ENVIRONMENTAL MANAGEMENT PLAN (EMP):

FOR

THE PROPOSED EXPLORATION ACTIVITIES OF BASE & RARE METALS, DIMESION STONE, INDUSTRIAL MINERALS, AND PRECIOUS METALS ON EXCLUSIVE PROSPECTING LICENSE (EPL) NO. 8014, LOCATED SOUTH OF USAKOS, ERONGO REGION, NAMIBIA.

Document Version: DRAFT

ECC Application Number:

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1 INTRODUCTION

1.1 Project Background

Excel Dynamic Solutions (Pty) Ltd (the consultant) has been appointed by Ueriheka Roswitha Dealmanda (the Proponent) to act on their behalf in applying for the Environmental Clearance Certificate (ECC) for the proposed exploration activities on Exclusive Prospecting License (EPL) 8014. The target commodities for the proposed prospecting and exploration activities are Base and Rare Metals, Dimension stones, Industrial Minerals, and Precious Metals. The 14841.0652 Hectares (ha) EPL is about 20 km South of Usakos in the Erongo Region.The EPL covers (overlies) in Farms such as Abbabis; Farm No.70, Etusis; Farm No.75 and Ubib; Farm No. 76 (Figure 1).

This document has been prepared as a legal requirement by Section 8 of the EMA, No. 7 of 2007 and its 2012 EIA regulations. The compilation of this EMP is also one of the outputs required of the Environmental Consultant (Environmental Assessment Practitioner (EAP), by The Proponent. It is required of the Environmental Consultant to comply with the EMA and provide for the following:

- Prepare a detailed Environmental Management Plan that can be used as guide to monitor compliance to the recommendations made in the EIA and to assist in managing and monitoring activities throughout the operation and maintenance of the proposed exploration and prospecting activities on the EPL.
- The Environmental Consultant must clarify in the EMP, the roles and responsibilities of the Proponent, the contractors and any other identified stakeholders.

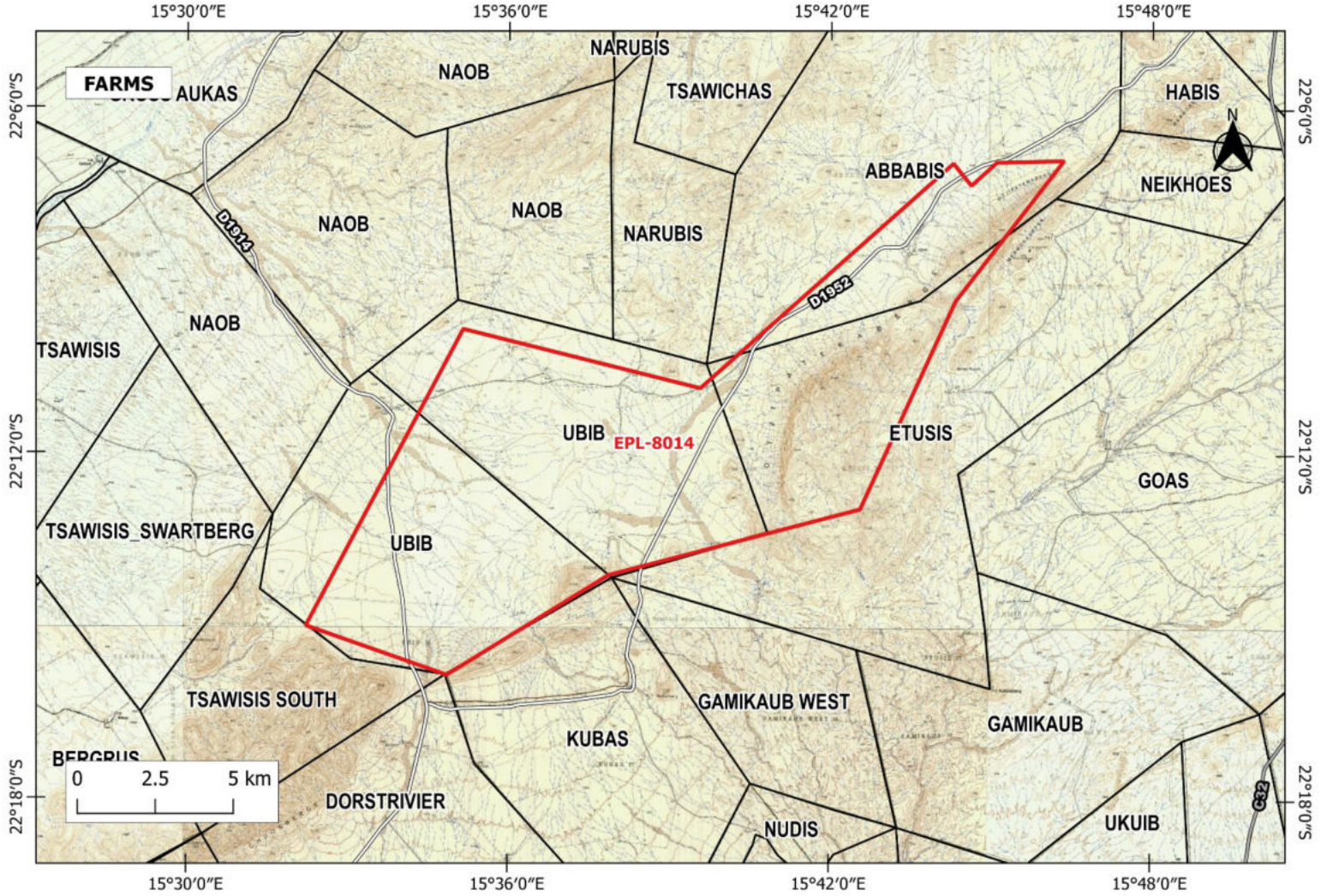

Figure 1: Farm map around EPL – 8014

1.2 Appointed Environmental Consultant and ECC Application

To ensure that the proposed activity is compliant with the national environmental legislation the project Proponent appointed an independent environmental consultant, Excel Dynamic Solutions (Pty) Ltd, to undertake the required Environmental Assessment (EA) process (which includes the compilation of this EMP) and apply for the ECC on their behalf.

The ECC application is compiled and submitted to the Competent Authority (Ministry of Environment, Forestry and Tourism. Upon submission of an Environmental Scoping Assessment Report and Draft Environmental Management Plan (EMP), an ECC for the proposed project will be considered by the Environmental Commissioner at the MEFT's Department of Environmental Affairs and Forestry (DEAF).

1.3 The Aim of the Environmental Management Plan (EMP)

Regulation 8(j) of the EIA Regulations (2012) requires that a draft Environmental Management Plan (EMP) shall be included as part of the Environmental Assessment (EA) scoping report. A 'Management Plan' is defined as:

"…a plan that describes how activities that may have significant environments effects on the environment are to be mitigated, controlled and monitored."

