



ENVIRONMENTAL MANAGEMENT PLAN FOR EXCLUSIVE PROSPECTIVE LICENSE (EPL)

KUNENE REGION

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LIST OF ABBREVIATIONS

EPL: Exclusive Prospecting License

MEFT: Ministry of Environment Forestry and Tourism

ECO: Environmental Control Officer

EMP: Environmental Management Plan

MFO: Manager Field Operations

m³/day: Cubic metres per day

HSE: Health Safety Environment

PPE: Personal Protective Equipment

1. SITE LOCATION

This Environmental Management Plan (EMP) has been prepared for the proposed exploration activities for base and rare metals, industrial minerals, and precious metals on Exclusive Prospective Licence (EPL) 7304 in Opuwo, Kunene Region, Namibia. The EPL is located approximately 27 km from Opuwo town, and it covers an area of approximately 19 132 hectares. The site can be accessed via the D3720 district road that connects Opuwo town to Etoto village/settlement. The licence lies within the Ombombo conservancy and there is no knowledge of any particular environmental sensitivity in the area.

2. OVERVIEW OF THE EMP

Earth Environmental Services (EES) has prepared this document as part of the EIA report which was conducted in terms of the Environmental Assessment for the exploration of for base and rare metals, industrial minerals, and precious metals on Exclusive Prospecting License (EPL) 7304. The content thereof has been designed as stipulated by the Regulations of the Environmental Management Act, 2007 (Act No 7 of 2007). The aim is to provide management measures to address the environment effects that have been identified in the EIA report and to give possible mitigation measures/recommendations to address these effects. It is essential for personnel involved on the ground to be fully aware of the possible environmental issues and the means to avoid or minimize the potential impacts of activities on site.

Furthermore, Namex Minerals fully understands the legal and policy requirements as holder and operator of the EPL. Impacts identified in the EIA form the basis of a set of environmental specifications that will be implemented on site. These environmental specifications form the basis for an agreement between the company and Ministry of Environment, Forestry and Tourism (MEFT) and these specifications become binding on the exploration company.

3. ENVIRONMENTAL MANAGEMENT PRINCIPLES

NamEx Minerals (Pty) Ltd will ensure that all parties involved in the project follow company aims as listed as follows:

- 1) **All personnel will be required to conduct activities in a manner that is environmentally and socially friendly. This includes all consultants, contractors, and sub-contractors, transporters, guests and anyone entering the EPL area in connection with the 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 surrounding settlements and other stakeholders.
- 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 minimise environmental impacts;
 - Minimize air, water, and soil pollution; and
 - Conserve Biodiversity.

The following principles need to be maintained in order to attain the purpose of the project:

a) Commitment and Accountability

Company senior executives and line managers will be held responsible and accountable for:

- Health and safety of site personnel while on duty, including travelling to and from site in company vehicles: and,
- Environmental impacts caused by exploration activities or by personnel engaged in the exploration activities.

b) Competence

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

c) Risk Assessment, Prevention and Control

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

d) 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.

e) *Stakeholder Consultation*

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

f) *Continual Improvement*

Through continual evaluation, reports, and innovation, seek to improve performance with regard to social health and well-being as well as environmental management throughout the lifespan of the project.

g) *Financial Provisions for Exploration*

In line with the internationally recognised “polluter pays principle” the company will make the necessary financial provision for compliance with the EMP.

4. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT

4.1. Communication between Parties

Emphasis will be put towards open communication between all parties, in order to reach a proactive approach towards potential environmental issues deriving from the project. This approach should guarantee that environmental impacts are anticipated and prevented, or minimised, rather than adopting a negative “policing” approach after negative impacts have already occurred.

The importance of a proactive approach cannot be overemphasised, particularly in relation to preventing unnecessary tracks, and damage to vegetation (i.e. protected and endemic species) as these impacts cannot easily be remedied.

4.2. The Exploration Company

The company is ultimately responsible for all stages of the project and the impacts resulting from those activities.

The responsible persons will be the company’s Environmental Control Officer (ECO) and Managing Director to ensure that:

- The EMP and its environmental specifications are included in contractual documents and it is required that contractors, and subcontractors, consultants etc. do meet the EMP requirements;
- The company and all its subcontractors, consultants etc. comply with all Namibian legislation and policies and any relevant International Conventions;
- Compliance with the environmental specifications are enforced on a day-to-day basis;
- Environmental audits are conducted periodically by a suitably qualified ECO to confirm that the environmental requirements are properly understood and effectively implemented;
- Sufficient budget is provided to implement those measures that have cost implications;
- The Site Manager must commission tree surveys well in advance of planned road construction or drill pad preparation so that the necessary site visits by forestry personnel and forestry permits are acquired; and,
- Open and effective communication is maintained between all parties concerning environmental management on the project.

