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ENVIRONMENTAL SCOPING ASSESSMENT (ESA) FOR THE PROPOSED PROSPECTING AND EXPLORATION ACTIVITIES ON EXCLUSIVE PROSPECTING LICENCE (EPL) NO. 9919 LOCATED EAST OF CAPE CROSS IN THE ERONGO REGION, NAMIBIA.

ENVIRONMENTAL ASSESSMENT REPORT: FINAL REPORT

ECC APPLICATION REFERENCE: APP-006157

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EXECUTIVE SUMMARY

Rock Ridge Trading CC (*The Proponent*) has applied to the Ministry of Environment, Tourism and Forestry (MEFT) to be granted an Environmental Clearance Certificate (ECC) for the Application of an Exclusive Prospecting License (EPL) No. 9919. Excel Dynamic Solutions (Pty) Ltd (*The Consultant*) was appointed to act on behalf of the proponent in obtaining the ECC. The EPL covers a total surface area of 15 958.9788 hectares (ha), located about 27 km East of Cape cross in the Erongo region**.** The target commodity on the EPL **is Nuclear Fuel.** The EPL covers (overlies) within Dorob National Park .

EPL 9919 fully lies in Dorob National Park. Thus, the regulations stipulated in the National Policy on Prospecting and Mining in Protected Areas (2018) in relation to the intended exploration area is highly recommended.

Prospecting and exploration-related activities are among the listed activities that may not be undertaken without an ECC under the Environmental Impact Assessment (EIA) Regulations, Subsequently, 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 and apply for the ECC on their behalf.

The application for the ECC was compiled and submitted to the Ministry of Environment, Forestry & Tourism (MEFT). The date-stamped copy was uploaded on the online ECC Portal of MEFT as the environmental custodian for project registration purposes. Upon submission of an Environmental Scoping Assessment (ESA) Report and Draft Environmental Management Plan (EMP), and ECC for the proposed project will be considered by the Environmental Commissioner at the MEFT's Department of Environmental Affairs and Forestry (DEAF).

Brief Project Description

The proposed exploration activities on EPL 9919 may include drilling, aerial or remote sensing, ground penetrating radar, and mineral sampling. Non-invasive ground penetrating radar is planned to be undertaken followed by a drilling program. If mineralization is identified, further exploration methods shall be applied; if not identified, then EPL 9919 shall be rehabilitated and returned to the government.

Public Consultation

Public Consultation Activities

Regulation 21 of the EIA Regulations details steps to be taken during a public consultation process and these have been used in guiding this process. The public consultation process assisted the Environmental Consultant in identifying all potential impacts and aid in the process of identifying possible mitigation measures and alternatives to certain project activities. The communication with I&APs about the proposed prospecting and exploration activities was done through the following means and in this order to ensure that the public is notified and afforded an opportunity to comment on the proposed project.

Potential Impacts identified

The following potential negative impacts are anticipated:

- **Positive impacts:** Socio-economic development through employment creation (primary, secondary, and tertiary employment) and skills transfer; opens up other investment opportunities and infrastructure-related development benefits; produces a trained workforce and small businesses that can serve communities and may initiate related businesses; boosts the local economic growth and regional economic development and; increased support for local businesses through the procurement of consumable items such as Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc.
- **Negative impacts:** Physical land/soil disturbance; Impact on local biodiversity close to the sensitive area of the Dorob National Park (fauna and flora); habitat disturbance and potential illegal wildlife and domestic hunting in the area; potential impact on water resources and soils particularly due to pollution; air quality issue: potential dust generated from the project; potential occupational health and safety risks, vehicular traffic safety and impact on services infrastructure such as local roads, vibrations and noise associated with drilling activities may be a nuisance to locals; environmental pollution (solid waste and wastewater), archaeological and heritage impact and potential social nuisance and conflicts (theft, damage to properties, etc.).

The potential negative impacts were assessed, and mitigation measures were provided accordingly.

CONCLUSIONS AND RECOMMENDATIONS

The potential impacts that are anticipated from the proposed project activities were identified, described, and assessed. For the significant adverse (negative) impacts with a medium rating, appropriate management and mitigation measures were recommended for implementation by the Proponent, their contractors and project related employees.

The public was consulted as required by the EMA and its 2012 EIA Regulations (Section 21 to 24). This was done via the two newspapers (New Era and The Namibian) used for this environmental assessment.

The site visit assessment which was conducted on the 22 June 2025 formed the basis for this Report and the Draft EMP. The issues observed during the site assessment were addressed and incorporated into this Report whereby mitigation measures have been provided thereof to avoid and/or minimize their significance on the environmental and social components. Most of the potential impacts were found to be of medium rating significance. The effective implementation of the recommended management and mitigation measures will particularly see a reduction in the significance of adverse impacts that cannot be avoided completely (from medium rating to low). To maintain the desirable rating, the implementation of management and mitigation measures should be monitored by the Proponent directly, or their Environmental Control Officer (ECO) is highly recommended. The monitoring of this implementation will not only be done to maintain impacts' rating or maintain a low rating but to also ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed right away.

Recommendations

The Environmental Consultant is confident that the potential negative impacts associated with the proposed project activities can be managed and mitigated by the effective implementation of the recommended management and mitigation measures and with more effort and commitment put on monitoring the implementation of these measures.

It is, therefore, recommended that the proposed prospecting and exploration activities be granted an ECC, provided that:

- All the management and mitigation measures provided herein are effectively and progressively implemented.

- All required permits, licenses and approvals for the proposed activities should be obtained as required. These include permits and licenses for land use access agreements to explore and ensure compliance with these specific legal requirements.
- The Proponent and all their project workers or contractors comply with the legal requirements governing their project and its associated activities and ensure that project permits and or approvals required for undertaking specific site activities are obtained and renewed as stipulated by the issuing authorities.
- Site areas where exploration activities have ceased are rehabilitated, as far as practicable, to their pre-exploration state.
- Environmental Compliance monitoring reports should be compiled and submitted to the DEAF Portal as per provision made on the MEFT/DEAF's portal.

Conclusions

In conclusion, it is crucial for the Proponent and their contractors, to effectively implement the recommended management and mitigation measures to protect both the biophysical and social environment throughout the project duration. All these would be done with the aim of promoting environmental sustainability while ensuring a smooth and harmonious existence and purpose of the project activities in the community and environment at large. However, the ECC should be issued on the condition that the provided management measures and action plans are effectively implemented on site and monitored. Most importantly, monitoring of the environmental components described in the impact assessment chapter should be conducted by the Proponent and applicable Competent Authority. This is to ensure that all potential impacts identified in this study and other impacts that might arise during the exploration and test mining are properly identified in time and addressed. Lastly, should an ECC be issued, the Proponent will be expected to be compliant with the ECC conditions as well as legal requirements governing the mineral exploration and related activities as stipulated in the National Policy on Prospecting and Mining in Protected Areas, including;

- Furnishing the MEFT and MME with an environmental report every six (6) months
- Carrying out and submission of an annual Environmental Audit to the MEFT and MME

Disclaimer

EDS warrants that the findings and conclusion contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work and Environmental Management Act (EMA) of 2007. These methodologies are described as representing good customary practice for conducting an Environmental Impact Assessment of a property for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment, or which were not reasonably identifiable from the available information. The Consultant believes that the information obtained from the record review and during the public consultation processes concerning the proposed exploration work is reliable. However, the Consultant cannot and does not warrant or guarantee that the information provided by the other sources is accurate or complete. The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. No other warranties are implied or expressed.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This report is subject to the limitations of historical documentation, availability, and accuracy of pertinent records and the personal recollections of those persons contacted.

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
AMSL	Above Mean Sea Level
BID	Background Information Document
CV	Curriculum Vitae
DEA	Department of Environmental Affairs
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
EDS	Excel Dynamic Solutions
ESA	Environmental Scoping Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPL	Exclusive Prospecting Licence
GG	Government Gazette
GN	Government Notice
I&Aps	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
PPE	Personal Protective Equipment
Reg	Regulation
S	Section
TOR	Terms of Reference

DEFINITION OF TERMS

Alternative	A possible course of action, in place of another that would meet the same purpose and need of the proposal.
Baseline	Work done to collect and interpret information on the condition/trends of the existing environment.
Biophysical	That part of the environment that does not originate with human activities (e.g. biological, physical and chemical processes).
Cumulative Impacts/Effects Assessment	In relation to an activity, means the impact of an activity that in it may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.
Decision-maker	The person(s) entrusted with the responsibility for allocating resources or granting approval to a proposal.
Ecological Processes	Processes which play an essential part in maintaining ecosystem integrity. Four fundamental ecological processes are the cycling of water, the cycling of nutrients, the flow of energy and biological diversity (as an expression of evolution).
Environment	As defined in Environmental Management Act - the complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the quality of life, including – (a) the natural environment that is land, water and air; all organic and inorganic matter and living organisms and (b) the human environment that is the landscape and natural, cultural, historical, aesthetic, economic and social heritage and values.
Environmental Management Plan	As defined in the EIA Regulations (Section 8(j)), a plan that describes how activities that may have significant environments effects are to be mitigated, controlled and monitored.
Exclusive Prospecting Licence	Is a license that confers exclusive mineral prospecting rights over land of up to 1000 km2 in size for an initial period of three years, renewable twice for a maximum of two years at a time

Interested and Affected Party (I&AP)	In relation to the assessment of a listed activity includes - (a) any person, group of persons or organization interested in or affected by an activity; and (b) any organ of state that may have jurisdiction over any aspect of the activity. Mitigate - practical measures to reduce adverse impacts. Proponent – as defined in the Environmental Management Act, a person who proposes to undertake a listed activity. Significant impact - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.
Fauna	All of the animals found in a given area.
Flora	All of the plants found in a given area.
Mitigation	The purposeful implementation of decisions or activities that are designed to reduce the undesirable impacts of a proposed action on the affected environment.
Monitoring	Activity involving repeated observation, according to a pre-determined schedule, of one or more elements of the environment to detect their characteristics (status and trends).
Nomadic Pastoralism	Nomadic pastoralists live in societies in which the husbandry of grazing animals is viewed as an ideal way of making a living and the regular movement of all or part of the society is considered a normal and natural part of life. Pastoral nomadism is commonly found where climatic conditions produce seasonal pastures but cannot support sustained agriculture.
Proponent	Organization (private or public sector) or individual intending to implement a development proposal.
Public Consultation/Involvement	A range of techniques that can be used to inform, consult or interact with stakeholders affected by the proposed activities.
Protected Area	Refers to a protected area that is proclaimed in the Government Gazette according to the Nature Conservation Ordinance number 4 of 1975, as amended
Scoping	An early and open activity to identify the impacts that are most likely to be significant and require specialized investigation during the EIA work. Can, also be used to identify alternative project designs/sites to be assessed, obtain local knowledge of site and surroundings and prepare a plan for

	public involvement. The results of scoping are frequently used to prepare a Terms of Reference for the specialized input into full EIA.
Terms of Reference (ToR)	Written requirements governing full EIA input and implementation, consultations to be held, data to be produced and form/contents of the EIA report. Often produced as an output from scoping.

1. INTRODUCTION

1.1 Project Background

Rock Ridge Trading CC (The Proponent) has applied to the Ministry of Environment, Tourism and Forestry (MEFT) to be granted an Environmental Clearance Certificate (ECC) for the Application of an Exclusive Prospecting License (EPL) No. 9919. Excel Dynamic Solutions (Pty) Ltd (The Consultant) was appointed to act on behalf of the proponent in obtaining the ECC. The EPL covers a total surface area of 15 958.9788 hectares (ha), located about 27 km East of Cape cross in the Erongo region as shown in (Figure 1). The target commodity on the EPL is Nuclear fuel . The EPL covers (overlies) within Dorob National Park (Figure 2). The proponent is interested in prospecting and exploration of Nuclear Fuel within the EPL.

EPL 9919 (Coordinates: -21.7286949, 14.294839838), which fully lies in Dorob National park. Thus, the regulations stipulated in the National Policy on Prospecting and Mining in Protected Areas (2018) in relation to the intended exploration area will be a high priority.

Section 27 (1) of the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 Environmental Impact Assessment (EIA) regulations, provides a list of activities that may not be carried out without an Environmental Impact Assessment (EIA) undertaken and an Environmental Clearance Certificate (ECC) obtained. Exploration activities are listed among activities that may not occur without an ECC. Therefore, individuals or organizations may not carry out exploration activities without an EIA undertaken and an ECC awarded.