An EMP is one of the most important outputs of the EA, as it synthesizes all the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. It provides a link between the impacts identified in the EA process and the required mitigation measures to be implemented during operation. It is important to note that an EMP is a statutory document and a person who contravenes the provisions of this EMP may face imprisonment and/or a fine. This EMP is a living document and can be amended to adapt to address project changes and/or environmental conditions and feedback from compliance monitoring.

The purpose of this document is, therefore, to guide environmental management throughout the different phases of the proposed exploration activities, namely: operation and maintenance phase, and decommissioning phase:

- **Operation and Maintenance** - This is the phase where The Proponent carries out exploration and prospecting for the relevant commodity groups and undertake related activities on site. It is also the phase during which maintenance of the area, equipment and machinery is done by The Proponent.

- **Decommissioning and Rehabilitation** – This is the phase during which the exploration activities on the EPL cease. The decommissioning of the exploration operations may be considered as a result of poor exploration results or declining in the focus commodity market price. Before the decommissioning phase, The Proponent will need to put site rehabilitation measures in place.

Environmental Monitoring Requirements: In order to support and ensure that the proposed mitigation measures are achieving the desired results, a monitoring plan must be implemented alongside the mitigation plan. This draft EMP will be used by The Proponent, employees and/or contractors to provide management measures to be undertaken during the exploration and prospecting activities, to address the environmental impacts identified in the scoping report and ensure that the impacts on the environment are avoided, or limited if they cannot be avoided completely.

2 LEGAL OBLIGATIONS GOVERNING THE PROPOSED ACTIVITIES

Upon issuance of the ECC and obtaining any other necessary and required documentation, the Proponent will prepare for the administrative and technical aspects needed for the actual prospecting and exploration works on the EPL.

The prospecting and exploration and associated activities will be required to adhere to certain local, regional, national as well as international legal framework (as detailed in the Scoping Report). The legal requirements provided herein are these in terms of permits or licensing that the Proponent will need to obtain prior to the site works and or renewal of permits throughout the exploration phase. These legal requirements are provided under **Table 1**.

Table 1: Applicable and required permits/authorizations/licenses for the proposed prospecting and exploration activities

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project and Contact Institution/Person
Environmental Management Act (EMA) No. 7 of 2007	The Act requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). The Act details principles which are to guide all EAs.	The EMA and its regulations should inform and guide this ESA process. Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue.
Environmental Impact Assessment (EIA) Regulations Government Notice 28-30 (Government Gazette 4878))	Details requirements for public consultation within a given environmental assessment process (Government Notice 30 Section 21). Details the requirements for what should be included in a Scoping Report (Government Notice 30 Section 8) and an Assessment Report (Government Notice 30 Section 15).	Contact details at the Department of Environmental Affairs and Forestry (DEAF), Ministry of Environment, Forestry and Tourism (MEFT) **Office of the Environmental Commissioner** **Tel: +264 (0) 61 284 2701**
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	Section 48 (3): To enable the Minister to consider any application referred to in section 47 the Minister may (b) require the person concerned by notice in writing to (i) carry out or cause to be carried out such environmental impact studies as may be specified in the notice. Section 54(2): details provisions pertaining to the decommissioning or abandonment of a mine.	The Proponent should ensure that all necessary permits/authorization for the EPL are obtained from the Ministry of Mines and Energy (MME). **Office of the Mining Commissioner** **Tel: +264 61 284 8167**
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that "No person shall possess or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"	The Proponent should obtain the necessary authorisation form the MME for the storage of fuel on-site. **Ministry of Mines and Energy: Acting Director – Petroleum Affairs** **Tel: +264 61 284 8291**

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project and Contact Institution/Person
Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.	The protection of employees and contractors' labour rights and occupational health safety
Forestry Act 12 of 2001, Amended Act 13 of 2005	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22 (1)). The Act prohibits the removal of and transport of various protected plant species.	Should there be protected plant species, which are known to occur within the actual project site footprint, and require to be removed, a Permit should be obtained from the nearest Forestry Office (MEFT) prior to removing them. Contact Details at MEFT (Forestry Division Head Office), **Director of Forestry:** **Tel: +264 (0) 61 208 7320**
National Heritage Act (Act No. 27 of 2004)	The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration, or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Section 51 (3) sets out the requirements for impact assessment. Should any objects of heritage significance be identified during the site clearing and excavations, the	The Proponent is advised to make an application to the National Heritage Council for a Consent to allow Detailed Archaeological and Heritage Assessment Study of the EPL area. Contact: The Director of the National Heritage Council of Namibia (NHC): OR Regional Heritage Officers at the NHC **Tel: +264 (0) 61 301 903**

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project and Contact Institution/Person
	work must cease immediately in the affected sites and the necessary steps taken to seek authorisation from the Council.	
The National Monuments Act No. 28 of 1969	The Act enables the proclamation of national monuments and protects archaeological sites.	
The Road Traffic and Transport Act No. 52 of 1999 and its 2001 Regulations	Provides for the control of traffic on public road and the regulations pertaining to road transport, including the licensing of vehicles and drivers.	Roads Authority- specialist Road legislation), Tel: +264 (0) 61 284 7072

3 DRAFT EMP IMPLEMENTATION, ROLES & RESPONSIBILITIES

As the project Proponent, Ueriheka Roswitha Dealmanda is ultimately responsible for the implementation of the EMP. However, they may delegate this responsibility at any time, as they deem necessary during the project (usually an environmental control officer or safety, health, and environmental person). The roles and responsibilities of all the parties involved in the effective implementation of this EMP are as follows:

3.1 Competent Environmental Monitoring Authorities (DEAF and Others)

The Department of Environmental Affairs and Forestry (DEAF) is responsible for enforcing compliance with the EMA, its regulations and full implementation of this EMP. The authority is also responsible for reviewing bi-annual audit reports submitted by the Proponent and grant ECC renewal after every 3 years following an environmental audit.

Further Monitoring institutions include but not limited to:

- **The National Heritage Council of Namibia:** for archaeological and heritage resources (sites and objects).
- **Ministry of Mines and Energy:** for compliance to the relevant prospecting and exploration requirements, including petroleum products' storage and handling on site.

3.2 The Exploration Manager (or the Proponent)

This Manager, *who may also be the Proponent*, is responsible for the following:

- Development and management of schedules for daily activities in compliance with the EMP.
- Managing/overseeing the implementation of this EMP and updating and maintaining it when necessary.
- Ensure that relevant commitments contained in the EMP Action Plans are adhered to.
- Ensure the relevant staff is trained in procedures entailed in their duties.
- Through consultations and cooperation with the ECO/SHE officer, issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site.
- Setting up and managing the schedule for the day-to-day activities.
- Ensuring all incidents are recorded and documented.
- Undertaking an annual review of the EMP and amending the document when necessary.

