ENVIRONMENTAL SCOPING ASSESSMENT REPORT

Exploration Activities for Industrial Minerals on Mining Claim 73017, Erongo Region

APP: 001526

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PROJECT DETAILS

TITLE	ENVIRONMENTAL SCOPING ASSESSMENT REPORT FOR THE PROPOSED EXPLORATION ACTIVITIES FOR INDUSTRIAL MINERALS ON MINING CLAIM 73017 IN ERONGO REGION.
MEFT APP NO	001526
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LOCATION	ERONGO REGION

DISCLAIMER

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ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BID	Background Information Document
DEA	Directorate of Environmental Affairs
EA	Environmental Assessment
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act No.7 Of 2007
EMP	Environmental Management Plan
EPL	Exclusive Prospecting Licence
ESAR	Environmental Scoping Assessment Report
GPS	Global Positioning System
Ha	Hectare
HIV	Human Immunodeficiency Virus
IAPs	Interested and Affected Parties
km	Kilometre
MEFT	Ministry Of Environment, Forestry and Tourism
ML	Mining Licence
mm	Millimetre
MME	Ministry of Mines and Energy
NHC	National Heritage Council
NAMPOWER	Namibia Power Corporation
PPEs	Personal Protective Equipments
PPP	Public Participatory Process
SME	Small Medium Enterprises
ToR	Terms of Reference

GLOSSARY

Definitions outlined below are for explanatory purposes only.

Activity	The physical work that a Proponent intends to construct, operate, change, decommission, or an activity that a Proponent proposes to carry out.
Alternative	A choice limited to one of two or more possibilities, as of things, proposals, or courses of action, the selection of which precludes any other possibility.
Assessment	The process of identifying, predicting, and evaluating the significant effects of activities on the environment; and the risks and consequences of activities and their alternatives and options for mitigation with a view to minimise the effects/impacts of activities on the environment.
Competent Authority	A body or person authorized under the local authorities act or Environmental Management Act to enforce the rule of law.
Contaminated Water	Water polluted by the Contractor's activities, e.g. concrete water, and runoff from plant/personnel wash areas.
Cumulative Impacts	In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts from similar or diverse activities or undertakings in the area.
Environment	As defined in the Environmental Assessment Policy and Environmental Management Act – refers to "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values".
Environmental Impact Assessment (EIA)	The process of examining the environmental effects of a development as prescribed by the Environmental Impact Assessment Regulations (2012) for activities listed as List of Activities which may not be undertaken without an Environmental Clearance Certificate from the Environmental Commissioner.

Environmental Management Plan (EMP)	A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.
Independent Environmental Control Officer	A qualified professional independent from the Proponent and Contractor who oversees the construction phase and ensure that all environmental specifications and EMP requirements are met during the phase. Will also be responsible for the monitoring, revising, and verifying of compliance with the EMP by the Contractor.
Interested & Affected Parties (IAP)	Any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have influence over any aspect of the activity.
Listed Activity	An activity listed in terms of the Environmental Management Act (No. 7 of 2007) and its EIA Regulations (2012) and the List of Activities which may not be carried out without an Environmental Clearance Certificate from the Environmental Commissioner.

EXECUTIVE SUMMARY

The proponent, Mr. Moses Haufiku intends to partake in exploration activities for industrial minerals on mining Claim 73017 in Erongo region.

Uncontrolled natural resource mining has in the past years resulted in negative environmental effects in areas. This attributed to the fact that people were under no obligation to rehabilitate affected areas and left behind open pits or quarries which pose danger to people and animals.

Exploration of the above mentioned minerals, has no emissions apart from those of the fuel powered earthmoving machines/equipment that will be utilized in the extraction and a small amount in the blasting process. Contamination of water resources is only possible in the event of petrochemical spills or leakages from the equipment, these can be largely prevented or cleaned up. The main possible negative environmental impacts include: habitat destruction, sense of change of place (visual nature).

Thus, the generally objective of the environmental assessment is to outline and assess the likely social and environmental (both negative and positive) impacts likely to result from the proposed exploration activities on Mining Claim 73017; and to make recommendations on feasible mitigation measures that will help lessen the identified likely negative impacts. Subsequently, compile this Environmental Scoping Assessment Report; and the Environmental Management Plan (EMP), which will be used by the Proponent to ensure negative impacts are reduced to minimal or zero during the mineral exploration period.

The identified likely impacts will be monitored as per recommended mitigation measures in the Environmental Management Plan (EMP) for this proposed exploration project; and the proponent will ensure that the EMP is complied and adhered to at all times for the duration of the project.

The Proponent will utilize the available historical mineral occurrence data to determine the exploration within the Mining Claim; and carry out surface investigations and other perspective methods such as geophysical surveys, drilling, trenching and bulk sampling. Traditional procedures of trenches and shallow pitting will be used; reverse circulation drilling will be used for deeper targets.

The assessment confirmed that no damage, disturbance or any material, fauna and flora species protected under the National Heritage Act (27 of 2004) is likely to happen.

Public Consultation

The public was informed of the Environmental Scoping Assessment process through:

- Newspaper adverts (Confidente Newspaper) respectively (see attached newspaper advert sheets attached).
- Notices were put up at Karibib Regional Council.
- Public meeting did not take place due to the fact that no person(s) showed interest to register as affected or interested parties; no single phone call or email was received from the public.

Recommendations and Conclusion

Monitoring will not only be carried out to maintain the low rating of impacts consequence but also to make certain that new potential impacts that might arise during project execution are well identified in time, properly addressed and that applicable mitigation measures are provided and achieved.

Epic Environmental Consultancy is confident that the likely negative impacts related with the proposed project activities can be achieved/managed and mitigated by the effective execution of the recommended managing and mitigation actions in the Environmental Management Plan by ensuring that sufficient efforts and commitment is put into practise in monitoring the execution of the measures.

1. INTRODUCTION

1.1 Project Overview

The Proponent, Mr. Moses Haufiku is devoted in participating in the commodity market. The Proponent intends to embark on small-scale proposed exploration activities of industrial minerals on mining claim 73017 in Erongo region. The Mining Claim measures 17. 9329 hectares (ha) in extent.

This proposed project is a listed activity in terms of the Environmental Management Act (EMA). Thus, an Environmental Clearance Certificate (ECC) is required which is to be issued by the competent authority (Ministry of Environment, Forestry and Tourism) to the Proponent, as specified in terms of the Environmental Management Act No.7 of 2007 and its EIA Regulations of 2012.

Engagement with the interested and affected parties shall be done at all times by the proponent during the exploration/prospecting period to identify any concerns or issues to make certain that suitable mitigation and management measures are further established and incorporated accordingly.

1.2 Need and Desirability

In our country, the mining sector contributes to the country's Gross Domestic Product (GDP), state tax revenues and export returns.

Should the proposed exploration activities be a success, and a well-defined feasible mineral resource concentrations are found, exploration processes will result in socio-economic growth in the region/country.

In order to meet the demand of the local and international markets, it is highly recommended that the exploration and mining of mineral resources continues in Namibia. This exploration project will provide the local communities with technical skills as well as job opportunities, this will help to improve their socio-economic status in the region. Furthermore, this exploration project can possibly enhance to mining work contributing to the Namibian economy.