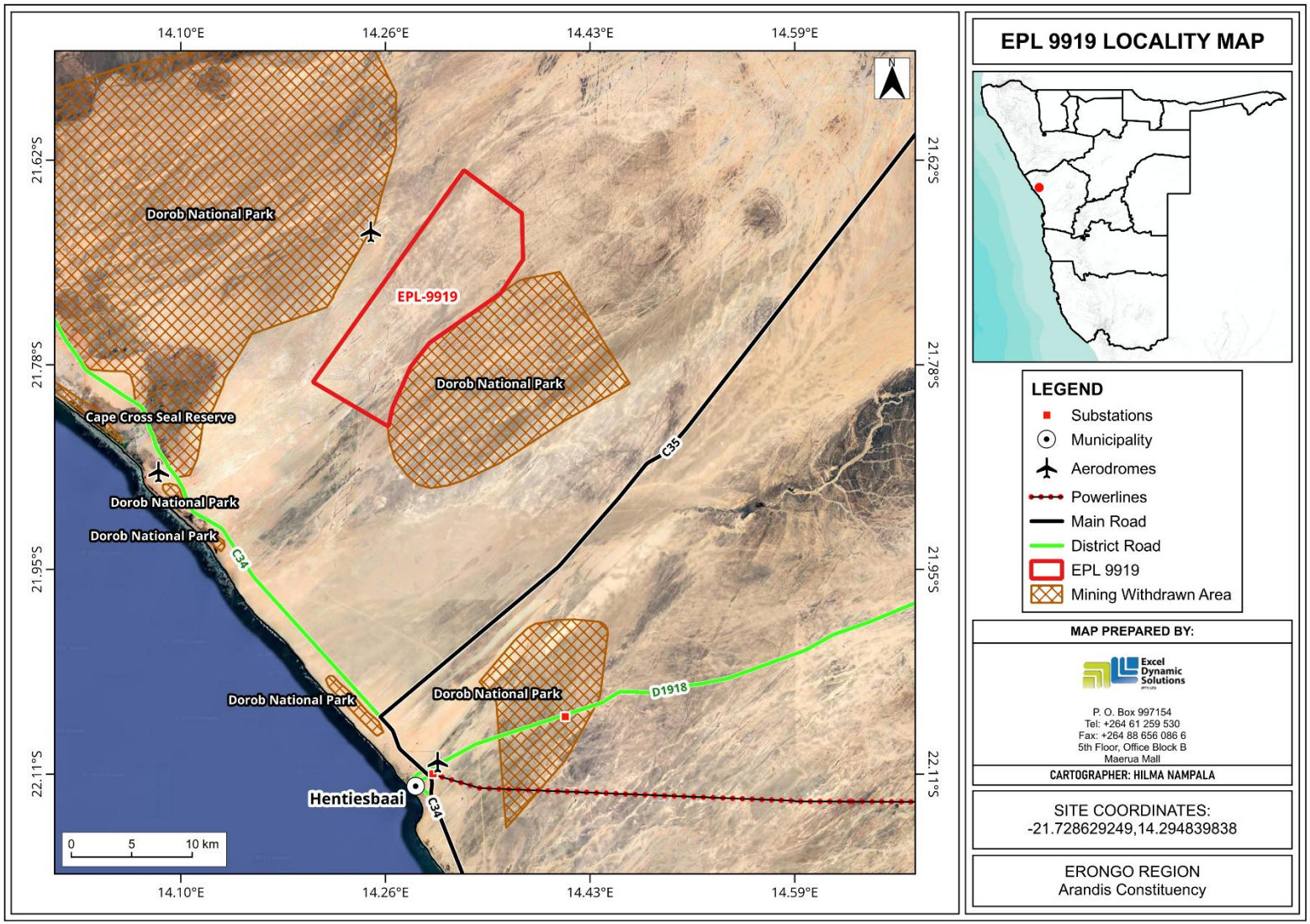

Figure 1: Locality map for EPL No. 9919

1.2 Terms of Reference and Scope of Works

Excel Dynamic Solutions (Pty) Ltd (EDS) has been appointed by the Proponent to undertake an environmental assessment (EA), and thereafter, apply for an ECC for exploration works on the EPL. There were no formal Terms of Reference (ToR) provided to EDS by the Proponent. The consultant, instead, relied on the requirements of the Environmental Management Act (No. 7 of 2007) (EMA) and its Environmental Impact Assessment (EIA) Regulations (GN. No. 30 of 2012) to conduct the study.

The application for the ECC was compiled and submitted to the Ministry of Environment, Forestry and Tourism (MEFT). Upon submission of an Environmental Scoping Assessment (ESA) 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 Appointed Environmental Assessment Practitioner

To satisfy the requirements of the EMA and its 2012 EIA Regulations, the Proponent appointed EDS, to conduct the required EA process on their (Proponent's) behalf. The findings of the EA are incorporated into this report and the draft EMP – **(Appendix B)**. These documents are submitted as part of the ECC application to the Environmental Commissioner at the DEAF.

The EIA project is headed by Ms. Aili Iipinge, a qualified and experienced EAP. The consultation process and reporting was done by Ms. Aili Iipinge, Ms.Iipinge s cv is presented in **Appendix C.**

1.4 Motivation for the Proposed Project

The mining industry is one of the largest contributors to the Namibian economy; therefore, it contributes to the improvement of livelihoods. In Namibia, exploration for minerals are undertaken mainly by the private sector. Exploration activities have a great potential to enhance and contribute to the development of other sectors and its activities do provide temporary employment, as well as taxes that fund social infrastructural development. The minerals sector yields foreign exchange and accounts for a significant portion of gross domestic product (GDP). Additionally, the industry produces a trained workforce and small businesses that can serve communities and may initiate related businesses. Exploration activities foster several associated activities such as

manufacturing of exploration and mining equipment, and provision of engineering and environmental services.

The mining sector forms a vital part of some of Namibia's development plans, namely: Vision 2030, National Development Plan 5 (NDP5) and the Harambee Prosperity Plans (HPPs) I and II. Thus, mining is essential to the developmental goals of Namibia in aim of contributing to the ever-increasing global demand for minerals, and for national prosperity. Therefore, successful exploration on EPL 9919 would lead to the mining of the targeted commodities which could contribute towards achieving the goals of the national development plans; hence the need to undertake the proposed exploration activities on the EPL.

1.5 Motivation for Exploration activities for EPL 9919 in Protected Area: Dorob National Park

The EPL 9919 lies within the Dorob National Park which is one of the largest national parks in Namibia. Taking into account that the EPL 9919 lies within the protected area, the National Policy stipulated on Prospecting and exploration in Protected Areas is highly recommended. Rehabilitation will be highly recommended as required under the exploration and Prospecting in Protected Areas and National Monuments (1999).

EPL 9919 is in close vicinity with active Mining Licences such as, (ML) No. 11 which is owned by Salt Company (Pty) Ltd (90%) and ML 210 which is owned by Gecko Salt (Pty) Ltd. These active MLs also fall within the Dorob National Park. The already occurring mineral exploration/mining activity in the area have proven that sustainable mineral exploration activity in the area may be possible, under conditions that the provided management measures and action plans are effectively implemented on site and monitored.

Table 1 Presents different characteristics of Protected Areas as stipulated in the National Policy on Prospecting and mining in Protected Areas (2018) in relation to the area (EPL 9919). The Consultant understands that the policy is also aimed at establishing "no go areas" where exploration will not be permitted due to high conservation and/or aesthetic and tourism value, based upon the best available information.

Table 1: Characteristics of Protected Areas

Characteristic	Case with EPL 9919 (YES/NO/UNKNOWN)	Consultant comment
Biodiversity Priority Areas	YES	In the Dorob National Park
Archaeological rock tools	YES	In the Dorob National Park
High Value Tourism Areas	UNKNOWN	None
Known Breeding Areas of Certain Species, Including Marine Species	NO	Inland exploration project
Important Wetland Areas	NO	Dryland
Areas with Existing Economic Activities That Would Be Compromised by Prospecting and/or Mining	UNKNOWN	Active mining activities known in the vicinity of the exploration EPL 9919
Areas with The Potential to Be Developed into Economically Viable Tourist or Other Compatible Operations	NO	No

1.6 Namibia's Approach towards exploration and Mining in a National Park

Any exploration development in a National Park must be balanced against the risk that it could jeopardize the potential for long-term sustainable development. Prospecting and exploration of minerals stated in the Minerals (Prospecting and Mining) Act of 1992 are permitted as such developments are in the national interest. The targeted commodities group are listed in the Minerals Act. The National Policy on Prospecting and mining in Protected Areas developed in 2018 states that granting of an Exclusive Prospecting and Mining Licences is permitted in Protected Areas and National Monuments upon presenting a plan of activities that will be carried out using best practice, taking into account long-term national benefits and conservation efforts.

The Policy of the Conservation of Biotic Diversity and Habitat Protection was drafted by the Ministry of Environment and Tourism in 1994 to ensure adequate protection of all species and subspecies, of ecosystems, and of natural life-support processes.

1.7 Namib Ecology Integrity

The ecological integrity and diversity of fauna and flora of the Western Namib is well addressed in the Strategic Environmental Management Plan (SEMP) developed in 2009 as a result of the Strategic Environmental and Socio-Economic Assessment of the Uranium industry "rush". The annual SEMP report (2014) indicated that the integrity and diversity of the Western Namib biodiversity is not compromised by the exploration and mining activities. The report went further to explain that ecological integrity means that ecological processes are maintained, key habitats are protected, rare and endangered and endemic species are not threatened. The SEMP limits are defined through Environmental Quality Objectives and aim to;

- Improve Namibia´s and the Erongo region's sustainable socio-economic development and outlook without undermining the growth potential of other sectors
- Promote local employment and integration of society;
- Ensure that key infrastructure is adequate and well maintained, thus enabling economic development, public convenience and safety;
- Ensure that the integrity of all aquifers remains consistent with the existing natural and operational conditions (baseline). This requires that both the quantity and quality of groundwater are not adversely affected by prospecting and mining activities;
- Ensure workers and the public do not suffer significant increased health risks from the exploration and mining activities;
- Safeguard the natural beauty of the desert and ensure its sense of place are not compromised unduly by the exploration and mining activities;
- Identify ways of avoiding conflicts between the tourism industry and prospecting/mining, so that both industries can coexist in the Western Namib;
- **Protect the ecological integrity and diversity of fauna and flora of the Central Namib. All efforts are taken to avoid impacts to the Namib and where this is not possible, disturbed areas are rehabilitated and restored to function after mining/development;**
- Maintain and enhance Namibia's international image because of environmentally, socially and financially responsible mining operations;
- Ensure that exploration and mining and all related infrastructure developments will have the least possible negative impact on archaeological and paleontological heritage resource.

2. PROJECT DESCRIPTION: PROPOSED EXPLORATION ACTIVITY

Prospecting and exploration of minerals are the first components of any potential mining project (development and eventual mining). This is done to acquire the necessary data required for further decision making and investment options. These activities are anticipated to last for about three years, with ground geophysical surveys done in stages on different parts of the EPL, lasting several weeks. The exploration process includes three phases, namely: prospecting, exploration, and the decommissioning of works.

2.1 Pre-development Phase (Prospecting)

During the prospecting and exploration phase, reviewing existing reports and composite stratigraphic lithological-geochemical maps of the targeted areas to identify prospective lithostratigraphic packages will be vital. In addition to the literature review, fieldwork (lithological (soil/rock) mapping and sampling) will be conducted to verify desktop work. Prospecting during the advanced exploration phase will require the Proponent to assess the EPL area through detailed geological mapping, geophysical and geochemical surveys, to define targets for test pitting, trenching, and drilling. Upon issuance of an ECC, the exploration program will commence with ground geophysical surveys.

The Proponent intends to adopt a systematic prospecting approach of the following:

2.1.1 Desktop Study: Geological mapping

This mainly entails a desktop review of geological area maps and ground observations. This includes the review of geological maps of the area and on-site ground traverses and observations and an update where relevant, of the information obtained during previous geological studies of the area.

2.1.2 Lithology geochemical surveys

Rock and soil samples shall be collected and taken for trace element analysis to be conducted by analytical chemistry laboratories to determine if enough targeted commodities are present. Additionally, trenches or pits may be dug depending on the commodity (in a controlled

environment e.g., fencing off and labelling activity sites), adopting manual or excavator to further investigate the mineral potential.

2.1.3 Geophysical surveys

This will entail data collection of the substrata (in most cases service of an aero-geophysical contractor will be sourced), by air or ground, through sensors such as radar, magnetic and electromagnetic to detect any mineralization in the area and are conducted to ascertain the mineralization.

2.2 Exploration (Drilling) Phase

Exploration work will be entirely conducted by contracted geological and geophysical consultants as well as drilling consultants and companies. The selection of the potential mineralization model and exploration targets will be based on the local geology, trenching, drilling, and assay results of the samples collected. The planned exploration activities are aimed at delineating the mineral deposits and determining whether the deposits are economically feasible mining resources. No explosives will be used during the exploration phase.

Should analyses by an analytical laboratory be positive, holes are drilled, and drill samples collected for further analysis. This will determine the depth of the potential mineralization. If necessary new access tracks to the drill sites will be created and drill pads will be cleared in which to set up the rig. Two widely used drilling options may be adopted, these are the Reverse Circulation (RC) drilling method and/or the Diamond (Core) drilling method. The RC drilling method uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample, which comprises rock chips. It is relatively quicker and cheaper when compared to other techniques like Diamond Drilling. However, Diamond drilling may also be considered for this exploration programme, for better geological control and to perform processing trials.

A typical drilling site will consist of a drill-rig and support vehicles as well as a drill core and geological samples store. A drill equipment parking and maintenance yard may be set up (including a fuel and lubricants storage facility).

2.3 Other aspects of the exploration operations include:

2.3.1 Accessibility to Site

EPL is accessible via C34 road Henties Bay, which diverts into existing road that will lead into the EPL.

2.3.2 Material and Equipment

The input required for the exploration program in terms of vehicles and equipment includes: (4X4) vehicles, a truck, water tanks, drill rigs and drilling machines, and a power generator. Equipment and vehicles will be stored at a designated area near the accommodation site or a storage site established within the EPL area.

