

Environmental and Social Scoping Assessment Report



Environmental Clearance Certificate (ECC) Application: The Proposed Mineral Prospecting and Exploration Activities on Exclusive Prospecting License (EPL) No. 8955 situated North of Opuwo Town in the Kunene Region, Namibia

ENVIRONMENTAL ASSESSMENT PRACTITIONER	OMAVI Geotechnical & Environmental Services P.O Box 1642, Windhoek Email: info@omavi.com.na Tel: +264 81 478 6303
PROPONENT	Max Kefas Nuseb P.O Box 2649 Walvis Bay Namibia
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EXECUTIVE SUMMARY

Max Kefas Nuseb (hereinafter referred to as the Proponent) had applied for the rights to prospect and explore on Exclusive Prospecting Licence (EPL) No. 8955 (EPL-8955) from the Ministry of Mines and Energy (MME) on the 03rd of August 2022. However, the granting of the EPL is subject to an Environmental Clearance Certificate (ECC) from the Environmental Commissioner for consideration of the EPL as shown on the Namibia Mines and Energy Cadastre Map Portal (status ''pending ECC'').

The Proponent intends to prospect and explore for mineral commodities within the boundaries of the EPL. These commodities are base & rare metals, dimension stone, industrial minerals, and, precious metals. The 19,768.0277 hectare (Ha) - EPL is situated about 50km north of Opuwo in the Kunene Region and within the Kunene River Conservancy.

Proposed Project Activities

A combination of various exploration techniques common in searching for base & rare metals, dimension stone, industrial minerals and precious metals will be adopted on the EPL area. The techniques likely to be utilized include, but are not limited to the following:

A. Base & Rare Metals, Dimension Stone, Industrial Mineral and Precious Metals

- Desktop review of all available geological, geochemical, geophysical data and information which would be sourced from various sources such as published literature, historical exploration in the area from the MME
- Site reconnaissance walk-over and geological plus geo-structural mapping, coupled with soil and stream sediment sampling and grab sampling
- Airborne and/ or ground radiometric, electromagnetic surveys (e.g., controlled-source audio-frequency magnetotelluric (CSAMT)) to help identify concealed intrusions, and model the dip/ strike of alkaline intrusive rock dykes and sills
- Reverse circulation (RC) and diamond drilling of specific anomalies identified from radiometric and magnetic surveys and geological mapping, including geochemical assays
- Trenching, and drilling. Where these techniques and ground geophysical surveys are required would require clearing of vegetation for the creation of access tracks, creating working platforms for the drill rigs, and setting out lines for ground geophysical equipment.

B. Dimension Stone Exploration

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

- Non-invasive techniques: Geological mapping, reviewing of existing geological maps and historical drilling/quarrying data, Field evaluation.
- Invasive techniques: rock sampling and Down-The-Hole drilling to obtain exploration demonstration blocks. No blasting will be onsite.

The likely scope of exploration activities to be covered over the planned exploration program is documented herein. It is important to note that the exact scope of exploration activities will be refined, documented, and reported bi-annually and/ or as exploration advances to incorporate any changes to the initial exploration program.

Public Consultation

Communication with I&APs with regards to the proposed exploration activities was facilitated through the following modes of information sharing and engagement:

- A list of pre-identified stakeholders was compiled. These formed part of the first email communication sent out soon after the first newspaper adverts for the ESIA Study.
- Formal public notices announcing the commencement of the Environmental Assessment process, inviting the public to register as I&AP and attend the public consultation meeting were published in *New Era* and *Windhoek Observer* newspapers (dated 29 August and 05 September 2023).
- A notification email (with Background Information Document (BID)) was circulated to all identified and registered I&APs on 05 September 2023 announcing the commencement of the EIA process and an invitation to register as I&APs. The email also provided information on the community consultation meeting (an invitation) which was scheduled for 11h00 on 21st of September 2023. The BID contained a high-level and preliminary description of the planned scope of activities for the proposed mineral prospecting project.
- Printed formal written site notices were placed at various publicly accessible locations in the Region namely at the; Kunene Regional Council notice board, and Ehomba Convenient Shop & Bar entrance, as well as Kunene River Conservancy premises.
- A community consultation meeting was scheduled and held with the local public on the 21st of September 2023 in Ehomba (being the closest to the EPL area and based on the community's choice of meeting venue). The meeting was attended by twenty-three (23) people. The consultation meeting minutes were taken.

Impacts Identification and Assessment

Some key potential positive and negative impacts were identified by the Environmental Consultant and based on comments made by the I&APs during the consultation period (community consultation meeting to be specific). The comments raised by I&APs' in the consultation meeting were addressed and incorporated into this Report. The appropriate management and mitigation measures thereto and key negative issues identified have been provided in the Draft EMP/ESMP for implementation to avoid and/or minimize their significance on the environmental and social components.

Recommendations and Conclusions

The impact assessment done for the proposed exploration and associated activities indicates that the activities will have some negative impacts on the biophysical and socio-economic environment. However, based on the impacts' description and assessment, it showed that most of the impacts have a medium/high to high significance, if any mitigation measure is not implemented. However, upon re-assessing the impacts after the implementation of mitigation measure, the significance would be reduced from high to medium and eventually low or from medium to low. Therefore, the significance can be reduced by the effective implementation of the provided management and mitigation measures accompanied by monitoring.

It has also been noted that the project will bring about few temporary positive impacts on the social and economic aspects. To prevent or mitigate negative impacts, coordinated project management strategy according to an Environmental Management Plan has been developed for the proposed exploration activities. The EMP contains the mitigation measures to reduce the impact's significance during project implementation when avoidance is not possible, to ensure that the project activities are undertaken in an environmentally and socially sustainable manner.