3.3 Safety, Health and Environmental (SHE) or Environmental Control Officer (ECO)

The SHE or ECO (as appropriate) is responsible for ensuring that project activities are completed on time, efficiently and sustainably. The ECO/SHE Officer's duties and responsibilities will include:

- The SHE Officer will be responsible for the following activities:
- Planning and carrying out site inductions to the workers on-site and visitors to the worksite(s).
- Ensuring compliance with relevant environmental and related authorisations and license conditions.
- Ensure that the requirements of the EMP are carried out during applicable activities throughout the project life span.
- Monitor the overall implementation of the EMP.
- Identifying and appointing of appropriately qualified specialists (were necessary) to undertake the programme in a timeous manner and to acceptable standards.

3.4 Public Relation Officer (PRO)

The Public Relation Officer is responsible for the following tasks:

- Liaison between the affected farmers (property owners) and/or occupiers of land as well as other stakeholders, and the Proponent.
- Ensure effective communication with stakeholders (affected farmers or landowners or occupiers of land), media (if necessary) and the public.
- Managing public relations issues.
- Preparing and submitting public relations reports, if required.
- Collaborating with personnel and maintaining project-related open communication among personnel.
- Cooperate with all relevant interested and affected parties/stakeholders.

3.5 Archaeology: Chance Finds Procedure (CFP) Implementation Roles

The following personnel have been assigned responsibilities as per the Chance Finds Procedure **(Appendix 1)** as per the provided Archaeological and Heritage Assessment Studies conducted for the proposed activities:

A. Operator

To exercise due caution if archaeological remains are found

B. Foreman

To secure site and advise management timeously

C. Superintendent

To determine safe working boundary and request inspection

D. Archaeologist

To inspect, identify, advice management, and recover remains.

The Proponent should assess these commitments in detail and should acknowledge their obligation to the specific management actions detailed in the Tables of the following sections.

4 ENVIRONMENTAL MANAGEMENT & MITIGATION ACTION PLANS

The environmental management and mitigations measures (management plan actions) provided to the potential adverse impacts associated with the proposed project and its activities are presented under this chapter. The aim of these plan actions is to avoid these potential impacts where possible, and where avoidance is impossible, measures are provided to reduce the impacts' significance (as presented under the impacts' assessment chapter of the Scoping Report).

4.1 Key potential Negative/ (Adverse) Impacts

The key potential adverse impacts for which the measures have been developed are as follows:

- Disturbance to grazing land
- Land degradation and Biodiversity Loss
- Generation of dust
- Impact on water resources
- Pollution of soil & water resources
- Waste Generation
- Occupational health & safety risks

- Vehicular Traffic Use & Safety
- Noise & Vibrations
- Disturbance to archaeological & heritage resources
- Impacts on local roads
- Social Nuisance: local property intrusion & disturbance
- Impacts associated with closure and decommissioning of exploration works

4.2 The Management and Mitigation of Potential Key Negative Impacts

The management and mitigation measures (action plans) for the potential adverse impacts are presented in **Table 2** for the planning, and prospecting and exploration (operational and maintenance) phases.

The required management and mitigation plan actions have been presented under **Table 2** in terms of (a) Environmental aspect and issues for which management actions are required, (b) proposed impact mitigation measures, (c) key performance indicator (KPI) for monitoring success levels of management actions, (d) responsible person(s) for implementing the proposed management actions, (e) resources required for implementing management actions and monitoring and (f) implementation timeframes for the proposed management actions.

Table 2: Management and Mitigation Measures for the Planning, Prospecting & Exploration Phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
PLANNING PHASE						
EMP implementation and training	Lack of EMP awareness and implications thereof	-A Comprehensive Health and Safety Plan for the project activities should be compiled. This will include all the necessary health, safety, and environmental considerations applicable to respective works on sites. -An EMP non-compliance penalty system should be implemented on site. -The Proponent should appoint an SHE Officer to be responsible for managing the EMP implementation and monitoring.	-All required Plans and systems are compiled and in place. A SHE officer or Environmental control Officer (ECO) is appointed.	-Proponent	-Records of EMP implementation Plans and Systems	Pre-exploration (project activities)
Authorizations	Lack of Agreements, Permits/ Licenses	-All the required agreements and licenses or permits should be applied for and signed, respectively before commencement of work on the EPL, or as required. -The permits, agreements referred to herein include land access & use (by land/farm or property owners or representatives of the	-Applicable permits and licenses to obtained from relevant authorities and kept on site for records keeping and future inspections -Agreements signed and obtained from landowners or	-Proponent	-Permits and Licenses	Prior to exploration works

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		occupiers of land) for exploration by the landowners/custodian, as well as petroleum storage permits from Ministry of Mines and Energy (MME).	occupiers of land on time, minimum of 2 months prior to planned commencement date of onsite works -Onsite petroleum storage permits obtained		Signed Land Access and Use Agreements	
Communication between the Proponent and landowners or occupiers of land	Lack of communication (proper liaison) between farmers and Proponent with regards to land use	-The Proponent should appoint a Public Relation Officer (PRO) to liaise with the landowner and or custodian -The PRO should be introduced to the farm/landowners and his or her contact details provided to them prior to undertaking activities for easy communication during the exploration activities. -A clear communication procedure/plan which should include a grievance mechanism should be compiled	-A PRO is appointed -Ongoing Stakeholders' and Public Engagement & Consultation throughout the project cycles, when and as required	-Proponent	-Complaint's logbook -PRO contact details to be provided to the affected farmers/landowners -Records of Stakeholders' and Public Consultations	PRO appointment (Prior to project activities) and their responsibilities throughout the rest of the project phases
Employment	Creation of employment opportunities to the locals	-Preference of local people for employment for jobs should be prioritised, i.e., employment of non-residents should be justified.	-Number of locals employed for exploration activities -Consultation with the constituency councillor's office and	-Proponent in collaboration with the Exploration Manager (if necessary)	-Record of employees -Constituency Council office to assist in identifying unemployed people	Pre-project activities and when necessary, throughout .

