Excel Dynamic Solutions
Consultants.DataExperts.ProjectManagers

Physical Address: 112, Robert Mugabe Avenue, Windhoek

Postal Address: PO Box 997154 Maerua Mall, Windhoek

Telephone: +264 (0) 61 259 530 **Fax2email:** +264 (0) 886 560 836

Email: info@edsnamibia.com Web: www.edsnamibia.com

ENVIRONMENTAL SCOPING ASSESSMENT (ESA)

FOR

THE PROPOSED EXPLORATION ACTIVITIES OF DIMENSION STONE, BASE & RARE METALS, INDUSTRIAL MINERALS, AND PRECIOUS METALS GROUPS WITHIN THE EXCLUSIVE PROSPECTING LICENSE (EPL) 8738, LOCATED NEAR KALKFELD, OTJOZONDJUPA REGION.

ECC Application Reference No.: APP- 001221

Document Version: FINAL

May 2023

Author: Mr. Titus Shuuya	**Proponent:** Simed Trading CC
Reviewer: Ms. Rose Mtuleni	**Contact person:** Mr. Eddyson Nghituwamata
Company: Excel Dynamic Solutions (Pty) Ltd	**Telephone:** +264818313676
Telephone: +264 (0) 61 259 530	**Postal Address:** P.O. Box 8872, Bachbrecht, Windhoek
Email: public@edsnamibia.com / tshuuya@edsnamibia.com	**Email:** simedtrading@outlook.com

EXECUTIVE SUMMARY

Excel Dynamic Solutions (Pty) Ltd (the consultant) has been appointed by Simed Trading CC (the proponent) to act on their behalf, to undertake the Environmental Assessment (EA) process and apply for an Environmental Clearance Certificate (ECC) for the proposed mineral exploration on Exclusive Prospecting License (EPL) 8738. The EPL 8738 is located approximately 20 km west of the Kalkfeld Settlement in the Otjozondjupa Region, and it covers 39 329. 9425 hectares (ha) which contain at least portions of sixteen (16) farm boundaries within the vicinity namely: Oviraura North East, Oviraura, Evergreen, Klein Okarumue North 71, Eberhardshohe 81, Zierenberg 70, Klein Okarumue 72, Okarumue 82, Eremutua North East 25, Ozongombo, Onjombojumuwiwa 32, Eremutua South East, Otjeriwanga 33, Groot Ongariwanda, and Okamborombonga 30. The targeted commodities for the proposed exploration activities are Dimension Stones, Base & Rare Metals, Industrial Minerals, Precious Metals and Semi-Precious Stones.

In terms of the Environmental Management Act No.7 of 2007 and the EIA Regulations of 2012, the proposed project activities are among the listed activities that cannot be undertaken without an ECC. As such, an environmental clearance application will be submitted to the competent authorities (MEFT and MME) for decision-making before the commencement of the anticipated project activities. The Environmental Scoping Assessment (ESA) Report and Environmental Management Plan (EMP) were compiled and submitted to the competent authorities as part of the environmental clearance application.

Brief Project Description

The Proponent intends to adopt a systematic exploration approach of non-invasive and invasive techniques as summarised below:

1. **Non-invasive Techniques:**

- **Desktop review of existing data to identify potential prospecting targets.** This is a non-invasive technique approach that mainly entails a desktop review of geological maps and ground observations.

- **Lithology geochemical surveys** which include soil and rock sampling shall be collected for trace element analysis to determine the presence of Dimension Stone, Base & Rare Metals, Industrial Minerals, and Precious Metals. If required, minor pitting and trenching may be conducted to obtain lithological, structural and assay information within the EPL 8738. These will consist of about ±20 cm X 20 cm X 30 cm pits to collect at least 1 kg samples which can be sieved to obtain 50 g material for analysis.
- **Electromagnetic and geophysical surveys** shall be conducted should there be a need, following the designed exploration program. This will shall include baseline data collection of the substrata by airborne or ground, through sensors such as radar, magnetic and electromagnetic to detect the targeted mineralization within the EPL 8738, if required.

2. Invasive Technique:

- **Detailed exploration drilling**, which is an invasive technique shall be conducted if the findings from the desktop study, lithology geochemical, electromagnetic and geophysical surveys are positive and feasible. These will entail drilling holes and sample collection for further analysis to determine the depth and spatial extent of the potential mineralization. The proponent intends to use both Reverse Circulation (RC) and diamond drilling to about a 200 m depth. If required, some vegetation may be cleared or thinned to create dirty roads to allow access to the targeted locations or drilling sites, however, existing tracks will be used as far as reasonably practical.
- 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 either Reverse Circulation (RC) drilling and/or diamond drilling. RC drilling uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large-volume sample, which is comprised of 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 program, 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 core equipment parking and maintenance yard may be set up (including a fuel and lubricants storage facility).

Public Consultation Process

Public participation is the cornerstone of the ESA process as detailed in the EIA Regulation 21. The process ensures that sufficient information is gathered and/or shared transparently with all Interested and Affected Parties (I&APs) as well as other stakeholders, including the findings of the reports, during the specified comment and review periods. The communication with I&APs about the proposed exploration activities was conducted, but not limited to the following:

- A Background Information Document (BID) containing brief non-technical information about the proposed project was compiled, and distributed to identified and registered I&APs.
- Public newspaper adverts notices were published in The Namibian (23rd March 2023 & 30th March 2023) and New Era (24th March 2023 & 31st March 2023) newspapers briefly explaining the activity and its locality, inviting members of the public to register as I&APs and submit their comments/concerns.
- A consultation meeting was scheduled and held with the I&APs on the 26 of April 2023 at Kalkfeld Community Hall, but there were no I&APs present. However, efforts were made to engage and consult with the directly affected landowners during the farm visit during the heritage impact assessment.

  The issues and concerns raised during the farm visit were noted and incorporated within the ESA and EMP reports.

Potential impacts identified

The following potential positive and negative impacts are anticipated:

- **Positive impacts**: Socio-economic development through employment creation and skills transfer or capacity building; 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 (e.g., Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc) and local income generation through the hiring of local machine and equipment, e.g., bulldozer, grader, excavator etc.

- **Negative impacts**: Potential disturbance of existing grazing land; Physical land/soil disturbance; Impact on local biodiversity (fauna and flora); Habitat disturbance and potential illegal wildlife and livestock theft 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 infrastructures such as local roads, vibrations, and noise associated with drilling activities may be a nuisance to the community, wildlife and livestock; 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 as practically as possible.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The potential impacts that are anticipated from the proposed project activities were identified, described, and assessed. The significant adverse (negative) impacts were mainly evaluated as a medium rating, however, with appropriate and effective implementation of the recommended management and mitigation measures by the Proponent, their contractors and project-related employees, the significance of adverse impacts is expected to reduce from Medium to Low.

The public was consulted as required by the EMA and its 2012 EIA Regulations (Sections 21 to 24), which was conducted via the two newspapers (New Era and The Namibian) and site notice for this environmental assessment. A face-to-face consultation meeting was held with the directly affected farmers (landowners) at Kalkfeld Community Hall and at the landowner's residence, whereby they raised comments, issues and concerns on the proposed project activities. However, no major issues or concerns were raised during the public consultation process.

The comments, issues and concerns raised by the registered I&APs formed the basis for this report and the Draft EMP. The issues 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. Particularly observed a reduction in the significance of adverse impacts that cannot be avoided completely (from high/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 the 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 as the project progress.

The Proponent including contractors must ensure the effective implementation of the recommended management and mitigation measures to protect both the biophysical and social environment throughout the project duration. All these would be done to promote environmental sustainability while ensuring a smooth and harmonious existence and purpose of the project activities in the community and environment at large.

Recommendations

Excel Dynamic Solutions Pty Ltd (EDS) is confident that the potential negative impacts associated with the proposed project activities can be avoided, managed, and mitigated by the effective implementation of the recommended management and mitigation measures and with more effort and commitment put into compliance audit monitoring.

It is, therefore, recommended that the proposed prospecting and exploration activities 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 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, and where it is possible, progressive rehabilitation should be implemented.
- Environmental Compliance monitoring reports should be compiled and submitted to the MEFT/DEAF.

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.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Appendix A: Notice of Preparedness to Grant an Application for an Exclusive Prospecting License (EPL)

Appendix B: Draft Environmental Management Plan (EMP)

Appendix C: Curricula Vitae for the Environmental Assessment Practitioner (EAP)

Appendix D: Background Information Document (BID)

Appendix E: Evidence of public consultation

LIST OF ABBREVIATIONS

Abbreviation	Meaning
BID	Background Information Document
DEAF	Department of Environmental Affairs and Forestry
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner

Abbreviation	Meaning
ECC	Environmental Clearance Certificate
EDS	Excel Dynamic Solutions
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPL	Exclusive Prospecting Licence
ESA	Environmental Scoping Assessment
GG & GN	Government Gazette & Government Notice
I&APs	Interested and Affected Parties
IFC	International Finance Corporation
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
PPE	Personal Protective Equipment
Reg / S	Regulation / Section
TOR	Terms of Reference

KEY TERMS

Terms	Definition
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.

Terms	Definition
Exclusive Prospecting Licence	Is a license that confers exclusive mineral prospecting rights over land of up to 1000 km^2 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 and Flora	All the animals and plants found in an 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).
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

Terms	Definition
	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

Simed Trading CC (the Proponent) has applied to the Ministry of Mines and Energy (MME) to be granted the Exclusive Prospecting Licence (EPL) 8738. In terms of Section 48 (4) of the Minerals (Prospecting and Mining) Act, No. 33 of 1992, a notice of preparedness was given by MME to grant the EPL application which was lodged on the 18th of January 2022 (**Appendix A**). However, an Environmental Scoping Assessment (ESA) study was given as a prerequisite for the approval and granting of the Environmental Clearance Certificate (ECC) for the EPL to the Proponent (**Appendix A**).

The proposed activity covers 39329.9425 hectares, and it is located approximately 20 km west of the Kalkfeld Settlement in the Otjozondjupa Region. The EPL is accessible via the C33 national road, onto the D2403 or D2338 roads and it includes portions of the following farms: Oviraura North East, Oviraura, Evergreen, Klein Okarumue North 71, Eberhardshohe 81, Zierenberg 70, Klein Okarumue 72, Okarumue 82, Eremutua North East 25, Ozongombo, Onjombojumuwiwa 32, Eremutua South East, Otjeriwanga 33, Groot Ongariwanda, and Okamborombonga 30 (**Figure 1 & Figure 2**).

The targeted commodities for the proposed exploration activities are Dimension Stones, Base & Rare Metals, Industrial Minerals, Precious Metals and Semi-Precious Stones.

In terms of the Environmental Management Act No. 7 of 2007 and its Environmental Impact Assessment (EIA) Regulations (2012), Section 27 (1) provides a list of activities that may not be carried out without an EIA undertaken and an ECC obtained. Mining and quarrying (including prospecting and exploration) activities are listed among the activities that may not be undertaken without an ECC. Therefore, individuals or organizations may not carry out prospecting and exploration activities among those listed, without an EIA undertaken and an ECC awarded.