To ensure that the EMP (ESMP) implementation is effective and yields the desired management results/indicators, monitoring of such implementation should be done by an Environmental Control Officer/ Safety Health Environment (SHE) Officer reporting to the Proponent during project implementation. Therefore, the Environmental Clearance Certificate (ECC) may be issued by the Environmental Commissioner for the proposed activities, on condition that the Proponent and their associated contractors implement the EMP for impacts' management and monitoring measures outlined in this Report and its EMP.

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Appendix B: CV of Environmental Assessment Practitioner (EAP) - *uploaded on the Portal as required*

Appendix C: Consent Letters/ Documentation from Relevant Authorities (MME and Otjikaako Traditional Authority) - *uploaded on the Portal as required*

Appendix D: ESIA public notification (Newspaper Adverts) - *uploaded on the Portal as required (part of consultation proof)*

Appendix E: Email sent to pre-identified stakeholders (with the BID attached) - *uploaded on the Portal as required (part of consultation proof)*

Appendix F: Copy of the Site poster (A3) - *uploaded as part of consultation proof*

Appendix G: Community Consultation Meeting Minutes *uploaded on the Portal as part of consultation proof*

List of Abbreviations

BID	Background Information Document
CSAMT	Controlled-source audio-frequency magnetotelluric
DCD	Diamond Core Drilling
DEAF	Department of Environmental Affairs and Forestry
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMRP	Environmental Management Plan (EMP) / Rehabilitation Plan
EPL	Exclusive Prospecting License
ESMP	Environmental Management & Social Plan
ESSA	Environmental and Social Scoping Assessment
I&APs	Interested and Affected Parties
MAWLR	Ministry of Agriculture, Water & Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
NHC	National Heritage Council of Namibia
PPE	Personal Protective Equipment
SHE Officer	Safety Health Environment Officer

1 INTRODUCTION

1.1 General Overview

This Environmental & Social Scoping Assessment (ESSA) Report is prepared to support the application for Environmental Clearance Certificate (ECC) for the proposed mineral prospecting activities on Exclusive Prospecting License (EPL) 8955 north of Opuwo in the Kunene Region (herein referred to as *the EPL or Project*). The report provides perspective on the envisaged exploration approach and techniques, the receiving environment, how the different exploration techniques would interact with the receiving environment, and what positive and adverse impacts those activities will potentially trigger. Alternatives are considered in regard to various aspects (such as location, the technology to be used, etc.), and the various impacts identified to be of significance are systematically assessed.

For completeness, this report should be read and evaluated with all attachments highlighted above as well as the accompanying Environmental and Social Management Plan (ESMP).

1.2 Why is the Environmental and Social Scoping Assessment (ESSA) needed?

In terms of the Environmental Management Act (EMA) of 2007 and the Environmental Impact Assessment Regulations of 2012, all mineral prospecting activities are classified as listed activities which may not be undertaken without a valid Environmental Clearance Certificate (ECC) issued by the office of the Environmental Commissioner. The provision of such listed activities in the EMA is as follows:

Mining and quarrying activities

- **Activity 3.1 (Mining and Quarrying Activities):** *The construction of facilities for any process or activities which requires a license, right or other form of authorization, and the renewal of a license, right or other form of authorization. This bears relevance to the concerned project because the planned activities may entail the installation and construction of temporary exploration camps, access tracks as well as temporary working platforms.*
- **Activity 3.2 (Mining and Quarrying Activities):** *Other forms of mining or extraction of any natural resource whether regulated by law or not. This bears relevance to the concerned project because soil and rock material will be*

extracted from within the license area's footprint in the form of soil and rock samples for geochemical testing, rock core, geotechnical testing, etc.

- **Activity 3.3 (Mining and Quarrying Activities):** *Resource extraction, manipulation, conservation, and related activities. This bears relevance to the concerned project because mineral resources will be extracted from within the license area over the prospecting stage duration for drilling, trenching, pitting and testing purposes.*
- **Activity 8.1 (Water Resources Development):** *The abstraction of ground or surface water for industrial or commercial purposes. This bears relevance to the concerned project because surface water would be abstracted from existing water supply sources such as the Bulk water supply schemes or site boreholes for exploration drilling, to meet domestic water requirements for the exploration camps, and to supplement any drilling and metallurgical test work for latter stages of the prospecting phase.*
- **Activity 10.1 (Infrastructure development):** *The construction of public roads and motor vehicle tracks. This bears relevance to the concerned project because access tracks for vehicles and drilling rigs may be created where existing tracks cannot be utilized.*

To support the application for an ECC, an Environmental Scoping Assessment (ESA) study must be carried out to understand how the planned project activities will interact with the current and future biophysical and socio-economic environment, and what positive and negative impacts those activities may trigger in the environment. After the ESA study a project specific Environmental Management Plan (Appendix A) shall be compiled which provides the necessary and appropriate impact management measures for all significant impacts which could be generated by the project. The two documents with associated appendices shall then be submitted to the Department of Environmental Affairs and Forestry (DEAF) for scrutiny to allow the DEAF to make an informed and knowledge-based decision on the issuance of an ECC. The issuance of the ECC will then enable the Ministry of Mines and Energy (MME) to decide on the granting of EPL-8955 to the Proponent, as the status of the EPL application on the Namibia Mines and Energy Cadastre indicates "pending ECC"- Figure 1-1.