4.3. Site Managers

Day-to-day responsibility for environmental management will be assigned to the ECO and Manager Field Operations (MFO) for the duration of all exploration activities to:

- Be familiar with the contents of the EMP and applicable sections of the EIA and the measures recommended therein;
- Monitor compliance with the environmental specifications on a daily basis and enforce the environmental compliance on site by communicating the ECO’s directions to all personnel involved;
- In the event of any infringements leading to environmental damage, personnel need to consult with the ECO and seek advice on any remedial measures to limit or rectify the damage;
- Maintain a record (photographic and written) of “before-and-after” conditions on site;

- Facilitate communication between all role players in the interests of effective environmental management; and,
- Plan and mark out new access routes in advance and arrange for plant surveys by a suitably qualified person so that forest permits can be applied for.

4.4. Environmental Control Officer (ECO)

NameX Minerals (Pty) Ltd must appoint a suitably qualified ECO who is responsible to:

- Undertake environmental audits of overall compliance with the environmental specifications. This should be done at least bi-annually for the exploration area,
- Submit a site inspection report to the Managing Director and MFO;
- Advise the MFO on interpretation and implementation of the environmental specifications as required; and,
- Make recommendations for remedial action in cases of non-compliance with the environmental specifications.
- The report should be submitted to the MEFT periodically at the time interval stipulated by law.

4.5. Drilling / Exploration Contractors

The drilling / exploration contractors will have the responsibility to:

- Familiarize themselves with the requirements of the EMP and comply with the environmental specifications within;
- Notify the ECO through the MFO timeously in advance of any actions that might have significant negative impacts. Mitigatory measures should be discussed and implemented before negative impacts arise;
- Conduct or arrange for environmental training for employees and sub-contractors;
- Undertake rehabilitation measures where required by the EMP. As far as possible, rehabilitation measures should be carried out progressively and not left till the end of the project.

5. ENVIRONMENTAL SPECIFICATIONS

5.1. Compliance with the Environmental Specifications

The exploration will be conducted in an environmentally and socially responsible manner. The contractor and all personnel on site will comply with the environmental specifications contained in this section.

5.2. Training of Site Personnel and Contractors

All site personnel and site contractors will receive the training to equip them with the necessary knowledge to comply with the environmental specifications. The MFO will ensure that an appropriate level of training is provided at all levels of site personnel.

5.3. Stakeholder Relations

All site personnel will maintain good relations with the land owners and members of the public. Any complaints received by the ECO will be addressed.

5.4. Permits

Water abstraction permits will be required for any boreholes that are to be used for abstracting water for drilling or exploration camp purposes.

Removal or relocation of rare and endangered plants will require a permit from Directorate of Forestry.

5.5. Site Camp

Establishment of field camps should be planned and agreed upon with the local authorities. The conditions of land use should be stipulated in an agreement between the parties.

Toilets should be established near operational and drill sites and regularly serviced by the company. All site staff will be instructed to use the toilets provided and not to defecate in the veld or riverbeds.

5.6. Waste Management

The entire EPL area needs to be kept clean, neat and tidy to the satisfaction of the MFO and ECO. The contractor will provide bins at the work sites and will be responsible for the collection and containment of daily refuse and waste generated by his staff. Bins will be secured in such a way that wind cannot remove papers and plastics. Bins will also be secured against animals around the vicinity. No waste will be buried on site. All waste will regularly be removed to an approved waste disposal facility.

5.7. Fuel, Oils and other Hazardous Substances

All containers of fuel, oil and any other hazardous substances will be kept sealed, and clearly labelled for identification.

Tanks for fuels, oils and any other hazardous substances need to be banded in an adequate manner to contain any possible spills.

Toxic substances will not be allowed to soak into the ground.

If any spills occur, the contaminated soil will be removed to the nearest hazardous waste disposal site.