1.3 Purpose of this Scoping Report

This report is prepared for the purpose of the Environmental Assessment for the anticipated exploration activities on mining claim 73017. The purpose of this report is to:

- Recognize any social and environmental impacts to be taken into account before the proposed project can begin.
- Consult with the public regarding the proposed project.
- Outline practical alternative for the project.
- Identify information required for the proposed development.
- Identify IAPs and take into consideration of their views, comments and suggestions regarding the proposed development.
- Institute the terms of reference for the proposed project.

1.4 Terms of Reference (ToR)

The Terms of Reference for the proposed project activities is based on the requirements set out by the Environmental Management Act (EMA) of No.7 of (2007) and its Environmental Impact Assessment (EIA) Regulations (2012). The procedure covered the below, which are stated in this document:

- Provision of a full description of the proposed development activities;
- Classification of all legislations, policies and guidelines that have reference to the proposed project activities
- Documentation of existing environmental (both ecological, socio and economic) conditions of the reception environment in order to determine environmental sensitivities;
- Consultation with Interested and Affected Parties (I&APs) and relevant authorities of the details of the proposed development and provide them with a reasonable opportunity to take part during the process;
- Bearing in mind the probable environmental impacts of the development (negative and positive impacts), and assess the significance of the identified impacts.
- Management and mitigating measures that will be defined more in the Environmental Management Plan (EMP) to reduce and/or mitigate likely negative impacts, which cannot be avoided.

1.5 Study Assumptions and Limitations

- Facts or data included in this report is established on literature review (research) of available documents and maps which the applicable institutions or private institutions are in possession of.
- It is assumed that all permits or licence requirements, other than the ECC, associated with the proposed project will be addressed as separately; and are not included in this Environmental Assessment process;
- It is expected that all the information provided by the Proponent and relevant authorities consulted, is true and that those above-mentioned have revealed all true essential information available;
- It is assumed that there will be no variations to the development or the affected environment regarding this scoping report and executing of the development that could significantly impact outcome, recommendations through high opinion to mitigation and managing and control;
- The assessment is mainly on the main environmental, social and biophysical and legislative framework.

1.6 Project Alternatives Considered

1.6.1 The No-go Alternatives

If the anticipated project does not take place, the inhabitants will lose out on chances, which may likely profit the community. This proposed development can importantly contribute to the economy of our country as well; and basically improve socio-economic profits in the region as well.

1.6.2 Proposed Exploration Procedures/Techniques

Exploration of the commodities will include defining the historical mineral occurrences within Mining Claim 73017; which will take into account surveys, drilling, trenching and sampling. A full planning of trenching capacities and gravel processing will be done by the proponent to have a better choice of investment requirements.

- ✓ Geological Mapping: This involves a desktop assessment of geographical area maps and observations. The assessment of geological maps of the area and onsite

ground observations and bring up to date of the information gained throughout former geological studies of the area (where possible).

- ✓ Lithology Geochemical Surveys: Rock samples will be collected and taken for analysis to be carried out by analytical chemistry laboratories to ensure if there is adequate/satisfactory quantities of precious metal of interest are present. Trenches and/or pits may be dug depending on the commodity. To make sure suitable risks mitigation, all diggings will be opened and closed straightaway after finding the required samples; and/or the sites will be fenced off until the trenches or pits are closed with the owner of land's permission and relevant authority.

- ✓ Geophysical surveys: This take account of data collection of the substrata, the need for an aero-geophysical contractor might be needed by air or ground, through sensors such as radar, magnetic and electromagnetic to detect any mineralization in the target area and are carried out to establish the mineralisation. Ground geophysical surveys may be carried out, where required using vehicle-mounted sensors or may be hand-held by staff members.

- ✓ Full Drilling (Invasive Method): Should any of the samples taken for analytical chemistry laboratories be found positive, holes will be drilled accordingly and more drill samples will be further collected/taken for investigation. Reverse circulation drilling may be considered for deeper targets, this method uses a pneumatic hammer which drives a rotating tungsten-steel bit. This method produces an uncontaminated big size sample comprised of rock chips. Whilst the Diamond drilling may be considered for better geological control and for carrying out processing trials.

Soil sampling usually comprises of small pits (±20cm X 20cm X 30cm) being excavated, where 1kg samples can be extracted and filtered to collect 50g of material.

Once the drilling, yields positive results, the test quarrying is only a component of exploration activities, to be done at a very small-scale level on directed sites of the Mining Claim, to support the Proponent to get sufficient and reliable exploration data. Areas that will be found to contain good value rocks in profitable capacities will then be demarcated and a submission will be launched with the Ministry of Mines and Energy (MME) for permitting of a valid mining license, of which a separate Environmental Impact Assessment (EIA) will be conducted for mining purposes. Consequently, it should be

noted that this Environmental Scoping Assessment (ESA) procedure and its succeeding reporting will only cover exploration activities only.

1.7 Appointed Environmental Assessment Practitioner

The proponent appointed Epic Environmental Consultancy CC, to examine the likely biophysical and socio-economic environmental impacts that would arise from the proposed exploration project. The results of the environmental assessment are intended at providing the Ministry of Environment, Forestry and Tourism's (MEFT) Department of Environmental Affairs (DEA) with sufficient information in order to make well informed decision on the granting of the mandatory Environmental Clearance Certificate for the proposed exploration project.

2. PROJECT DESCRIPTION AND LOCATION

The Mining Claim 73017 can be accessed via B2 road from Karibib leading to Okahandja. Mining Claim 73017 is located in the Karibib district in Erongo Region. The project location GPS coordinates (Latitude: -21.970765° Longitude: 15.938085°). The mining claim measures 17. 9329 hectare in extent. Refer to locality map below (Figure 1), for the representation of the location for the proposed small-scale exploration project of industrial.

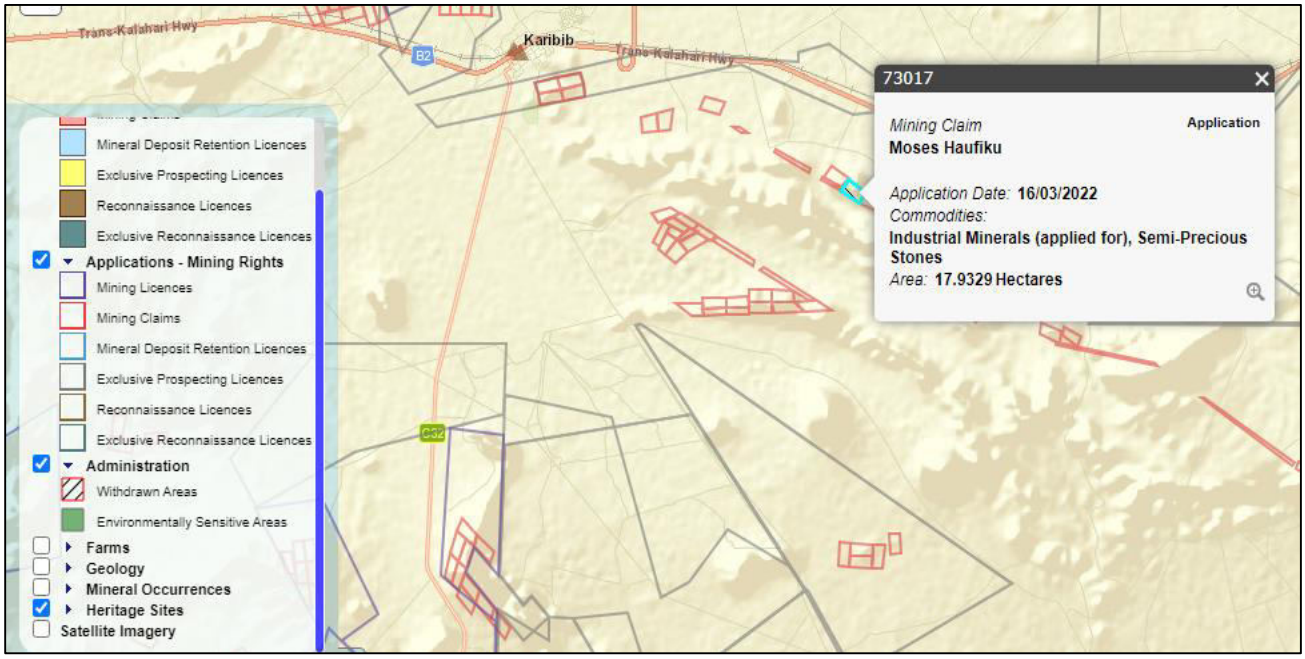

Figure 1: Shows the Location of Mining Claim 73017 (in blue outline) in Erongo Region (Source: MME mining cadastre portal, accessed January 2023).