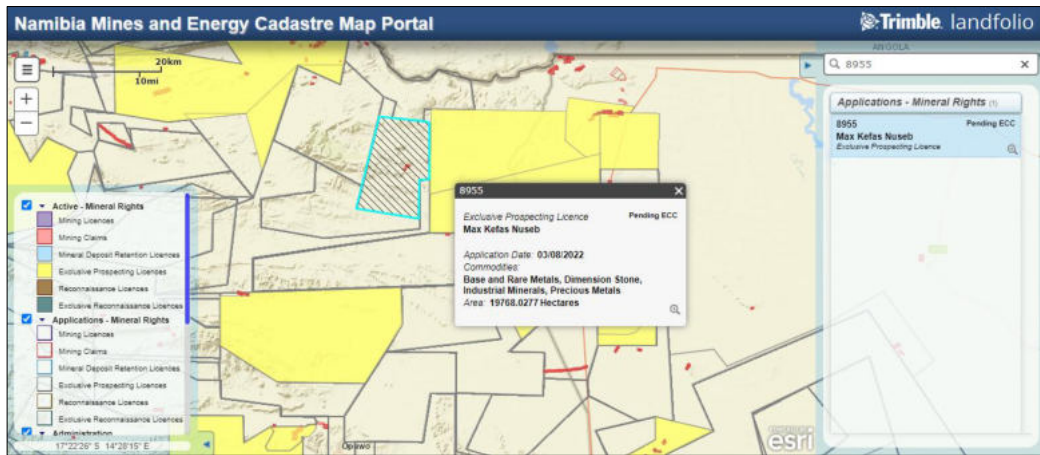


Figure 1-1: The status of the EPL on the Mines and Energy Cadastre Portal (source: <https://maps.landfolio.com/Namibia/>)

1.3 About the Project Proponent

Max Kefas Nuseb (the Proponent) is the sole applicant and eventual sole holder of EPL 8955 and will work directly with a reputable third-party partner who may provide the necessary technical support in the implementation of the planned exploration activities.

1.4 About the Environmental Assessment Practitioner

OMAVI Geotechnical & Environmental Services was appointed by the license holder to undertake an Environmental Scoping Assessment (ESA) and prepare the project-specific Environmental Management Plan (EMP) for the proposed non-invasive and invasive prospecting activities, in accordance with the Environmental Management Act of 2007 and its 2012 EIA regulations. OMAVI Geotechnical & Environmental Services is a specialist environmental consulting entity, with considerable industry experience in environmental compliance and environment management of exploration and mining projects. Our team of scientists possesses the right set of interpersonal, technical and analytical skills which holistically ensure that we understand, in an integrated manner, how a set of planned activities would interact with the biophysical, socio-economic and political landscape within which such activities are envisioned to take place.

At OMAVI we are grounded in the idea that a balance between socio-economic development and environmental protection can be achieved through proactive and integrated planning whereby project activities are designed, planned and implemented with due consideration to minimize adverse environmental and socio-economic impacts, as well as with closure and rehabilitation principles in mind.

The curriculum vitae (CV) of the Environmental Assessment Practitioner (EAP) responsible for the ESIA Study and compilation of this document is attached hereto as Appendix B.

1.5 Need and Desirability of the Project

Mining is Namibia's leading economic sector, and roughly accounts for 10% of Namibia's GDP every year. The proposed prospecting activities on EPL-8955 have potential to yield results which could lead to the development of a mine if economically viable deposits are discovered. If economically viable deposits of base & rare metals, dimension stone, industrial minerals, and, precious metals are discovered on this property, the Namibian economy would benefit significantly from revenues generated through royalties, license rental levies and taxes to the government, procurement opportunities to local small and medium enterprises, and employment opportunities for the poverty stricken surrounding communities such as Ehomba, Okahozu and Etoto) and where possible, the broader Kunene Region communities.

2 PROJECT BACKGROUND AND DESCRIPTION OF PLANNED ACTIVITIES

2.1 Project Location

Max Kefas Nuseb's EPL-8955 is situated about 50km north of Opuwo in the Kunene Region (Figure 2-1) and within the Kunene River Conservancy as shown on the land use map in Figure 2-2. The EPL is accessed via D3700 and D3701 gravel roads in the area. Since the EPL currently has limited access, new access tracks will be created to access site specific areas on the EPL, where required (approval to be given by Otjikaoko Traditional Authority and Kunene River Conservancy prior to the creation of such access roads).

The Proponent intends to prospect and explore for mineral commodities within the boundaries of the EPL. These commodities are base & rare metals, dimension stone, industrial minerals, and precious metals. The EPL covers a surface area of 19,768.0277 hectare (Ha).