2.3.3 Services and Infrastructure

Water: Water for the exploration operations on the EPL will be obtained from the Henties Bay Town Council or from existing boreholes. Estimated monthly water consumptions are at ± 10,000 liters, but will not exceed 80,000 liters, which includes water for drinking, sanitation, dust control, drilling, as well as washing of equipment.

Power supply: Power required during the operation phase will be provided from diesel-generators. About 4,500 litres of diesel will be used per day, a bunded diesel bowser which will be on site, will be filled 2 – 3 times a week by a diesel bowser.

Fuel (diesel for generators and other equipment): The fuel (diesel) required for exploration equipment will be stored in a tank mounted on a mobile trailer, and drip trays will be readily available on this trailer and monitored to ensure that accidental fuel spills are cleaned up as soon as they have been detected/observed. Fuel may also be stored in jerry cans placed on plastic sheeting to avoid unnecessary contamination of the ground.

2.3.4 Waste Management

The site will be equipped with secured waste bins for each type of waste (i.e., domestic, hazardous, and recyclable). Depending on the amount generated, waste will be sorted and collected weekly or monthly and taken to the nearest certified landfill site. An agreement will need to be reached with different waste management facility operators/owners and authorization or permits will be obtained prior to utilizing these facilities, in the case of production of any hazardous waste.

Sanitation and human waste: Mobile chemical ablution facilities will be provided on-site. The wastewater will then be transported offsite to the treatment facility either by the Proponent or a designated/appointed external waste management contractor.

Hazardous waste: Drip trays and spill control kits will be available on site to ensure that oil/fuel spills and leaks from vehicles and equipment are captured on time and contained correctly before polluting the site.

The waste produced on-site can also be categorized as mineral or non-mineral waste:

Mineral Waste: Consists of solid products of exploration and mineral concentration to acquire the targeted minerals. Mineral waste will potentially be produced throughout the project exploration phase. This waste will be stripped and dumped in allocated areas as stipulated in the EMP.

Non-mineral Waste: Consists primarily of auxiliary materials that will support the exploration phase. This includes but is not limited to items such as empty containers, plastic etc., and other domestic waste. This waste will be collected, sorted and taken to the dumpsite weekly, bi-weekly or as regularly as necessary.

2.3.5 Health and safety

Adequate and appropriate Personal Protective Equipment (PPE) will be provided to every project personnel while on and working at site. A minimum of two first aid kits will be readily available on site to attend to potential minor injuries.

2.3.6 Safety and Security

Storage Site: Temporary storage areas for exploration material, equipment and machinery will be required at the campsite and/or exploration sites. Security will be supplied on a 24-hour basis at the delegated sites for storage. A temporary support fence surrounding the storage site will be constructed to ensure people and domestic animals are not put at risk.

Fire management: A minimum of basic firefighting equipment, i.e., two fire extinguishers will be readily available in vehicles, at the working sites and camps.

2.3.7 Accommodation

The exploration crew will be accommodated in Henties Bay. Exploration activities will take place during daytime only and staff will commute to exploration site(s) from their place of accommodation.

2.4 Decommissioning and Rehabilitation Phase

Once the exploration activities on the EPL comes to an end, the Proponent will need to put site rehabilitation measures in place. Decommissioning and rehabilitation are primarily reinforced through a decommissioning and rehabilitation plan, which consists of safety, health, environmental, and contingency aspects. The economic situation or unconvincing exploration results might force the Proponent to cease the exploration program before predicted closure. Therefore, it is of best practice for the Proponent to ensure the project activities are ceased in an environmentally friendly manner and site is rehabilitate.

3. PROJECT ALTENATIVES

Alternatives are defined as the "*different means of meeting the general purpose and requirements of the activity*" (EMA, 2007). This section will highlight the different ways in which the project can be undertaken and to identify the alternative that will be the most practical, but least damaging to the environment is identified.

Once the alternatives have been established, these are examined by asking the following three questions:

- What alternatives are technically and economically feasible?
- What are the environmental effects associated with the feasible alternatives?
- What is the rationale for selecting the preferred alternative?

The alternatives considered for the proposed development are discussed in the following subsections.

3.1 Types of Alternatives Considered

3.1.1 The "No-go" Alternative

The "no action" alternative implies that the status quo remains, and nothing happens. Should the proposal of exploration activities on the EPL, be discontinued, none of the potential impacts (positive and negative) identified would occur. If the proposed project is to be discontinued, the current land use for the proposed site will remain unchanged.

This no-go option was considered and a comparative assessment of the environmental and socio-economic impacts of the "no action" alternative was undertaken to establish what benefits might be lost if the project is not implemented. The key loses that may never be realized if the proposed project does not go ahead include:

- Loss of foreign direct investment.
- About 5 -10 temporary job opportunities for community members will not be realized.
- No realization of local businesses supports through the procurement of consumable items such as Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc.
- Loss of potential income to local and national government through land lease fees, license lease fees and various tax structures.

- Improved geological understanding of the site area regarding the targeted commodities.
- Socio-economic benefits such as skills acquisition to local community members would be not realized.

Considering the above losses, the “no-action/go” alternative was not considered a viable option for this project, although, in the case where parts of the project site are considered environmentally sensitive and/or protected, one or severally sections of the site may be identified as no-go zones.

3.1.2 Exploration Location

The prospecting/exploration location is dependent on the geological setting (regional and local), the economic geology, and the exploration and mining history of the EPL area. Therefore, finding an alternative location for the planned exploration activities is not possible. This means that the mineralization of the target commodities is area-specific, and exploration targets are primarily determined by the geology (host rocks) and the tectonic environment of the site (an ore-forming mechanism). The tenement has sufficient surface area for future related facilities, should an economic mineral deposit be defined.

Furthermore, the national mineral resources’ potential locations are also mapped and categorized by the Ministry of Mines and Energy, on exclusive prospecting licenses, mining licenses and claims, mineral deposit retention licenses, reconnaissance licenses and exclusive reconnaissance licenses. Available information on EPL 9919 (**Figure 4**) and other licenses are available on the Namibia Mining Cadastral Map here https://portals.landfolio.com/namibia/

Figure 2 the location of EPL 9919 on the mining cadastral

3.1.3 Exploration Methods

Invasive and non-invasive exploration techniques are expected to be used for exploration works. If an economically viable discovery is made, the project will proceed to the mining phase upon approval of a mining ECC and issuance of a mining license. If any other alternative viable exploration methods are found to achieve the purpose more effectively and/or efficiently without aggravating any environmental measures put in place, they can be implemented. Table 1 shows the exploration methods that will be employed during the exploration phase.

Invasive Exploration Method (Alternatives Considered)	Process	Advantages
Pitting and trenching	-Pits and trenches can be a quick, cheap way of obtaining lithological and structural information in areas of shallow cover. -Pitting is usually employed to test shallow, extensive, flat-lying bodies of mineralization such as a buried heavy mineral placer. -The main advantage of pitting over a pattern-drill programme on the same deposit is that pits can provide a very large volume sample. Large sample sizes are necessary to overcome problems of variable grade distribution, which are a characteristic feature of such deposits. -Trenches are usually employed to expose steep dipping bedrock buried below shallow overburden and are normally dug across the strike of the rocks or mineral zone being tested (Marjoribanks, 1997).	- Quick, cheap way of obtaining lithological and structural information in areas of shallow cover. -Pits can provide a very large volume sample. Large sample sizes are necessary to overcome problems of variable grade distribution, which are a characteristic feature of such deposits. -Trenches are an excellent adjunct to RC drilling programmes, where the structural data from trench mapping are needed to complement the lithological information obtained from the drill cuttings (Marjoribanks, 1997).

Invasive Exploration Method (Alternatives Considered)	Process	Advantages
Reverse Circulation (RC) Drilling	-Crushed rock is collected in the form of drill chips and powdered samples, brought to surface through the drilling rods by compressed air. This is in contrast to conventional drilling (Rotary Air Blow Drilling) that puts the air inside the rods and the cuttings outside. Here the air passes downwards through the annular space between the inner shaft and the outer tube. -Water is often used down the hole to cool the drill bit and reduce dust as well as assisting with the transportation of sample bits to the surface. -RC drilling is designed for drilling through and crushing hard rock. -RC drilling is fundamentally different from diamond drilling, both in terms of equipment and sampling. One major difference is that RC drilling creates small rock chips instead of solid core.	-Compared to diamond drilling, RC requires less water. Therefore, RC drilling will put less pressure on water supply and use. The major differences between RC and diamond drilling are in the rate of penetration and cost per meter. RC drilling is much faster than diamond core drilling, and much less expensive. -Unlike diamond drilling, this process creates rock chips that can be analysed, rather than a solid, cylindrical piece of rock. -Some types of information, such as structural details, are not possible to obtain in the absence of solid rock. Despite this

Invasive Exploration Method (Alternatives Considered)	Process	Advantages
	The RC method: -Allows full recovery of samples continuously -Quick installation -There is no contact between the walls and cuttings taken at the bottom. -The penetration rate is fast (Technidrill, 2020)	disadvantage, much valuable information can still be obtained from the rock chips. For example, the chips are much easier to examine under a microscope. Testing of fluorescence and effervescence are easily accomplished (Earth Science Australia, 2020). It is for these reasons that RC will be the most preferred method and is mainly used. However, RC drilling would be combined with Diamond drilling where necessary for more reliable data collection and analysis. Diamond drilling would be more applicable where deeper holes are required than is possible using RC drilling. In-fill drilling would also be applied to support an update to a higher classification of the Mineral Resources estimate.
Infill drilling	The progress of an exploration project mostly depends on the result of the primary boreholes. Therefore, primary exploration boreholes must intersect high-grade mineralization zones with considerable thickness. On the other hand, the infill boreholes are designed based on obtained results from the primary boreholes (Fatehi, *et al.,* 2017). Therefore, infill drilling is intended to support an update to a higher classification of the Mineral Resource estimate. The metallurgical test-work results will improve understanding of blending designs in the exploration	

Invasive Exploration Method (Alternatives Considered)	Process	Advantages
	schedules for the product offtake specifications (Canyon Resources, 2021).	
Diamond (Core) drilling	-Diamond drilling uses a diamond bit, which rotates at the end of a drill rod (or pipe). The opening at the end of the diamond bit allows a solid column of rock to move up into the drill pipe and be recovered at the surface. -The diamond bit is rotated slowly with gentle pressure while being lubricated with water ("mud circulation") to prevent overheating. As a result, this drilling method is known to use a huge amount of water compared to RC, thus may put pressure on water supply sources. - Drill cuttings obtained with RC drilling can be analysed directly to provide a limited amount of information, and their locations are less precise. Core samples, on the other hand, will identify actual veins of materials and give you their precise location (BG Drilling, 2016). Therefore, for accuracy's sake, diamond drilling would provide better result. In other words, RC results are reliable but may not be accurate.	

Invasive Exploration Method (Alternatives Considered)	Process	Advantages
	- As diamond is one of the strongest materials in the world, it has no trouble drilling through most surfaces. Therefore, it works well across a wider range of ground types and conditions. -Time-consuming and more effort is required to obtain the drill core. -Low initial investment, but generally more expensive to meters drilled because of the limitation of the speed.	

The final drilling technique would be determined by the mineralization type. However, based on the information presented in the Table above regarding the detailed exploration methods, it was found and pre-determined that Reverse Circulation (RC) drilling would be preferable as much as possible given its efficiency in terms of costs, operating speed and environmental friendliness (water demand), compared to Diamond drilling.

Although RC drilling is known to have its shortcomings, particularly the lack of solid drill recovery and inaccuracy, it is usually combined with Diamond drilling for the exploration of some minerals, if the borehole(s) needs to be deeper than what RC can achieve.

4. LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES

Prospecting and exploration activities have legal implications associated to certain applicable legal standards. A summary of applicable and relevant international policies and Namibian legislation, policies and guidelines to the proposed development is given in this section. This summary serves to inform the project Proponent, Interested and Affected Parties and the decision makers at the DEAF, of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled to establish the proposed prospecting and exploration activities.

4.1 The Environmental Management Act (No. 7 of 2007)

This EIA was carried out according to the Environmental Management Act (EMA) and its Environmental Impact Assessment (EIA) Regulations (GG No. 4878 GN No. 30).

The EMA has stipulated requirements to complete the required documentation to obtain an Environmental Clearance Certificate (ECC) for permission to undertake certain listed activities. These activities are listed under the following Regulations:

- 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.

The National Policy on Prospecting and Mining in Protected Areas

This Policy was developed in 2018 to complement various regulations and policies relevant to prospecting and mining, in order to ensure minimal negative impacts on the environment (referred to in **Table 2**).

The Parks and Wildlife Management Bill (2008)

The bill aims to provide a regulatory framework for the protection, conservation, and rehabilitation of species and ecosystems, the sustainable use and sustainable management of indigenous biological resources, and the management of protected areas, in order to conserve biodiversity and in order to contribute to national development.

Integrated Coastal Management Act (draft)

The core objective of this proposed Act is to establish a system of integrated coastal management in Namibia in order to promote the conservation of the coastal environment, maintaining the natural attributes of the coastal landscapes and seascapes, and ensuring the sustainable development and use of the natural resources within the coastal zone that is also socially, economically and ecologically justifiable. A permanent Coastal Management Authority will be established to realise this and other objectives. Functions and powers of the CMA would include, among other, to explore possible regulations for coastal zone use and enforcement capacity for such regulations.