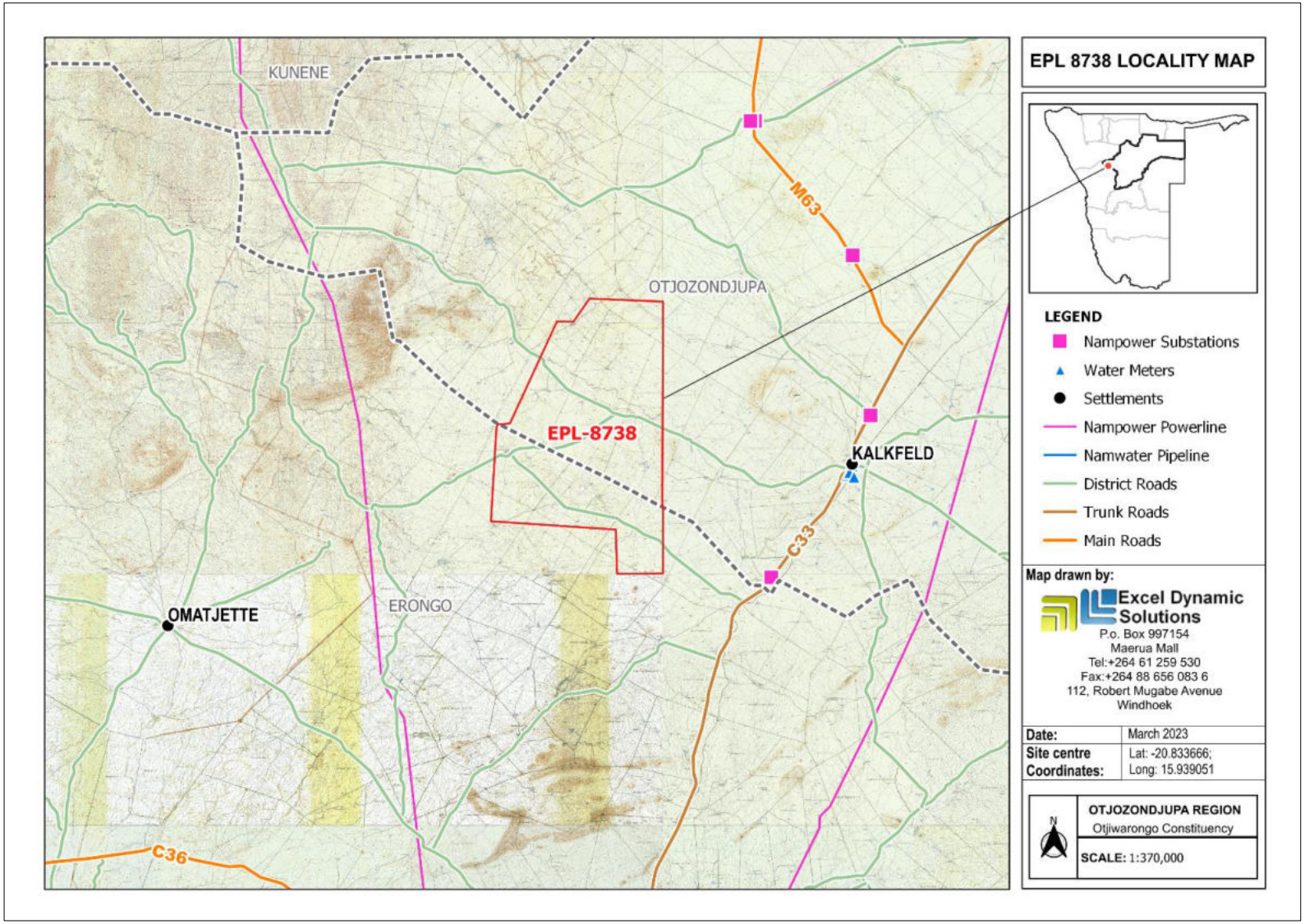

Figure 1 – Locality map of EPL 8738

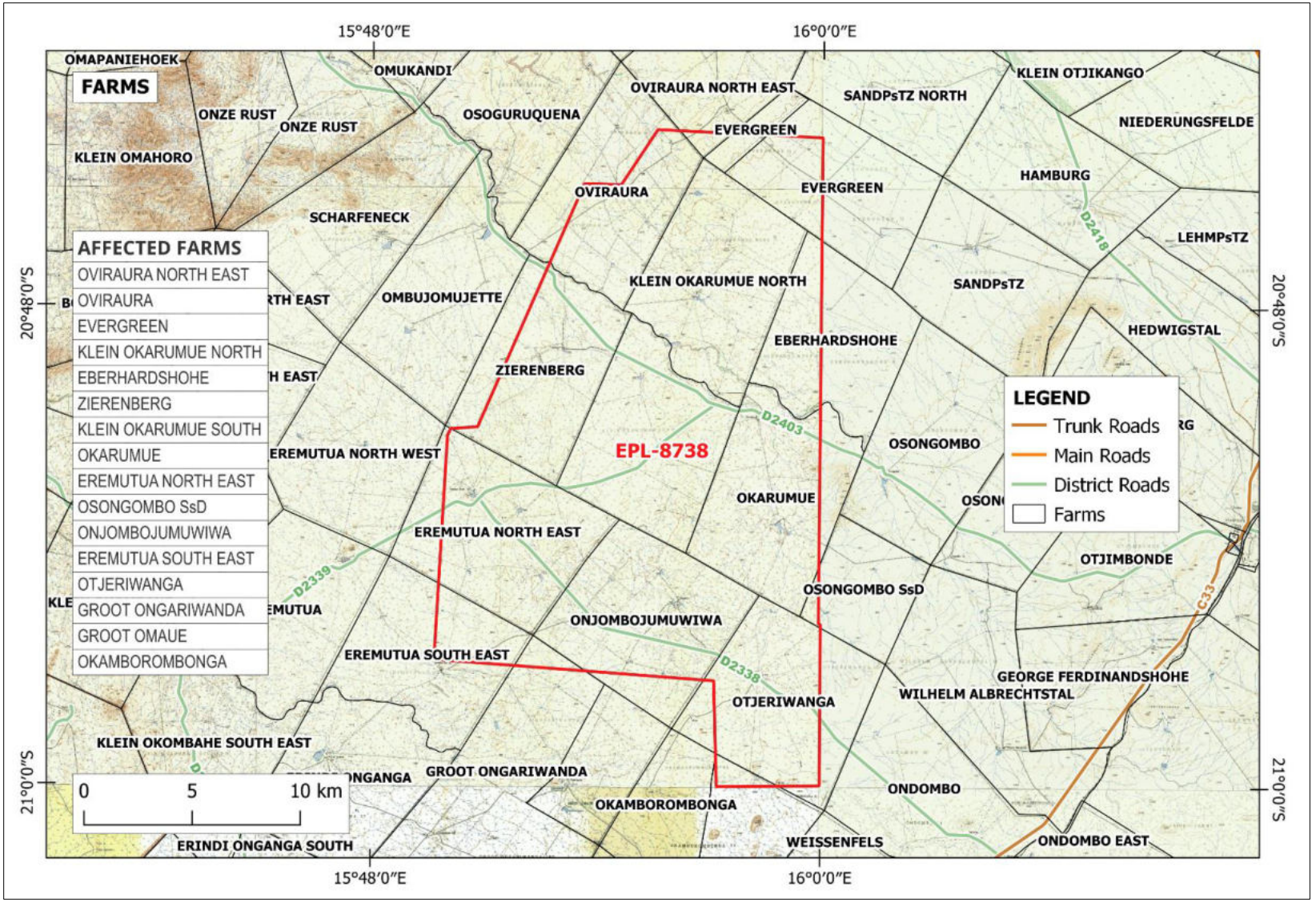

Figure 2 – Farms that are contained within the EPL 8738

1.2 Terms of Reference, Scope of Works and Appointed Environmental Assessment Practitioner

Excel Dynamic Solutions (Pty) (EDS) has been appointed by the Proponent to undertake an Environmental Assessment (EA), and thereafter, apply for an ECC for prospecting and exploration works on the EPL 8738. During this reporting period, there were no formal Terms of Reference (ToR) provided to EDS by the Proponent. EDS, instead, relied on the requirements of the Environmental Management Act No. 7 of 2007 and its EIA Regulations (GN. No. 30 of 2012) to conduct the study.

The application for the ECC is compiled and submitted to the Ministry of Environment, Forestry and Tourism (MEFT) for project registration as well as environmental authorization purposes, upon submission of an ESA Report and Environmental Management Plan (EMP) as per **Appendix B**.

The EIA project is headed by Mr. Titus Shuuya, a qualified and experienced Environmental Impact Practitioner in arid environments – and supported by Mr. Nerson Tjelos, a qualified and experienced Geoscientist Environmental Assessment Practitioner, and further reviewed by Ms. Rose Mtuleni and their Curricula Vitae are attached as **Appendix C.**

1.3 The Need for the Proposed Project

Mining and quarrying activities contribute significantly to Namibia's economic sector and have triggered an increase in recent prospecting and exploration activities across the country. The mining industry is one of the largest contributors to the Namibian economic development which can significantly improvise the living standards of the nation. Thus, the Proponent intends to conduct prospecting and exploration activities to delineate mineral deposits of the targeted commodities, as part of the resource development for mining purposes.

Prospecting and exploration activities in Namibian have attracted significant international investors with great potential to enhance and contribute to economic growth. It provides permanent and temporary employment opportunities, and government revenue that assist funding for socio-economic infrastructural development among other initiatives. As a result, the minerals industry yields foreign exchange which accounts for a significant contribution to a portion of the Gross Domestic Product (GDP). In addition, the industry is enabled to escalate the capacity-building workforce for small-to-medium enterprises for community benefits. These could entail

fostering several associated activities such as manufacturing of exploration results to semi or finished products and/or mining equipment, and provision of engineering and environmental services, which are currently being under-utilised. The mining sector forms a vital part of some of Namibia's development plans, such as Vision 2030, National Development Plans (e.g., NDP5), Harambee Prosperity Plans (HPPs) etc. Thus, mining is essential to the development goals of Namibia in contributing to meeting the ever-increasing global demand for minerals – especially raw materials for national prosperity. Therefore, successful prospecting and exploration of the proposed EPL would enable the mining of targeted commodities, which could contribute towards achieving the goals of the sustainable resource national development plans.

2 PROJECT DESCRIPTION: PROPOSED PROSPECTING AND EXPLORATION ACTIVITIES

Prospecting and exploration of minerals are the initial components of a potential mining project which could result in a development and eventual mining project. They entail acquiring the necessary data set for further decision-making and investment options, and the duration is anticipated to last for about three years and beyond, depending on the availability of the exploration resources which are further described in this section.

2.1 Prospecting Phase

This is the initial prospecting and exploration phase which involves reviewing existing reports and composite stratigraphic, lithological-geochemical maps of the targeted commodity and areas to identify prospective lithostratigraphic packages. In addition to the literature review, ground truthing (lithological, soil/rock, mapping, and sampling) shall be conducted for verification. During this stage, there shall be no physical environmental disturbance required and/or minimal. This is an advanced exploration stage whereby the Proponent will be required to assess the proposed area for detailed geological mapping, and geophysical and geochemical surveys, supported where necessary by geophysical surveys, to define targets for test pitting, trenching, and drilling.

2.1.1 Desktop Study: Geological mapping

This activity will involve a detailed desktop review of geological area maps, ground observations and other relevant literature of the information obtained during previous geological studies of the area.

2.1.2 Geophysical surveys

Geophysical surveys will include data collection of the substrate by air or ground, through sensors such as radar, magnetic and/or electromagnetic sensors, to detect and ascertain the targeted mineralization in the area. Ground geophysical surveys shall be conducted, where necessary, using vehicle-mounted sensors or handheld by the project team, while in the case of air surveys, the sensors are mounted to an aircraft, which navigates over the target area might be used.

2.1.3 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 target commodities are present. Additionally, trenches or pits may be dug depending on the commodity adopting a manual or excavator to further investigate the mineral potential.

In addition, soil sampling consists of small pits being dug where 1 kg samples can be extracted and sieved to collect about 50 g of material. As necessary, and to ensure adequate risk mitigation, excavations will be rehabilitated immediately after obtaining the samples, or the sites will be secured until the trenches or pits are closed. The landowner and other relevant stakeholders will be engaged regularly to obtain authorization where necessary.

2.2 Exploration (Drilling, Sampling and Analysis) Phase

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. It is noteworthy that no explosives will be used during the exploration phase.

2.2.1 Detailed Exploration Drilling

Detailed exploration drilling technique shall be conducted if the findings from the desktop study, lithology geochemical, electromagnetic and geophysical surveys are positive and feasible. These will entail drilling holes and sample collection for further analysis to determine the depth and spatial extent of the potential mineralization. The Proponent intends to use both Reverse Circulation (RC) and diamond drilling to about 200 m depth. If required, some vegetation may be cleared or thinned to create dirty roads to allow access to the targeted locations or drilling sites, however, existing tracks will be used as far as reasonably practical.

RC drilling technique uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large-volume sample, which is comprised of 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, during advanced stages of exploration if large amounts of sample material may be required for analysis and to perform processing trials. A typical drilling site will consist of a drill rig, drill core and geological samples store and a drill equipment parking and maintenance yard, including a fuel and lubricants storage facility with a secondary containment.

2.2.2 Accessibility to Site

The project area is located approximately 20 km west of the Kalkfeld Settlement in the Otjozondjupa Region **(Figure 1).** The proposed site is accessible via the C33 national road, onto the D2403 or D2338 roads, which both traverse the EPL as indicated in **Figure 2.**

2.2.3 Material and Equipment

The input resources required for the prospecting and exploration program in terms of vehicles and equipment include but are not limited to 4X4 vehicles, a truck, water tanks, drill rigs and drilling machines, sampling equipment, ablution facilities, 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.

2.2.4 Services and Infrastructure

Water: Approximately 500 litres of water consumption per day will be required for the operational activities, including water for drinking, sanitation, cooking, dust control, drilling, as well as washing equipment. Water will be brought on-site from the nearest town, but if required or deemed necessary, or the proponent finds good groundwater during the exploration activity, the borehole may be used as a water source, provided the permission of the landowner and the appropriate abstraction permit is obtained from the competent authority.

Power supply: Power required during the operation phase will be provided from the diesel generators, specifically for drilling activities. However, various machinery and equipment required for drilling will have their power supplies or generators attached. It is expected that about 200 litres per month will be required, especially during drilling activities.