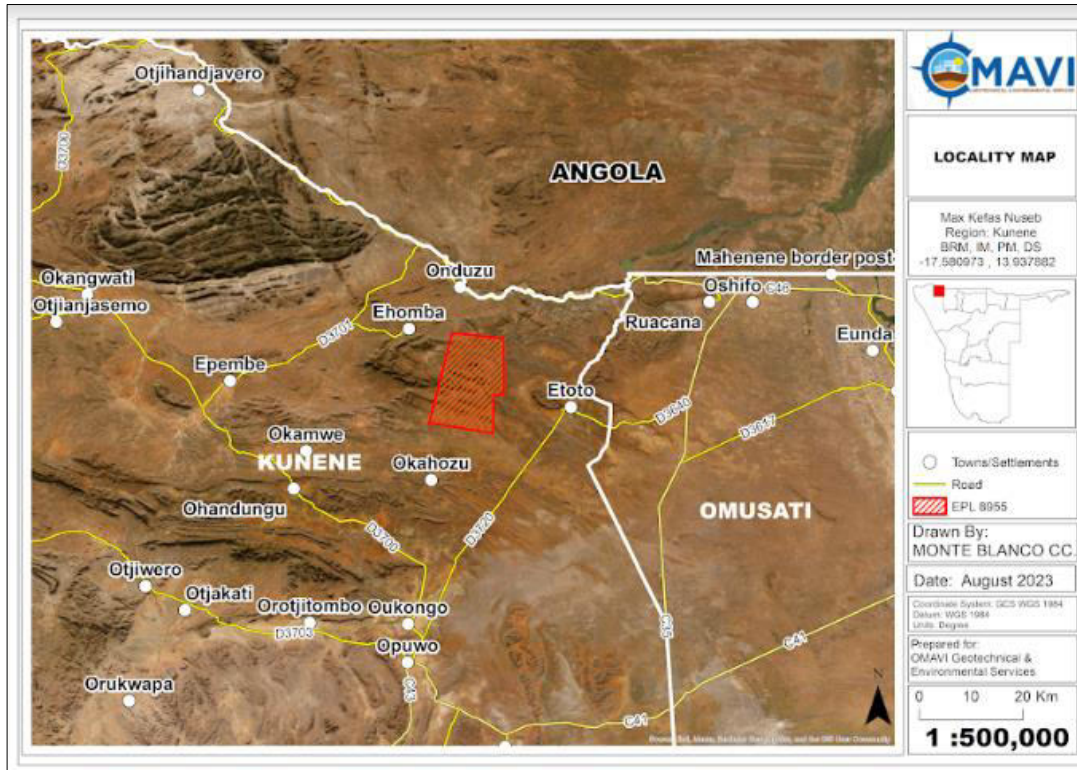


Figure 2-1: Locality and layout boundaries of EPL-8955.

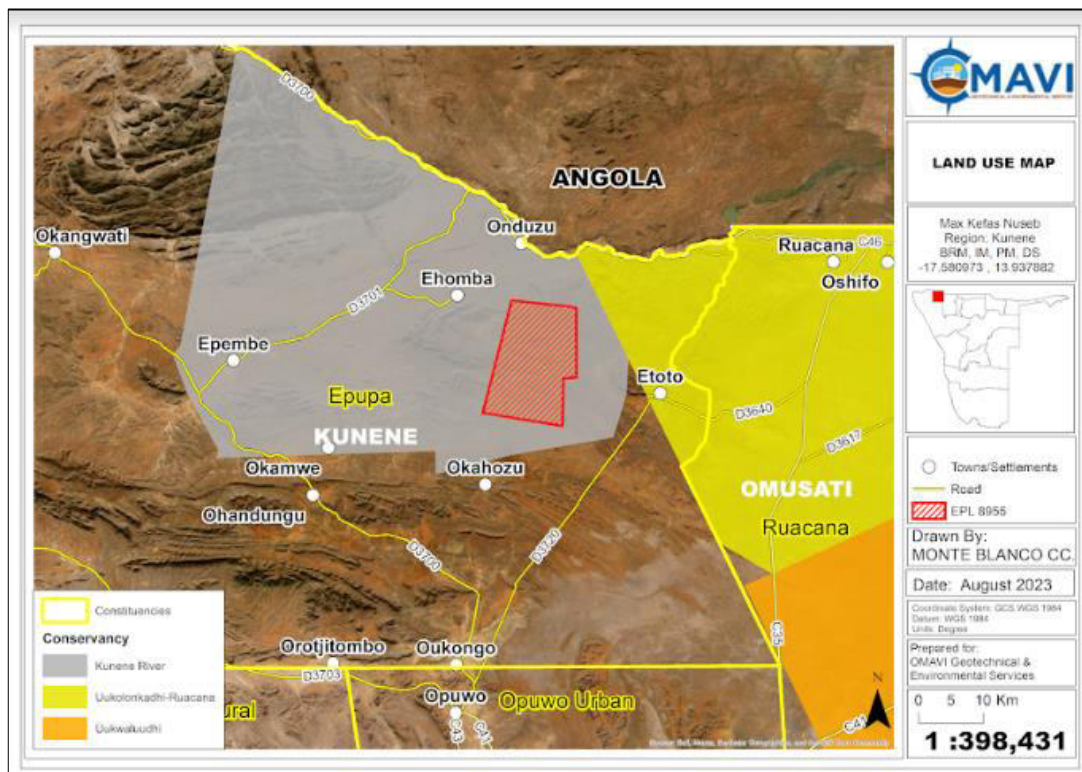


Figure 2-2: Locality map with significant land use covered by EPL-8955.

The approximate corner coordinates of EPL-8955 are presented in Table 2-1.

Table 2-1: The GPS corner coordinates of EPL-8955

EPL Corner Point	GPS Coordinates
1	-17.4942 13.9099
2	-17.5047 13. 9998
3	-17.6005 14.0001
4	-17.6022 13. 9821
5	-17.6678 13.981
6	-17.6497 13.8698
7	-17.5614 13.8926
Centre coordinates	-17.5673 13.9465

2.2 Project Background and Description of Activities

A combination of various exploration techniques common in searching for base & rare metals, dimension stone, industrial minerals and precious metals will be adopted on the concerned EPL area. The techniques likely to be utilized include, but are not limited to the following:

- Desktop review of all available geological, geochemical, geophysical data (e.g., government obtained airborne radiometric and magnetic data) and information which would be sourced from various sources such as published literature, historical exploration in the area from the Ministry of Mines and Energy
- Site reconnaissance walk-over and geological plus geo-structural mapping, coupled with soil and stream sediment sampling and grab sampling
- Airborne and/ or ground radiometric, electromagnetic surveys (e.g., controlled-source audio-frequency magnetotelluric (CSAMT)) to help identify concealed intrusions, and model the dip/ strike of alkaline intrusive rock dykes and sills
- Reverse circulation (RC) and diamond drilling of specific anomalies identified from radiometric and magnetic surveys and geological mapping, including geochemical essays
- Trenching and drilling. These techniques and where ground geophysics are required, would require clearing of vegetation for the creation of access tracks, creating working platforms for the drill rigs, and setting out lines for ground geophysical equipment.

The likely scope of exploration activities to be covered over the planned exploration program is documented below. It is important to note that the exact scope of exploration activities will be refined, documented, and reported bi-annually and/ or as exploration advances to incorporate any changes to the initial exploration program.