Table 1: GPS corner coordinates of Mining Claim 73017

ORDER	LATITUDE	LONGITUDE
1	21°58'00" S	15°56'17" E
2	21°58'09" S	15°56'10" E
3	21°58'19" S	15°56'28" E
4	21°58'10" S	15°56'32" E

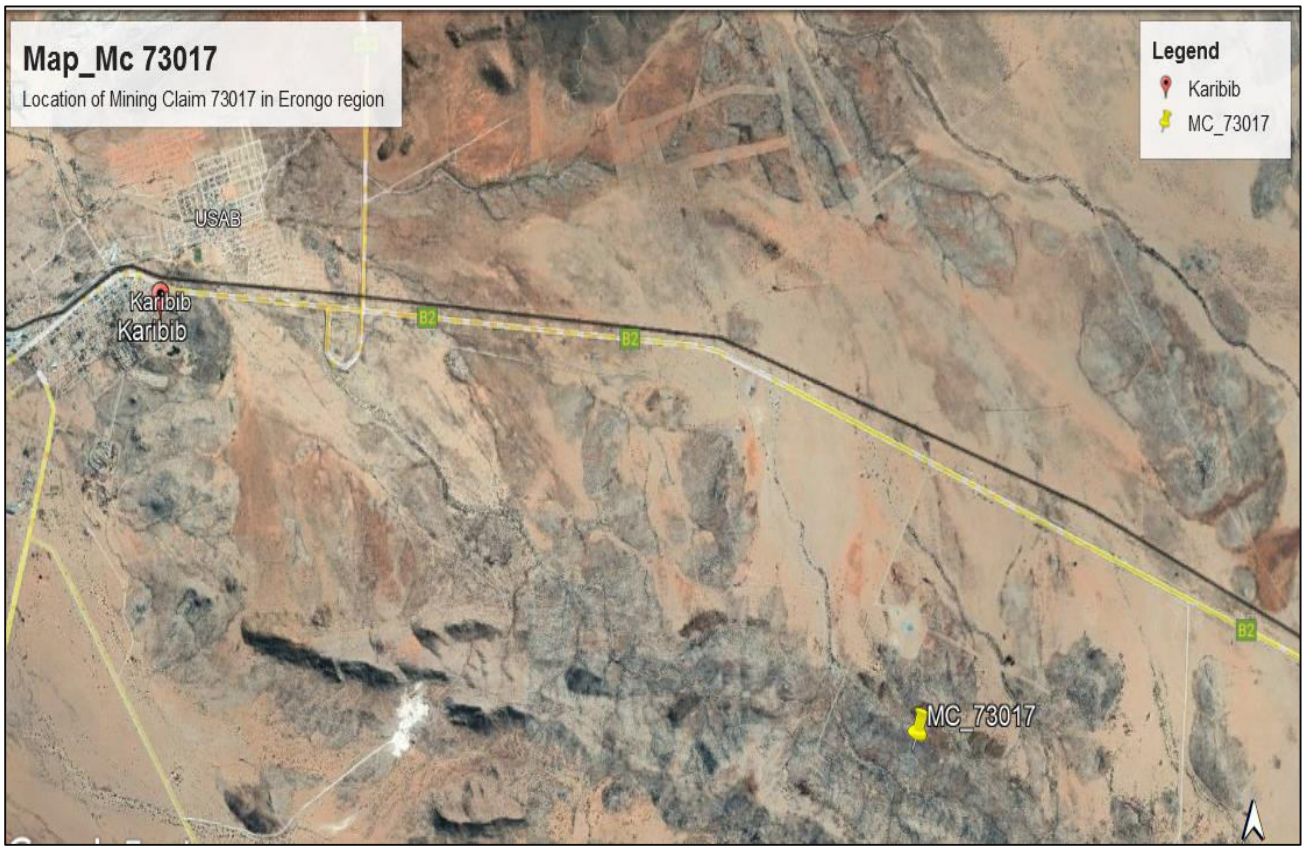

Figure 2: Location of Mining Claim 73017 in Erongo Region (Latitude: -21.970765° Longitude: 15.938085°).

3. REGULATORY FRAMEWORK

3.1 Environmental Requirement

The Environmental Management Act (also referred to as the EMA), requires that for every activity which is listed under the EIA regulations, an Environmental Clearance Certificate must be obtained. The aim of the EIA is to identify, assess and ascertain potential environmental impacts that may arise from the proposed activity.

The following sections are pertinent to the proposed exploration works according to the Environmental Management Act No. 7 of 2007 and its EIA Regulations of 2012:

• *`'3.1 The construction of facilities for any process or activities which requires a license, right of other forms of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act, 1992).*

• *3.2 other forms of mining or extraction of any natural resources whether regulated by law or not.*

• *3.3 Resource extraction, manipulation, conservation, and related activities."*

Other related national regulations, policies, Acts and legislations are outlined on the next page.

Table 2: Related National Legislations

Legislation	**Applicability**	**Legislation Objective(s)**
The Namibian Constitution	To maintain the ecosystems, ecological processes and biological diversity by conducting Environmental Impact Assessment (EIA).	"The state shall actively promote and maintain the welfare of the people by adopting policies that are aimed at…maintenance of ecosystems, essential ecological processes and the biological diversity of

		Namibia and utilization of natural resources on a sustainable basis for the benefit of all Namibians, both for present and future".
Environmental Management Act No.7 of 2007	Legal requirement to carry out an Environmental Impact Assessment (EIA).	The Environmental Management Act No.7 of 2007 promotes the sustainable management of the environment and the use of natural resources and provides for the process of assessment and control of activities which may have significant effects on the environment; and provides for incidental matters. The Act ensures that potential impacts are considered, a comprehensive stakeholder's consultation is carried out, all interested and affected parties are given a chance to comment/object on the project. The Act as well provides a list of activities that may not be undertaken without an Environmental Clearance Certificate.