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

2.2.5 Waste Management

The site will be equipped with secured jackal-proof 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 disposed of at 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 before utilizing these facilities, in the case of the production of any hazardous waste.

Sanitation and human waste: If required, a portable ablution facility will be used, and emptied regularly and the sewage will be disposed of according to the approved disposal or treatment methods of the waste products, especially during the detailed exploration programme.

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 immediately and contained correctly before polluting the site. Any spillage, including minor spills, shall be cleaned up immediately. Soil contaminated with hydrocarbons shall be temporally stored in an appropriate containment and further disposed to a permitted hazardous disposal facility and a disposal certificate shall be on record. The Proponent will ensure that all vehicles and equipment are well maintained and serviced regularly to prevent hydrocarbon leakage. Hazardous substances that are expected to be used on-site are listed in **Table 1.**

Table 1 – Hazardous substances that are expected on site.

Substance	Purpose	Storage
Diesel	Fuel for vehicles and generators	Sealed drums and containers, kept in PVC-lined storage facility or drip trays.
Petrol	Fuel for chainsaws, vehicles and generators	Sealed drums and containers, kept in PVC-lined storage facility or drip trays.
Oil, grease and lubricants	For vehicles, equipment and other machinery	Sealed containers are kept in lined PVC storage facilities or drip trays. Drip trays and absorbent material shall be installed as needed.

2.2.6 Health and Safety

Adequate and appropriate Personal Protective Equipment (PPE) will be provided to all project personnel. A minimum of two (2) first aid kits, and at least one (1) first aider (with a valid certificate) shall be readily available on-site to attend to potential minor injuries, especially during the detailed exploration activity.

2.2.7 Safety and Security

Storage Site: If required, the Proponent shall provide 24-hour security for temporary storage areas for exploration material, equipment, and machinery across the site.

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

2.2.8 Accommodation

The exploration team will be accommodated in the Kalkfeld settlement or Omaruru, or a campsite will be set up near the exploration sites. If the accommodation camp is to be set up on a farm, necessary arrangements will be made with the landowner, and a written agreement shall be in place. Prospecting and exploration activities will be conducted during the day only and the exploration team will commute to the targeted site (s) from their place of accommodation.

2.3 Decommissioning and Rehabilitation Phase

Once the exploration activities on the EPL come to an end, the Proponent shall ensure the site is fully rehabilitated as per the agreement with the landowner. The progressive rehabilitation principle shall be adopted when certain activities or sites are completed. Decommissioning and rehabilitation are primarily reinforced through a decommissioning and rehabilitation plan, which consists of safety, health, environmental, and contingency aspects. The economic situation, unconvincing exploration results or other unforeseen circumstances might force the Proponent to cease the exploration program before the predicted closure.

3 PROJECT ALTERNATIVES

Alternatives are defined as the “different means of meeting the general purpose and requirements of the activity” in the Environmental Management Act No.7 of 2007. This section will highlight the different ways in which the project can be undertaken and identify the alternative that will be the most practical, but least damaging to the environment is identified and considered.

3.1 Types of Alternatives Considered

3.1.1 The "No-go" Alternative

This option means that no further activities are undertaken in the EPL area, and it will be reverted to the MME. Should this happen, the economic and social growth associated with the potential resource will not reach fruition, and the Namibian economy will fail to benefit from a potential mineral resource. However, this option would be that no exploration activities would take place and thus no negative impact on the environment and/or the residents would occur and the current land use for the proposed site will remain unchanged.

The key losses that may never be realized if the proposed project does not go ahead include:

- Loss of foreign direct investment and the proposed temporary job opportunities for community members will not come to the realization;
- No realization of local businesses supports through the procurement of consumable items such as PPE, machinery spare parts, lubricants, etc;
- Loss of potential income to the local and national government through land lease fees, license lease fees, various tax structures and state revenue;
- Improved geological understanding of the site area regarding the targeted commodities will not transpire;
- Socio-economic benefits such as skills acquisition or capacity building to local community members would be not realized.
- Considering the above losses, the “No-Go” alternative was not considered a viable option for this project.

3.1.2 Exploration Location

The proposed exploration location is dependent on the local and regional geological formation, the geological economy, and the exploration and mining history of the EPL. As such, finding an alternative location for the planned prospecting and exploration activities is not probable – because the target commodities are site-specific, and are primarily determined by the geology (e.g., host rocks) and the tectonic environment (e.g., ore-forming mechanism). In addition, the national mineral resources’ potential locations are mapped and categorized by MME in exclusive prospecting licenses, mining licenses and claims, mineral deposit retention licenses, reconnaissance licenses and exclusive reconnaissance licenses and available information on

EPL 8738. The proponent proposes is interested in potential base & rare metals, dimension stones, industrial minerals, and precious metals as indicated **(Figure 3).**

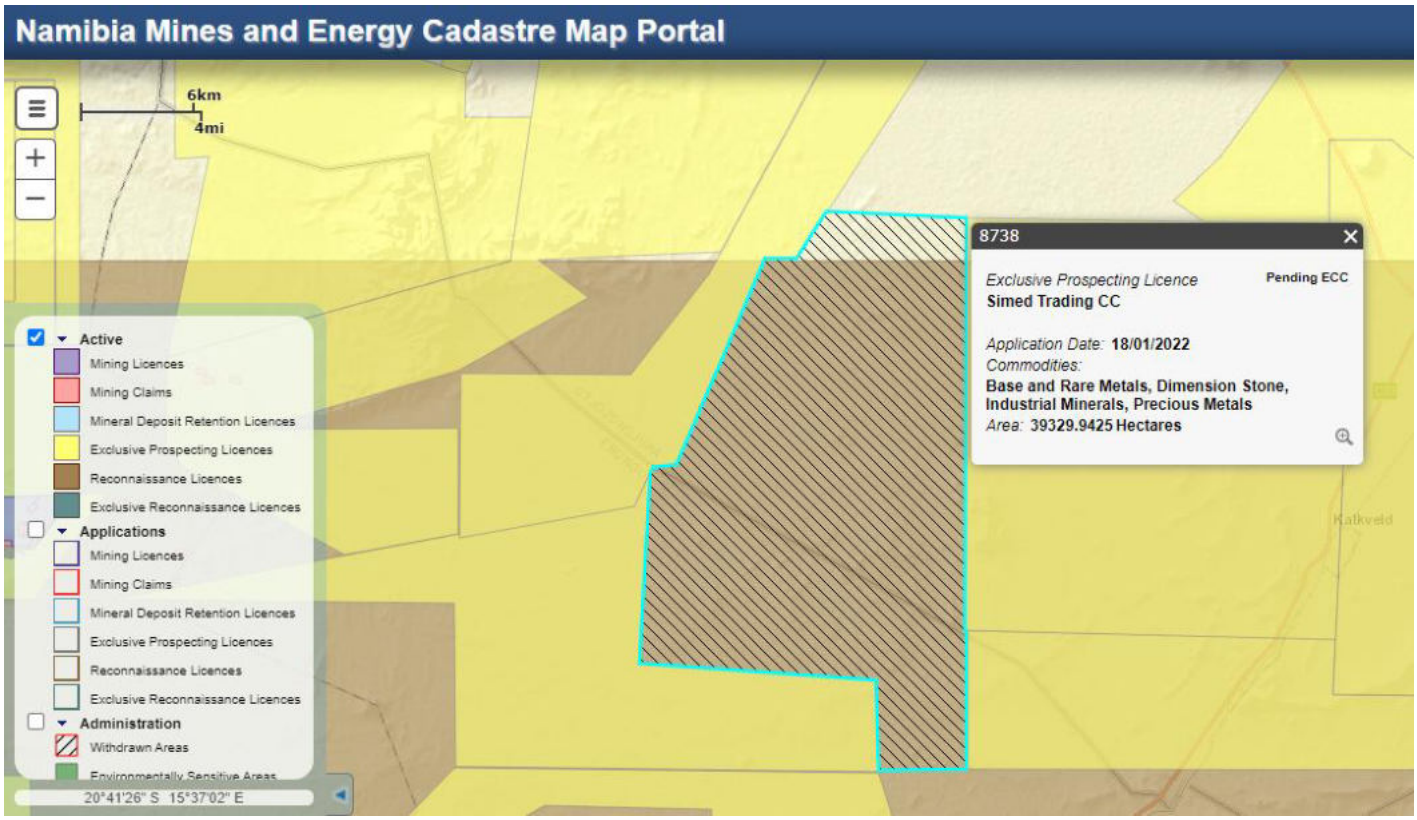

Figure 3 – Location of EPL 8738 on the MME Cadastre Map Portal

3.1.3 Exploration Methods

Both invasive and non-invasive exploration activities as indicated in this report are expected to take place and in case of an economically viable discovery is made, the project will proceed to the mining phase upon approval of a mining EIA, license and other applicable legal requirements.

4 LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES

Prospecting and exploration activities have legal implications associated with certain applicable national legal standards and international best practices. A summary of applicable and relevant international policies and Namibian legislation, policies and guidelines for the proposed development is given in this section **(Table 2 & Table 3).** This summary serves to inform the Proponent, I&APs, MEFT and MME of the compliance requirements and expectations, as laid out in terms of these legal 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 conducted following the Environmental Management Act No. 7 of 2007 and its EIA Regulations (GG No. 4878 GN No. 30).

The Act has stipulated requirements to complete the required documentation to obtain an ECC as authorization to undertake certain listed activities.

The listed activities that trigger the proposed project are as follows:

MINING AND QUARRYING ACTIVITIES

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

3.2 *Other forms of mining or extraction of natural resources whether regulated by law or not.*

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

FORESTRY ACTIVITIES

4. *The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorization in terms of the Forest Act No. 12 of 2001 or any other law.*

- If required to access target sites, minimal vegetation clearing or thinning shall be conducted, but this will only be for dirt roads.

The EIA Regulations GN 28-30 (GG 4878) detail requirements for public consultation within a given environmental assessment process (GN 30 S21). The EIA regulations also outline the required details of a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).

Other legal obligations that are relevant to the proposed activities of EPL and related activities are presented in **Table 2 & Table 3**.

Table 2 – Applicable local, national and international standards, policies and guidelines

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: "…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."	By implementing the environmental management plan, the establishment will be conformant to the constitution in terms of environmental management and sustainability. Ecological sustainability and maintaining its integrity will be the main priority for the proposed development.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
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, even though the proposed activity is not within these areas.
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, to conserve biodiversity and to contribute to national development.	

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
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 licence holder may not exercise his/her rights in any town or village, on or in a proclaimed road, land utilised for cultivation, within 100 m 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 if the holder of a mineral license intends to abandon the mineral license area. Section 68 stipulates that an application for an exclusive prospecting license (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 to prevent or minimize any such effect.	The Proponent should enter into a written agreement with landowners before carrying out prospecting and exploration on their land. The Proponent may not carry out exploration activities within the areas limited by Section 52 (1) of this Act. The Proponent should assess 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.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	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 concerning 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 licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"	The Proponent should obtain the necessary authorisation from the MME for the storage of fuel on-site if required.

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 I&APs and must be consulted during the Environmental Assessment (EA) process. The project site falls under the Otjozondjupa Regional Council; 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 Act's requirements. The necessary management measures and related permitting requirements must be taken. This was done by 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.	

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
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.
Forestry Act (Act No. 12 of 2001	The Act provides for the management and use of forests and forest products. Section 22. (1) provides: "Unless otherwise authorised by this Act, or by a licence issued under subsection (3), no person shall on any land which is not part of a surveyed erven of a local authority area as defined in section 1 of the Local Authorities Act, 1992 (Act No. 23 of 1992) cut, destroy or remove - (a) vegetation which is on a sand dune or drifting sand or on a gully unless the cutting, destruction or removal is done for the purpose of stabilising the sand or gully; or (b) any living tree, bush or shrub growing within 100 m of a river, stream or watercourse."	The Proponent will apply for the relevant permit under this Act if it becomes necessary.
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.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labourers.	
Atmospheric Pollution Prevention Ordinance (1976)	This ordinance provides for the prevention of air pollution and is affected by the Health Act 21 of 1988. Under this ordinance, the entire area of Namibia, apart from East Caprivi, is proclaimed as a controlled area for the purposes of section 4(1) (a) of the ordinance.	The proposed project and related activities should be undertaken in such a way that they do not pollute or compromise the surrounding air quality. Mitigation measures provided in EMP should be implemented on-site.
Hazardous Substance Ordinance, No. 14 of 1974	The ordinance provides for the control of toxic substances. It covers manufacture, sale, use, disposal and dumping as well as import and export. Although the environmental aspects are not explicitly stated, the ordinance provides for the importing, storage, and handling.	The Proponent should handle and manage the storage and use of hazardous substances on site so that they do not harm or compromise the site environment

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
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, Industrial Relations and Employment Creation 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 listed in **Table 3.**

Table 3 – Applicable International Policies, Principles, Standards, Treaties and Convention.