2.2.1 Desktop Review and Study

The envisioned exploration program will commence with a desktop investigation, analysis and review of the following:

- Historical exploration and geological reports of the area, including those of adjacent properties
- The 1:250 000 and 1:50 000 geological maps of the area
- Government obtained airborne radiometric and magnetic survey (from 200m spaced fixed wing surveys) data from the Namibian Geological Survey
- Publicly available satellite imagery of the license area obtained from various sources (e.g., ArcMap, QGIS)
- Any existing stream, soil and grab sampling essay results and
- Historical drilling data, where such can be accessed.

The aim of this exercise would be to gain better geological and geo-structural understanding of the license area and identify preliminary target areas for detailed geological mapping and field evaluation.

2.2.2 Site Reconnaissance, Stream/ Soil/ Grab Sampling and Mapping

Collectively, the license wide site reconnaissance, stream or soil sampling and geological mapping, will form part of the field evaluation stage. The field evaluation will be undertaken by a group of suitably qualified and experienced geologists and field technicians, and will be aimed at refining the geological map in selected zones of interest with potential for base and rare metals, nuclear mineral fuels and industrial minerals mineralization. During the field mapping and soil/ stream sediment and rock chip sampling stage, emphasis will be placed on refining geological contacts and geological structures, as well as obtaining soil, stream sediment and grab samples from such zones, in conjunction with multi element soil geochemical testing and analyses.

Soil and grab rock samples collected during this stage will be stored at a designated exploration camp which will be erected within the Conservancy side of the EPL. The camp will comprise of temporary (either prefabricated or containerized) office, kitchen, laundry, mess and shower structures, tents for sleeping, and a sample storage shed. The camp will also most likely accommodate most, if not all, staff who will be involved in this program. It is further envisaged that as part of this stage, local personnel familiar with the project area will be interviewed to obtain some local indigenous knowledge about various mineral occurrences within the area.

2.2.3 Geophysical surveys

Once the geological desktop review, field walk-over surveys and mapping have been concluded, broader target zones will be selected for high-resolution airborne radiometric and electromagnetic surveying at an anticipated line spacing of 50m to 100m. Airborne geophysics is deemed suitable and adequate for this license area because of the limited overburden and vegetation cover, and the outcropping nature of the bedrock that is generally prevalent over the area.

It is anticipated that based on field mapping data and the resultant 3D models from both field mapping and geophysics, the dip and strike of the various intrusive bodies targeted and the different geological structures will be established. This information, together with soil/ stream sediment and rock chip sample assay results, will assist in the identification of anomalies which would in turn serve as drilling targets.

2.2.4 Intrusive Exploration

The intrusive exploration stage will involve several intrusive investigation techniques such as trenching for bulk sampling, drilling (both reverse circulation (RC) and diamond core drilling (DCD)), and where exploration results are promising the prospecting program may advance to metallurgical testing. The number and positions of the drill holes and/ or trenches will only become apparent after the initial exploration stages, and will most likely be affiliated with the targeted rock units where primary mineralization for base and rare metals, industrial minerals and precious metals is anticipated.

Rock chip samples recovered during RC will be bagged in polyester bags, sampled where necessary, and ultimately, stored at a designated temporary sample shed at the exploration camp. Similarly, rock core recovered during DCD will be stored in core trays at the same facility. The position of each drillhole will be captured with a handheld GPS.

Where shallow mineralization is encountered or suspected, trenching will be carried out with a Tractor Loader Backhoe (TLB), and any bulk samples retrieved will then be stockpiled. During operations, all such trenches will be clearly demarcated with a danger tape and upon completion of any mapping and sampling work, they will be backfilled and rehabilitated.

2.2.5 Project Input Infrastructure, Services and Equipment

The following infrastructure and equipment will likely be installed/ constructed and deployed to the project area over the exploration phase:

- Reverse circulation and diamond core drilling rigs
- Trucks to support the drilling operations (e.g., for water supply, carrying of drilling rods and air compressors, etc.)
- Field bakkies - The exact sizes of the mobile fleet is likely to change over the duration of the project as the project evolves. These changes will be captured and reported in the bi-annual environmental monitoring reports.
- A self-contained diesel tank for supply of diesel to various mobile plant. This tank will be stored at the exploration camp, and will BE erected on a concrete bund to ensure containment of any leakages.
- Temporary water tanks which will be stored onsite. The tanks will be frequently refilled as deemed necessary.
- Human resources: about 10 to 20 people including may be required for exploration works. However, the number of people may vary throughout the project. The people who will be employed, for any work they are capable of will be from the local communities and nearby villages in the surrounding areas.
- Workforce Accommodation: An exploration camp will be established within the EPL boundaries comprising staff accommodation tents; prefabricated or containerized offices, kitchen, mess room, laundry room, showers and toilets. The camp will also include a sample and core storage shed; a shed for sorting and arranging all samples collected; septic tanks for sewage and waste water; wifi routers.

Exploration (mainly drilling) workers will be housed in tented campsite (temporary accommodation) within the boundaries of the EPL. However, consents from land custodian (traditional authority) and land users (Conservancy) will be obtained prior to setting up accommodation structures.

The EPL consent letter as provided by the Otjikaako Traditional Authority is attached hereto as Appendix C.

- Power supply for the exploration team (lighting): a roof top solar system for power supply for the entire exploration camp will be installed onsite.
- Accessibility: the EPL is accessed via D3700 and D3701 gravel roads in the area. New access tracks will be created to access site specific areas on the EPL, where required (approval to be given by Traditional Authority and Conservancy).
- Water supply: water will be required for exploration activities such as cooling down and washing of drilling equipment, domestic use (ablution, drinking and cooking). This will be supplied by existing sources with a reliable supply through water purchase agreements. To be explored during the ESIA Study.
- Fuel supply: The Proponent will provide firewood or fuel to be used for food preparation by the site workers. No firewood will be collected onsite neither neighbouring land. For machinery and equipment, there will be a diesel powered generator. A trailer mounted and bunded fuel tank will be onsite to ensure an interrupted fuel supply to the project.
- Waste management: the different waste (Sewage, general and domestic, as well as hazardous waste) will be sorted and handled accordingly, properly stored in dedicated containers for later disposal at the nearest respective and approved waste management facilities such as in Opuwo and any nearby approved sites.
- Health and Safety: The workforce will be provided with appropriate Personal Protective Equipment (PPE) onsite, including site visitors. Two fully-equipped first aid kits will be readily available onsite, and two people will be trained on first aid administering.
- Potential Accidental Fire Outbreaks: Three well-serviced fire extinguishers will be readily available onsite. Basic firefighting training will be provided to some project personnel to ensure that there are capable people in the exploration crew who can put out accidental fires that may occur during exploration and associated works onsite.