Environmental Impact Assessment (EIA) Regulations (GN notice No. 30 of 2012)	Provides guidelines for Environmental Assessments.	Provides procedures for Environmental Assessments.
Minerals (Prospecting and Mining) Act No.33 of 1992 As amended Minerals (Prospecting and Mining) Amendment Act 8 of 2008	Governs all mining activities in the country.	To provide for the reconnaissance, prospecting and mining for, and disposal of, and the exercise of control over, minerals in Namibia; and to provide for matters incidental thereto.
Public Health Act No. 36 of 1919	Safeguards the public is protected from noise, dust and air pollution.	No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.
Water Resources Management Act No. 11 of 2013	Guarantees that the water systems are not polluted and that pollution control mechanisms are in place.	An Act to provide for the management, protection, development, use and conservation of water resources; to provide for the regulation and

		monitoring of water services and to provide for incidental matters.
Environmental Policy Framework (1995)	Provides guidelines for EIA.	The Policy ensures that all developmental projects are subjected to environmental assessments so that all potential impacts are taken into consideration and incorporated into the planning and development stages.
Labour Act No. 11 of 2007	Regulates labour in general, remuneration, etc in the country.	The Labour Act regulates labour in general and protects the safety, health and welfare of employees. The regulation of 1997 relating to the safety and health of employees at work, sets out the duties of employers, welfare and facilities at the work place.
Soil Conservation Act No. 76 of 1969	Promotes soil conservation.	The Act promotes the conservation of soil and the prevention of soil erosion.

National Heritage Act No. 27 of 2004	Provides protection and conservation of places and objects that has national heritage significance; and the registration of such places or objects.	The Act makes provision for the protection of places and objects of heritage significance and the registration of such places And objects. Section 46 of the Act, further prohibits the removal, damage, alteration, excavation of national sites or remains; and Section 48, sets out the procedure for application and granting permits for exploration activities such as trenching, drilling, etc.
Hazardous substances Ordinance No. 14 of 1974	Controls the handling of hazardous substances such as fuel, fire, etc.	The Ordinance controls the handling of hazardous substances such as manufacturing, imports and exports to ensure human and environmental safety.

4. ASSESSMENT OF POTENTIAL IMPACTS IDENTIFIED

The likely impacts identified and assessed below are related with the proposed exploration project; and will be discussed in more detail in the Environmental Management Plan:

4.1 Assessment Methodology

Outlined below is the assessment methodology used in determining the significance, location, management and impacts of the exploration activities and the feasible alternatives on the bio-physical and socio-economic environment.

Table 3: Assessment methodology used in determining the significance of impacts.

Criteria	**Category**
Impact	**Description of likely impact**
Nature Describe the type of effect	Positive: The activity will have a social/economical/environmental benefit. Neutral: The activity will have no effect. Negative: The activity will have a social/economical/environmental harmful effect.
Duration Foresees the life time of the impact	Temporary :< 1 year (not included in the construction). Short-term: 1-5 years. Medium: 5-15 years. Long-term: >15 years (Impact will only stop after the exploration due to natural course or by human interferences). Permanent
Extent Describes the scale of the impact	Site specific: Extends only onsite itself where activity will be carried out. Small: Limited to the site's close environment (within 1 km of the site). Medium: Within 5 km from the site (local). Large: Beyond 5 km from the site (regional).

Intensity Describe the magnitude (scale/size of the impact)	Zero: Social and/or natural function/ or the process remain an unchanged. Very low: Affects the environment in a way that the natural/social functions and processes are not affected. Low: Natural/social functions/processes are slightly changed/affected. Medium: Natural/social/functions/processes are notably altered/changed/affected in a modified way. High: Natural/social functions/processes are severely changed/affected and may permanently or temporarily stop.
Probability of Occurrence Describe the probability of the impact occurring	Improbable: Impact not likely to occur. Probable: Distinctive possibility/impact likely to occur. Highly probable: Impact most likely to occur/happen. Definite: Impact will likely to occur regardless of any prevention measures in place.
Degree of Confidence in predictions State of degree of confidence in predictions based on the availability of information and specialist knowledge.	Unsure/Low: Little confidence regarding the information available (<40%). Probable/Medium: Moderate confidence regarding the information available (40-80%). Definite/High: Great confidence regarding the information available (>80%).
Significance of Rating The impact on every component is determined by a combination of the above criteria.	Neutral: A potential concern found to have no impact when assessed/evaluated. Very low: Impacts will be site specific and temporary with no mitigation needed. Low: The impact will have a minor influence on the proposed project or environment. The impacts will require

	feasible and achievable mitigation measures in place. Medium: Impacts will be notable in the local and surrounding areas for the lifespan of the proposed project and may result in long-term changes. The impact may be reduced or improved by making changes to the project design or ensuring effective execution of the mitigation measures.

4.2 Potential positive impacts

- Socio-economic development (through employment creation);
- Skills and knowledge transfer;
- infrastructure interrelated development benefits;
- Increased support for local businesses in the area (through the purchasing of equipment spare parts, greases, food, etc.);
- Better local economic development and economic growth.

4.3 Potential negative impacts

- Soil disturbance: Likely causes of soil contamination comprise petrochemical spills/leaks from vehicles (bakkies), water trucks, drill rig, fuel operated generator as well as the trailer mounted fuel tank for fuel storage.
- Surface and groundwater pollution/contamination: There is no surface water in the area as it receives rainfall occasionally, and communities rely on groundwater. Consequently, to avoid putting pressure on this scarce resource, the project will source water offsite and transport it in water tankers.
- Noise Disturbance.
- Impact on Air quality, Dust and Emissions: The likely cause of air pollution would be dust and fumes produced by project vehicles and/or trucks, diesel power-driven machinery; and dust from drilling.
- Waste generation
- Biodiversity loss and habitat destruction: likely cause of the minimal clearing of plants/vegetation will be to make way for access roads (where required) and possibly put up temporary staff accommodation onsite during field exploration for the exploration team.

- Alien Invasive Species (AIS): Plants that are introduced accidentally or deliberately into a natural environment (exploration/study area) where they are not usually found; and this may or might negatively have serious consequences on the new environment. They represent a threat on the native plant
- Safety and Health
- Visual and Sense of Place: Exploration project activities generally leave marks on the local landscape when rehabilitation is not done properly, this normally depend on the site features, methods used during exploration and the depending on the site characteristics, exploration method and power/intensity of the activities.

4.4 Cumulative impacts

Cumulative impacts are defined *as "those that result from the successive, incremental, and/or combined effects of an action, project, or activity (collectively referred to in this document as developments) when added to other existing, planned, and/or reasonably anticipated future ones".*

From this scoping assessment conducted, the below cumulative impacts are outlined below:

- Increased loss of vegetation and habitant;
- Decreased visual impact and sense of place;
- Increased benefits to the farm owners and local contractors; and
- Employment opportunities, skills and knowledge transfer.

4.5 Mitigation Measures

A mitigation hierarchy can be used to react or respond to a proposed project activity. The mitigation hierarchy includes: avoidance, minimization, restoration and compensation.

5. INFRASTRUCTURE AND SERVICES

5.1 Water Supply

Water required will be for domestic use and cleaning of the equipments. Water will be re-used and used sparingly. No water will be sourced or abstracted from the local boreholes unless with permission from the Farm owners or relevant authority/ministry or else water required for the proposed project will be carried in and stored in tanks/containers onsite. The estimated water requirement per month will be 20 000 litres.

5.2 Electricity

Karibib town is linked to the national power network, power lines are close to the main road. No firewood will be collected onsite or from neighbouring farms without farm or land owner's permission. No connection will be made to the national power grid.

5.3 Waste and Sanitation

Waste containers will be available on-site to make sure safe disposal of waste generated on-site. These will be collected on a weekly basis. All waste generated will be disposed of at the local dumpsite/landfill used by all local inhabitants in the study and the surrounding area. Sewerage will be disposed in a way that does not contaminate the environment.