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		-Equal opportunity should be provided for both men and women, when and where possible.	local development committee -Notification via the Constituency Office			
Specialised procurement of services	Exploration contractors and other services.	All services related to exploration activities such as trenching/pitting and drilling that the Proponent may need, preference should be given to local providers of such services. If unavailable locally, the services may be sought regionally (Erongo Region), nationally, and lastly, internationally.	-Number of hired contractors	Proponent Site/Project Manager	-Record of hired or contracted companies or services providers	Pre-project activities and when necessary, throughout

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Corporate Social Responsibility (CSR)	Social commitment failures	-Consider providing and or donating services such as water supply boreholes to the community they are operating in through the identification of people in need. This can be done by drilling a water borehole for the communities. -Infrastructure should be donated to the community through the Regional Council post-exploration for distribution/allocation to the needy communities. -The project owner (Proponent) should fulfil their promises of CSR, upon proper consultation with the local development committees to establish what the community really needs.	-Visible commitment to ensure that the local community is benefitting from the project	-Proponent	-Office of the Constituency Councillor -Local Development Committee to monitor implementation of the CSR	Throughout the prospecting & exploration phase
PROSPECTING AND EXPLORATION PHASE						

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
EMP implementation and training	Lack of EMP awareness and implications thereof	-EMP trainings should be provided to all new workers on site and to old workers (as a refresher) every 6 months. -All site personnel should be aware of necessary health, safety, and environmental considerations applicable to their respective work -The implementation of this EMP should be monitored. -The site should be inspected, and a compliance audit done throughout **the project activities, monthly and compliance monitoring reports submitted to the DEAF bi-annually.** -An EMP non-compliance penalty system should be implemented on site.	-Compliance monitoring conducted monthly for the exploration phase and should be recorded -EMP Refresher training for employees/workers every 6 months -Timely renewal of the Environmental Clearance Certificate (ECC) every 3 years	-SHE Officer	Bi-annual Environmental Audit reports Record the EMP training conducted	Throughout the operation phase and as required
Pastoral land	Impact on grazing areas	-Any unnecessary removal or destruction of grazing land, due to exploration activities should be avoided. -Vegetation found on the site, but not in the targeted	-Little damage on grass cover and vegetation -Maximum effort implemented to curb	-Exploration Manager -SHE Officer	-None	Throughout the phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		exploration areas should not be removed but left to preserve biodiversity and grazing land. -Workers should refrain from driving off road and creating unnecessary tracks that may contribute to soil erosion and loss of grazing land. -Environmental awareness on the importance of the preservation of grazing land for local livestock should be provided to the workers	loss of grazing areas within the EPL			
Communication between the Proponent and other neighbouring land users and custodians	Lack of communication (proper liaison) between other land users and Proponent with regards to land use	The PRO should be introduced to and share communication contact details with the neighbouring land users to facilitate communication during the exploration activity. The Proponent should compile a clear communication procedure/plan which should include a grievance and response mechanism.	PRO is part of the project personnel. Ongoing Stakeholders' and Public Engagement & Consultation throughout the project cycles, when and as required	PRO	Complaint's logbook PRO contact details to be provided to the affected land users. Records of Stakeholders' and Public Consultations	Throughout the project activities