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	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
	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	
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	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

Statute	Provisions	Project Implications
	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	(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	

Statute	Provisions	Project Implications
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 environmental sustainability United Nation Convention	The project activities should not be such that they contribute to desertification.
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 or mitigated.

Statute	Provisions	Project Implications
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 baseline environment is critical in predicting and evaluating the potential environmental impacts of the proposed activity. Understanding the pre-project conditions of the environment will aid in laying down background "information" on the status quo and future projections of environmental conditions after proposed works on the EPL. In addition, it helps to identify the sensitive environmental features that may need to be protected through the recommendations and effective implementation of mitigation measures. The conditions of the natural, cultural, social and economic systems and their interrelations within the receiving environment are detailed in this chapter. These include, but are not limited to climatic conditions, geology and soils, topography, geohydrology and water resources, fauna, flora, avifauna, socio-economic, archaeology and heritage sites around the vicinity of EPL 8738.

5.1 Biophysical Environment

5.1.1 Climate Conditions

Climatic conditions within the vicinity of the Kalkfeld settlement have relatively constant temperatures for most of the years. Like other locations across the country, there are unreliable and unpredictable rainfall patterns with seasons and temperature variations during the year. Within the vicinity of the proposed project, the variation in the precipitation between the driest and wettest months is 73 mm. Whereas, the variation in temperatures throughout the year is 8.3 °C.

The month with the highest relative humidity is March (50.77 %) when compared to the lowest relative humidity in September (17.90 %). Rainfall mainly occurs in February with the rainiest days (10.00 days), while August has few rainy days (0.03 days) as indicated in the climate condition around the project area **Figure 4.**

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	24.7 °C (76.4) °F	24.3 °C (75.8) °F	23.6 °C (74.6) °F	22.3 °C (72.1) °F	20.1 °C (68.2) °F	16.9 °C (62.4) °F	16.7 °C (62.1) °F	19.2 °C (66.5) °F	22.5 °C (72.5) °F	24.7 °C (76.5) °F	24.8 °C (76.7) °F	25 °C (77) °F
Min. Temperature °C (°F)	18.3 °C (65) °F	18.4 °C (65.2) °F	18.1 °C (64.5) °F	16.1 °C (61) °F	13.1 °C (55.6) °F	9.6 °C (49.3) °F	9.4 °C (48.9) °F	10.8 °C (51.5) °F	13.5 °C (56.4) °F	16.2 °C (61.1) °F	16.9 °C (62.4) °F	17.8 °C (64) °F
Max. Temperature °C (°F)	31.8 °C (89.3) °F	30.9 °C (87.6) °F	29.6 °C (85.3) °F	28.5 °C (83.2) °F	27 °C (80.6) °F	24.5 °C (76.1) °F	24.3 °C (75.8) °F	27.4 °C (81.4) °F	31.1 °C (87.9) °F	33.1 °C (91.5) °F	32.9 °C (91.1) °F	32.7 °C (90.9) °F
Precipitation / Rainfall mm (in)	72 (2)	73 (2)	68 (2)	29 (1)	2 (0)	0 (0)	0 (0)	0 (0)	2 (0)	9 (0)	23 (0)	38 (1)
Humidity(%)	43%	48%	51%	44%	31%	29%	26%	20%	18%	21%	27%	33%
Rainy days (d)	7	8	7	3	0	0	0	0	0	2	3	4
avg. Sun hours (hours)	11.3	10.7	10.3	10.2	9.9	9.7	9.8	10.2	10.8	11.3	11.7	11.9

Figure 4 – Climate condition around the project area (source: climate-data, 2022)

5.1.2 Topography

The EPL 8738 mainly lies in the central-western of the country which is characterized by dissection and erosional cutbacks. The elevation ranges from 1250 – 1500 m as indicated in the topographic map **(Figure 5).**

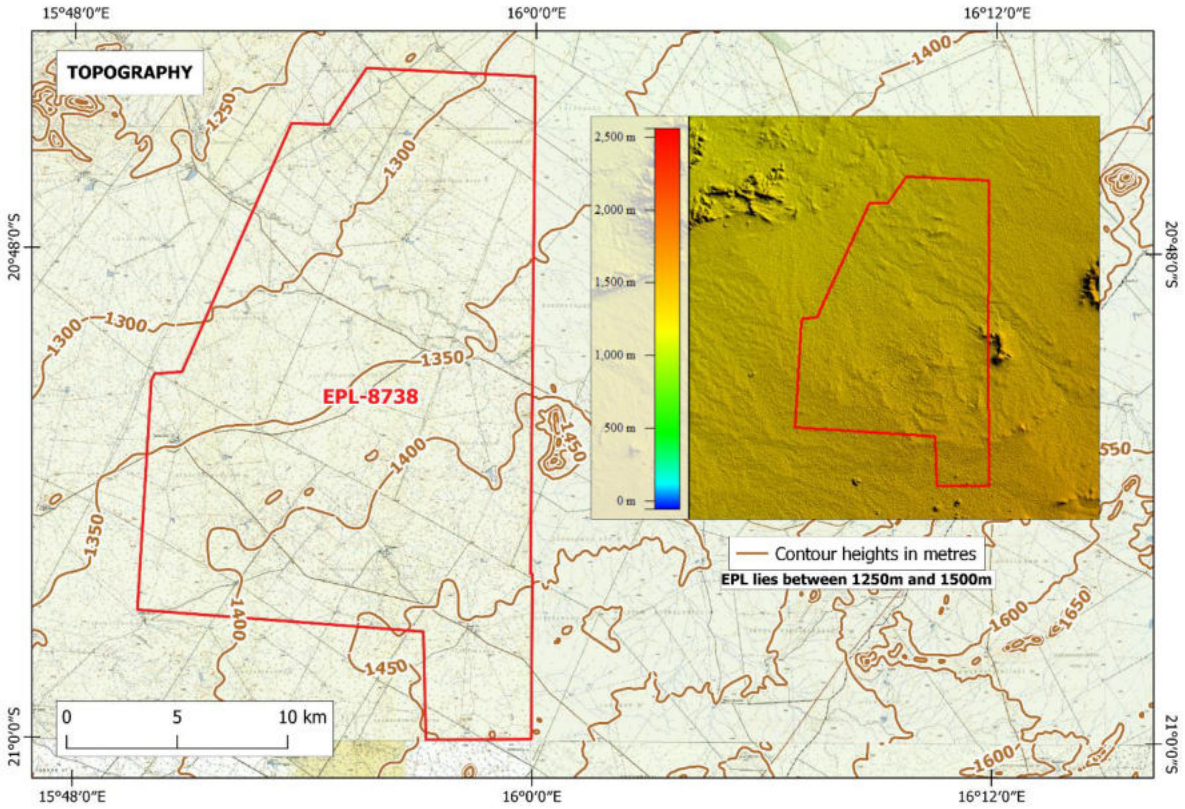

Figure 5 – Topography map for the project area.

5.1.3 Geology and Lithology

EPL 8738 is located within the region of the Damara Orogenic belt, which is characterized by rocks of Nosib and Swakop Groups. This geological zone has been thrust northward over the Otavi, Mulden and pre-Damaran rocks along the Khorixas- Gaseneirob thrust. The main lithology that covers the EPL 8738 includes but is not limited to Sand, Gravel, Scree, Calcrete, Mica Schist, Schist, Marble, Dolostone, Limestone, Leucogranite (Non-foliated) as indicated in **Figure 6**.

EPL 8738 is located within the Kalkfeld carbonatite body, which is known to be part of the Cretaceous Damaraland Igneous Province, which appears to be pervasively finitized close to the magmatic intrusions. Moreover, the carbonatites of the Kalkfeld complex are confined to the centre of the in-trusion, with contact with other rocks hidden by Tertiary sands. However, it appears that the immediate centre of the intrusion consists of fine-grained, oxidized iron ore, while the rocks surrounding this ore consist of at least calcite, ferroan dolomite and fluorapatite which is often intergrown with fine-grained strontianite.

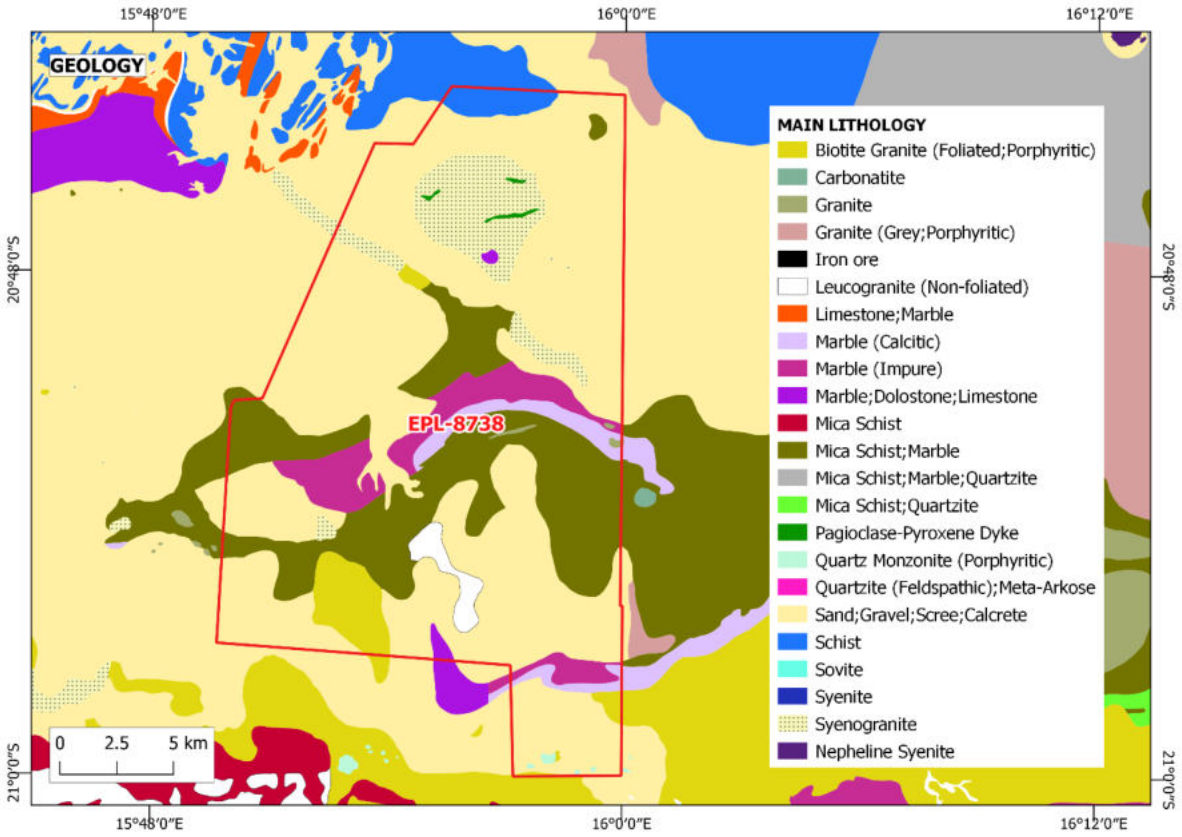

Figure 6 – The geology of the EPL 8738.

5.1.4 Soil

The EPL 8738 is entirely covered by the Eutric Regosols which are characterized as medium or fine-textured soils of actively eroding landscapes, the thin lying directly above the rock surface from which they are formed, (Mendelsohn, 2003) **(Figure 7)**.

If required, during the prospecting phase of the project, minimal soil sampling will be conducted to a depth between 10 cm – 20 cm, and this shall be rehabilitated immediately**.** Therefore, the Soil Conservation Act No. 76 of 1969 should be taken into account to ensure that soils have conserved in an environmentally sustainable manner that does not promote soil erosions which may result in gullies.