The Proponent will be accountable for the discharging of the ablution facility weekly and dispose of at the nearest sewerage discarding ponds in Karibib. The Proponent will involve the suppliers of grease and other lubricants to collect and dispose of such waste in an environmentally responsive method.

5.4 Road and Road Infrastructure

The Mining Claim is accessible via the B2 road from Karibib leading to Okahandja, about 1-1.5 kilometres from the B2 road. Existing farm roads will be utilized to gain entry to the targeted exploration site within the Mining Claim. New roads within the Mining Claim to exploration sites will only be made where required. There is a railway station in Karibib, and Trans-Namib railway runs through the town.

5.5 Staff housing

It is expected that for most of the exploration programme workers will reside in Karibib due to the close proximity of the mining claim; and be transported to and from the site. The Proponent will provide transport. However, during the latter part of the prospecting (drilling) personnel may be required to stay at the exploration site in campsites or in existing housing rented from the property owner if possible.

The exploration group will consist of less than ten (10) people, comprising of trained, semi-skilled and unskilled personnel, who may reside or may not reside from the nearby area.

5.6 Fuel Storage and Lubricants

All light vehicles will be fuelled at Karibib. When required, a 1000 litres fuel tank will be mounted onsite to operate various equipments required during the exploration project. Consumables and lubricants will be stored at a nominated area at the site as per the set national standards.

5.7 Telecommunication

Provision for a two-way radio will be made available to ensure the exploration team communicate effectively at all times in case the team experience network problem.

5.8 Personnel and Health

All personnel will be provided with sufficient and suitable Personal Protective Equipment (PPE) that will be substituted to ensure that employee's occupational health and safety is not compromised. First aid kits will be accessible on-site to be present at all times to warrant that any likely slight injuries are attended to. There is a Primary Health Clinic in Karibib.

5.9 Safety and Security

The high-risk operational/functioning sites will be delineated; and provisionally fenced off. Exploration vehicles will be fitted out with fire extinguisher as well as the drilling site in cases of fire outbreaks while carrying out exploration activities.

6. SOCIO-ECONOMIC ENVIRONMENT

A total population of the Erongo region that was recorded was 150 809, with a yearly population growth rate projected at 3.4% (National Population and Housing Census, 2011).

The region has the highest net of migration than any other regions especially, this resulted in a mixed population with diverse languages, with Oshiwambo languages reported in most of the households (38.8%), Afrikaans in 20.4% of households, Nama/Damara 18.8 %, Otjiherero Languages 9.4%, English 5.3% while San, Setswana and Asian languages each were reported as spoken in only about 0.1% of the households.

The town of Karibib has massive land for business, residential, institutional and small-scale farming opportunities. The town can also offer solar energy farming and easy access to the main railway network. Mining opportunities include gold and semi-precious stones. The town offers many historical heritage sites. Bulk water to Karibib is supplied by NamWater, a recognized water utility supplier, via the Swakop-poort Dam (Karibib Town Profile, 2020).

The town is located on the T-junction with two major transport corridors to the north and to the North-East of Namibia. The locality of Karibib puts the town in excellent position to provide logistical services to the corridors either by rail or road (Karibib Town Profile, 2020).

The population of Karibib is largely reliant on on earnings in the form of salaries and wages. Mining and quarrying sites deliver most employments with Navachab Gold Mine employing about 750 inhabitants.

7. BIO-PHYSICAL ENVIRONMENT

This fragment provides a summary of the baseline biophysical and social environmental conditions, which the anticipated project will interrelate. It talk over about the receiving environment starting from the desktop study/literature review, existing online datasets and previous reports of work done in the area. On-site direct observations of the site/environment by the Environmental Assessment Practitioner was carried out.

7.1 Climate

Karibib District has a semi-desert climate, categorized by low rainfall, high evaporation, and a variety of temperatures. Minimum temperatures usually varies between 8°C and 20°C in Winter whereas the maximum temperatures experienced in Summer amid late October and end March when regular temperatures range between 25 °C and 35 °C (Mendelsohn, 2009).

7.1.1 Wind Speed

The windiest month that has the highest average wind speed is usually July (13.1km/h). The calmest month with the lowest average wind speed is February (9km/h).

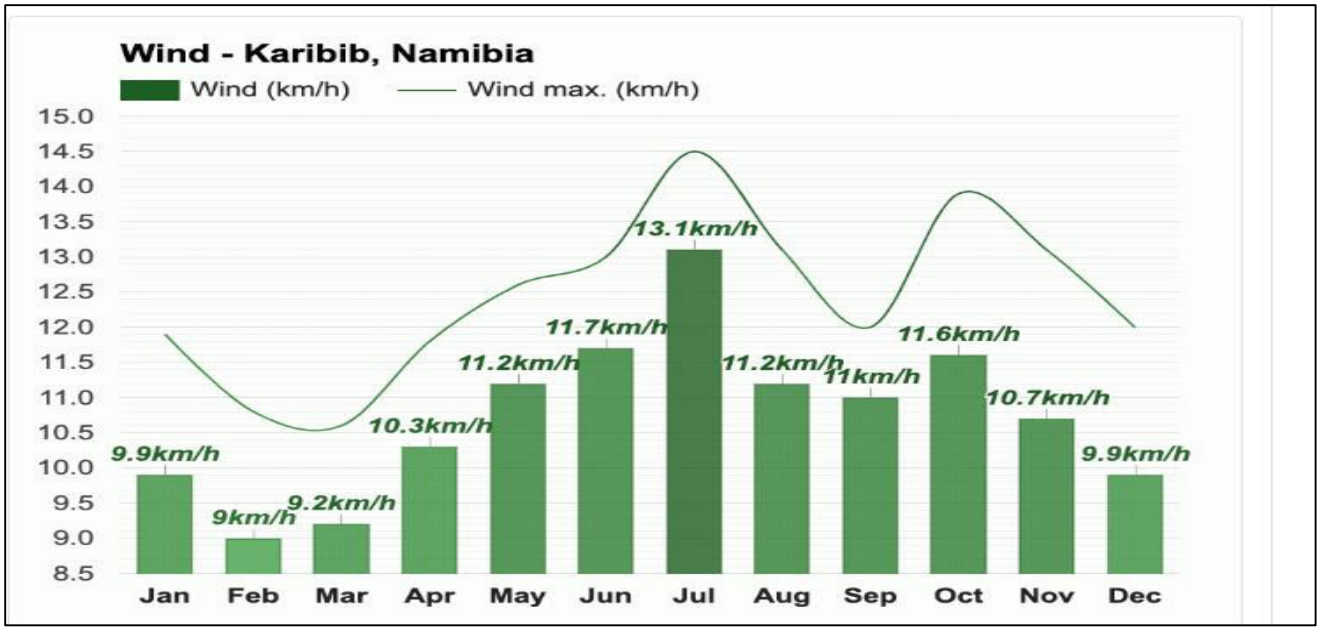

Figure 3: Shows the Wind Speed Patterns in the study area (Source: weather online, 2023)

7.1.2 Rainfall

Throughout the whole year, the rain falls for 79.5 days in Karibib and collects up to 272mm of rainfall. February is the month with the furthermost rainfall. Rain falls for 15.5 days and collects 82 millimetre (mm) of precipitation.