Other legal obligations that are relevant to the proposed activities of EPL No. 9919 and related activities are presented in **Table 2.**

Table 2: Applicable local, national and international standards, policies and guidelines governing the proposed development

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
The Constitution of the Republic of Namibia, 1990 as amended	The Constitution of the Republic of Namibia (1990 as amended) addresses matters relating to environmental protection and sustainable development. Article 91(c) defines the functions of the Ombudsman to include:	By implementing the environmental management plan, the establishment will be in conformant to the constitution in terms of environmental management and sustainability. Ecological sustainability will be main priority for the proposed development.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	"…the duty to investigate complaints concerning the over-utilisation of living natural resources, the irrational exploitation of non-renewable resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia…" Article 95(l) commits the state to actively promoting and maintaining the welfare of the people by adopting policies aimed at the: "…Natural resources situated in the soil and on the subsoil, the internal waters, in the sea, in the continental shelf, and in the exclusive economic zone are property of the State."	
Nature Conservation Amendment Act, No. 3 of 2017	National Parks are established and gazetted in accordance with the Nature Conservation Ordinance, 1975 (4 of 1975), as amended. The Ordinance provides a legal framework with regards to the permission of entering a state protected area, as well as requirements for individuals damaging objects (geological, ethnological, archaeological and historical) within a protected area. Though the Ordinance does not specifically refer to mining as an activity within a protected area (PA) or recreational area (RA), it does restrict access to PA's and prohibits certain acts therein as well as the purposes for which permission to enter game parks and nature reserves may be granted.	The Proponent will be required to enhance the conservation of biodiversity and the maintenance of the ecological integrity of protected areas and other State land

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
The Parks and Wildlife Management Bill of 2008	Aims to provide a regulatory framework for the protection, conservation, and rehabilitation of species and ecosystems, the sustainable use and sustainable management of indigenous biological resources, and the management of protected areas, in order to conserve biodiversity and in order to contribute to national development.	
The National Policy on Prospecting and Mining in Protected Areas	Requires that, where necessary a Memorandum of Understanding is developed between prospecting and mining Companies, the MET and the MIME to set out additional implementation mechanisms.	The Proponent should maintain the integrity of ecosystems and natural resources, and avoiding degradation of areas highly sensitive for their ecological, social and/or cultural heritage value.
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	Section 52 requires mineral license holders to enter into a written agreement with affected landowners before exercising rights conferred upon the license holder. Section 52(1) mineral license holder may not exercise his/her rights in any town or village, on or in a proclaimed road, land utilized for cultivation, within 100m of any water resource (borehole, dam, spring, drinking trough etc.) and boreholes, or no operations in municipal areas, etc.), which should individually be checked to ensure compliance. Section 54 requires written notice to be submitted to the Mining Commissioner in the event that the holder of a mineral license (which includes and EPL) intends to abandon the mineral license area.	The Proponent should enter into a written agreement with landowners before carrying out exploration. The Proponent should carry out an assessment of the impact on the receiving environment. The Proponent should include as part of their application for the EPL, measures by which they will rehabilitate the areas where they intend to carry out mineral exploration activities. The Proponent may not carry out exploration activities within the areas limited by Section 52 (1) of this Act.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	Section 68 stipulates that an application for an EPL shall contain the particulars of the condition of, and any existing damage to, the environment in the area to which the application relates and an estimate of the effect which the proposed prospecting operations may have on the environment and the proposed steps to be taken in order to prevent or minimize any such effect. Section 91 requires that rehabilitation measures should be included in an application for a mineral license.	
Mine Health & Safety Regulations, 10th Draft	Makes provision for the health and safety of persons employed or otherwise present in mineral licenses area. These deal with among other matters; clothing and devices; design, use, operation, supervision and control of machinery; fencing and guards; and safety measures during repairs and maintenance.	The Proponent should comply with all these regulations with respect to their employees.
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that "No person shall possess [sic] or store any fuel except under authority of a license 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 authorization from the MIME for the storage of fuel on-site.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
The Regional Councils Act (No. 22 of 1992)	. This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 "to undertake the planning of the development of the region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment.	The relevant Regional Councils are considered to be I&APs and must be consulted during the Environmental Assessment (EA) process. The project site falls under the Erongo Regional Council; therefore, they should be consulted.
Local Authorities Act No. 23 of 1992	To provide for the determination, for purposes of traditional government, of traditional authority councils; the establishment of such traditional authority councils; and to define the powers, duties and functions of traditional authority councils; and to provide for incidental matters.	The Henties Bay Town Council is the responsible local Authority of the area therefore they should be consulted.
Water Act 54 of 1956	The Water Resources Management Act 11 of 2013 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: Prohibits the pollution of water and implements the principle that a person disposing of effluent or waste has a duly of care to prevent pollution (S3 (k)). Provides for control and protection of groundwater (S66 (1), (d (ii)). Liability of clean-up costs after closure/abandonment of an activity (S3 (l)). (l)).	The protection (both quality and quantity/abstraction) of water resources should be a priority.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Water Resources Management Act (No 11 of 2013)	The Act provides for the management, protection, development, use and conservation of water resources; and provides for the regulation and monitoring of water services and to provide for incidental matters. The objects of this Act are to: Ensure that the water resources of Namibia are managed, developed, used, conserved and protected in a manner consistent with, or conducive to, the fundamental principles set out in Section 66 - protection of aquifers, Subsection 1 (d) (iii) provide for preventing the contamination of the aquifer and water pollution control (Section 68).	
National Heritage Act No. 27 of 2004	To provide for the protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish a National Heritage Council; to establish a National Heritage Register; and to provide for incidental matters.	The Proponent should ensure compliance with these Acts requirements. The necessary management measures and related permitting requirements must be taken. This done by the consulting with the National Heritage Council of Namibia.
The National Monuments Act (No. 28 of 1969)	The Act enables the proclamation of national monuments and protects archaeological sites.	
Soil Conservation Act (No 76 of 1969)	The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister.	Duty of care must be applied to soil conservation and management measures must be included in the EMP.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Public Health Act (No. 36 of 1919)	Section 119 states that "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."	The Proponent and all its employees should ensure compliance with the provisions of these legal instruments.
Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labours.	
Road Traffic and Transport Act, No. 22 of 1999	The Act provides for the establishment of the Transportation Commission of Namibia; for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport across Namibia's borders; and for matters incidental thereto. Should the Proponent wish to undertake activities involving road transportation or access onto existing roads, the relevant permits will be required.	Mitigation measures should be provided for, if the roads and traffic impact cannot be avoided, the relevant permits must be applied for.
Labour Act (No. 6 of 1992)	Ministry of Labour (MOL) is aimed at ensuring harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians. This ministry insures effective implementation of the Labour Act no. 6 of 1992.	The Proponent should ensure that the prospecting and exploration activities do not compromise the safety and welfare of workers.

4.2 International Policies, Principles, Standards, Treaties and Conventions

The international policies, principles, standards, treaties, and conventions applicable to the project are as listed in **Table 3** below.

Table 3: International Policies, Principles, Standards, Treaties and Convention applicable to the project

Statute	Provisions	Project Implications
Equator Principles	A financial industry benchmark for determining, assessing, and managing environmental and social risk in projects (August 2013). The Equator Principles have been developed in conjunction with the International Finance Corporation (IFC), to establish an International Standard with which companies must comply with to apply for approved funding by Equator Principles Financial Institutions (EPFIs). The Principles apply to all new project financings globally across all sectors. **Principle 1:** Review and Categorization **Principle 2**: Environmental and Social Assessment **Principle 3:** Applicable Environmental and Social Standards **Principle 4:** Environmental and Social Management System and Equator Principles Action Plan **Principle 5:** Stakeholder Engagement **Principle 6:** Grievance Mechanism **Principle 7:** Independent Review **Principle 8:** Covenants **Principle 9:** Independent Monitoring and Reporting **Principle 10:** Reporting and Transparency	These principles are an attempt to: '…encourage the development of socially responsible projects, which subscribe to appropriately responsible environmental management practices with a minimum negative impact on project-affected ecosystems and community-based upliftment and empowering interactions.'

Statute	Provisions	Project Implications
The International Finance Corporation (IFC) Performance Standards	The International Finance Corporation's (IFC) Sustainability Framework articulates the Corporation's strategic commitment to sustainable development and is an integral part of IFC's approach to risk management. The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The Policy on Environmental and Social Sustainability describes IFC's commitments, roles, and responsibilities related to environmental and social sustainability. As of 28 October 2018, there are ten (10) Performance Standards (Performance Standards on Environmental and Social Sustainability) that the IFC requires a project Proponents to meet throughout the life of an investment. These standard requirements are briefly described below. **Performance Standard 1:** Assessment and Management of Environmental and Social Risks and Impacts **Performance Standard 2:** Labour and Working Conditions **Performance Standard 3:** Resource Efficient and Pollution Prevention and Management **Performance Standard 4:** Community Health and Safety	The Performance Standards are directed towards clients, providing guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the Client (Borrower) in relation to project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced. IFC uses the Sustainability Framework along with other strategies, policies, and initiatives to direct the business activities of the Corporation to achieve its overall development objectives.

Statute	Provisions	Project Implications
	Performance Standard 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement **Performance Standard 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources **Performance Standard 7:** Indigenous Peoples/Sub-Saharan African Historically Undeserved Traditional Local Communities **Performance Standard 8:** Cultural Heritage **Performance Standard 9:** Financial Intermediaries (FIs) **Performance Standard 10:** Stakeholder Engagement and Information A full description of the IFC Standards can be obtained from http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards?cq_ck=1522164538151#ess1	
The United Nations Convention to Combat Desertification (UNCCD) 1992	Addresses land degradation in arid regions with the purpose to contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change. The convention objective is to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas to support poverty reduction and	The project activities should not be such that they contribute to desertification.

Statute	Provisions	Project Implications
	environmental sustainability United Nation Convention	
Convention on Biological Diversity 1992	Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use. Promote the protection of ecosystems, natural habitats, and the maintenance of viable populations of species in natural surroundings	Removal of vegetation cover and destruction of natural habitats should be avoided and where not possible minimised.
Stockholm Declaration on the Human Environment, Stockholm (1972)	It recognizes the need for: "a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment.	Protection of natural resources and prevention of any form of pollution.

Relevant international Treaties and Protocols ratified by the Namibian Government

- Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES), 1973.
- Convention on Biological Diversity, 1992.
- World Heritage Convention, 1972.

5. ENVIRONMENTAL BASELINE

The proposed exploration programme will be undertaken in specific environmental and social conditions. Understanding the pre-project conditions of the environment will aid in laying down background "information" of the status quo and future projections of environmental conditions after proposed works on the EPL. This also helps the EAP in identifying the sensitive environmental features that may need to be protected through the recommendations and effective implementation of mitigation measures provided.

The baseline information presented below is sourced from a variety of sources including reports of studies conducted in the Erongo Region. Further information was obtained by the Consultant during the site visit.

Biophysical Environment

5.1 Climate

Generally, climate mainly denotes to the meteorological elements dignified in a region over time. Climate therefore has a major influence on the exploration activities proposed on the EPL. Understanding the climatic conditions helps to determine the appropriate times to conduct exploration activities. **Figure 5** shows the climatic condition around the project area.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	18.4 °C (65.1) °F	19 °C (66.1) °F	18.8 °C (65.8) °F	18.2 °C (64.7) °F	16.9 °C (62.4) °F	16.1 °C (61) °F	16.1 °C (60.9) °F	14.1 °C (57.3) °F	13.9 °C (57) °F	14.7 °C (58.5) °F	16 °C (60.8) °F	17.2 °C (63) °F
Min. Temperature °C (°F)	16.3 °C (61.4) °F	17 °C (62.5) °F	16.5 °C (61.7) °F	15.5 °C (59.9) °F	13.6 °C (56.5) °F	12.4 °C (54.3) °F	12.2 °C (53.9) °F	10.7 °C (51.3) °F	10.9 °C (51.7) °F	12 °C (53.6) °F	13.3 °C (55.9) °F	14.8 °C (58.7) °F
Max. Temperature °C (°F)	20.9 °C (69.6) °F	21.4 °C (70.6) °F	21.5 °C (70.7) °F	21.1 °C (70) °F	20.4 °C (68.8) °F	20.3 °C (68.6) °F	20.4 °C (68.8) °F	17.6 °C (63.7) °F	17.1 °C (62.8) °F	17.7 °C (63.9) °F	18.9 °C (66.1) °F	19.9 °C (67.9) °F
Precipitation / Rainfall mm (in)	7 (0.3)	10 (0.4)	4 (0.2)	3 (0.1)	1 (0)	1 (0)	1 (0)	1 (0)	2 (0.1)	2 (0.1)	2 (0.1)	4 (0.2)
Humidity(%)	84%	84%	82%	78%	72%	63%	60%	73%	81%	82%	82%	83%
Rainy days (d)	1	1	1	0	0	0	0	0	0	0	0	0
avg. Sun hours (hours)	7.2	7.3	7.5	7.9	7.8	8.1	8.2	7.3	6.7	6.9	7.5	7.5

Figure 5: Climate in the area of Henties Bay (source: https://en.climate-data.org/africa/namibia/erongo-region/henties-bay-1775/)

Namibia has a low humidity in general, and the lack of moisture in the air has a major impact on its climate by reducing cloud cover and rain increases the rate of evaporation (Mendelsohn, 2002). With reference with the above figure, the difference in precipitation between the driest month and the wettest month is 9 mm. The average temperatures vary during the year by 5.1 °C. The month with the highest relative humidity is February (83.87 %). The month with the lowest relative humidity is July (60.44 %). The month with the highest number of rainy days is February (1.40 days). The month with the lowest number of rainy days is July (0.07 days).