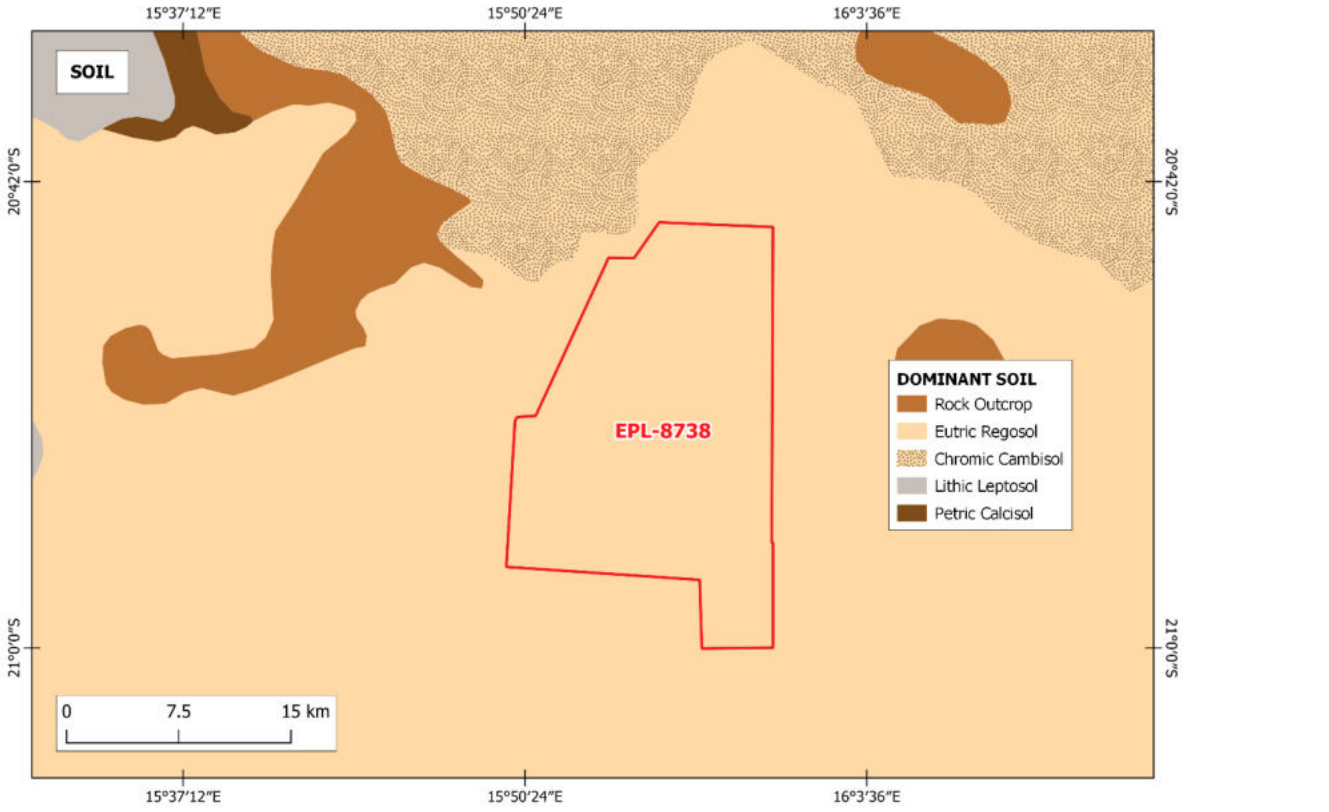

Figure 7 – The soils of the EPL.

5.1.5 Hydrology

The entire EPL is located in an area covered by rock bodies with little groundwater potential aquifer as indicated in **Figure 8**. Therefore, the regulations stipulated in the Water Act 54 of 1956 concerning water abstraction should be adhered to, whereby over-abstraction will not be recommended during the exploration phase.

The EPL 8738 is located within the aquifer which is classified as a moderately vulnerable area prone to pollution, with minor rivers such as Omuronga and drainage lines **(Figure 8)**, that flows into the Omaruru or Ugab Rivers. Most farmers within the proposed project site have implemented typical rainwater or runoff harvesting techniques such as earth dams in order to adopt with the limited water in the area **(Figure 9).** These are simple, well-designed dams that make water available at times when it is required for livestock and wildlife purpose – and also to improve groundwater recharge. The Proponent shall ensure compliance with the Water Resources Management Act 11 of 2013 and associated legal framework at all times.

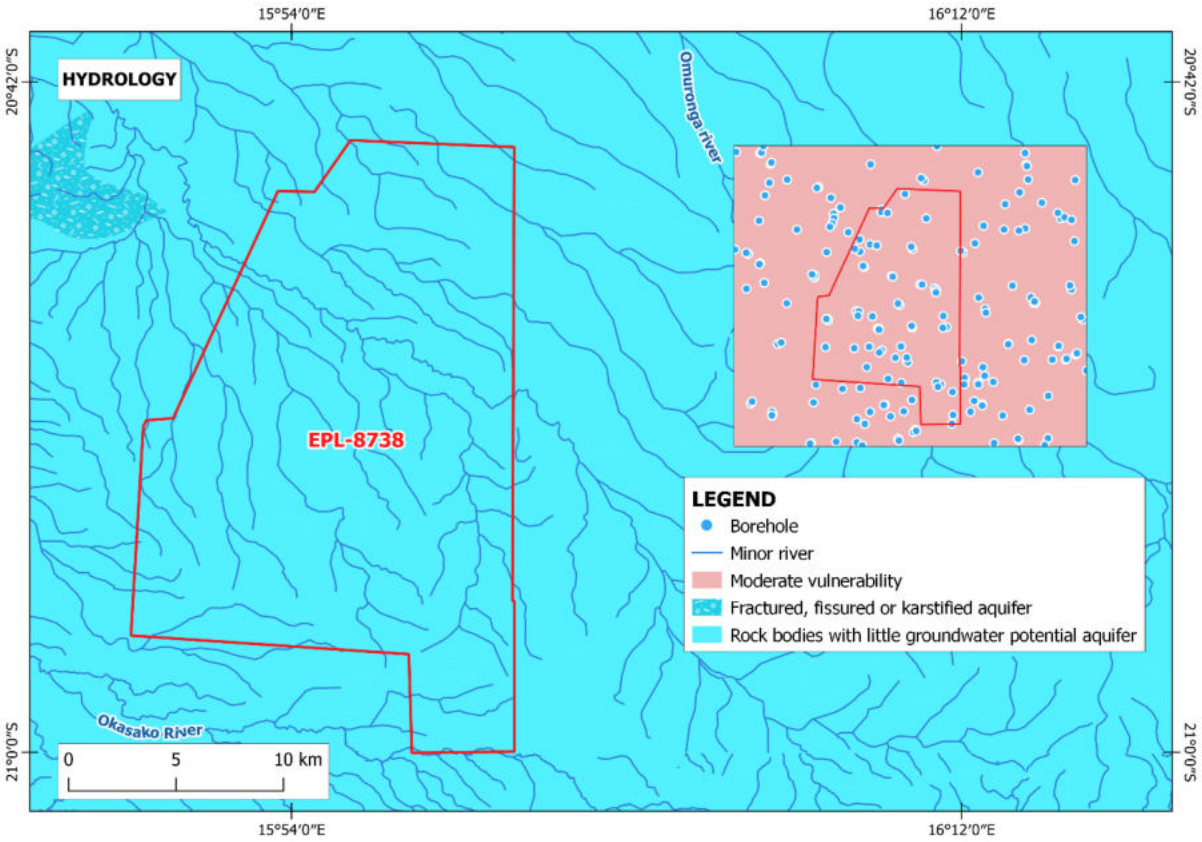

Figure 8 – Hydrology for the EPL 8738.

Figure 9 – A typical rainwater harvesting technique observed across the farms.

5.2 Biodiversity

5.2.1 Flora

The vegetation around the EPL 8738 is characterized by the Thornbush shrubland **(Figure 11)**, with a mixed shrubland of Khorixas granite hills located adjacent, but east of the EPL. The EPL is located in the ecoregion with low-to-medium vegetation cover and scattered bare areas of sparsely distributed trees and shrubs. The vegetation varies from thornbush shrubland, dwarf shrub savannah to grassland ecosystem, with bush encroachment in some areas. However, bush encroachment is being controlled by thinning or clearing for charcoal production in some areas.

Tree and shrub species such as *Acacia mellifera, Acacia reficiens, Grewia flavescens, Croton gratissimus, Boscia albitrunca,* are common in the area. However, on the granite hills or koppi or certain isolated areas unique vegetation species including Commiphora, Aloe and Leadwood species were observed **(Figure 10),** which are probably associated with changing climate or shifts in climatic conditions, poor nutrient levels and unpredictable rainfall. As such, as per sections 22-24, 27 and 33 of regulations 8 and 12 of the Forestry Act, 2001, a forestry license is required for the removal of any important plant species that may be found on the EPL. Moreover, the EPL falls under medium and high medium plant diversity, and it is worth noting that terms stipulated in the Forest Act, No. 12 of 2001 about the plant's diversity and structure should be adhered to by the Proponent at all times.

Figure 10 – Aloe species observed within the EPL 8738.

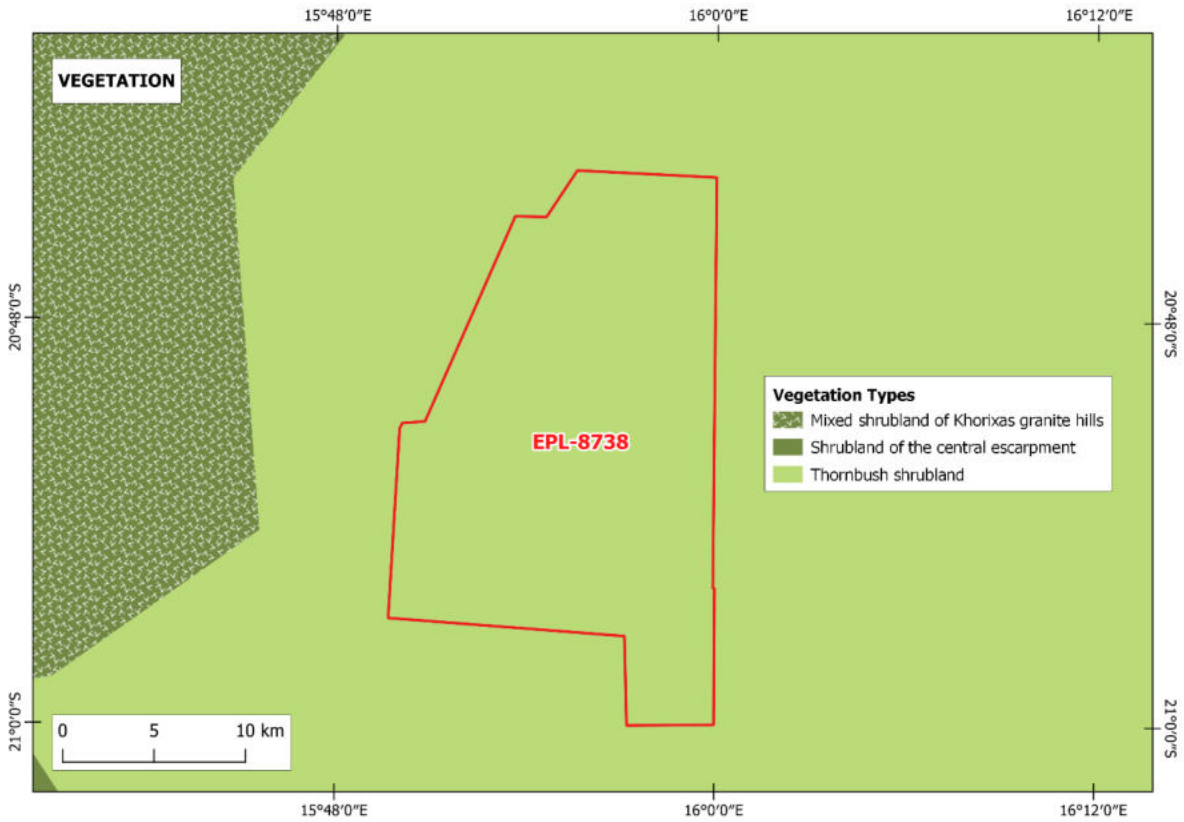

Figure 11 – Vegetation Cover for EPL 8738.

5.2.2 Fauna

The EPL is located in Omaruru District, but also partially crosscut the Otjiwarongo District, and these areas are mainly known for livestock farming and wildlife animals. With regards to livestock, cattle, goats and sheep are common in most farms in the area. For example, the 16 000 stocks of cattle in Omaruru and surrounding areas account for a share of 0.5 percent of the total national stock of 2, 99, 713 cattle across the country while the 7 600 stock of sheep accounts for a share of 0.4 percent to the total national stock of 1, 973 393. The EPL also occurs within the region with places of high diversity in central Namibia, particularly in highland areas where species converge because of the mix of rocky areas, woodlands and other habitats. Wildlife species on most farms covered by the EPL include kudus, elands, oryx and impalas, ostrich, leopards, cheetahs and small mammals etc. It was also verbally communicated that most-targeted high-value species by poachers such as pangolins do occur on some of the farmers, as such the Proponent, including the contractors, shall adhere to the mitigation measures, landowners' contractual agreement and other legal frameworks.

5.2.3 Avifauna

A total of 676 bird species has been recorded across Namibia, probably due to the variety of habitats such as desert, savanna, grassland, riverine forests, wetlands, coastal shores and ocean. Avifauna diversity within the region of the EPL can be regarded as medium-to-low with species between 111 – 140, but it varies based on the suitable habitats such as mountains, savanna and pan systems which can contribute to a high level of habitat complexity. Some common birds that were observed within the EPL are Guinea fowls, Namaqua sandgrouse, Laughing dove, African red-eyed bulbul, and Red-billed hornbill among others **(Figure 12)**.