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Land use (physical soils)	Physical soil/land disturbance and loss of topsoil	-Overburden should be handled more efficiently during exploration works to avoid erosion when subjected erosional processes. -Prevent creation of huge piles of waste rocks by performing sequential backfilling, especially for drilling exploration. -Stockpiled topsoil and overburden waste rocks should be used to backfill the explored and disturbed site areas/spots. -Soils that are not within the intended and targeted footprints of the site areas should be left undisturbed and soil conservation implemented as far as possible. -Project vehicles/machinery should stick to access roads provide and or meant for the project operations but not to unnecessarily create further tracks on site by driving everywhere resulting in soil compaction	-No proliferation of informal vehicle tracks. -No new erosion gullies.	SHE Officer/ECO	-Complaint's logbook	Throughout the exploration phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Water resource	Over-abstraction (Water demand and availability)	Abstraction of water from local aquifers should be avoided at all costs by ensuring that part of the required water is sourced from the boreholes on nearest farms (through agreed purchase) and or augmented by carted water from areas with better supply. The Proponent should prioritize carting water from outside the project area and reach an agreement with relevant owners/officials to supply potable water (to augment the project water needs). Although water will not be abstracted from local aquifers, the Proponent should be water-use conscious and consider voluntary water use reduction by sticking to their proposed threshold volumes or less when possible. The Proponent should aim to use water efficiently, recycle and re-use where necessary and possible. Water reuse/recycling methods should be implemented as far as practicable for exploration	- Water supply agreements Proof/ recording/ quantification of water saving efforts.	Proponent Site/Project Manager	Water supplier Proponent Water storage tanks on site	Once off supply agreement Throughout the phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		activities. Water used to cool off operational equipment should be captured and used for the cleaning of project equipment, if possible. Water conservation awareness and saving measures training should be provided to all the project workers to promote water conservation and staff accountability.				
Soil and water resources	Soil and water resources pollution	Oil and wastewater spill control preventive measures should be in place on site to manage soil contamination, and prevent spills from reaching ground and surface water bodies. Some of the preventive measures that can be implemented include: (a) Identification of oil storage and use locations on site and allocate drip trays and polluted soil removal tools suitable for that specific surface (soil or hard rock cover) on the sites. (b) Maintain equipment and fuel storage tanks to ensure that they are in good condition thus preventing leaks and spills.	-No complaints of pollutants on the soils and eventually in the water due to exploration activities -No visible oil spills on the ground or contaminated/polluted spots.	-SHE Officer	-Complaint's logbook -Waste containers -Non-permeable material to cover the ground surface at areas where hydrocarbons and potential pollutants are utilized.	Throughout exploration phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		(a) The oil storage and use locations should be visually inspected for container or tank condition and spills. (b) Maintain a fully provisioned, easily accessed spill kit. Spill kits should be located throughout the active project sites contain the floor dry absorbent material and absorbent booms, pads, mats. These would be suitable for ground surface areas that are covered mainly by hard rocks. -All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures. -The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible. -Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC)				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		Plan training and mentor new workers as they get hired. -Exploration site areas where hydrocarbons will be utilized, the surface should be covered with an impermeable plastic liner (e.g., an HDPE liner), carefully placed to minimize risk of puncturing, to prevent any spillages from getting into direct contact with the soils and prevent eventual infiltration into the ground. -Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site. -In cases of accidental fuel or oil spills on the soils from site vehicles, machinery and equipment, the polluted soil should be removed immediately and put in a designate waste type container for later disposal as per the preceding bullet point. The removed polluted soil should either be completely disposed of or cleaned and returned to where it was taken from on site				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		or can be replaced with a cleaner soil. -Although fuel (diesel) required for exploration equipment will be stored in a tank mounted on a mobile trailer, drip trays must be readily available on this trailer and monitored to ensure that accidental fuel spills along the tank trailer path/route around the exploration sites are cleaned on time (soon after the spill has happened). -Polluted soil must be collected and transported away from the site to an approved and appropriately classified hazardous waste treatment facility. -Washing of equipment contaminated hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources. -Toilet water should be treated by discharging into chemical toilets and periodically emptied out before reaching capacity				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		and transported to a wastewater treatment facility.				
Biodiversity	Loss of Fauna and Flora	**Flora:** The Proponent should avoid unnecessary removal of vegetation, thus promoting a balance between biodiversity and their operations. Vegetation found on the site, but not in the targeted exploration area should not be removed but left to preserve biodiversity on the site. Movement of vehicle and machinery should be restricted to existing roads and tracks to prevent unnecessary damage to the vegetation. Onsite vegetation should not be cut, damaged, or used for any project related activities without prior approval from the Parks Division. Plants found along the exploration site, should not be removed. Therefore, care should be taken when prospecting and exploration activities are implemented	-Incident reports of illegal hunting of wildlife by the project crew/workers. -No complaints of livestock theft, snaring or killing of livestock and wildlife by the project personnel -No disturbance to unmarked areas. No complaints from locals regarding unauthorised vegetation removal or cutting down of trees	-SHE Officer	- Barricading tape (to indicate working areas) -Complaint's logbook	During site set up, and throughout the exploration phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		without destroying the site vegetation. Design access roads appropriately in a manner that disturbs minimal land areas as possible. Make use of the existing road network as much as possible and avoid off-road driving, to minimize onsite floral destruction. Vegetation clearing to be kept to a minimum. The vegetation of the site is largely low and open and therefore whole-sale vegetation clearing should only be applied where necessary and within the development footprint. Plants on sites should not be unnecessarily removed. Care should be taken when extracting mineral species without destroying the vegetation and its surrounding. Vegetation found on the site, but not in the targeted areas should not be removed but left to preserve biodiversity on the site.				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		No-go areas should be identified prior to operation to prevent disturbances in the current preserved ecosystems. Environmental awareness on the importance of floral biodiversity preservation should be provided to the workers. **Fauna:** -Workers should refrain from disturbing, killing or stealing domestic and wild animals and killing small soil and rock outcrops' species found on site. -Poaching (illegal hunting) of wildlife from the area is strictly prohibited. -Environmental awareness on the importance of biodiversity preservation should be provided to the workers.			-Anti-poaching unit of the Namibian Police Force -MEFT's Wildlife Protection Unit	
Land Use	Conflict between neighbouring land uses and exploration activities	Prospecting and exploration activities should not in any way hinder the existing land uses within the EPL area but rather promote co-existence throughout the operations while respecting other land uses.	Land access and use permits/authorizations. Compliance with conditions set within operational permits by	PRO Proponent SHE Officer/ECO	Proponent Relevant authorities (MEFT, MME, etc.)	Throughout the Operational phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		Project works should be limited to the active EPL sites only. The Proponent should ensure that their activities comply with the conditions set by the competent, regulatory, and affected authorities such that the proposed exploration activities do not severely impact the various existing land uses within and around the EPL.	relevant and affected authorities. Little to no complaints of significant interference from the neighbouring land users			
Illegal hunting	Illegal hunting of wildlife	No wildlife hunting is permitted. Site personnel should refrain from killing/poaching or intentionally disturbing wildlife, or any faunal species found on site and around the EPL.	Incident reports of illegal hunting of wildlife by the exploration crew.	SHE Officer	Complaint's logbook MEFT Parks' Division Anti-poaching Police Unit	During site set up, and throughout operational phase
Air Quality	Air quality (dust)	-Exploration vehicles should not drive at a speed more than 40 km/h to avoid dust generation around and within the site area. -The Proponent should ensure that the exploration schedule is limited to the given number of days of the week, and not every	-Dust suppression measures implemented -Visible efforts to curb dust	-Exploration Manager -SHE Officer	-Grievance logbook -Dust suppression water tanks	Throughout the phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		day. This will keep the vehicle-related dust level minimal in the area. -Dust control measures such as reasonable amount of water spray should be used on gravel roads and near exploration sites to suppress the dust that may be emanating from certain exploration areas on the EPL such as drilling, trenching sites. -Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers on site drilling areas, where they are exposed to dust. -The impact mitigation measures should be covered in the relevant farm access agreement as required by law on commercial farms. This should also apply to resettled/communal farms, if any. -Drilling and excavating equipment should be regularly maintained to ensure drilling and excavation efficiency and				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		so to reduce dust generation and harmful gaseous emissions.				
Littering and Waste management (General waste and sanitation)	Environmental pollution	-Workers should be sensitized to dispose of waste in a responsible manner and not to litter. -All domestic and general operational waste produced daily should be contained until such that time it will be transported to designated waste sites. -No waste may be buried or burned on site or anywhere else and no wastes left on the sites. -The exploration site should be equipped with separate waste bins for hazardous and general/domestic waste. -Hazardous waste, including emptied chemical containers should be safely stored on site where they cannot be accessed and used by uniformed locals for personal use. These containers can then be transported to the nearby approved hazardous waste	-A register of all waste generated on site is kept on site. -All waste disposal permits from relevant authorities are available on site. -No littering on and around the project site	-Proponent -Exploration Manager -SHE Officer	-Funds to acquire waste storage bins/ drums; and transport all waste from the site. -Waste storage containers	Throughout the phases.

