities 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

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### 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 taken into account 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) Fixing a notice board at a place conspicuous to the public at the boundary or on the fence of the site where the activity to which the application relates is or is to be undertaken;
- b) Giving written notice to:
  - i. The owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site;
  - ii. The local authority council, regional council and traditional authority, as the case may be, in which the site or alternative site is situated;
  - iii. Any other organ of state having jurisdiction in respect of any aspect of the activity; and
- c) Advertising the application once a week for two consecutive weeks in at least two newspapers circulated widely in Namibia.

In line with the provisions of the regulations, the public notices (attached) were published in the local newspapers during the months of May to June 2022. The public consultation process started on 30 May 2022 and the closing date for registration and submission of written objections, comments, inputs to the environmental assessment process was initially 19 June 2022 which was extended to the 30 June 2022. 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.

A stakeholder's register as shown in Table 27 was created on the 30<sup>th</sup> of May 2022. The public meeting was held on the last day of the consultation process (18 June 2022) at Usab Community Hall in Karibib. The meeting's attendance register, minutes and photos are annexed to this report.

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

**Table 27:** 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	Erasmus Shivolo	Mining Commissioner	Ministry of Mines and Energy
5	Lesley Goreseb	CEO	Karibib Town Council
6	N P Du Plessis	Senior Environmentalist	NamWater

Registered stakeholders (register was made available from 01 June 2022).

No.	Name	Affiliation	Contact Details
1	Gerelel Appriels		Contact no. : +264 81 48 588 31
2	Manuel Numbo	Small scale miner (Erongo Region)	Contact no. : +264 81 49 74418
3	Ivano Sima		<a href="mailto:ivano.sima@gmail.com">ivano.sima@gmail.com</a>
4	Elina Hamatwi Lumbu	Roads authority	<a href="mailto:lumbue@ra.org.na">lumbue@ra.org.na</a>
5	Mr Hoffman Trust	Independent Geologist	Contact no. : +264 811 28 3520

## 8.2 Public and Stakeholder Consultation Outcomes

Concerns and comments raised by interested parties as follows:

### Elina Mr Manuel Neumbo

- ✓ Lot of areas taken by EPLs, locking out small scale miners
- ✓ Some EPL holders are not willing to permit small scale miners into their EPLs
- ✓ Small scale miners plan to engage the Ombudsman on the above issue

### Elina HamatwiLumbu from Roads authority

- Any exploration within 30m on either side of the road permission needs to be obtained from the Roads Authority.
- If drilling will have an effect on the layers of the road), permission should be obtained from the Roads Authority.

**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 EPL.
- 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.
- It is very unlikely that the entire EPL will be an area of interest because this is never the case and there is no way it would happen with this EPL.
- A land/farm access Agreement will be negotiated between the EPL holder (Proponent) and the landowner (farmer) 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 to advance to a mining stage is less than 0.01.
- 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**

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The proponent intends to carryout exploration activities on EPL8665 for nuclear fuel metals. The proposed exploration activities include desktop studies, geophysical surveys, geochemical survey, geological mapping, trenching, drilling and geochemical sampling as well as laboratory analysis aimed discovering mineral resources of economic interest. Potential positive and negative impacts of the proposed exploration activities on the EPL 8665 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. This is to ensure that all potential impacts identified in this study and other impacts that might arise during the exploration activities are properly addressed on time.

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 exploration activities.

## **10. Recommendations**

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Therefore, it is recommended that the mineral exploration activities on the project site 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 exploration activities 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.

- 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 to private property such as private farms from the landowners.
- The exploration 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.

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