Figure 12 – Guinea fowls observed during the farm visit.

5.3 Archaeology and Heritage

5.3.1 Regional Level

The Erongo Region hosts many declared heritage sites and other archaeological records, it is based on this background that the EPL area is likely to have archaeological sites or significance. There is the existence of ancestral graves around the vicinity of the EPL area, and some archaeological artifacts might be discovered during the exploration activities. Therefore, it is recommended that the National Heritage Act, No. 27 of 2004 should be strictly enforced, and concurrently the recommendation given in the statutory documents for this project should be strictly adhered to **(Appendix B)**. Some rock art sites that are not well documented or studied were not declared heritage sites were observed in the specific farm (e.g., Eremutua South-East) and recorded, and this area shall be a no-go area for the proposed prospecting and exploration activities. If a heritage site or items of heritage significance are found in the course of the prospecting and exploration activities, then a chance finds procedure should be followed as per the National Heritage Act, No. 27 of 2004.

Some of the closest declared heritage site, within the region includes, but are not limited to the Cultural Landscape (e.g., Brandberg Area - 012/1951). Furthermore, there about 150 sites are recorded in the Erongo Region alone, and the Region is also endowed with Iron Age artefacts and contemporary heritage resources. According to the National Heritage Council of Namibia (Declared Sites/Lists of National Heritage), Erongo Region has about 37 heritage sites which are

listed as national monuments[1]. The distribution of archaeological sites in Namibia are indicated in **Figure 13**.

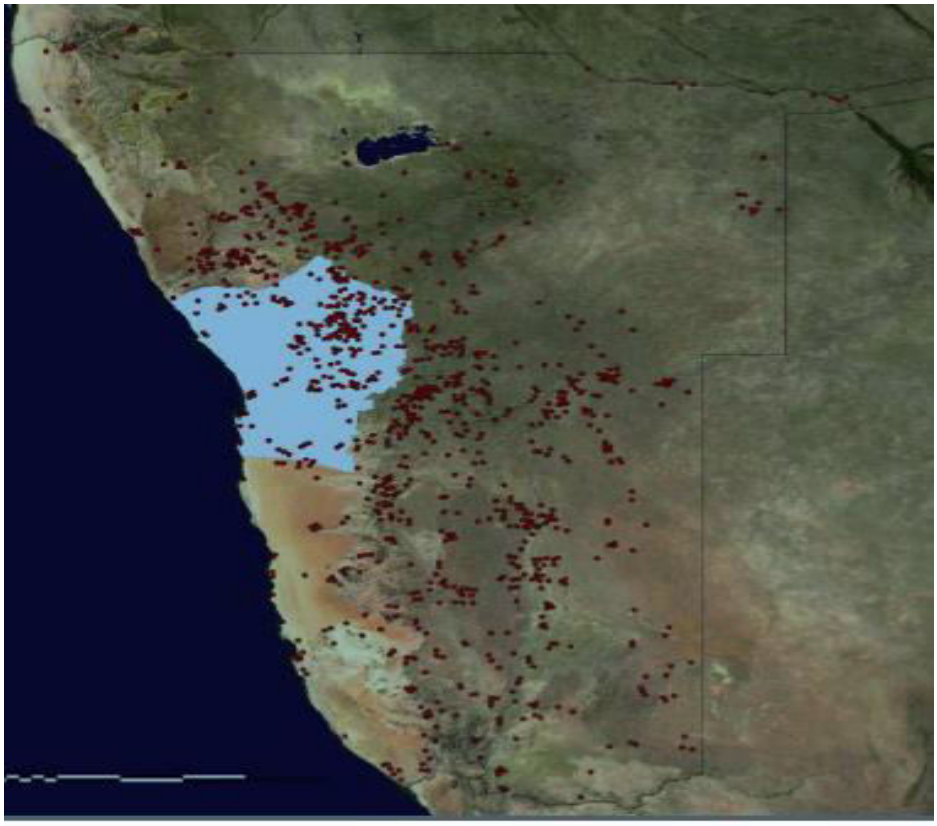

Figure 13 – Distribution of the archaeological sites in Namibia with a focus on the Erongo Region (light blue polygon). Source: (Kinahan, J. 2012).

5.4 Surrounding Land Uses

The EPL 8738 is within commercial farmland as shown in **Figure 2**. The Proponent is required to secure a signed written agreement from the affected landowners and farmers to gain access to the areas of interest for prospecting and exploration investigations as per Section 52 of the Minerals (Prospecting and Mining) Act No. 33 of 1992 and Section 2.2.3 of the Minerals Policy of Namibia as stated below.

Section 52 (1) The holder of mineral licence shall not exercise any rights conferred upon such holder by this Act or under any terms and conditions of such mineral licence –

[1] *https://second.wiki/wiki/liste_des_nationalen_erbes_namibias#Erongo*

(a) In, on or under any and until such time as such holder has entered into an agreement in writing with the owner of such land containing terms and conditions relating to the payment of compensation, or the owner of such land has in writing waked any right to such compensation and has submitted a copy of such agreement or waiver to the Commissioner.

Section 2.2.3 of the Draft Minerals Policy of Namibia states that the Licence Holder and/or mineral explorers currently must negotiate a contract with landowners to gain access for or mining purposes.

5.5 Socio-Economic conditions

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. In 2011 the population of the Erongo Region was 150 809 (approximately 70 986 females and 79 823 males), representing a population of 2.4 persons per square kilometre.

The EPL is within the vicinity of Omaruru district population, with of about 6000 people and is the third highest population in the region after Walvis Bay and Swakopmund, with a population recorded at 61 300 and 44 700, respectively.

Mining can be considered the backbone of income generation, employment creation, contributing to government revenue and a source of foreign direct investments for most developing countries like Namibia. The sector plays a vital role in the economic development of the country, for example, it has both social and economic benefits, especially in Erongo Region. It should, however, not be considered from one perspective of being a source of employment and income generation as it also can present social environmental and economic challenges such as water contamination loss of habitats for plants and animals, exposure of humans and wildlife to toxic materials, noise pollution etc. Namibia is viewed as an attractive mining and exploration investment destination in Africa ranking 6th position out of 15 in the year 2016 (Nambinga & Mubita, 2021), and this can be proven with the recent increase in exploration activities.

6 PUBLIC CONSULTATION PROCESS

Public consultation forms 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 what extent further investigations are necessary. Public consultation can also aid in the process of identifying possible mitigation measures. Public consultation for this project has been done under 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 who contacted the Consultant after project advertisement notices in the newspapers, were registered as I&APs upon their request. Newspaper advertisements of the proposed exploration activities 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 inviting members of the public to register as I&APs and submit their comments. The summary of pre-identified and registered I&APs is listed in **Table 4**.

Table 4 – 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
Regional, Local and Traditional Authorities
Otjozondjupa Regional Council
Otjiwarongo Constituency Office
Omaruru Town Council
Kalfeld Settlement Community
General Public
Landowners /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 about the proposed development was facilitated through the following means and in this order:

- A Background Information Document (BID) containing brief information about the proposed facility was compiled **(Appendix D)** and distributed to all identified and registered Interested and Affected Parties (I&APs). Furthermore, the draft ESA and EMP will be circulated to the registered I&APs to provide their further inputs and comments before submission to the authorities.
- Project Environmental Assessment notices were published in The Namibian Newspaper **(23rd March 2023** and **30th March 2023**) and New Era Newspaper **(24th March 2023** and **31st March 2023)**, and site notices were placed on the noticeboard in Omaruru as well as in Kalkfeld settlement **(Figure 14),** briefly explaining the activity and its locality and inviting members of the public to register as I&APs **(Appendix E)**.
- A consultation meeting was scheduled and held with the I&APs, including the affected farmers (landowners) on the **26th of April 2023** at Kalkfeld Community Hall at 13h00, but there were no I&APs present. However, efforts were made to engage and consult with the directly affected landowners during the farm visit – which also included on-farm Environmental and Heritage Impact Assessments **Figure 15** and **Appendix E.**

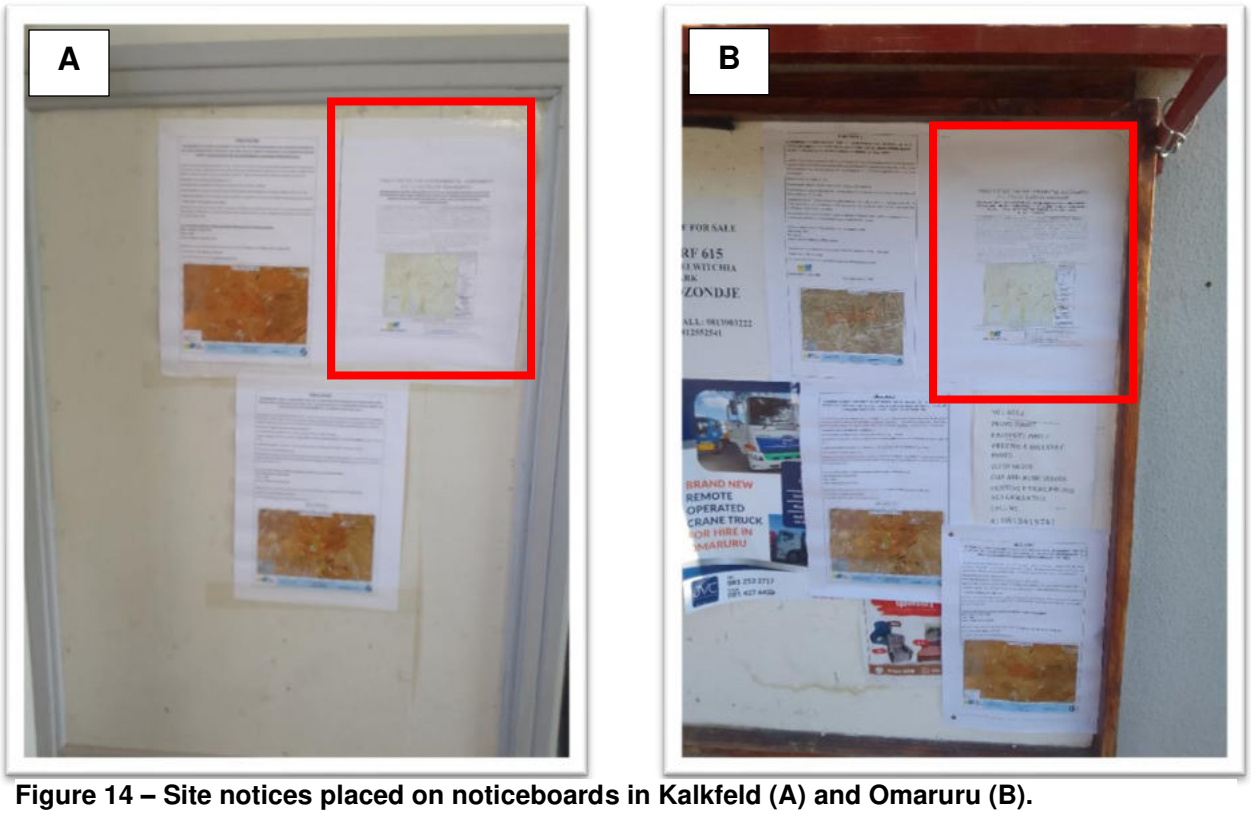

Figure 14 – Site notices placed on noticeboards in Kalkfeld (A) and Omaruru (B).

Figure 15 – On-farm individual stakeholders' engagement.

6.3 Feedback from Interested and Affected Parties

A few comments, concerns and issues were raised by I&APs (from the consultation meeting and on-farm one-on-one farmers consultation), and these were recorded and incorporated in the ESA Report and draft EMP. The summary of these key comments, concerns or issues and their responses are presented in **Table 5**.

Table 5 – Summary of key comments, concerns or issues received and responses during the consultation.

Comments/Concerns/Issues	Responses
Limited water resources in the area. Not enough water for large mining activities.	This is phase 1 of the proposed prospecting and exploration activities which require minimal water. The Proponent intends to source water from the nearest town by using a water cart, in case more will be required. Alternatively, the Proponent will have an agreement with a landowner to drill a borehole on their property with the terms and conditions attached or investigate other sources of water supply. In addition, for larger operations such as mining activities, before such activity

Comments/Concerns/Issues	Responses
	commences a detailed EIA will be required which shall include the specialist studies such as the hydro-census or geohydrological etc.
Landowners' agreement (e.g., farm access, poaching and livestock theft, progressive rehabilitation required)	The Proponent will ensure that a clear written landowner agreement is in place as stated in Section 52 of the Minerals (Prospecting and Mining) Act No. 33 of 1992 and Section 2.2.3 of the Minerals Policy of Namibia. Strictly, there shall be no venturing into a No-Go area for all prospecting and exploration vehicles and employees without permission from the landowner. The Proponent will be operating in compliance with the EMP, which shall have all conditions that need to be adhered to, including progressive rehabilitation of specific areas once activities are completed.