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		sites for safe disposal. No waste should be improperly disposed of on site or in the surroundings, i.e., on unapproved waste sites. -Oil spills should be taken care of by removing and treating soils affected by the spill. -A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented. -Careful storage and handling of hydrocarbons on site is essential. -Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of in accordance with municipal wastewater discharge standards so that they do not contaminate surrounding soils and eventually groundwater. -An emergency plan should be available for major/minor spills at the site during operation activities (with consideration of air, groundwater, soil and surface water) and during the				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		transportation of the products(s) to the sites.				
	Wastewater generated by exploration workers living on-site.	-Washing of hydrocarbon contaminated equipment, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources. -Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest wastewater treatment facility. -Emptying of chemical toilets according to the manufacturer's specifications. -All wastewater and hydrocarbon substances and other potential pollutants associated with the project activities should be contained in designated containers on site and later disposed of at nearby approved waste sites in accordance with MAWLR's Water Environment Division standards on wastewater discharge into the environment.	-Adequate toilet facilities on site.	-Exploration Manager -SHE Officer	-Chemical toilets, waste treatment agents/chemicals -Wastewater discharge permits	At site setup and throughout exploration phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		This is to ensure that these hazardous substances do not infiltrate into the ground and affect the local groundwater quality.				
Noise	Noise	-Noise from project vehicles and equipment on the working sites of the EPL should be at acceptable levels. -Exploration hours should be restricted to between 08h00 and 17h00 to avoid noise and vibrations generated by exploration equipment and the movement of vehicles before or after hours, thus disturbing the tranquillity in the area during the night or early morning hours. -When operating the drilling machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise. -The transportation of exploration materials, equipment and machinery should be limited to once or	-Noise generating activities such as drilling limited to weekdays only. -PPE provided to workers operating noisy equipment and in noisy site areas.	-Exploration manager -SHE Officer	-Clearly written placards with operational hours in a day placed at one of the visible access roads to sites	Throughout the project phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		twice a week only, but not every day. -Target exploration sites that may be found to be within less than 1 km from the residences (farmhouses) should be avoided at all costs. This is done to preserve tranquillity of the residents.				
Health and Safety	Occupational & Community Health and Safety	-The Proponent should commit to and make provision for bi-annual full medical check-up for all the workers at site to monitor the impact of project related activities on them (workers). -As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs. -When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs,	-Compilation of Comprehensive Health and Safety Plan -Regular health screening of workers -Bi-annual health and safety audits done. -All onsite workers and visitors equipped with PPE.	-Exploration Manager -Proponent -SHE Officer	-Health and Safety Policies -Funds to acquire health and safety related equipment. and to pay for employee medical services -First Aid training for at least 1 personnel at each work site	

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		dust masks, safety glasses, etc. -Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible. -Drilled exploration boreholes that will no longer be in use or to be used later after being drilled should be properly marked for visibility and capped/closed off. -Ensure that after completion of exploration holes, drill cuttings are put back into the hole and the holes filled and levelled. -An emergency preparedness plan should be compiled, and all personnel appropriately trained. -Workers should not be allowed to drink alcohol prior to and during working hours nor allowed on site when under the influence of alcohol as this may lead to mishandling of equipment which results into injuries and other health and safety risks.				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		-The site to be equipped with "danger" or "cautionary" signs for any potential danger or risk area identified on site.				
Fires	Accidental fire outbreak	-Portable fire extinguishers should be provided on site. -No open fires to be created by project personnel. -Potential flammable areas and structures should be marked as such with clearly visible signage.	-No Fires recorded (due to presence of workers)	-Exploration Manager -SHE Officer	-Fire extinguishers (1 per vehicle) and 1 per working site	Throughout the phases
Archaeology and heritage	Accidental disturbance and destruction of archaeological or heritage objects and sites	-The management and mitigations or recommendation to minimize impact on archaeological and heritage resources **are not available, pending a Detailed/Comprehensive Specialist' Study**. The only provisional recommendation to the proposed Detailed Study hereto is that: The Proponent is advised to make an application to the National Heritage Council for a Consent to allow a Detailed Assessment of the area in relation to the proposed activity	-Preservation of all artefacts that are discovered around project area -Cessation of work upon discovery/unearthing of unknown objects	-Exploration Manager -SHE Officer -Archaeologist	-Technical Consultant (Archaeologist to help identify and advise on heritage object discovery) -Salvage equipment -Flag tapes -GPS (site marking)	-Archaeologist to be present on-site during excavations

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		believed to be an archaeological or heritage site.				
Social conflicts	Job seeking, and differing norms and cultures	-The Proponent should prioritize the employment of more local people, and only if necessary and due to lack of skills in the area, out-of-area people can be given some of the work. This is to avoid the influx of outsiders into the area for works that can be done the locals. -The locals to be employed during the project phases should be provided with the necessary training of skills required for the project to avoid bringing in many out-of-area employees. This way, skills development and transfer is ensured in the nearby communities. -no-resident workers that may be employed (due to their unique work skills) on site should be sensitized on the importance of respecting the local values and norms, so that they can co-live-in harmony with the local communities	-No complaints of property theft or damage related to project workers -More local workers who are familiar with the values, and way of living in the area	-Exploration Manager -SHE Officer	-Grievance logbook -Employment Code of Conduct	Throughout the phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		during the duration of their employment on site.				
	Property intrusion and disturbance	-The Proponent should inform their workers on the importance of respecting the locals' properties by not intruding or damage their homes, fences or snaring and killing their livestock. -Any workers or site employees that will be found guilty of intruding peoples 'privately owned properties should be called in for disciplinary hearing and/or dealt with as per their employer' (Proponent)'s code of employment conduct -Site workers should be advised to respect the community and local's private properties, values, and norms. -No worker should be allowed to wander in people's private yards or fences without permission. -Site workers are not allowed to kill or in any way disturb local livestock. -No worker should be allowed to, without permission cut down	-Project workers are educated on what is expected of them while on site in relation to the private and public properties -No complaints of damage to private or public properties by project workers or activities	-Exploration Manager -PRO -SHE Officer	-Anti-property intrusion or damage pamphlets or placards placed at every exploration site -Fines for any intentional damage or disturbance of private or public property	Throughout the phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		or damage trees belonging either the farm owner, the neighbouring farms or in the already scarce community vegetation.				
Vehicular Traffic	Traffic safety	-The transportation of exploration materials, equipment and machinery should be limited to once or twice a week only, but not every day to reduce the pressure on local roads. -The heavy truck loads should comply with the maximum allowed speed limit for respective vehicles while transporting materials and equipment/machinery on the public and access roads (40km/h). -The potential carted water to the site (from other source of water supply) should be done once or twice a week in container that can supply and store water for most of the week, thus reducing the number of water-carting trucks on the road daily. -Drivers of all project phases' vehicles should be in	-Site access road permits obtained, and requirements fulfilled -No complaints from members of the public regarding vehicular traffic issues related to the project -All personnel operating the project vehicles and machinery are appropriately licensed and possession of valid driving licenses. -The vehicles are driven at the recommended speed. -Demarcated areas for parking, offloading, and loading zones are on sites	-Exploration Manager -SHE Officer	-Vehicular traffic compliance to be included in the annual environmental audit reporting	Throughout the phases.