5.2 Topography

The EPL area falls under the Central Western Plain. This landscape is broad area of plain extends inland for about 450km in places. The plains are large, and formed by erosion cutting back into higher ground and craving out the catchment area of several rivers western plains (Mendelsohn et al, 2008). The EPL lies at an altitude of between 150 - 300 m above sea level. **Figures 6** shows the topographic and the landscape map of the project area.

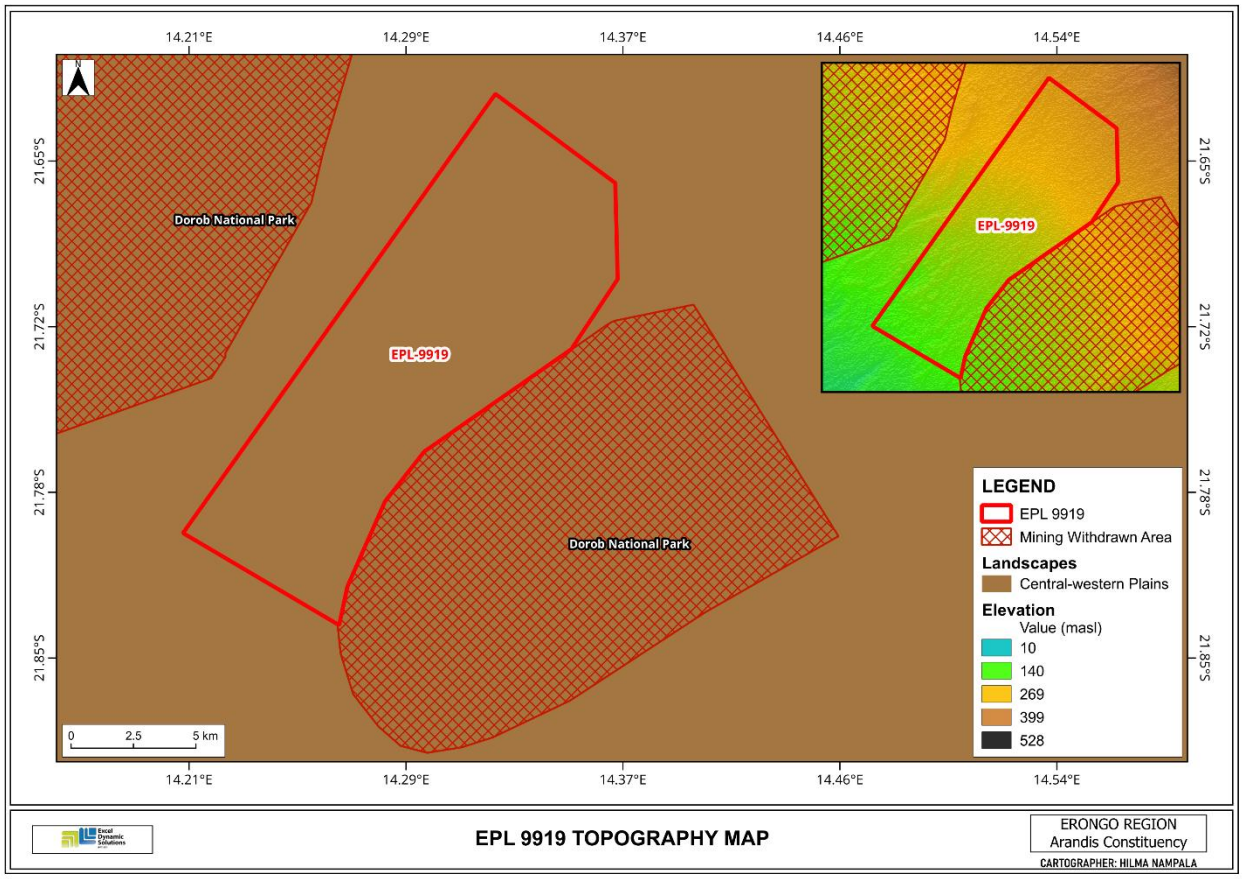

Figure 6:The topographic map around the EPL area

Figure 7 the general overview of the project area

5.3 Geology and Soil

Geology

Geologically, the area of Henties Bay and EPL lies within the Damara Supergroup and Gariep Complex (Mendelsohn *et al*, 2008). The Geology of the project area is underlain by rare metal pegmatites which are associated with syn-tectonic granites, intruded into greywacke and phyllites of Damaran age. EPL 9919 contains mineralized rock types such as mica, schist, granites, quartzite, schist, and biotite granite **(Figure 8)**.

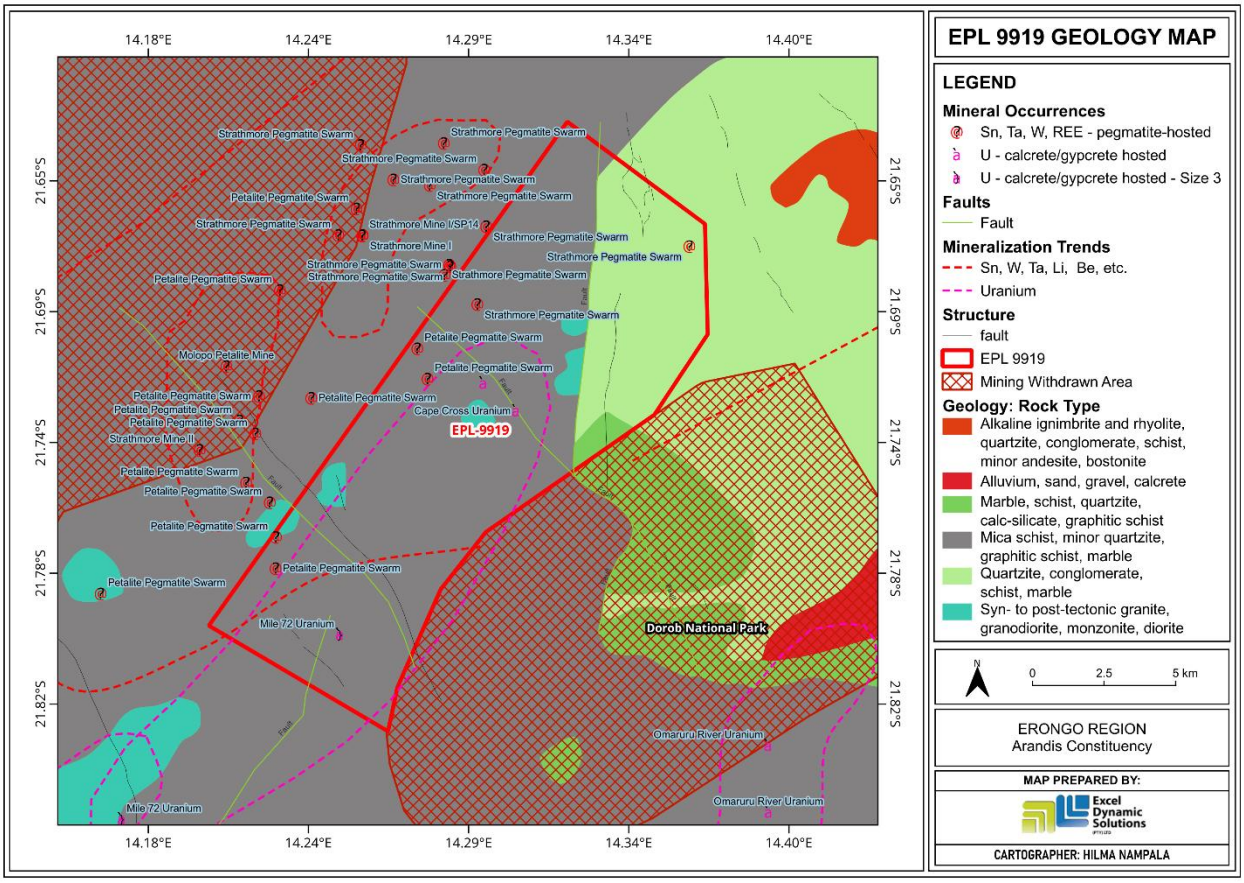

Figure 8: A map of the general geology of the project area

Soil

The majority of the EPL area contains rock outcrops containing Petric Gypsisols. These types of soil occur in the dry parts of the semi-arid regions where evapotranspiration exceeds considerably the precipitation, and where a source of sulphate is present to form gypsum are soils with accumulation of calcium carbonate. These soils that have a solid layer at a shallow depth that remains hard even when wet and are found normally found in low-lying areas of the landscape (Mendelsohn et al, 2003) such as the areas of the central Namib. These soils have a very low fertility level and therefore only the toughest vegetation survive here (Mendelsohn et al, 2003). **Figure 9** below shows the typical soil types found within the EPL area.

Figure 9 typical soil found within the EPL.

5.4 Hydrology and Water Resources

In terms of surface water/ hydrology, there are minor rivers that flow through the EPL. With regards to groundwater (hydrogeology), the EPL has very little groundwater potential and has no visible boreholes within the EPL vicinity. The nature of rock type potentially does not allow the storage, transmission and flow of groundwater. **Figure 10** shows the hydrology map of the EPL area.

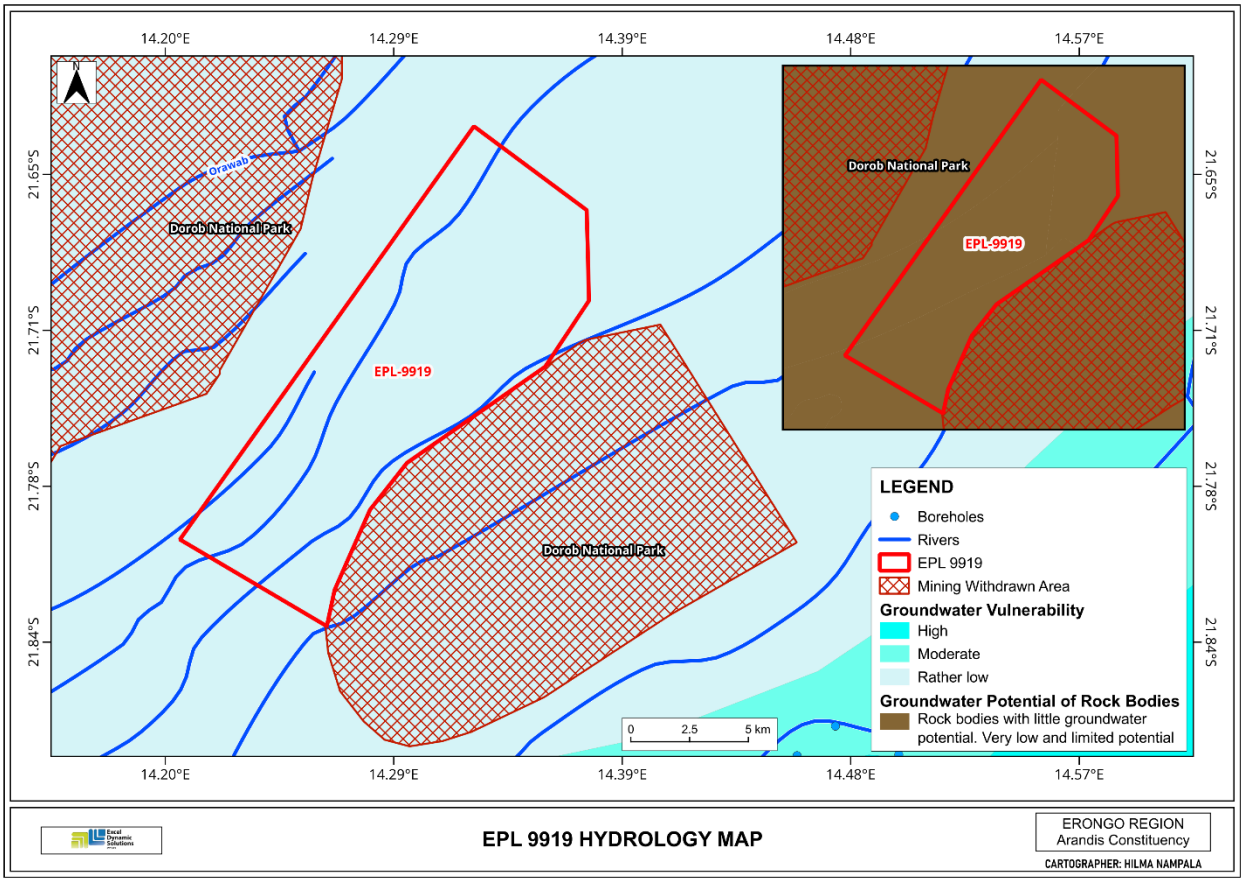

Figure 10: Shows the hydrological map

5.5 Flora and Fauna

Flora

The vegetation in the Erongo Region is generally sparse and are typical to the Namib Desert conditions. These plants have shallow root systems that are adapted to harvest fog that drips onto the soil and can withstand saline soil conditions. This area is generally described as a narrow coastal strip of hummock dunes formed around *Zygophyllum clavatum*, *Psilicaulon salicornioides*, *Salsola sp* (EDS, 2020). Naturally, the vegetation within EPL 9919 provide an indication of the present state of the environment; the slow growing perennials and short-lived annuals are extremely fragile. Most of the plants in this area, can absorb the fog moisture through the modified leaves. These plants vary according to the substrate herbs, small shrub and grass usually grow on gravel plains. Most of the plant species in the EPL are restricted, or largely restricted, to

koppies, ridges, drainage lines and rivers, which also carry the highest plant biomass for much of the year. The grassland vegetation structure with its sparse shrubs and grasses are mainly determined by precipitation and geology of the EPL. Levels of plant endemism are comparatively high in the project area. See **Table 4**. This area also contains vegetation such Lithops, Hoodia, Crassula and Adenia.