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 project activities. The potential positive and negative impacts that have been identified from the prospecting activities are listed as follows:

Positive:

- Socio-economic development through employment creation (primary, secondary, and tertiary employment) and skills transfer/capacity building,
- Open other investment opportunities and infrastructure-related development benefits,
- Produce a trained workforce and small businesses that can service communities and may initiate related businesses,
- Improved skills and knowledge on the subsurface, thus contributing to geoscience research,
- Boosting the local economic growth and regional economic development,
- Increased support for local businesses through the procurement of consumables (e.g., Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc) and;
- Local income generation through a land lease agreement, hiring of local machines and equipment (e.g., bulldozer, grader, excavator etc) or other services provided.

Negative:

- Potential disturbance of grazing land areas,
- Physical land/soil disturbance,
- Impact on local biodiversity (fauna and flora) and habitat disturbance and potential illegal wildlife hunting and livestock theft in the area,
- Potential impact on water resources, particularly due to over-abstraction and 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 the surrounding community and wildlife,
- Environmental pollution (solid waste, hydrocarbon spills and wastewater),
- Archaeological and heritage resources impact,
- Potential social nuisance and conflicts (theft, damage to properties, etc).

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 following 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 6, Table 7, Table 8** and **Table 9**, respectively.

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 6** shows rating of impact in terms of extent of spatial scale.

Table 6 – 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 7** shows the rating of impact in terms of duration.

Table 7 – 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 8** shows the rating of impact in terms of intensity, magnitude, or severity.

Table 8 – 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 occurring. This determination is based on previous experience with similar projects and/or based on professional judgment. **Table 9** shows impact rating in terms of probability of occurrence.

Table 9 – 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 6, Table 7, Table 8** and **Table 9**) 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 10**).

Table 10 – 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 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, ecosystem, 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, to 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, prospecting, exploration, and decommissioning. The potential negative impacts stemming from the proposed activities of the EPL are described, and assessed and mitigation measures are provided thereof. Further mitigation measures in the form of management action plans are provided in the Draft Environmental Management Plan.

7.3 Assessment of Potential Negative (Adverse) Impacts

The significant negative impacts potentially associated with the proposed prospecting and exploration of Dimension Stone, Base and Rare Metals, Industrial Minerals and Precious Metals are assessed, including comments and concerns raised during the public consultation process.

7.3.1 Disturbance to the Grazing Areas

The EPL is overlying commercial farms that practice livestock and game farming, invasive exploration activities such as site clearing, trenching, and drilling can potentially lead to the disturbance of grazing land. This will potentially affect the grazing areas available to the farms' livestock and wildlife, and since the farmers greatly depend on these types of land use practices for subsistence and commercial purposes, this would have an impact on their livelihood through potential feeding/grazing for livestock stock and wildlife, thus eventual losses.

The effect of exploration work on the land, if practiced over a wider spatial extent and longer period, if not mitigated, may hinder animal husbandry and wildlife movement in the area and its surrounding. The project area might experience loss of its pastoral system and wildlife might migrate over time. Losing grazing pastures for livestock and wildlife minimizes the number of

animals on the farms and overall farming activity in the area and leads to loss of livelihoods. Under the status, the impact can be of a medium significance rating. However, once the implementation of appropriate mitigation measures, the rating will be reduced to a lower significance. The impact is assessed in **Table 11.**

Table 11 – Assessment of the impacts of exploration on grazing areas

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre mitigation	M: -3	M: -3	M/L: -4	M/H: 4	M: -40
Post mitigation	L/M: -2	L/M: -2	L/M: -4	L/M: 2	L: -16

Mitigations and recommendations to lower the possibility of disturbance and loss of the grazing

- Any unnecessary removal or destruction of grazing land, due to exploration activities should be avoided.
- Vegetation found on the site, but not in the targeted exploration areas should not be removed but left to preserve biodiversity and grazing land.
- Workers should refrain from driving off-road and creating unnecessary tracks that may contribute to the loss of grazing land.
- Environmental awareness on the importance of the preservation of grazing land for local livestock should be provided to the workers.

7.3.2 Land Degradation and Loss of Biodiversity

Fauna: The trenching, pitting and drilling activities conducted for detailed exploration would result in land degradation, leading to habitat loss for a diversity of flora and fauna ranging from microorganisms to large animals and vegetation. Endemic, vulnerable, threatened and rare 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 not only the domestic animals (livestock) grazing but also the wildlife present within the vicinity. Not only the disturbance due to human and vehicle movements but also potentially illegal hunting and livestock theft. This could lead to the loss or number reduction of specific faunal species which also impacts tourism (e.g., game drive and trophy hunting) and livestock farming.

Poor or inappropriate rehabilitation and or unfenced boreholes, trenches and pits used for exploration, if they are no longer in use could have an impact on livestock and wildlife, by falling in them causing injuries and potential mortalities.

Flora: Direct impacts on flora and vegetation communities will mainly occur through clearing or thinning for the exploration access roads and associated infrastructure. The dust emissions from drilling may interfere with the photosynthesis process once the depositional dust accumulates on the plant's leaves or further penetrate the leaves and limit the photosystem process. Some vegetation may undergo stress which could be deleterious, depending on the species. However, due to the abundance of the plants and site-specific areas of exploration on the EPL, the impact will be localized and manageable.

Under the status, the impact can be of a medium significance rating, and after the implementation of appropriate mitigation measures, the rating will be reduced to a low significance rating **(Table 12)**.

Table 12 – Assessment of the impacts of exploration on land degradation and 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

Mitigations and recommendations to minimize the loss of biodiversity.

- The Proponent should avoid unnecessary removal of vegetation, to promote a balance between biodiversity and ecological processes.
- Vegetation found on the site, but not in the targeted exploration site areas should not be removed but left to preserve biodiversity on the site.
- Shrubs or trees found along trenching, drilling, or targeted areas should not be unnecessarily removed or damaged.
- Movement of vehicles and machinery should be restricted to existing roads and tracks to prevent unnecessary damage to the vegetation.
- No onsite vegetation should be cut or used for firewood related to the project's operations and fire is only permitted at the designated areas that shall be determined and agreed upon with the Project manager and landowner.
- Design access roads around the plants as practically as possible.

- Vegetation clearing or thinning should be avoided or be kept to a minimum, and for clearing or thinning, appropriate permits should be obtained from the Directorate of Forestry.
- Formulate and implement suitable and appropriate operational management guidelines for the areas where vegetation was removed.
- Strictly, no employee should be permitted to disturb, remove, kill, relocate or steal farm animals, including small soil and rock outcrops species.
- Stakeholder engagement should be implemented throughout the exploration program, especially with the surrounding landowners and other relevant stakeholders.
- A written agreement to access the property for the landowner should be in place before work commences in their area.
- All complaints, including verbal ones, should be recorded in the complainant register and resolved within a reasonable time frame.
- All the project personnel should attend the site induction before they start working, and they should have their identification card.
- Develop a policy that limits independent movements of all workers into the veld that could create suspicion of poaching. Strictly prevent poaching, harvesting and making fire, including the collection of firewood, or possession of any such natural materials.

7.3.3 Generation of Dust (Air Quality)

Dust generation during exploration activities (e.g., vehicular movement from unpaved roads, drilling operation, drill rig preparation) may result in an unfavorable airborne emission. Dust emissions can pollute the ambient air quality in the surrounding. Negative effects of dust on personnel working at the drilling site are likely to occur if dust suppression techniques are not employed or PPEs are not issued or used as required. The medium significance of this impact can be reduced to a low significance rating by properly implementing mitigation measures **(Table 13).**

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 - 1	L - 1	L- 2	L - 1	L - 4

Mitigations and recommendations to minimize dust.

- If require, minimal dust suppression techniques should be employed at the source.
- Avoid activities that create excessive dust on extremely windy days.
- Personnel are required to wear PPE if excessive dust is created for prolonged working periods when working in the dust zones.
- Employees should be made aware of the negative effects of dust inhalation.
- Exploration vehicles should not drive at a speed of more than 40 km/h to avoid dust generation around the area.
- A reasonable amount of water should be used on gravel roads, using regular water sprays on gravel routes and near exploration sites to suppress the dust that may be emanating from certain exploration areas on the EPL, in cases of excessive generation of dust.

7.3.4 Water Resources Use

Water resources are impacted by project developments/activities in two ways, through pollution or over-abstraction. The abstraction of more water than can be replenished from low groundwater potential areas would negatively affect the local farmers.

The impact of the project activities on the resources would be dependent on the water volumes required by each project activity. 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.

About 100 – 200 litres of water per day shall be required for drilling purposes such as cooling and washing drilling equipment, drinking and other domestic purposes. Since their water availability is critical within the proposed project, the Proponent planned to source water from the nearest town by using a water cart, with an alternative to drill a borehole once the permission of the landowner is granted. The exploration period is limited, therefore, the impact will only last for the duration of the exploration activities and ceases after completion.

Without the implementation of any mitigation measures, the impact can be rated as medium and even after mitigation measures and effective implementation of the recommended measures, the impact significance would be remained medium, but localized and of a short duration **(Table 14)**

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 - 3	L - 3	L/M - 4	M – 32

Mitigations and recommendations to manage water use

- Water should be used efficiently, and recycling and re-using of water on certain site activities should be encouraged, where necessary and possible. For example, water used to cool off exploration equipment should be captured and used for the cleaning of project equipment or re-used, if possible.
- The Proponent should consider carting water for drilling from elsewhere if the existing boreholes are not sustainable. Agreements of water supply should be made between the farmer/landowner and the Proponent and all required permits should be obtained and conditions as set out on the abstraction permit should be adhered to.
- Water storage tanks should be inspected daily to ensure that there is no leakage, resulting in wasted water on site.
- Water conservation awareness and saving measures training should be provided to all the project workers in both phases so that they understand the importance of conserving water and therefore be held accountable.

7.3.5 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 from project vehicles, machinery, and equipment as well as potential wastewater and effluent from exploration-related activities.

The pollutants can infiltrate into the ground and pollute the fractured or faulted aquifers and reach further groundwater systems. 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 and can be managed with ease.

Pre-mitigation measure implementation, the impact significance is medium to moderate and upon implementation, the significance will be reduced to low **(Table 15).**

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

Mitigations and recommendations to manage soil and water pollution.

- Spill control preventive measures should be in place on-site to manage soil contamination, thus preventing and or minimizing the contamination from reaching water resources bodies. Some of the soil control preventive measures that can be implemented include:
  - Identification of oil storage and use locations on site and allocate drip trays and spill kit tools on the sites.
  - Maintain equipment and fuel storage tanks to ensure that they are in good condition thus preventing leaks and spills.
  - The oil storage and use locations should be visually inspected for container or tank condition and spills and they should be stored in a secondary containment.
  - All spillage, including minor spills, should be cleaned up immediately and disposed of at a permitted hazardous facility.
- All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures.
- The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible.
- Project machines and equipment should be equipped with drip trays to contain possible oil spills and they should be inspected daily for any spills or leaks.
- Drip trays must be readily available on this trailer and monitored to ensure that accidental fuel spills along the tank trailer path/route around the exploration sites are cleaned on time (soon after the spill has happened).
- Cleaning and servicing of equipment contaminated hydrocarbons should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources.
- Portable toilets should be treated using an environmentally friendly chemical and periodically emptied out before reaching capacity and transported to a wastewater treatment facility.

7.3.6 Waste Generation

During the prospecting and exploration phase, domestic and general waste is produced on-site. If the generated waste is not disposed of responsibly, land pollution, including littering may occur on the EPL or around the site. The EPL is in an area of moderate sensitivity to pollution. 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. 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. Plastics should be avoided or be limited onsite because it can be easily blown away and animals are likely to eat them. 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

Mitigations and recommendations to waste management

- Workers should be sensitized to disposing of waste responsibly.
- No littering shall be permitted on site.
- The Proponent should ensure that there is no waste left on the sites every day.
- All domestic and general operational waste produced daily should be contained onsite until such a time it will be transported to designated waste sites.
- No waste may be buried or burned on site or anywhere else.
- The exploration site should be equipped with separate waste bins for hazardous and general/domestic waste.
- Sewage waste should be stored in the portable chemical toilets supplied on site and regularly disposed of at the nearest treatment facility.
- Oil spills should be taken care of by removing and treating soils affected by the spill.

- A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented.
- Potential contaminants such as hydrocarbons and wastewater should be contained on-site and disposed of at a permitted disposal site.
- An emergency plan should be available for major/minor spills at the site during operation activities with consideration of air, groundwater, soil, and surface water and during the transportation of the product(s) to the sites.