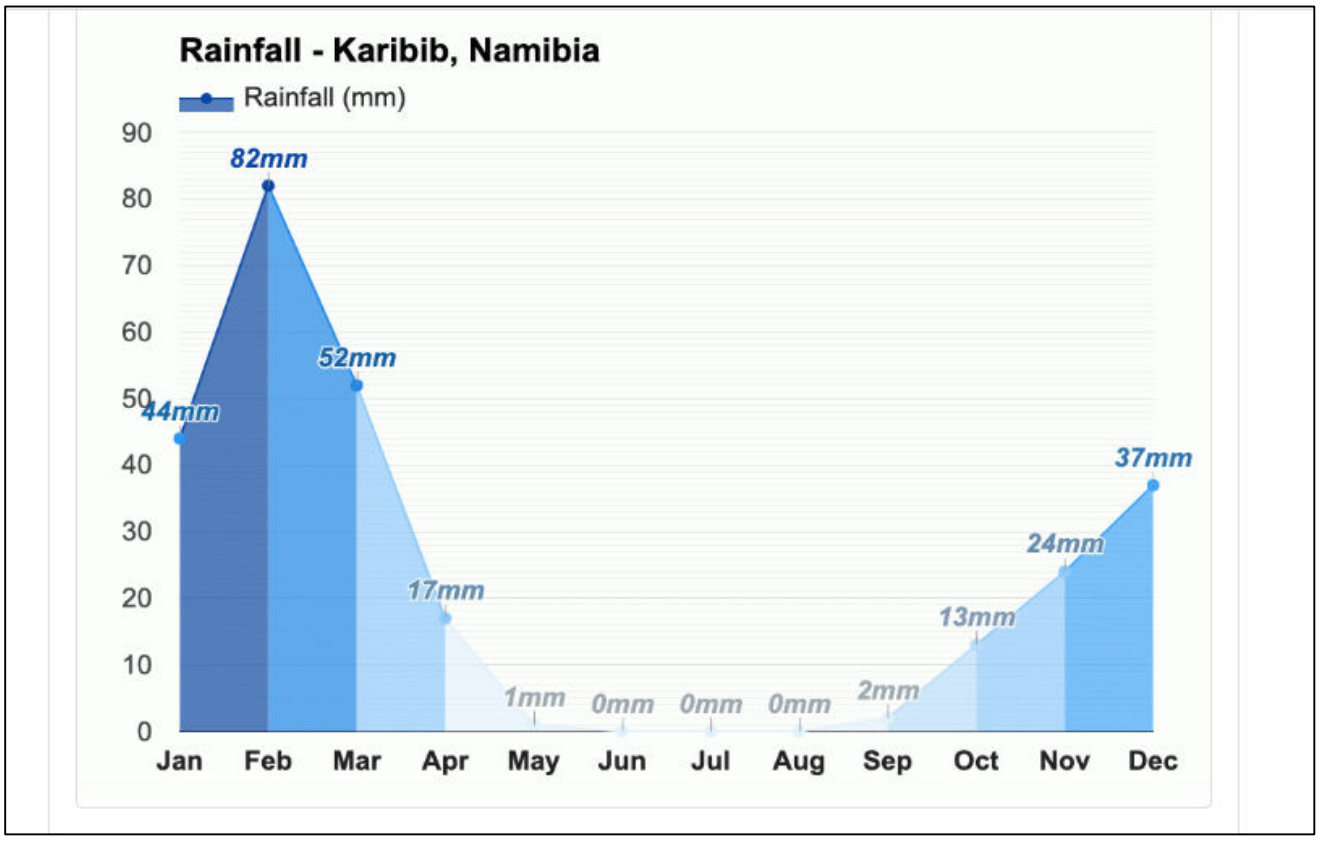

Figure 4: Average Rainfall Pattern (Source: Weather online, 2023)

7.1.3 Temperature

Karibib town has an average comparative humidity of 51%, March is the most humid month. May to July has an average maximum UV index of 5 (the most months with the lowest UV index), with an average high temperature of 23.6°C and an average low temperature of 10.3°C. The coldest month is June. June through August are months with no rainfall (the dried up months) in the town. October is the warmest month (Weather online, 2023).

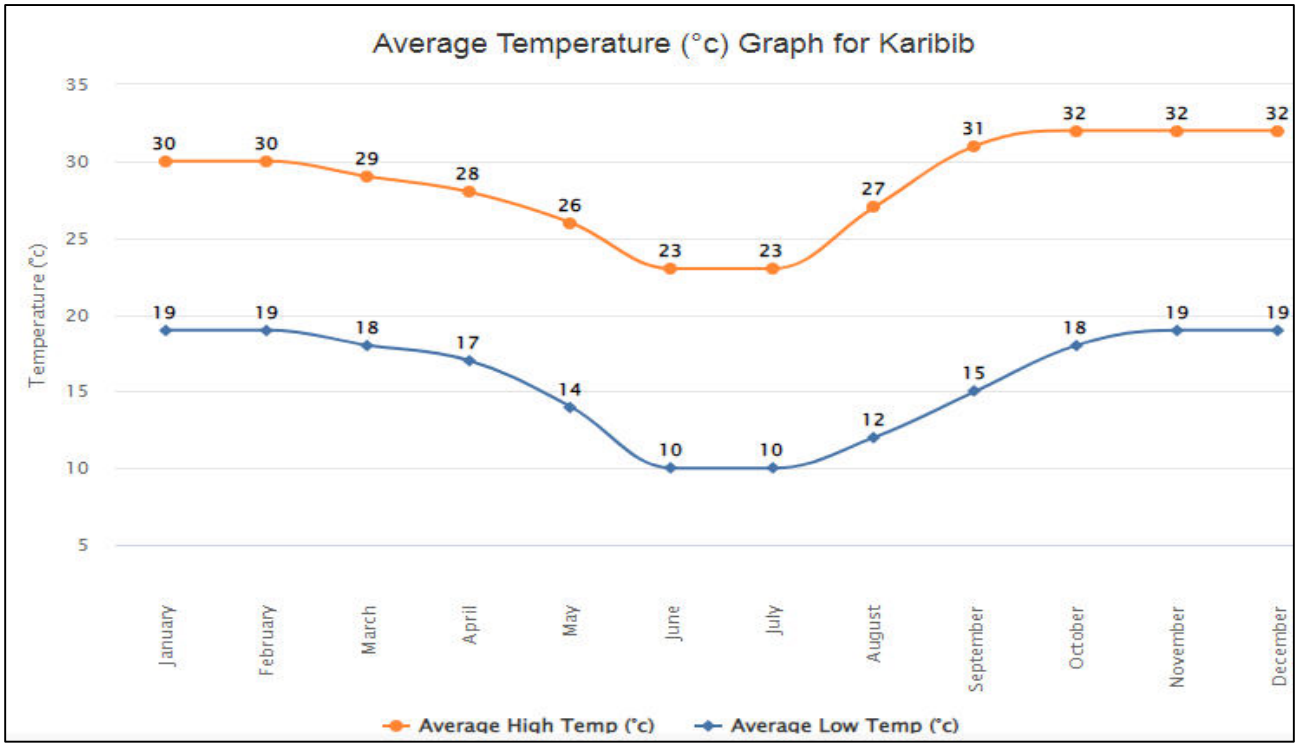

Figure 5: Low and high temperatures in the study area (Source: Weather online, 2023)

7.2 Topography, Soil and Geology

The overall landscape of the Erongo Region is that of a gradual decrease in altitude from east to west. Karibib area falls within the southern Central Zone (sCZ) of the Neo-Proterozoic Damara Orogenic Belt. Kheisian Abbabis Metamorphic Complex (AMB) regarded as basement dome structures that underlies the study area.