Additional species information was requested from and provided by the National Botanical Research Institute (NBRI). See below the list of species of significance (near endemic, endemic, protected, etc.) found within the EPL area. According to the NBRI, some of the species have not been collected in this area and do not appear on the list provided but the Threatened Plants Program (TPP) and therefore the NBRI have active monitoring squares in this area.

It should be noted that this are not the only species that are found within the EPL area (**Appendix E**).

Table 4: List of species of significance found within EPL 9919

SPECIES	ENDEMISM	PROTECTED	IUCN1	IUCN2
Aizoanthemum galenioides (Fenzl ex Sond.) Friedrich				
Arthraerua leubnitziae (Kuntze) Schinz	Endemic			
Brownanthus kuntzei (Schinz) Ihlenf. & Bittrich				
Commiphora pyracanthoides Engl.				
Cordia sinensis Lam.				
Crassothonna protecta (Dinter) B.Nord.				
Crassula mesembrianthemopsis Dinter		Protected		
Drosanthemum luederitzii (Engl.) Schwantes				
Dyerophytum africanum (Lam.) Kuntze				
Eberlanzia sedoides (Dinter & A.Berger) Schwantes	Near Endemic	Protected		Near Threatened
Eragrostis biflora Hack. ex Schinz				
Eragrostis pygmaea De Winter	Endemic			
Flaveria bidentis (L.) Kuntze				
Galenia papulosa (Eckl. & Zeyh.) Sond.				

Gazania jurineifolia DC. subsp. scabra (DC.) Roessler	Near Endemic			
Helichrysum tomentosulum (Klatt) Merxm. subsp. Tomentosulum				
Heliotropium tubulosum E.Mey. ex DC.				
Hoodia pedicellata (Schinz) Plowes	Near Endemic	Protected		
Indigofera auricoma E.Mey.				
Limeum argute-carinatum Wawra ex Wawra & Peyr. var. argute-carinatum				
Lycium decumbens Welw. ex Hiern				
Merremia guerichii A.Meeuse	Endemic			
Myxopappus hereroensis (O.Hoffm.) Källersjö	Endemic			
Nicotiana glauca Graham				
Polygala leptophylla Burch. var. leptophylla				
Psilocaulon salicornioides (Pax) Schwantes	Near Endemic			
Ptycholobium biflorum (E.Mey.) Brummitt subsp. angolensis (Baker) Brummitt				
Rhus marlothii Engl.				
Sarcocaulon marlothii Engl.	Endemic			
Sarcocaulon mossamedense (Welw. ex Oliv.) Hiern	Near Endemic			
Senecio engleranus O.Hoffm.	Endemic			
Sporobolus nebulosus Hack.	Near Endemic			
Stipagrostis hermannii (Mez) De Winter	Near Endemic			
Stipagrostis uniplumis (Licht.) De Winter var. intermedia (Schweick.) De Winter				
Tetraena simplex (L.) Beier & Thulin				
Tetragonia reduplicata Welw. ex Oliv.				

Trichodesma africanum (L.) Lehm.				
Tripteris microcarpa Harv. subsp. septentrionalis (Norl.) B.Nord.				
Triraphis pumilio R.Br.				
Welwitschia mirabilis	Vulnerable			
Zygophyllum simplex L.				
Zygophyllum stapffii Schinz	Endemic			

Figure 2 the flora found within the EPL

Fauna

Namibia is a large, semi-arid to arid country in the south-western region of southern Africa. It is a land of great contrasts in physical environment, and includes some of the most distinctive of the world's fauna. Relatively few animals are observed around the area of Henties Bay because of the inherently low population levels for all animals in the Namib desert (Shihepo, 2020). According to Shihepo (2020), this could be directly extrapolated from experience in similar surrounding areas, taking into account the habitats-specification of the animals that are expected to occur in that area. In addition, animals unlike plants, they can migrate and relocate to safer locations when their safety is endangered.

The most common animals in Henties Bay are springbok (*Antidorcas marsupialis*), black-backed jackal (*Canis mesomelas*), Cape fur seal (*Arctocephalus pusillus*), black hyena (*Crocuta Crocuta),* Oryx and zebra (EDS, 2020). Small animals such birds, beetles, geckos as well as a snake more likely to be found within and around the EPL. However, none of these animals were observed during site visit.

5.6 Heritage and Archaeology

During the site visit which was conducted on the on the 22 June 2025. Archaeological rock tools where observed on the site. Thus, archaeological significant artefacts may still be discovered during exploration activities deemed an ECC is obtain for this EPL, therefore, the National Heritage act, 27 of 2004 regulations and the recommendations stipulated in the Environmental Management Plan (**Appendix B**) are highly recommended.

5.7 Surrounding Land Uses

The EPL falls within the Dorob National Park and is also located about 25 Kilometers to the Omaruru Game Reserve, as shown in **Figure 13**. It is also surrounded by a few farms but does not have any farms within the EPL area. North of Henties Bay, one can visit the Cape Cross Seal Reserve with its thousands of Cape Fur Seals. Inland, a variety of private game reserves, hunting farms, lodges and guest farms. To the northeast and west of the Erongo Region, you find small-scale miners who make a living from semi-precious stones, which they sell at roadsides or to shops. (Erongo Regional Council, 2020). Additionally, there are no known tourism facilities found within the EPL. Therefore, the exploration and mining activities to be conducted on the EPL will not have an effect on the tourism sector of Henties Bay or surrounding areas.

The Proponent is required to secure a signed agreement from the competent authority (MEFT) to gain access to the areas of interest for prospecting and exploration investigations as per the Section 52 of the Minerals (Prospecting and Mining) Act No. 33 of 1992 and Section 2.2.3 of the Minerals Policy of Namibia.

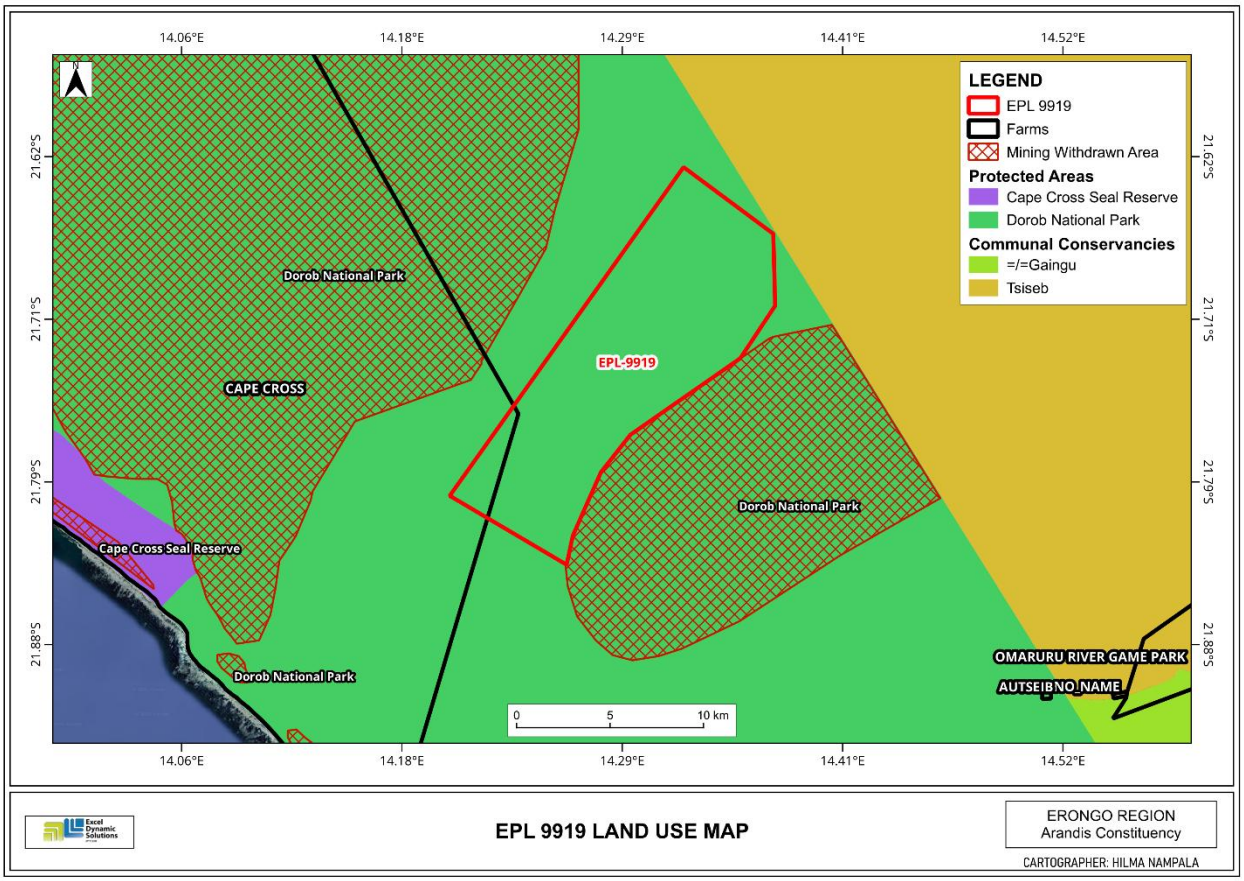

Figure 13: Land use within and surrounding EPL 9919

5.8 Population of the Erongo Region

The Erongo Region covers an area of 63,586 km^2, which comprises 7.7 per cent of Namibia's total area of about 823,680 km^2. The population of Erongo Region was 150 809 (approximately 70 986 females and 79 823 males), representing a population of 2.4 persons per square kilometers. Henties Bay population was 4 720 in 2011. (Namibia Statistics Agency, 2011).

6. PUBLIC CONSULTATION PROCESS

Public consultation forms part of an important component of an Environmental Assessment (EA) process. It provides potential Interested and Affected Parties (I&APs) with an opportunity to comment on and raise any issues relevant to the project for consideration as part of the assessment process, thus assisting the Environmental Assessment Practitioner (EAP) in identifying all potential impacts and to what extent further investigations are necessary. Public consultation can also aid in the process of identifying possible mitigation measures. Public consultation for this scoping study has been done in accordance with the EMA and its EIA Regulations.

6.1 Pre-identified and Registered Interested and Affected Parties (I&APs)

Relevant and applicable national, regional, and local authorities, local leaders, and other interested members of the public were identified. Pre-identified I&APs were contacted directly, while other parties were given a chance to register after project advertisement notices in the newspapers. Newspaper advertisements were placed in two widely-read national newspapers in the region (The Namibian Newspaper and New Era Newspaper). The project advertisement/announcement ran for two consecutive weeks. The summary of pre-identified and registered I&APs is listed in **Table 5** below and the complete list of I&APs is provided in **Appendix D**.

Table 5: Summary of Interested and Affected Parties (I&APs)

National (Ministries and State-Owned Enterprises)
Ministry of Environment, Forestry and Tourism
Ministry of Mines and Energy
Ministry of Health and Social Services
Regional, Local and Traditional Authorities
Erongo Regional Council
Henties Bay Town Council
General Public
Interested members of the public

6.2 Communication with I&APs

Regulation 21 of the EIA Regulations details the steps to be taken during a public consultation process and these have been used in guiding this process. Communication with I&APs with regards to the proposed development was facilitated through the following means and in this order:

- A Background Information Document (BID) containing brief information about the proposed project was compiled and emailed to relevant Authoritative Ministries, and upon request to all new registered Interested and Affected Parties (I&APs);
- Project Environmental Assessment notices were published in The Namibian newspaper and New Era **(16 and 23 May 2025) (Appendix F)**, briefly explaining the activity and its locality, inviting members of the public to register as I&APs and submit their comments/concerns.
- Public notices were placed at the Ministry of Environment, Forestry and Tourism in Swakopmund by their noticeboard **(Figure 12)**.
- A public meeting was scheduled and held on **22 June 2025** at the Ministry of Environment, Forestry and Tourism office .