7.3.7 Occupational Health and Safety Risks

All project personnel involved in the exploration activities may be exposed to health and safety risks. These are in terms of accidental injury, owing to either minor (e.g., superficial physical injury) or major (e.g., 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 and vehicles too.

If machinery and equipment are not properly stored and packed, the safety risk may not only be a concern for project workers but also for the local community.

The impact is probable and has a medium significance rating. However, with adequate mitigation measures, the impact rating will be reduced to a low (**Table 17)**.

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

Mitigations and recommendations to minimize health and safety issues

- The Labour Act's Health and Safety Regulations should be complied with.
- The Proponent should commit to and make provision for annual full medical check-ups for all the workers at the site to monitor the impact of project-related activities on workers.

- As part of their induction, the project workers should be provided with awareness training on the risks of mishandling equipment and materials on-site as well as health and safety risk associated with their respective jobs.
- When working on-site, employees should be properly equipped with adequate PPE such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc.
- Heavy vehicles, equipment and fuel storage sites should be properly secured, and appropriate warning signage placed where visible.
- Drilled boreholes that will no longer be in use or to be used later after being drilled should be properly marked for visibility and capped/closed off.
- Ensure that after completion of exploration holes and trenches, drill cuttings are rehabilitated as per the landowner agreement and the holes filled and levelled, and trenches backfilled respectively.
- An emergency preparedness plan should be compiled, and all personnel appropriately trained.
- Workers should not be allowed to consume any intoxicants before and during working hours nor allowed on site when under the influence of alcohol as this may lead to mishandling of equipment which results in injuries and other health and safety risks.
- The site areas that are considered temporary risks should be equipped with cautionary signs, including firefighting equipment.

7.3.8 Vehicular Traffic Use and Safety

The EPL is accessible via the C33 from Omaruru which diverges onto the D2403 or D2338 roads that lead to the EPL area, these are the main transportation routes for all vehicular movement in the area and provide access to the EPL and connect the project area to other towns. Traffic volume will therefore increase on these district roads during exploration as the project would need delivery of supplies and services on site. These services and supplies will include but are not limited to water, waste removal, procurement of exploration machinery, equipment, and others.

Depending on the project needs, trucks, and 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. This would add additional pressure on the roads.

However, only so many times a week or even months that the exploration-related heavy trucks will be transporting materials and equipment from and to site during exploration. 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

Mitigations and recommendations to minimize the impact on road safety and vehicular traffic issues.

- The transportation of exploration materials, equipment and machinery should be limited, to reduce pressure on local roads.
- The heavy truck loads should comply with the maximum allowed speed limit for respective vehicles while transporting materials and equipment/machinery on the public and access roads (40km/h).
- The potential carting of water to the site (from other sources of water supply) should be done minimally, in containers that can supply and store water for relatively long periods, to reduce the number of water-carting trucks on the road daily.
- Drivers of all project phases' vehicles should have valid and appropriate driving licenses and adhere to the road safety rules.
- Drivers should drive slowly (40km/hour or less) and be on the lookout for livestock and wildlife as well as residents/travellers.
- The Proponent should ensure that the site access roads are well equipped with temporary road signs conditions to cater for vehicles travelling to and from the site throughout the project's life cycle.
- Project vehicles should be in a road-worthy condition and serviced regularly to avoid accidents owing to mechanical faults.
- Vehicle drivers should only make use of designated site access roads provided and as agreed.
- Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol.

- No heavy trucks or project-related vehicles should be parked outside the project site boundary or demarcated areas for such purposes.
- To control traffic movement on site, deliveries from and to the site should be carefully scheduled. This should optimally be during weekdays and between the hours of 8 am and 5 pm.
- The site access road(s) should be upgraded to an unacceptable standard to be able to accommodate project-related vehicles as well as farm vehicles.

7.3.9 Noise and vibrations

Prospecting and exploration work, especially drilling may be a nuisance to surrounding communities and animals due to the noise produced by the activity. Excessive noise and vibrations can be a health risk to workers on site and could cause animals to migrate elsewhere or interfere with their grazing patterns. 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. If the mitigation measures are implemented significance reduces to low rating **(Table 19).**

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

Mitigations and recommendations to minimize noise.

- Noise from operations vehicles and equipment on the sites should be at acceptable levels.
- The exploration operational times should be set such that no exploration activity is carried out during the night or very early in the morning.
- Exploration hours should be restricted to between 08h00 and 17h00, or at the hours agreed upon by the Proponent and landowners, to avoid noise and vibrations generated by exploration equipment and the movement of vehicles before or after hours.
- When operating the drilling machinery onsite, workers should be equipped with PPE such as earplugs to reduce exposure to excessive noise.

7.3.10 Disturbance to Archaeological and Heritage Resources

The proposed prospecting and exploration area contain some archaeological significance, therefore, the project indicates that some sections within the boundaries of the proposed project site area are highly sensitive and archaeologically significant in terms of heritage resources that characterizes the need for a detailed investigation of any other existing archaeological cultural materials in the areas, and they should be protected either by fencing them off or demarcation for preservation purposes or excluded from any development i.e., no exploration activities should be conducted near these recorded areas through the establishment of 500 m to 1.5 km buffer zones.

Therefore, this impact can be rated as medium significance if there are no mitigation measures in place. Upon implementation of the necessary measures, the impact significance will be reduced to a lower rating. 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

Mitigations and recommendations to minimize the impact on archaeological and heritage resources.

- A “No-Go-Area” should be put in place where there is evidence of archaeological sites, historical items or cultural objects. It can be a demarcation by fencing off or avoiding the site completely by not working closely or near the known site.
- On-site personnel (s) and contractor crews must be sensitized to exercise and recognize “chance finds heritage” in the course of their work.
- During the prospecting and exploration works, it is important to take note and recognize any significant material being unearthed and make the correct judgment on which actions should be taken, work should stop, and a Chance Find Procedures should be followed.
- The footprint impact of the proposed prospecting and exploration activities should be kept to a minimum to limit the possibility. The Proponent should keep a buffer of 500 meters on all the archaeological/cultural sites observed within the project site and broader area throughout the project.

- A landscape approach to site management must consider cultural and heritage features in the overall planning of exploration infrastructures within and beyond the license boundaries.
- The Proponent and contractors should adhere to the provisions of Section 55 of the National Heritage Act in the event significant heritage and cultural features are discovered while conducting exploration works.
- Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project Archaeological Management Plan (AMP)/EMP should be complied with.
- An archaeologist or Heritage specialist should be onsite to monitor all significant earth-moving activities that may be implemented as part of the proposed project activities.
- When the removal of topsoil and subsoil on the site for exploration purposes, the site should be monitored for subsurface archaeological materials by a qualified Archaeologist.
- Show overall commitment and compliance by adopting a “minimalistic or zero damage approach”.
- In addition to these recommendations above, there should be a controlled movement of the contractor, exploration crews, equipment, setting up of camps and everyone else involved in the prospecting and exploration activities to limit the proliferation of informal pathways, gully erosion and disturbance to surface and sub-surface artifacts such as stone tools and other buried materials etc.

7.3.11 Impact on Local Roads

These types of projects are usually associated with the movements of heavy trucks and equipment or machinery that use locals frequently. The heavy trucks travelling on the local roads exert more pressure on them. These local roads in remote areas are normally not in good condition already for light vehicles, and the additional vehicles such as heavy ones may make it worse and difficult to be used by vehicles that already struggled on the roads before they got worse. This will be a concern if maintenance and care are not taken during the exploration phase. The impact would be short-term 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

Mitigations and recommendations to minimize the impact on local services.

- The heavy trucks transporting materials and services to the site should be scheduled to travel at least twice or thrice a week to avoid daily travelling to the site, unless in cases of emergencies.
- The Proponent should consider frequent maintenance of local roads on the farms to ensure that the roads are in good condition for other road users such as farmers, and travellers from and outside the area.

7.3.12 Social Nuisance: Local Property Intrusion and Vandalism

The presence of some non-resident workers may lead to social annoyance to the local community. This could particularly be a concern when they or some of those workers enter or damage the properties of the locals. The private properties of the farmers could be houses, fences, vegetation, 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 properties may not only be private but local public properties. The unpermitted and unauthorized entry to private properties may cause grievances between the landowner and the Proponent.

Pre-implementation of mitigation measures, the impact is rated as of medium significance. However, upon post-mitigation, the significance will change from a medium to a 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

Mitigations and recommendations to minimize the issue intrusion or vandalism of private property

- The Proponent should inform their workers of the importance of respecting the farmers' properties by not intruding or damaging their houses, or fences or snaring and killing their livestock and wildlife.
- Any workers or site employees found guilty of intruding on private property should face a disciplinary hearing and/or be dealt with as per their employer' (Proponent)'s code of employment conduct.
- The project workers should be advised to respect the community and local's private properties, values, and norms.
- No worker should be allowed to wander or loiter on private property without permission.
- Project workers are not allowed to kill or in any way disturb local livestock and wildlife on farms.
- The cutting down or damaging of vegetation belonging to the affected farmers or neighbouring farms without permission is strictly prohibited.

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, some cumulative impacts to which the proposed project and associated activities potentially contribute are:

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

7.5 Mitigations and Recommendations for Rehabilitation

The rehabilitation of disturbed sites will include but not be limited to the following:

- Backfilling of trenches and or pits in such a way that subsoil is replaced first, and topsoil replaced last, to capitalize on the fertility of the topsoil for primary production purposes.
- Removal, closing off and capping of all exploration drilling boreholes, as practical as possible – especially if there will be no return to the targeted location. The boreholes should not only be filled with sand alone, as the wind may scour the sand and re-establish the holes.
- Removal of all waste generated from the last disposal to the last days on-site.
- Transporting all machinery and equipment as well as vehicles to designated offsite storage facilities.

8 RECOMMENDATIONS AND CONCLUSIONS

8.1 Recommendations

The potential positive and negative impacts resulting from the proposed exploration activities on EPL 8738 were identified and assessed and appropriate management and mitigation measures were made thereof for implementation by the Proponent, their contractors, and project-related employees.

The issues and concerns raised by the registered I&APs formed the basis for this report and the Draft EMP. Mitigation measures to identified issues 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. However, with effective implementation of the recommended management and mitigation measures, a reduced rating in the significance of adverse impacts is expected from Medium 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). The monitoring of this implementation will not only be done to maintain a low rating but also 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 right away.

EDS 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 into 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 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 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.

8.2 Conclusion

In conclusion, it is crucial for the Proponent and contractors to effectively implement the recommended management and mitigation measures, to protect the biophysical and social environment throughout the project duration. This would contribute to the general 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. It is also 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 accordingly. Lastly, should the ECC be issued, the Proponent will be expected to be compliant with the ECC conditions as well as legal requirements governing mineral exploration and related activities at all times.

9 REFERENCES

Atlas of Namibia Team, 2022, Atlas of Namibia: its land, water and life, Namibia Nature Foundation, Windhoek

Booth, P. (2011). Environmental Conceptual Site Model Exercise: Source – pathway – receptor. WSP Global: Semantic Scholar.

Bühn, Bernhard. (2008). The role of the volatile phase for REE and Y fractionation in low-silica carbonate magmas: Implications from natural carbonatites, Namibia. Mineralogy and Petrology. 92. 453-470. 10.1007/s00710-007-0214-4.

Kinahan, D. J. (2020). Archaeological assessment for the proposed bush thinning and charcoal burning project near Kombat, Otjozondjupa region. Windhoek: Unpublished

Manheimer. (2018). Retrieved from Tree Atlas of Namibia: http://treeatlas.biodiversity.org.na/viewspec.php?nr=20

Mendelsohn. (2006). A digest of information on key aspect of Otjozondjupa and Omaheke geography. Namibia: Research and Information Services of Namibia.

Mendelsohn, J. (2003). Atlas of Namibia: A Portrait of the Land and its People. Windhoek: The Ministry of Environment and Tourism of Namibia.

Miller, R. McG. 1983a. The Pan-African Damara Orogen of South West Africa/Namibia, 431-515. In: Miller, R.McG. (Ed.) Evolution of the Damara Orogen of South West Africa/Namibia. Spec. Publ. geol. Soc. S. Afr., 11, 515 pp.

SASSCAL WeatherNet, 2020. http://www.sasscalweathernet.org/weatherstat_monthly_we.php

Nambinga, V., & Mubita, L. (2021). The Impact of Mining sector on the Namibia economy.

Shilongo. F (2022). Socio-economic condition for the Otjozondjupa Region, Hochelf: unpublished

Namibia Statistics Agency (2011). 2011 Population and Housing Census Regional Profile, Otjozondjupa Region. URL: https://d3rp5jatom3eyn.cloudfront.net/cms/assets/documents/p19dptss1r1b6ufvsfb1mh41acvo.pdf