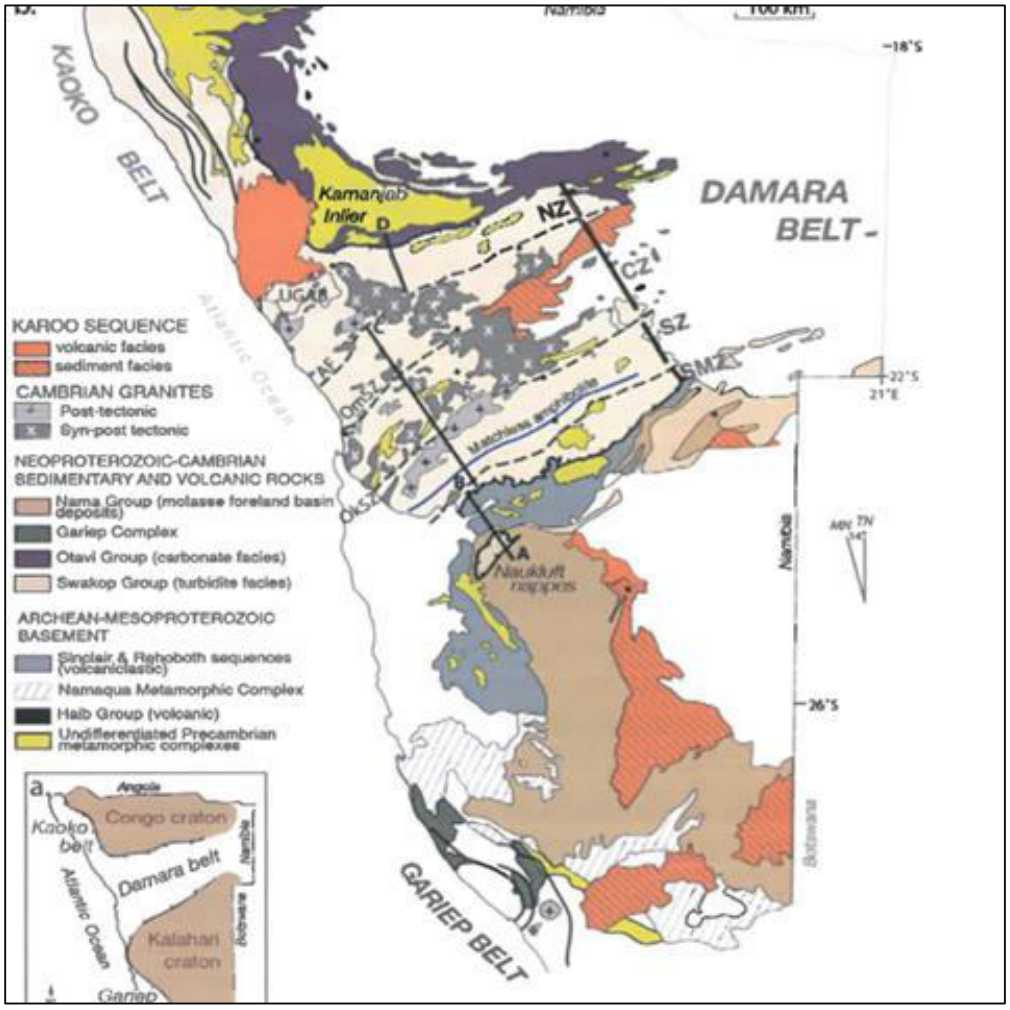

Figure 6: Geological Map of Namibia showing the Damara belt separating the Congo and Kalahari Cratons.

The eastern part of Karibib features rocks that are enclosed by sand, other sediments and the occurrence of the Kalahari sands on the surface meaning that there is reduced change from one area to another and creating a more uniform landscape (Mendelsohn et al, 2002). Karibib in the Erongo region falls within the wide-range of geological areas this clarifies the high mineral occurrences within the region. The geology is characterised by the Damara Super group and Gariep Complex rock formations, which is one of the

oldest rock formations aged between 850 – 600 million years. The rock types found within this area is Schists and Dolomite rocks (Mendelsohn et al, 2002).

The study area lies beneath the Abbabis Metamorphic Complex which is a succession of augen gneisses, granite gneisses, biotite-silimanite gneisses, migmatites and metavolcanics. These basement gneisses are exposed on the Southern side of the mining claim. The Abbabis Metamorphic Complex is overlain by unconformable Neoproterozoic Damara Supergroup which includes mainly meta-sedimentary rocks deposited in the period from about 900 to 700 Ma (Miller, 1983a). The Damara Supergroup is dominated by alternating siliciclastics and carbonates of the Swakop Group with interbedded diamictites airing confirmation of phases of glaciation.

Figure: 7: The overall study area is dominated by the Acacia mellifera and Acacia erioloba.

Sparsely vegetation such as Albizia anthelmintica, Commiphora saxicola, Acacia mellifera and Camelthorn (Acacia erioloba) were observed in the study area during the site visit.

Figure 8: Boscia foetida (commonly known as the stink shepherd's tree/smelly shepherd's bush) spotted in the study area.

Removal of any protected plants whether it is of minimum concern requires a permit from the Ministry of Environment, Forestry and Tourism (MEFT). The general impacts on plant

species is considered minimal and limited to a small area. Most of the plant species occurring in the study area are commonly distributed in the region/country.

7.3 Hydrology and Geohydrology

Topography and terrain governs the surface water flow or hydrology of the area. Likely drainage varies though, but the surface water in the area has a common flow from the highlands to the Atlantic in the west. The Swakop River is one of the major ephemeral rivers in the Western part of the country. Rainfall determines the surface water flow. Surface water flow only occurs during rare periods of exceptional rainfall but the major rivers in the region, such as the Swakop River usually flow less than five times in a decade (Limpitlaw and Hoadley, 2009). Occasional thunderstorms however do occur, turning the small river courses into fast flowing rivulets and may cause flashflood conditions (Speiser and Mulder, 2012).

There is inadequate capacities of groundwater in the study area because of low rainfall and lack of recharge, and unfavourable aquifer of Damara Sequence rocks. Groundwater in fractured aquifers between the coast and 20-150 km inland is mostly saline. (Christelis and Struckmeier, 2011). According to Steven and Badenhorst (2006), the regional groundwater of Karibib area has a pH range of 6.6 to 8.1 which is near-neutral and of similar salinity to that of Navachab (pH 6.5-7.1).

7.4 Archaeological and Heritage Resources

According to Nakale and Mowa (2022), the Erongo region has been the attention of various archaeological analyses and assessments in the past 20 years; and caused a moral understanding of the archaeological order and the association of sites and the terrains in which they are found (Kinahan, 2020).

Locations of heritage and archaeological importance are common in Namibia and symbolise the importance of a self-governing record of historical happenings.

Historical sites differ from natural rock shelters with proof of occupation, rock art, and stone features e.g. hut circles, larger grave landmarks, rock paintings and stone artefacts. All this proof, including the landscape setting is rendered protection under the National Heritage Act (No. 27 of 2004).

No heritage sites are declared in the study or immediate surrounding areas by the National Heritage Council (NHC). Even though there area has no heritage resource accidental find procedure in the study area may still be obligatory.