3 PROJECT ALTERNATIVES

This section explores alternatives that were considered and weighed up, and lists those deemed to be most feasible. The viability of the selected alternatives/options is based on those that were found to be less damaging to the environment, while maximizing potential benefits from the current and proposed additional activities.

According to the 2012 EIA Regulations the definition of the “alternatives”, in relation to a proposed activity, refers to different means of generally meeting the same purpose and requirements of a proposed activity, which may include alternatives to –

- (a) the property on which or location where it is proposed to undertake the activity.
- (b) the type of activity to be undertaken.
- (c) the design or layout of the activity.
- (d) the technology to be used in carrying out the activity; and
- (e) the operational aspects (or modus operandi) of the activity.

The concept of considering alternatives thus ensures that the environmental assessment process is not reduced to the defence of a single project proposal that is to the desire of the proponent, and therefore, provides an opportunity for unbiased considerations of options, to determine the most optimal course of action from an environmental perspective.

Alternatives weighed and considered for this project are with regards to:

- Location of proposed activities
- Exploration methods and technologies
- Water and power supply sources
- The “No-action” alternative.

3.1.1 Limitations to the Project Alternatives

In assessing possible alternatives to each of the above-listed aspects, the following factors were considered in accordance with best practice procedures as outlined under DEAT (2004):

- Resource/ project locality – where alternative locations could be considered for the same resource and such alternatives are justified by economics.

- Technological limitations - where high costs or the environmental unfriendliness of a technology may prevent it from being considered as a viable option, or the lack of technological development may preclude certain options from consideration
- Environmental limitations – where environmental factors such as climate, geology, hydrology, hydrogeology, potential impacts on the local ecology may prevent or favour consideration for an option.
- Socio-economic limitations – where socio-economic factors such as distance to material source, markets and/ or waste management sites; availability of supporting infrastructure such as water and electricity; current and future land-use; cultural significance; presence of archaeological sites and impacts on livelihoods may hinder or enhance consideration for an option.

3.1.2 Project Locality Alternatives

The area has been selected for exploration activities based on the geological setting (regional and local), the economic geology, and exploration as well as mining history of the license area and Proponents' preference of an area during application. This means that the mineralization of the commodities within the EPL is area-specific, which means the exploration target areas are primarily determined by the geology (host rocks) and the tectonic environment of the site (an ore-forming mechanism).

3.1.3 Exploration Technologies and Supporting Services

Both intrusive and non-intrusive exploration activities as indicated under the project description chapter will be used as deemed necessary, without aggravating the impact on the environment. If an economically viable discovery is made, the project will proceed to the mining phase upon approval of a mining EIA Study (and subsequent ECC) and issuance of a mining license by the Ministry of Mines and Energy (MME).

In terms of services and infrastructure, these have been envisaged to ensure that the most feasible options were selected. These were weighed in terms of technological, economic, and environmental limitations in selecting the most feasible option(s). The alternative considered in this regard are presented in Table 3-1.

Table 3-1: Service infrastructure alternatives considered for exploration on the EPL

Category of Infrastructure	Alternatives Considered	Justification for selected option(s)
Ablution facilities	<ul style="list-style-type: none"> -Install fixed facility with septic tank -Portable facilities with septic tank 	<p>-To avoid long-term visual impacts, minimize rehabilitation costs and reduce structure dismantling / removal time.</p>
Shade Structure for working areas	<ul style="list-style-type: none"> -Shade structure made from temporary blue or red corrugated sheets -Shade structure made with shade net 	<p>-Shade structure made from corrugated sheets deemed most suitable due to robustness, & resistance to wind destruction and hot sun.</p>
Water supply (for exploration drilling)	<ul style="list-style-type: none"> -Water abstracted from the nearest water supplying sources with less water supply issues, through supply and purchase agreements. -Siting and drilling of new boreholes in areas of the EPL far from existing boreholes. The new borehole(s) will supply the project activities such as drilling. 	<p>-Water should be brought from outside the EPL area upon reaching an agreement with a supplier. This will be done to relive pressure on struggling local aquifers.</p>
Water supply (for domestic/drinking purposes at the campsites)	<ul style="list-style-type: none"> -Water abstracted from surrounding local boreholes through purchasing agreements -Water carted from elsewhere -Water abstracted from site boreholes 	<p>-Drinking water can be supplied from the local boreholes through purchasing from Rural Water supply).</p> <p>-Water for exploration and associated activities (drilling and dust suppression) should be sourced from outside the EPL area such as existing bulk water supply scheme (by entering into an agreement with NamWater). Some of the water can be sourced from onsite boreholes as encountered during exploration drilling.</p>

Category of Infrastructure	Alternatives Considered	Justification for selected option(s)
Diesel storage	-Trailer mounted diesel tank -Fixed diesel tank onsite	-A trailer mounted diesel tank for fuel storage has great mobility requirements during exploration.
Power supply	-Diesel generator set -Powerline or solar panels	-Most practical & economically viable for exploration, even when exploration works is not positive.
Field accommodation and support office	-Erect dismantlable prefabricated units for site office -Accommodation in nearby settlements -Campsite within the EPL at selected locations based on the exploration programme	-Ease of installation, (b) Low installation costs and (c) Ease of dismantling & moving. -The accommodation campsite set up within the EPL is justifiable to ensure that there is a short distance to the working sites and will not impact work productivity.
	Fixed or temporary buildings for offices and accommodation units (structures) on site	However, before establishing accommodation facilities or any project infrastructure, permission should be obtained from the Kunene River Conservancy Management and Otjikaoko Traditional Authority.