5.8. Road Safety

The gravel access roads can be dangerous at times due to dust from passing vehicles, poor camber, patches of loose sand, careless drivers and other external factors. All drivers must be aware of these hazards and take precautions to avoid them. Such precautions will include, but not be limited to:

- Complying with speed limits;
- Reducing speed considerably when visibility is poor;
- Being wary of other vehicles – mindful of the fact that tourists are not expecting heavy vehicles or vehicles travelling at high speed;
- Travelling with lights on even in daylight;
- Slowing down for animals and birds on the road; and,
- Being courteous to other road users and allowing faster vehicles to pass safely – taking into account reduced visibility due to dust.

5.9. Access Tracks

No new tracks will be made unless there are no pre-existing tracks, and then only after the ECO has cleared the new road establishment.

The selected access and site roads will be clearly marked. A single road only will be used to and from each destination. Turning points for vehicles will also be pre-selected and marked. Particular care will be taken to avoid damage to plants.

Any elevated sites, or sites away from existing tracks, will be accessed on foot rather than by a vehicle. Tyre pressures will be kept as low as is compatible with safety and tyre-wear considerations. Recreational driving by exploration personnel is not permitted within the EPL.

5.10. Conservation of biodiversity

Damage to all plants species will be avoided wherever possible. Plants are generally of high conservation importance.

A vegetation survey conducted by a suitable qualified person prior to construction of roads and drill pads must be undertaken. The survey report must be submitted to the forestry department in Opuwo together with the plans to clear areas. A forestry permit is requested and a site visit by the forester is mandatory prior to issuance.

Sensitive areas must be avoided or excluded. Drill pads must be located few metres from the adjacent sensitive plant population barricaded for the duration of the drilling programme to prevent accidental damage.

5.11. Fire Prevention

After good rains, there can be enough grass to pose a risk of veld fires in dry grasslands. No fires are to be left unattended.

5.12. Borehole Water & Data Collection

Any boreholes made for water abstraction will comply with the permitting requirements of the Ministry of Water Affairs and Forestry if applicable.

Abstraction will be managed at rates that do not exceed the sustainable yield of the borehole.

Baseline data on groundwater will be needed if mining proceeds at a later stage. Therefore, to provide baseline data on groundwater a record needs to be kept of the following parameters for each water abstraction borehole:

- Co-ordinates of the borehole;
- Total volume of water abstracted (m³/day);
- Water level (metres below surface) before pumping each day, and immediately after pumping is stopped; and,
- To test water quality, a water sample of 1 litre should be taken after pumping for a few hours. This procedure is only required once or twice during the exploration period. The sample(s) should be sent to NamWater for analysis, and the results kept on record.

5.13. Wildlife Poaching

NB: It is an offence to poach wildlife.

No animal or bird is to be captured, killed or harmed in any way. Anyone caught violating this law will face suspension from the project, and could be liable for prosecution. In a likewise manner, domestic livestock on farms may also not be harmed.

5.14. Archaeological Sites

All archaeological remains are protected under the National Heritage Act (2004) and are not to be destroyed, disturbed or removed. The Act also requires that any archaeological finds, be reported to the Heritage Council Windhoek (Tel. 061-244375). The same applies to rock art sites.

The ECO will be notified without delay of any archaeological finds.

5.15. Health and Safety

All company personnel will receive a detailed induction upon joining the project and on a regular basis thereafter.

Dust: All staff will receive dust masks to prevent inhalation of potentially radioactive dust while carrying out any dust-producing activities associated with working with mineral ore. Eating, drinking and smoking while working with any materials that may contain radioactive or hazardous substances is forbidden. Good personal hygiene is encouraged (e.g. washing hands before eating) to prevent ingestion of potentially hazardous or radioactive materials.

Snakes & Scorpions: A number of poisonous snake and scorpion species may occur in the area. Therefore, precautions are required which include: -

- Exercising caution when picking up rocks or equipment from the ground;
- Looking at the ground when walking; and,

- Wearing closed shoes and not walking barefoot.

Bees: Bee stings are potentially dangerous to persons who are allergic to them. Bees are attracted to water, so water / liquid should not be left standing.

In case of emergency Aspivenin (suction syringe) is permanently available at all work stations for the first aid treatment of snake bites, scorpion stings and bee stings. Antihistamine tablets should also be available for the first aid treatment of allergic reactions to bee stings.

5.16. Work Stoppage

The MFO will have the right to order work to stop in the event of environmental specification infringements which could result in damage to plants, wildlife or personnel. Work will continue once the situation is rectified and brought to a state of compliance.