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		possession of valid and appropriate driving licenses and adhere to the road safety rules. -Drivers should drive slowly (40km/hour or less) and be on the lookout for livestock and wildlife as well as residents/travellers. -The Proponent should ensure that the site access roads are well equipped with temporary road signs conditions to cater for vehicles travelling to and from site throughout the project's life cycle. -Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents owing to mechanical faults. -Vehicle drivers should only make use of designated site access roads provided and as agreed. -Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol.				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		-Sufficient parking area for all project vehicles should be provided for and clearly demarcated on sites. -The Proponent should make provision for safe materials and equipment offloading and loading areas on sites. -No heavy trucks or project related vehicles should be parked outside the project site boundary or demarcated areas for such purpose. -To control traffic movement on site, deliveries from and to site should be carefully scheduled. This should optimally be during weekdays and between the hours of 8am and 5pm. -The site access road(s) should be upgraded to an unacceptable standard to be able to accommodate project related vehicles and access permits obtained from the Roads Authority.				
Local resources and services infrastructure	Overuse of existing roads and water resources	-The Proponent should consider re-using and recycling water on site to reduce the	The local roads are frequently maintained by the Proponent and	-Proponent -Exploration Manager	-Road maintenance excavator/bulldozer -onsite water storage tanks	Throughout the phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		abstraction of fresh water from the local sources. -The heavy trucks transporting materials and services to site should be scheduled to travel at least twice or thrice a week to avoid daily travelling to site, unless on cases of emergencies. -The Proponent should consider frequent maintenance of local roads around their operations to ensure that the roads are in a good condition for other roads users from and outside the area	movement of heavy trucks is limited -Water saving measures are implement			

4.3 Rehabilitation and Decommissioning measures

Successful rehabilitation requires careful consideration of the local ecological context in combination with rehabilitation goals. The most important steps in undertaking a successful rehabilitation are planning and environmental awareness (environmental education) on the importance of progressive rehabilitation (or post-activity rehabilitation) and its importance to the environment. Furthermore, to successfully implement the planned rehabilitation, practically, this will depend on a few factors - the rehabilitation program, characteristics of the site, nature of disturbance, rehabilitation methods, as well as resources availability.

Rehabilitation of the EPL site may include the re-vegetation of areas with species consistent with surrounding vegetation; refilling of trenches in such a way that subsoil is replaced first and topsoil replaces last. The management and mitigation measures (action plans) for the rehabilitation and decommissioning of explored sites and site works, respectively are presented in **Table 3**.

Table 3: Management and Mitigation Measures to rehabilitate the explored sites and decommissioning of the site works

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Rehabilitation	Explored and damaging of site land and soils	-All drilled exploration boreholes related to the project activities and no longer needed should be capped and backfilled if this is what the farm owners prefer. -Utilize stockpiled subsoil and topsoil to fill the excavated pits/trenches progressively back, i.e., stockpiled topsoil should be levelled during exploration activities. -Backfilling of all excavated pits and trenches with loose materials but not only be filled with sand alone, as wind will scours the sand and re-establish the holes. -Provision of both financial and technical resources for progressive rehabilitation and post-exploration activities should be made.	-Capped boreholes and backfilled pits -No stockpiled topsoil (topsoil is levelled after completion of each work) -Visible signs of stockpiled topsoil -Annual update of finances reserved for decommissioning and rehabilitation	-Proponent	-Record of boreholes drilled, and pits excavated (if any) -Waste containers on sites -Photo records of backfilled sites -Records of campsite and other structures onsite Records of finances set aside for	Pre-site abandonment

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Decommissioning	Structures and infrastructure	-All accumulated waste (hazardous, solid, and general) up until the cessation of exploration activities will be removed site and transported to designated off site waste management facilities -Removal of project vehicles and equipment from the site and taken to designated parking facility off site. -All project support structures such as ablution facility (toilet and washroom system), campsites, temporary field offices and storage containers/tanks shall be demolished, and the waste taken to designated sites. The site areas on which these structures were set up will be rehabilitated to pre-operational state.	-No sign of waste or littering seen on site and around site areas -project structures and infrastructure Campsite dismantled, and materials taken away from site	-Proponent	decommissioning activities	

4.4 Environmental and Social Monitoring

To support and ensure that the proposed management and mitigation measures are achieving the desired results throughout the project phases, a monitoring plan must be implemented alongside the mitigation plan. **Table 4** presents the required environmental and social monitoring in terms of each potential impact, parameters to be monitored and monitoring objective. Included in the same Table is the reporting structures for monitoring, frequency, methods to be used, reporting structure, any thresholds that apply and relevant recommended actions.

The same Table also presents the monitoring implementation for the exploration phase, given the similarity in activities, hence the ''reporting structure'' column presented as ''Exploration manager''. Therefore, the monitoring exercise will be done according to the relevant project stage or phase. In other words, for monitoring of mitigation implementation in the prospecting and exploration phase, the reporting structure ends with the Exploration Manager.

Table 4: Monitoring requirements to manage and mitigate the potential adverse impacts (updated after Resilient Environmental Solutions, 2019)

Impact	Parameter to be Monitored	Monitoring Objective	Key Performance Indicator (KPI)	Methods of Monitoring	Frequency	Responsible Party	Reporting structure	Threshold	Action if threshold is exceeded
Water and soil pollution									
Soil pollution by hydrocarbon (fuel and lubricant spills)	Complaints from farmers or occupiers of land within the project sites	To prevent contamination of site soils	No complaints from farmers about visible oil spills	Inspection of complaints logbooks	Weekly	SHE officer	SHE Officer> Exploration Manager	A logged complaint	Further consultations with the farm/landowners or custodian
Wastewater generated by exploration workers living on-site.	Open defecation and urination.	To prevent environmental pollution	Adequate toilet facilities on site. Complaints from the public about open defecation and urination.	Visual observation. Inspection of complaints logbook.	Weekly	SHE Officer	SHE Officer> Exploration Manager	A logged complaint	Clean-up of affected areas.

Impact	Parameter to be Monitored	Monitoring Objective	Key Performance Indicator (KPI)	Methods of Monitoring	Frequency	Responsible Party	Reporting structure	Threshold	Action if threshold is exceeded
Soils									
Loss of topsoil	Increased loss of soil	To prevent loss of topsoil	No proliferation of informal vehicle tracks. No new erosion gullies	Visual observation	Weekly	SHE Officer	SHE Officer> Exploration Manager	Proliferation of new vehicle tracks Formation of new gullies in work areas	Rehabilitation of affected explored areas
Air quality									
Increase in dust generation, which might negatively affect occupational and residential respiratory health.	Complaints from public about increased in dust generation.	To reduce public complaints and prevent negative changes in air quality due to exploration activities	No complaints from the public about increased dust generation.	Inspection of complaints logbook.	Weekly	SHE Officer	SHE Officer> Exploration Manager	A logged complaint	Dust suppression around working areas to reduce fugitive dust
Hydrocarbon emissions from vehicles	Complaints from the public about increased vehicles fumes	Same as above.	No complaints from the public about increased vehicle emissions	Inspection of complaints logbook.	Weekly	SHE Officer	SHE Officer> Exploration Manager	A logged complaint	Servicing of vehicles and machinery by a certified service provider
Poaching (Illegal hunting)									
Illegal hunting of wildlife	Reported poaching incidents by projects team	To prevent illegal hunting of wildlife	Incidents reports of illegal hunting of wildlife by	Consultation with the local Police Service for reported	Weekly	SHE Officer	SHE Officer> Exploration Manager> local Police Service (Anti-poaching Unit)	An incidents report logged with the local	Appropriate action will be decided by the