7.5 Surrounding Land Uses

Most of the residents in Karibib are employed in the nearby mine and small-scale mining/exploration activities taking place in the nearby areas of the town. Karibib is surrounded by a farming community which supports the economy of the town e.g. small livestock farming. The nearby surroundings is also supporting a strong hunting and tourism market of which the town gets very little benefit from.

The mining claim is not in any protected areas. The main land uses on the farm is primarily game hunting and small-stock livestock farming.

The landscape is dry meaning the area has little potential for agriculture. According to Van der Merwe (1983), sheep farming takes up about 70-80% and whereas 20-30% is for goats and cattle farming. The population living within the communal land is dependent on small-stock farming and small-scale mining. Most of the commercial farms are owned privately; and practice large-stock farming e.g. horses and cattle; and small-stock farming e.g. sheep and goats, game hunting and ecotourism.

8. DESCRIPTION OF THE BIODIVERSITY

Biodiversity is the relation richness of the diverse kinds of life forms in an area; is influenced by climatic aspects such as rainfall and temperature, soil and topography.

8.1 Flora and Fauna

The study area is acknowledged to have 6 different types of trees and shrubs species categorized as endemics while 16 are protected under the Forestry Ordinance No. 37 of 1952 or Forest Act No. 72 of 1968, 5 species are protected are under the Nature Conservation Ordinance No. 4 of 1975. Escarpments, mountains, and inselbergs are normally considered as sites of special ecological importance with granite domes specifically in districts of Omaruru and Karibib high in biotic abundance and endemism (Curtis and Barnard, 1998).

This semi-desert and savannah transition zone is typified by shrubs ("fodder bushes") such as Blepharis pruinosa, Leucosphaera bainesii and Monechma genistifolia and larger woody species such as Acacia erioloba are confined to the drainage lines. The trees common in the area are Commiphora glaucescens, C. virgata and C. dinteri as well as Boscia albitrunca and B. foetida. The area of Karibib is recognized to have sparse grass cover and comprises of the climax grasses Stipagrostis obtusa and S. uniplumis (Giess 1971).

It is projected that there are about 75 types of species of reptile, 7 amphibian, 87 mammal, 217 birds that occur in Karibib area (Risk-Based Solutions, 2020). Generally, terrestrial diversity and endemism (all species) is categorized as relatively of average to high respectively in the overall Karibib area (Mendelsohn et al. 2002).

Diversity determinants are favourable habitations, breeding sites, migratory paths, food and water accessibility and wild animal grazing sites.

8.2 Mammals and Reptiles

There are about 87 species of mammals that occur in the local area of Karibib, of which 9 species (10, 3%) are classified as endemic, 11 species are rodents and small carnivores. The area has an abundance of great herbivorous mammals e.g. kudu, zebra, oryx and large carnivores such as cheetahs and leopards (Risk-Based Solutions, 2020). Greatest

endemic mammals are associated with Namib escarpment which is about 60% of these rock-dwelling (Griffin 1998c). The endemic mammal fauna is best characterized by the endemic rodent family Petromuridae (Dassie rat) and the rodent genera Gerbillurus and Petromyscus (Griffin, 1998c).

Approximately, 75 reptile species are anticipated to occur in the Karibib area and 34 of such species are considered endemic species.

The greatest main species estimated to occur in the overall area are tortoises Stigmochelys pardalis and Psammobates oculiferus; pythons – P. anchietae and P. natalensi). Reptiles that are ''rare'' are Rhinotyphlops lalandei, Mehelya vernayi and Afroedura Africana (Risk-Based Solutions, 2019).

8.3 Avifauna: Birds

Bird life is fairly high in the area due various habitats. Nearly 217 bird species could occur in the general area of Karibib; this includes 12 of the 14 Namibian endemic species (85.7% of all Namibian endemic species). The endemic classified from the overall area that are the greatest main bird species such as the Damara hornbill and Herero chat. Some species which may be of concern are those classified as endangered (violet wood-hoopoe, Ludwig's bustard, white-backed vulture, black harrier, tawny eagle, booted eagle, martial eagle, black stork). Vulnerable species include lappet-faced vulture, secretary bird) and near threatened species include Ruppel's parrot, kori bustard, Verreaux's eagle, peregrine falcon, and marabou stork (Risk-Based Solutions, 2020).

8.4 Amphibians

Amphibians need water to breed and are related with lasting water bodies, generally in the northeast areas of country. Amphibians are understated in the area of Karibib, at least seven (7) species might have suitable habitat e.g. 2 endemic species (Poyntonophrynus hoeschi and Phrynomantis annectens), 2 toads, and 1 specie that is classified as ''near threatened'' (Pxicephalus adspersus), i.e., high level (42.9%) of amphibians of conservation value from the general area (Risk-Based Solutions 2020).

9. PUBLIC CONSULTATION

This section serves to provide a summary of the approach in which Interested and Affected Parties (IAPs) were involved in the proposed environmental assessment process.

As specified in the Environmental Impact Assessment (EIA) Regulations (paragraphs 7 and 21), public participation/involvement/consultation is a requirement and an essential element in environmental assessments. Comments or suggestions made during the PPP were noted; and addressed in both the Environmental Assessment Scoping Report and Environmental Management Plan (EMP).

Consulting with interested and affected parties (IAPs) allowed all parties involved to be well informed; and offered the stakeholders the opportunity to share their concerns, comments and/or suggestions.

The public was informed of the Environmental Scoping Assessment process through:

- Newspaper adverts (Confidente Newspaper 24th March 2023 & 31st March 2023; and Windhoek Observer newspaper (20th March 2023 & 27th March 2023) respectively.
- Notices were put up at Karibib Regional Council.
- Public meeting did not take place due to the fact that no person(s) showed interest to register as affected or interested parties; not even a single phone call or email was received from the public.

10. REHABILITATION AND DECOMMISSIONING

It will be the liability of the Proponent to carry out the decommissioning exercise, which will be done as per the Proponent's Decommissioning & Rehabilitation Plan.

A comprehensive decommissioning implementation should be done by the proponent, which should include the following: Demolishing and removal of all temporary and permanent structures; disturbed areas to be prepared accordingly; and retrieval and backfilling of topsoil; any building rubble should be disposed of at local dumpsite/landfill and rehabilitation monitoring should be done.

The effect/impact on the physical environment can be reduced by implementation of progressive rehabilitation that will be undertaken by the Proponent.

11. RECOMMENDATIONS AND CONCLUSION

Negative impacts assessed which are likely related with small-scale exploration activities are relatively low to zero significance. The positive importance in the social impact has been attributed to potential of direct and indirect jobs related with the project and the possibility of the project contributing to the national economy through loyalties, taxes and foreign currency earnings.

The negative impacts were cautiously defined, evaluated, and mitigation measures are provided thereof to reduce or eliminate their consequence on the environment. The effective execution of suggested managing actions (mitigation measures) will reduce negative impacts which cannot be completely eliminated from medium to low rating. Maintaining low significance rating will require monitoring of the likely negative impacts by the Proponent's Environmental Control Officer at all times.

Therefore, Epic Environmental Consultancy recommends that the proposed mineral exploration project receive an Environmental Clearance Certificate (ECC) provided that: the EMP is adhered to or complied with at all times and ensure that all required permits, licenses and approvals for the proposed exploration activities are acquired or renewed as required; that the Proponent and all project workers or contractors to fulfil the legal requirements leading the anticipated project and its related activities; site areas where exploration activities have stopped to be rehabilitated to the pre-exploration state; and that Environmental Compliance monitoring reports are compiled and submitted to MEFT as per the Ministry's requirements.

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