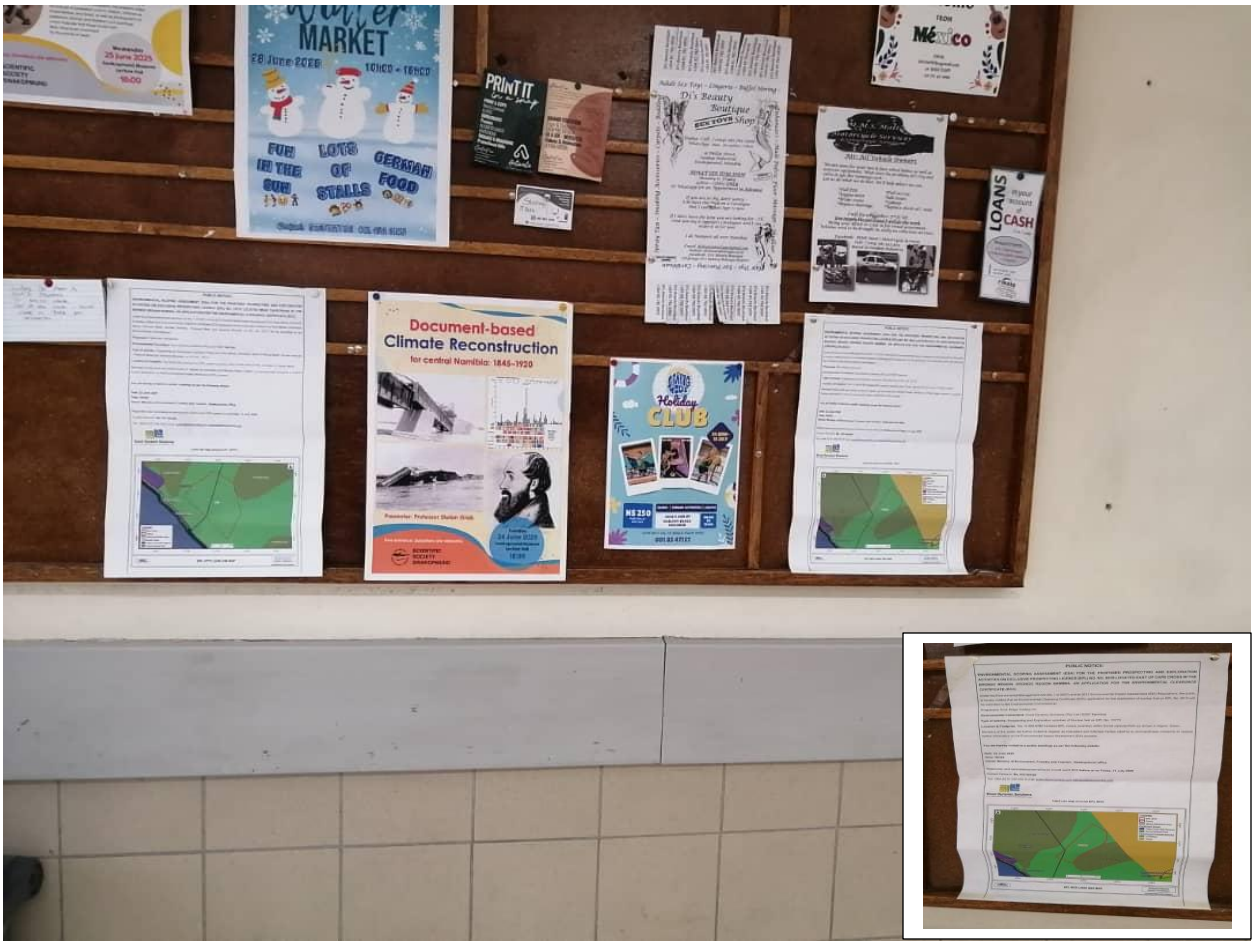

Figure 3: Public notices placed at MEFT

6.3 Feedback from Interested and Affected Parties

Issues were raised by I&APs (from the consultation meeting). These issues have been recorded and incorporated in the ESA Report and EMP. The summary of the key issues is presented in **Table 6** below.

Table 6: Summary of main issues and comments received during the public meeting

Issues	Concerns
Proponent engaging MEFT officials	The proponent must engage with the ministry official before commencement

7. IMPACT IDENTIFICATION, ASSESSMENT AND MITIGATION MEASURES

7.1 Impact Identification

Proposed developments/activities are usually associated with different potential positive and/or negative impacts. For an environmental assessment, the focus is placed mainly on the negative impacts. This is done to ensure that these impacts are addressed by providing adequate mitigation measures such that an impact's significance is brought under control, while maximizing the positive impacts of the development. The potential positive and negative impacts that have been identified from the prospecting activities are listed as follow:

Positive impacts:

- Creation of jobs to the locals (primary, secondary and tertiary employment).
- Producing of a trained workforce and small businesses that can service communities and may initiate related businesses
- Boosting of the local economic growth and regional economic development.
- Open up other investment opportunities and infrastructure-related development benefits

Negative impacts:

- Land degradation and Biodiversity Loss

- Generation of dust
- Water Resources Use
- Soil & Water Resources Pollution
- 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
- Social Nuisance: Job seeking & differing Norms, Culture & values
- Impacts associate with closure and decommissioning of exploration works

7.2 Impact Assessment Methodology

The Environmental Assessment process primarily ensures that potential impacts that may occur from project activity are identified, and addressed with environmentally cautious approaches and legal compliance. The impact assessment method used for this project is in accordance with Namibia's Environmental Management Act (No. 7 of 2007) and its Regulations of 2012, as well as the International Finance Corporation (IFC) Performance Standards.

The identified impacts were assessed in terms of scale/extent (spatial scale), duration (temporal scale), magnitude (severity) and probability (likelihood of occurring), as presented in **Table 7**, **Table 8**, **Table 9** and **Table 10**, respectively.

In order to enable a scientific approach to the determination of the environmental significance, a numerical value is linked to each rating scale. This methodology ensures uniformity and that potential impacts can be addressed in a standard manner so that a wide range of impacts are comparable. It is assumed that an assessment of the significance of a potential impact is a good indicator of the risk associated with such an impact. The following process will be applied to each potential impact:

- Provision of a brief explanation of the impact;
- Assessment of the pre-mitigation significance of the impact; and
- Description of recommended mitigation measures.

The recommended mitigation measures prescribed for each of the potential impacts contribute towards the attainment of environmentally sustainable operational conditions of the project for various features of the biophysical and social environment. The following criteria were applied in this impact assessment:

7.2.1 Extent (spatial scale)

Extent is an indication of the physical and spatial scale of the impact. **Table 7** shows rating of impact in terms of extent of spatial scale.

Table 7: Extent or spatial impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Impact is localized within the site boundary: Site only	Impact is beyond the site boundary: Local	Impacts felt within adjacent biophysical and social environments: Regional	Impact widespread far beyond site boundary: Regional	Impact extend National or over international boundaries

7.2.2 Duration

Duration refers to the timeframe over which the impact is expected to occur, measured in relation to the lifetime of the project. **Table 8** shows the rating of impact in terms of duration.

Table 8: Duration impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Immediate mitigating measures, immediate progress	Impact is quickly reversible, short term impacts (0-5 years)	Reversible over time; medium term (5-15 years)	Impact is long-term	Long term; beyond closure; permanent; irreplaceable or irretrievable commitment of resources

7.2.3 Intensity, Magnitude / severity

Intensity refers to the degree or magnitude to which the impact alters the functioning of an element of the environment. The magnitude of alteration can either be positive or negative. These ratings were also taken into consideration during the assessment of severity. **Table 9** shows the rating of impact in terms of intensity, magnitude or severity.

Table 9: Intensity, magnitude or severity impact rating

Type of criteria	Negative				
	H- (10)	M/H- (8)	M- (6)	M/L- (4)	L- (2)
Qualitative	Very high deterioration, high quantity of deaths, injury of illness / total loss of habitat, total alteration of ecological processes, extinction of rare species	Substantial deterioration, death, illness or injury, loss of habitat / diversity or resource, severe alteration or disturbance of important processes	Moderate deterioration, discomfort, partial loss of habitat / biodiversity or resource, moderate alteration	Low deterioration, slight noticeable alteration in habitat and biodiversity. Little loss in species numbers	Minor deterioration, nuisance or irritation, minor change in species / habitat / diversity or resource, no or very little quality deterioration.

7.2.4 Probability of occurrence

Probability describes the likelihood of the impacts actually occurring. This determination is based on previous experience with similar projects and/or based on professional judgment. **Table 10** shows impact rating in terms of probability of occurrence.

Table 10: Probability of occurrence impact rating

Low (1)	Medium/Low (2)	Medium (3)	Medium/High (4)	High (5)
Improbable; low likelihood; seldom. No known risk or vulnerability to natural or induced hazards.	Likely to occur from time to time. Low risk or vulnerability to natural or induced hazards	Possible, distinct possibility, frequent. Low to medium risk or vulnerability to natural or induced hazards.	Probable if mitigating measures are not implemented. Medium risk of vulnerability to natural or induced hazards.	Definite (regardless of preventative measures), highly likely, continuous. High risk or vulnerability to natural or induced hazards.

7.2.5 Significance

Impact significance is determined through a synthesis of the above impact characteristics. The significance of the impact “without mitigation” is the main determinant of the nature and degree of mitigation required. As stated in the introduction to this section, for this assessment, the significance of the impact without prescribed mitigation actions is measured.

Once the above factors **(Table 7**, **Table 8**, **Table 9** and **Table 10)** have been ranked for each potential impact, the impact significance of each is assessed using the following formula:

SIGNIFICANCE POINTS (SP) = (MAGNITUDE + DURATION + SCALE) X PROBABILITY

The maximum value per potential impact is 100 significance points (SP). Potential impacts were rated as high, moderate or low significance, based on the following significance rating scale **(Table 11)**.

Table 11: Significance rating scale

Significance	***Environmental Significance Points***	***Colour Code***
High (positive)	>60	H
Medium (positive)	30 to 60	M
Low (positive)	1 to 30	L
Neutral	0	N
Low (negative)	-1 to -30	L
Medium (negative)	-30 to -60	M
High (negative)	<-60	H

Positive (+): Beneficial impact

Negative (-): Deleterious/ adverse + Impact

Neutral: Impacts are neither beneficial nor adverse

For an impact with a significance rating of high (-ve), mitigation measures are recommended to reduce the impact to a medium (-ve) or low (-ve) significance rating, provided that the impact with a medium significance rating can be sufficiently controlled with the recommended mitigation measures. To maintain a low or medium significance rating, monitoring is recommended for a period of time to enable the confirmation of the significance of the impact as low or medium and under control.

The assessment of the exploration phases is done for pre-mitigation and post-mitigation.

The risk/impact assessment is driven by three factors:

Source: The cause or source of the contamination.

Pathway: The route taken by the source to reach a given receptor

Receptor: A person, animal, plant, eco-system, property or a controlled water source. If contamination is to cause harm or impact, it must reach a receptor.

A pollutant linkage occurs when a source, pathway and receptor exist together. Mitigation measures aim firstly, avoid risk and if the risk cannot be avoided, mitigation measures to minimize the impact are recommended. Once mitigation measures have been applied, the identified risk would reduce to lower significance (Booth, 2011).

This assessment focuses on the three project phases namely; the prospecting, exploration (and possible analysis) and decommissioning. The potential negative impacts stemming from the proposed activities of the EPL are described, assessed and mitigation measures provided thereof. Further mitigation measures in a form of management action plans are provided in the Draft Environmental Management Plan.

7.3 Assessment of Potential Negative Impacts

The main potential negative impacts associated with the operation and maintenance phase are identified and assessed below:

7.3.1 Land Degradation and Loss of Biodiversity

Fauna: The trenching, pitting and drilling activities done for detailed exploration would result in land degradation, leading to habitat loss for a diversity of fauna ranging from microorganisms to large animals. Endemic species are most severely affected since even the slightest disruption in their habitat can results in extinction or put them at high risk of being wiped out.

The presence and movement of the exploration workforce and operation of project equipment and heavy vehicles would disturb the wildlife present on the explored areas. Disturbance, not only due to human and vehicle movements, but also potential illegal hunting (poaching) of local wildlife by project related workers. This could lead to the loss or a number reduction of specific faunal species which also impacts tourism in the community.

Another potential activity that will impact the faunal community is the un-rehabilitated and/or unfenced boreholes, trenches and pits used for exploration (once they are no longer in use). If these holes and pits/trenches are not fenced off or closed off by rehabilitating them. This could

pose a high risk of wild animals falling into these holes and pits, causing injuries and potentially mortalities.

Flora: Direct impacts on flora mainly occur through clearing for the exploration access roads and associated infrastructure, and if there really is a need for new road, the Proponent should apply for this permit. The dust emissions from drilling may affect surrounding vegetation through the fall of dust. Some loss of vegetation has an inevitable consequence on the development. However, given the abundance of the shrubs and site-specific areas of exploration on the EPL, the impact will be localized, therefore manageable.

Under the status, the impact can be of a medium significance rating. With the implementation of appropriate mitigation measures, the rating will be reduced to a low significance rating. The impact is assessed in **Table 12** below.

Table 12: Assessment of the impacts of exploration on biodiversity

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M: -6	M/H: 4	M: -48
Post mitigation	L/M: -2	L/M: -2	L/M: -4	L/M: 2	L: -16

7.3.2 Generation of Dust (Air Quality)

Dust emanating from site access roads when transporting exploration equipment and supply (water) to and from site (time-to-time) may compromise the air quality in the area. Vehicular movements from heavy vehicles such as trucks would potentially create dust even though it is not always so severe. The hot and dry environment, hard and sandy nature of the substrate and low vegetation cover causes ambient fugitive dust levels. Additionally, activities carried out as part of the exploration works such as drilling would contribute to the dust levels in the air. The medium significance of this impact can be reduced to a low significance rating by properly implementing mitigation measures. The impact is assessed in **Table 13** below.