3.1.4 No-Go Alternative

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

4 APPLICABLE REGULATORY FRAMEWORK

4.1 National Legislation

In Namibia all aspects related to the extraction and processing of mineral resources are vested in the state and are regulated by the Ministry of Mines and Energy (MME) whereas sustainable exploitation and management of the environment and use of natural resources is regulated by the Ministry of Environment, Forestry and Tourism (MEFT).

The Minerals Prospecting and Mining Act (Act No. 33) of 1992 is the principal law governing exploration, mining and beneficiation of mineral resources in the Republic of Namibia. From an environmental management viewpoint, this Act requires that an environmental impact assessment be undertaken prior to prospecting, mining/quarrying and beneficiation operations. The Ministry of Mines and Energy is the custodian agency for the administration of the Mining Act.

Conversely, MEFT is the overseeing custodian agency for the administration and enforcement of the EMA, with the enforcement of the Environmental Impact Assessment Regulations of 2012 specifically being entrusted with the Department of Environmental Affairs and Forestry (DEAF) within MEFT. This Act stipulates that possession of an Environmental Clearance Certificate (ECC) is a pre-requisite for the continuation of running or operating any activities that are listed under the Environmental Impact Assessment Regulations of 2012. The act further sets out under Section 58 and in the Government Notice No. 29 of 2012 a detailed framework and schedule for conducting Environmental Impact Assessments for mineral exploration, mining and mineral processing companies or any entity that plans to undertake exploration, quarrying or mining, and/ or processing of mineral resources at any scale.

A review of the applicable and relevant local legislation, policies and guidelines to the existing operation and the planned new activities is given in this chapter. This review serves to inform the project Proponent, Interested and Affected Parties and the decision makers at the DEAF and the Competent Authorities of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled during prospecting. The applicable local (national) and where necessary regional/ international legislation, policies and guidelines are given in Table 4-1.

Table 4-1. Applicable legislation (laws and regulations), policies and guidelines to the project

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
The Constitution of the Republic of Namibia (1990)	Government of the Republic of Namibia	<p>The Namibian government has adopted several policies that promote sustainable development. Most of these originate in clauses of the Constitution of the Republic of Namibia. In Article 95 (i), the State undertakes to actively promote and maintain the welfare of the people by adopting policies aimed at the utilisation of natural resources on a sustainable basis for the benefit of all Namibians. Articles 91(c) and 95(l) are also of relevance to sound environmental management practice. In summary, these refer to:</p> <ul style="list-style-type: none"> -Guarding against over-utilisation of biological natural resources. -Pursuing sustainable natural resource use -Limiting over-exploitation of non-renewable resources. -Maintaining biological diversity -Ensuring ecosystem functionality. -Protecting Namibia's sense of place and character. <p>Effective implementation of the mitigation measures set out in this Environmental Scoping Report, the owner of the ECC shall be advocating for sound environmental management as set out in the Constitution.</p>
Environmental Management Act No. 7 of 2007 and its 2012 EIA Regulations Government Notice 28-30 (Government Gazette 4878)	MEFT: DEAF	<p>Part 2 of the Act sets out 12 principles of environmental management, summarized as follows:</p> <ul style="list-style-type: none"> -Community involvement in natural resources management, must be promoted and facilitated. -The participation of all I&APs must be promoted and decisions must consider the interest, needs and values of I&APs.

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>-Equitable access to environmental resources must be promoted and the functional integrity of ecological systems must be considered to ensure sustainable systems.</p> <p>-Assessments must be undertaken for activities which may have significant effects on the environment or the use of natural resources.</p> <p>-Sustainable development must be promoted in all aspects relating to the environment.</p> <p>-Namibia's cultural and natural heritage including, its biological diversity, must be protected and respected.</p> <p>-The option that provides the most benefit or causes the least damage to the environment, at a cost acceptable to society must be adopted to reduce the generation of waste and polluting substances at source.</p> <p>-The reduction, re-use and recycling of waste must be promoted.</p> <p>-A person who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by the pollution.</p> <p>-Where there is sufficient evidence which establishes that there are threats of serious or irreversible damage to the environment, lack of full scientific certainty may not be used as a reason for postponing cost-effective measures to prevent environmental degradation; and</p> <p>-Damage to the environment must be prevented and activities which cause such damage must be reduced, limited, or controlled.</p> <p>-In terms of the terms and conditions attached to the current ECC the proponent is required to renew the ECC after every 3 years. Such renewal process is expected to review the current conditions of the environment, document ongoing and planned activities, evaluate how the ongoing and planned activities will likely alter the current</p>

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>conditions of the environment, and formulate impact management measures that speak to the current and future status quo of the affected project area.</p> <p>The Proponent has the responsibility to ensure that the proposed impact management measures are implemented, conform to the principles of this Act. In developing this report, OMAVI has been cognizant of these requirements, and accordingly the process that was adopted has been undertaken in conformance with this Act and the EIA Regulations (2012). Several listed activities in terms of the Act, are triggered by the proposed activities as set out above.</p>
<p>Mineral Prospecting & Mining Act (Act no. 33 of 1992)</p>	<p>MME</p>	<p>Sections 50, 52, 54, 57 and 130 of this Act sets out provisions for environmental management for activities arising from mineral exploration, quarrying/ mining and beneficiation, as follows:</p> <ul style="list-style-type: none"> -Holders of mineral prospecting licenses (EPLs) are required to undertake an ESA or EIA and prepare an EMP to support applications for Environmental Clearance. Such holder are required to make revision of such EMP every 3 years. -That the holder of an EPL cannot exercise rights on a private land until the holder has entered into an agreement with the owner regarding compensation -That an EPL holder shall take all necessary remedial steps to reasonable satisfaction of the minister for any damage caused during prospecting. -That the minister is empowered to direct the holder of a prospecting license for carrying out good reconnaissance, mining and prospecting practices for the protection of the environment, and conservation of natural resources payment of liability fees and royalty and remedial steps for any damages and