Impact	Parameter to be Monitored	Monitoring Objective	Key Performance Indicator (KPI)	Methods of Monitoring	Frequency	Responsible Party	Reporting structure	Threshold	Action if threshold is exceeded
			exploration workers.	incidents of poaching.				Police Service	local Police Service
Habitat loss (Biodiversity)									
Localised loss of habitat and vegetation	Loss of habitat	To prevent loss of habitat outside areas of interest	No disturbance to unmarked areas within the project area	Visual observation	Weekly	SHE Officer	SHE Officer> Exploration Manager	Vegetation clearance outside of marked areas.	Rehabilitation of affected areas to the satisfaction of the SHE Officer
Occupational and Community Health and Safety									
No health and safety plan for exploration activities.	Compiled health and safety plan for exploration activities.	To prevent health and safety impacts	No significant health and safety incidents (i.e., serious injuries or loss of life)	Visual observation Inspection of complaints logbooks	Daily/ weekly	SHE Officer and Exploration Manager	SHE Officer> Exploration Manager	Health and safety incident	Remedy the consequences
Potential increase in outbreak of wildfires due to project activities	Occurrence of wildfires	To prevent environment damage caused by wildfires	No wildfires recorded (due to presence of exploration workers)	Visual observation	Daily	SHE Officer	SHE Officer> Exploration Manager > local police service	Outbreak of wildfires due to the exploration workers	Rehabilitation of affected areas
Archaeology and cultural heritage (to be updated upon completion of the required Detailed Archaeological and Heritage Assessment Study)									
Potential disturbance of archaeological and cultural heritage resources	Presence or unearthing of archaeological or cultural heritage resources	To prevent destruction of artefacts and sites	Preservation of all artefacts and sites that are discovered within the site boundary or around the project site area	Inspection of records of findings	Daily	SHE Officer Operator	Operator>Foreman> Superintended>SHE Officer>Project Archaeologist>National Heritage Council (NHC)	Unearthing of archaeological or cultural heritage resources	Cease all activities on site and wait for NHC to inspect site and give further instructions / actions

Impact	Parameter to be Monitored	Monitoring Objective	Key Performance Indicator (KPI)	Methods of Monitoring	Frequency	Responsible Party	Reporting structure	Threshold	Action if threshold is exceeded
Employment creation and Corporate Social Responsibility (CSR)									
Creation of employment	Creation of employment opportunities	To ensure that locals benefit from the project	Number of locals employed during exploration activities	Inspection of employment records	Monthly	Exploration Manager	Exploration Manager or Proponent	Number of those employed	None
Noise									
Potential increase in noise	Above ambient noise levels.	To ensure that generated noise does not disturb residents.	Complaints from residents about noise generated.	Inspection of complaints logbook	Weekly	SHE Officer	SHE Officer> Exploration Manager	A logged complaint about above normal noise levels	Revision of site activities
Vehicular Traffic									
Increase in traffic density on declared Roads Authority (RA) roads or damage to these.	Complaints from the public about increase in traffic on the roads. Complaints about damage to RA roads caused by movement of project vehicles and machinery.	To ensure continued ease of access to RA roads by residents	No complaints from the public about increase off traffic due to exploration activities	Inspection of logbooks	Weekly	SHE Officer	SHE Officer> Exploration Manager > Roads Authority	A logged complaint about traffic increase or damage to RA roads	Find alternative access roads for the workforce. Rehabilitation of affected roads
Social nuisance: Property invasion or disturbance and damage									
Potential intrusion or	Unauthorized intrusion and	To prevent crashes	No complaints of property damage	Liaison with property	Monthly	PRO	Exploration Manager (or Proponent)>PRO>Landowner	Arising new complaints	PRO to warn the personnel

Impact	Parameter to be Monitored	Monitoring Objective	Key Performance Indicator (KPI)	Methods of Monitoring	Frequency	Responsible Party	Reporting structure	Threshold	Action if threshold is exceeded
damage/destruction of private or public properties	or damage to properties	and tensions between the Proponent and the land/property owners	or intruding by project personnel	owners or occupiers of land			s/Occupiers of land or custodian		on respecting people's properties. If persists then Code of Conduct to be implemented
Environmental Pollution (Littering)									
Environmental pollution from solid waste during exploration activities.	Scattered litter	To prevent littering of the general project area	No visible litter around the project area	Visual observation	Daily	SHE Officer	SHE Officer> Exploration Manager	Visible littering around project site	Clean-up of the affected areas and ensuring exploration workers utilise waste containers provided.
Site Rehabilitation									
Soil and land disturbance because of exploration activities.	Abandoned and stockpiled topsoil as well as very disturbed land surface	To prevent major soil and land damage by project activities	No major soil and land disturbance	Visual observation	Daily	SHE Officer	SHE Officer> Exploration Manager	Visible soil and land disturbance	Effective progressive backfilling of topsoil and rocks

APPENDIX 1: CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020)

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found during development work. The procedure set out here covers the reporting and management of such finds.

Scope: The "*chance finds*" procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The "chance finds" procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): "*a person who discovers any archaeological …. Object ……must as soon as practicable report the discovery to the Council*". The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Responsibility:

Operator: To exercise due caution if archaeological remains are found.

Foreman: To secure site and advise management timeously.

Superintendent: To determine safe working boundary and request inspection.

Archaeologist: To inspect, identify, advice management, and recover remains.

Procedure:

Action by person identifying archaeological or heritage material

a) If operating machinery or equipment stop work

b) Identify the site with flag tape

c) Determine GPS position if possible

d) Report findings to foreman

Action by foreman

a) Report findings, site location and actions taken to superintendent

b) Cease any works in immediate vicinity

Action by superintendent

a) Visit site and determine whether work can proceed without damage to findings

b) Determine and mark exclusion boundary

c) Site location and details to be added to project GIS for field confirmation by an archaeologist

Action by Archaeologist

a) Inspect site and confirm addition to project GIS

b) Advise NHC and request written permission to remove findings from work area

c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

a) Actions as above

b) Field inspection by archaeologist to confirm that remains are human

c) Advise and liaise with NHC and Police

d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.

The competent authorities' contact details to report archaeological sites or objects (Exploration Manager and contractor) are as follows:

- National Heritage Council (NHC) of Namibia (061 244 375) or direct contact with the Regional Heritage Officers at the NHC 061 301 903
- National Museum (+264 61 276800),
- National Forensic Laboratory (+264 61 240461).