In the event of such work stoppage, the Contractor will not be entitled to claim for delays or standing time.

5.17. Compliance Monitoring

During exploration, the company ECO will conduct site compliance inspections at least once a month. After each inspection the ECO will compile an EMP compliance report for regular submission to the MFO and biannually to the MEFT.

6. SUMMARY ENVIRONMENTAL MANAGEMENT PLAN ASPECTS (QUICK CHECKLIST)

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES	MONITORING / ACTION & METHODS	RESPONSIBILITIES	RESOURCES REQUIRED FOR IMPLEMENTATION
ECOLOGY	<ul style="list-style-type: none"> - No killing of animals - Avoid nesting birds - Where possible no destruction of plants - Avoid highly sensitive environments or minimise footprint in environmental high priority areas - Stick to existing tracks - All waste and scrap to be removed - Rehabilitate sites where necessary. 	<ul style="list-style-type: none"> - Awareness training regarding the sensitive nature of the project area must be provided to all staff. - Photograph before and after exploration activities. - Acquire the necessary permits to operate, clear vegetation 	<ul style="list-style-type: none"> - Site manager / MFO, ECO/HSE (Health Safety Environment) Officer, team leaders, all workers 	<ul style="list-style-type: none"> - Taxa checklists and mapped conservation areas. - Permits for bush clearing for roads and drill pads.
DUST & NOISE	<ul style="list-style-type: none"> - Implement dust suppression measures - Wear appropriate PPE - Maintenance of machinery to reduce noise 	<ul style="list-style-type: none"> - Report on health of personnel - Scheduled maintenance reported 	<ul style="list-style-type: none"> - Site manager / MFO 	<ul style="list-style-type: none"> - Equipment (incl. PPE) and tools
WATER CONSUMPTION	<ul style="list-style-type: none"> - Minimize use and loss - Check container piping and taps regularly for leakage 	<ul style="list-style-type: none"> - Awareness training - Periodic inspections by supervisors - Monitor expenses 	<ul style="list-style-type: none"> - All workforce and management 	<ul style="list-style-type: none"> - Abstraction permit if necessary
LAND USE	<ul style="list-style-type: none"> - Awareness of proximity to any tourist attractions or homesteads, camps, watering points - Minimize visual impact 	<ul style="list-style-type: none"> - Awareness training - Periodic inspections by superiors - Complaints register to be kept 	<ul style="list-style-type: none"> - All workforce and management 	<ul style="list-style-type: none"> - Funds to conduct a cleaning up program in the area (rehabilitation)

	<ul style="list-style-type: none"> - Avoid conflict with other land users 	<ul style="list-style-type: none"> - Ongoing consultation with landowners 		
WASTE	<ul style="list-style-type: none"> - Removal of litter - Careful use and storage of chemicals - Oil adsorbing materials available in workshop 	<ul style="list-style-type: none"> - Awareness training - Periodic inspections by superiors - Implementation of cleaning up program 	<ul style="list-style-type: none"> - All workforce and management 	<ul style="list-style-type: none"> - Funds set up and implement training courses on cleaning up spills - Funds to conduct a cleaning up program in the area
FUEL STORAGE AND POTENTIAL POLLUTION	<ul style="list-style-type: none"> - Fuel storage facility erected on site shall comply with specification for storage and handling of petroleum products; - Tanks shall be bunted, allowing sumps for containment of spillage 	<ul style="list-style-type: none"> - Awareness training - Periodic inspections by superiors 	<ul style="list-style-type: none"> - Site manager / MFO 	<ul style="list-style-type: none"> - The company will provide for safe fuel storage and handling at an approved maintenance site. - Temporary customer installation certificate from MME
WORKERS CONDUCT	<ul style="list-style-type: none"> - Training - Fines/penalties for lack of compliance 	<ul style="list-style-type: none"> - Constant monitoring to ensure compliance 	<ul style="list-style-type: none"> - Team leaders and MFO 	<ul style="list-style-type: none"> - Training manual and time set aside for training - Procedures Manual for drilling.
HEALTH & SAFETY	<ul style="list-style-type: none"> - Follow procedures - Wear correct PPE 	<ul style="list-style-type: none"> - ECO/HSE officer to check that procedures are followed - Compliancy reports submitted 	<ul style="list-style-type: none"> - ECO/HSE Officers & site manager / MFO 	<ul style="list-style-type: none"> - Emergency Response Plans, First Aid kits and first aid trained personnel.