Table 13: Assessment of the impacts of exploration on air quality

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M/L: -4	M/H: 4	M: -40
Post mitigation	L: -2	L: -2	L: -2	L: -2	L: -12

7.3.3 Water Usage

Water resources is impacted by project developments/activities through pollution (water quality). The impact of the project activities on the resources would be dependent on the water volumes required by each project activity. Commonly exploration activities use a lot of water, mainly drilling. However, this depends on the type of drilling methods employed (diamond drilling is more water-consuming compared to drilling methods such as reverse circulation for instance) and the type of mineral being explored for.

The drilling method to be employed for this project's exploration activities is Reverse Circulation. The required water for exploration is about 10,000 litres per month. This water will be used for drilling purposes such cooling and washing drilling equipment, drinking and other domestic purposes. Given the low groundwater potential of the project site area, the Proponent will carter water volumes from outside the area and store it in industry standard water reservoirs/tanks on site. The exploration period is limited time wise, therefore, the impact will only last for the duration of the exploration activities and ceases upon their completion.

Without the implementation of any mitigation measures, the impact can be rated as medium, but upon effective implementation of the recommended measures, the impact significance would be reduced to low as presented in the **Table 14** below.

Table 14: Assessment of the project impact on water resource use and availability

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M/H: -4	L/M: -4	M/H: -4	M: -44
Post mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

7.3.4 Soil and Water Resources Pollution

The proposed exploration activities are associated with a variety of potential pollution sources (i.e., lubricants, fuel, and wastewater) that may contaminate/pollute soils and eventually groundwater and surface water. The anticipated potential source of pollution to water resources

from the project activities would be hydrocarbons (oil) from project vehicles, machinery, and equipment as well as potential wastewater/effluent from exploration related activities.

The spills (depending on volumes spilled on the soils) from these machinery, vehicles and equipment could infiltrate into the ground and pollute the fractured or faulted aquifers on site, and with time reach further groundwater systems in the area. However, it should be noted that the scale and extent/footprint of the activities where potential sources of pollution will be handled is relatively small. Therefore, the impact will be moderately low.

Pre-mitigation measure implementation, the impact significance is low to moderate and upon implementation, the significance will be reduced to low. The impact is assessed in **Table 15** below.

Table 15: Assessment of the project impact on soils and water resources (pollution)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M/H: -4	M: -6	M: -3	M: -39
Post mitigation	L: -1	L: -1	L: -2	L/M: -2	L: -8

7.3.5 Waste Generation

During the prospecting and exploration phase, domestic and general waste is produced on site. If the generated waste is not disposed of in a responsible way, land pollution may occur on the EPL or around the site. Improper handling, storage and disposal of hydrocarbon products and hazardous materials at the site may lead to soil and groundwater contamination, in case of spills and leakages. In addition to this, the permit for any National park, stipulates that no rubbish should be exposed off in and around the park and therefore, the exploration programme needs to have appropriate waste management for the site. To prevent these issues, biodegradable and non-biodegradable wastes must be stored in separate containers and collected regularly for disposal at a recognized landfill/dump site. Any hazardous waste that may have an impact on the animals, vegetation, water resources and the general environment should be handled cautiously. Without any mitigation measures, the general impact of waste generation has a medium significance. The impact will reduce to low significance, upon implementing the mitigation measures. The assessment of this impact is given in **Table 16**.

Table 16: Assessment of waste generation impact

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	L/M: -2	L/M: -2	M: -6	M: -3	M: –30
Post mitigation	L: -1	L: -1	L: -2	L/M: -2	L: -8

7.3.6 Occupational Health and Safety Risks

Project personnel (workers) involved in the exploration activities may be exposed to health and safety risks. These are in terms of accidental injury, owing to either minor (i.e., superficial physical injury) or major (i.e., involving heavy machinery or vehicles) accidents. The site safety of all personnel will be the Proponent's responsibility and should be adhered to as per the requirements of the Labour Act (No. 11 of 2007) and the Public Health Act (No. 36 of 1919). The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any harm or injury to the Proponent's personnel or local domestic animals.

The use of heavy equipment, especially during drilling and the presence of hydrocarbons on sites may result in accidental fire outbreaks. This could pose a safety risk to the project personnel and equipment. If machinery and equipment are not properly stored, the safety risk may be a concern for project workers.

The impact is probable and has a medium significance rating. However, with adequate mitigation measures, the impact rating will be reduced to low. This impact is assessed in **Table 17** below and mitigation measures provided.

Table 17: Assessment of the impacts of exploration on health and safety

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M: -6	M/H: -4	M: –48
Post mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

7.3.7 Vehicular Traffic Use and Safety

The district roads are the main transportation routes for all vehicular movement in the area and provide access to the EPL and connect the project area to Henties Bay. Traffic volume will increase on these district roads during exploration as the project would need a delivery of supplies and services on site. These service and supplies will include but not limited to water, waste removal, procurement of exploration machinery, equipment, and others.

Depending on the project needs, trucks, medium and small vehicles will be frequenting the area to and from exploration sites on the EPL. This would potentially increase slow moving heavy vehicular traffic along these roads. The impact would not only be felt by the district road users but also the local road users such as farms (via local access gravel and single-track roads). This would add additional pressure on the roads.

However, the exploration related heavy trucks will be transporting materials and equipment from and to site during exploration only a very limited number of times in a month. Therefore, the risk is anticipated to be short-term, not frequent, and therefore of medium significance. Pre-mitigation, the impact can be rated medium and with the implementation of mitigation measures, the significance will be low as assessed in **Table 18** below.

Table 18: Assessment of the impacts of exploration on road use (vehicular traffic)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M/H: -4	L/M: -4	M/H: -4	M: -44
Post mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

7.3.8 Noise and vibrations

Prospecting and exploration work (especially drilling) may be a nuisance to surrounding communities due to the noise produced by the activity. Excessive noise and vibrations can be a health risk to workers on site. The exploration equipment used for drilling on site is of medium size and the noise level is bound to be limited to the site only, therefore, the impact likelihood is minimal. Without any mitigation, the impact is rated as of medium significance. To change the impact significance from the pre-mitigation significance to low rating, the mitigation measures should be implemented. This impact is assessed in **Table 19** below.

Table 19: Assessment of the impacts of noise and vibrations from exploration

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	L/M: -2	L/M: -2	M: -6	M/H: -3	M: –30
Post mitigation	L: -1	L/M: -2	L: -2	L/M: -2	L: -10

7.3.9 Disturbance to Archaeological and Heritage resources

The archaeological map indicates that there are no significant archaeological sites within the EPL vicinity. In the unlikely event that the archaeological traces are exposed during site works, the expected nature of impact would be in the form of direct physical disturbance or destruction. The expected magnitude of this impact would be LOW. Due to the fact that impacts on archaeological sites are irreversible, these would be MEDIUM, with a LOCAL spatial scale. The consequence of the impact would be LOCALIZED, and its significance would be LOW. The interpretation of this assessment would indicate a LOW significance, indicating that the risk of archaeological impact is so low as to have no influence on the project decision.

The impact is assessed in **Table 20**.

Table 20: Assessment of the impacts of exploration on archaeological & heritage resources

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M: -6	M/H: -4	M: –48
Post mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

7.3.10 Impact on Local Roads/Routes

These types of projects are usually associated with movements of heavy trucks and equipment or machinery that use locals frequently. The heavy trucks travelling on the local roads and exert more pressure on them. These local roads in remote areas are normally not in a good condition already for light vehicles, and the additional vehicles such as heavy ones may make it worse and difficult to be used by small (vehicles) that already struggled on the roads before they got worse. This will be a concern if maintenance and care is not done during the exploration phase especially since this road is also used by locals and tourists who make use of this road to visit Cape Cross

Seal reserve and other sites in this area. The impact would be short-term (during exploration only) and therefore, manageable.

Without any management and or mitigation measures, the impact can be rated as medium and to reduce this rating to low, the measures will need to be effectively implemented. The assessment of this impact is presented in **Table 21**.

Table 21: Assessment of exploration on local services (roads and water)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M/H: -4	M: -3	M: -6	M: -3	M: –39
Post mitigation	L: -1	L: -1	M/L: -4	M/L: -2	L: -12

7.3.11 Social Nuisance: Local Property intrusion and Disturbance or Damage

The presence of some out-of-area workers may lead to social annoyance to the local community. This could particularly be a concern if some of those workers enter or damage properties of the locals (Resettlement area). The private properties of the locals, could be houses, fences, vegetation, or domestic and wild animals (livestock and wildlife) or any properties of economic or cultural value to the farm/landowners or occupiers of the land. The damage or disturbance to property may not only be private but local public properties. The unpermitted and unauthorized entry to private properties may cause crashes between the affected property (land) owners and the Proponent.

Pre-implementation of mitigation measures, the impact is rated as of medium significance. However, upon mitigation (post-mitigation), the significance will change from medium to low rating. The impact is assessed below **(Table 22)**.

Table 22: Assessment of social impact of community property damage or disturbance

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M: -6	M/H: -4	M: –48
Post mitigation	L: -1	L: -1	M/L: -4	M/L: -2	L: -12

7.3.12 Social Nuisance: Job seeking and Differing Norms, Culture and Values

The proposed project activities could attract a potential influx of people from outside the project area in search of job opportunities. Such influxes during the exploration phase may lead to social annoyance to the local community as well as conflicts. This is generally considered a concern, given the current unemployment rate of youth in Namibia. People from other areas/regions may learn of the project intentions through EIA notices in the newspapers and be forced to go look for work opportunities in the area. Different people may come with different ways of living to the area, which could interfere with the local norms, culture, and values. This could potentially lead to social crashes between the locals and outsiders (out-of-area job seekers).

Pre-implementation of mitigation measures, the impact is rated as of medium significance. However, upon mitigation (post-mitigation) – see mitigation measures below, the significance will change from medium to low rating. The impact is assessed in **Table 23** below.

Table 23: Social impact assessment of outsiders' influx into the area (job seeking related)

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: - 3	M: -3	M: -6	M/H: -4	M: –48
Post mitigation	L/M: -2	L/M: -2	L: -2	L/M: -2	L: -12

7.4 Cumulative Impacts Associated with Proposed Exploration

According to the International Finance Corporation (2013), 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".

Similar to many other exploration projects, one cumulative impact to which the proposed project and associated activities potentially contribute is the:

- **Impact on road infrastructure:** The proposed exploration activity contributes cumulatively to various activities such as farming activities and travelling associated with tourism and local daily routines. The contribution of the proposed project to this cumulative impact is however not considered significant given the short duration, and local extent (site-specific) of the intended mineral exploration activities.

- **The use of water:** While the contribution of this project will not be significant, mitigation measures to reduce water consumption during exploration are essential.

7.5 Mitigations and Recommendations for Rehabilitation

The rehabilitation of explored (disturbed) sites will include but not limited to the following:

- Backfilling of trenches and or pits in such a way that subsoil is replaced first, and topsoil replaces last.
- Levelling of stockpiled topsoil. This will be done to ensure that the disturbed land sites are left as close to their original state as much as possible.
- Closing off and capping of all exploration drilling boreholes to ensure that they do not pose a risk to both people and animals in the area. The boreholes should not only be filled with sand alone, as wind will scour the sand and re-establish the holes.
- Removal of exploration equipment and vehicles from the site. Transporting all machinery and equipment as well as vehicles to designated offsite storage facilities.
- Clean up of site working areas and transporting the recently generated waste to the nearby approved waste management facility (as per agreement with the facility operator/owner).

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

In conclusion, it is crucial for the Proponent and their contractors to effectively implement the recommended management and mitigation measures, in order to protect both the biophysical and social environment throughout the project duration. All these would be done with the aim of promoting environmental sustainability while ensuring a smooth and harmonious existence and purpose of the project activities in the host community and environment at large. This is to ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed. Lastly, should the ECC be issued, the Proponent will be expected to be compliant with the ECC conditions as well as legal requirements governing the mineral exploration and related activities.

8.2 Recommendations

The potential positive and negative impacts stemming from the proposed exploration activities on EPL No. 9919 were identified, assessed and appropriate management and mitigation measures (to negative impacts) made thereof for implementation by the Proponent, their contractors and project related employees.

The meeting and site survey formed the basis for this Report and the Draft EMP, and mitigation measures provided thereof, to avoid and/or minimize their significance on the environmental and social components. Most of the potential impacts were found to be of medium rating significance. With the effective implementation the recommended management and mitigation measures, this will particularly see the reduction in the significance of adverse impacts that cannot be avoided completely (from medium rating to low). To maintain the desirable rating, the implementation of management and mitigation measures should be monitored by the Proponent directly, or a project Environmental Control Officer (ECO) is highly recommended. The monitoring of this implementation will not only be done to maintain the reduce impacts' rating or maintain low rating but to also ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed right away.

The Environmental Consultant is confident that the potential negative impacts associated with the proposed project activities can be managed and mitigated by the effective implementation of the recommended management and mitigation measures and with more effort and commitment put on monitoring the implementation of these measures.

It is therefore, recommended that the proposed prospecting and exploration activities may be granted an Environmental Clearance Certificate, provided that:

- All the management and mitigation measures provided herein are effectively and progressively implemented.
- All required permits, licenses and approvals for the proposed activities should be obtained as required. These include permits and licenses for land use access agreements to explore and ensuring compliance with these specific legal requirements.
- The Proponent and all their project workers or contractors comply with the legal requirements governing their project and its associated activities and ensure that project permits and or approvals required to undertake specific site activities are obtained and renewed as stipulated by the issuing authorities.

- Site areas where exploration activities have ceased are rehabilitated, as far as practicable, to their pre-exploration state.

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