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>-That an EPL holder shall report pollution in course of any operations and make remedial measures for such.</p> <p>The abovementioned provisions are all relevant to the proposed activities and were thus considered in the Environmental Assessment process.</p>
Charter for Sustainable and Broad-Based Economic and Social Transformation in the Namibian Mining Sector 2014 – 2020 (The Namibian Mining charter)	The Namibian Chamber of Mines of Namibia	This charter aims to facilitate meaningful participation of historically deprived Namibians in the mining and mineral beneficiation industry. It has effectively been developed as an instrument to effect transformation and sets specific targets for mineral license holders and Operators of mineral processing facilities active in Namibia
The Minerals Policy of Namibia, 2003	Ministry of Mines and Energy: Mining Directorate	This policy sets out guiding principles and directions while communicating the values of the Namibian people in pursuit of the development of the mining and mineral resources beneficiation sector.
Pollution Control & Waste Management Bill	MEFT and others	This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management. The Bill repeals the Atmospheric Pollution Prevention Ordinance (11 of 1976). In terms of water pollution, it will be illegal to discharge of, or dispose of, pollutants into any watercourse without a Water Pollution Licence (apart from certain accepted discharges). Similarly, an Air Quality Licence will be required for any pollution discharged to air above a certain threshold. The Bill also provides for noise, dust or odour control that may be considered a nuisance. The Bill advocates for duty of care with respect to waste management affecting humans and the environment and calls for a waste management licence for any activity relating to waste or hazardous waste management.

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>The proposed prospecting activities would not entail the discharge of large quantities of gaseous pollutants into air but may result in increased noise levels, dust generation, destruction of in situ soil structure during such operations.</p>
<p>Water Act (No. 54 of 1956)</p>	<p>MAWLR: Department of Water Affairs</p>	<p>Makes provision for several functions pertaining to the management, control and use of water resources, water supply and the protection of water resources.</p> <p>The Proponent shall prevent any potential pollution of groundwater and surface water.</p>
<p>Water Resources Management Act (Act No. 11 of 2013)</p>		<p>This Act provides a framework for managing water resources based on the principles of integrated water resources management. It provides for the management, development, protection, conservation, and use of water resources. Should the proponent wish to undertake activities involving water abstraction and/or effluent discharge, the relevant permits will have to be applied for from the Department of Water Affairs.</p> <p>Furthermore, any watercourse on/or within the license area and surroundings, including associated ecosystems, should be protected in alignment with the principles above.</p>
<p>Nature Conservation Ordinance (Act No. of 1996)</p>	<p>MEFT</p>	<p>The Nature Conservation Amendment of 1996 (section 73.1) provides for an economically based system of sustainable management and utilization of game in communal areas; to delete references to representative authorities; and to provide for matters incidental hereto.</p> <p>Although the project site is not located within protected area, there are ongoing nature conservation efforts in the area, specifically within the Conservancy, and there are known indigenous vegetation and fauna in the license area. Therefore, this Ordinance is relevant. A permit</p>

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>would be required should any species onsite, with a protected or endangered status, be damaged or removed. If required, the proponent will apply for such a permit prior to commencing with the proposed activities.</p>
<p>Forestry Act (Act No. 12 of 2001)</p>	<p>MEFT</p>	<p>The Act provides for the management and use of forests and forest products.</p> <p>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."</p> <p>The proponent will apply for the relevant permit under this Act if it becomes necessary.</p>
<p>Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)</p>	<p>MME: Petroleum Affairs Division</p>	<p>Regulation 3(2)(b) states that "No person shall possess or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area.</p> <p>This law is applicable to this project because new diesel in excess of 600L will be stored on the site in a self-contained diesel storage tank. Therefore, a consumer installation certificate/permit should be applied for from MME.</p>
<p>National Heritage Act (Act No. 27 of 2004)</p>	<p>MEAC</p>	<p>The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits</p>

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>removal, damage, alteration or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Section 51 (3) sets out the requirements for impact assessment.</p> <p>Should any objects of heritage/ archaeological significance be identified during project activities, the work must cease immediately in the affected sites and the necessary steps taken to seek authorization from the Council.</p>
Public Health Act (Act No. 36 of 1919)	MoHSS: Occupational Health	<p>The Act serves to protect the public from nuisance and 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.</p> <p>The Proponent must ensure that all operations are operated in a way that is safe and healthy to both the employees and the public. Noise and dust emissions which could be considered a nuisance and/ or a health risk ought to be kept to acceptable levels.</p>
Labour Act, 2007	Ministry of Labour, Industrial Relations and Employment Creation (MLIEC)	<p>Sections 3, 4, 5, 11, 16, 23-27, 44 and 135 make provision for the following:</p> <ul style="list-style-type: none"> -That a person may not employ a child under the age of 14years -That children are prohibited for employment in a mine and other dangerous circumstances -That forced employment of persons is prohibited

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>-That an employee is entitled to monetary remuneration daily, weekly, fortnightly, or monthly in cash, cheque, and direct deposit into a bank account</p> <p>-That the work hours of an employee are 45 hours in a week, over and above which an employee is entitled to additional payment overtime wage</p> <p>-That employees are entitled to (a) annual leave on the basis of the average number of days worked over the year, (b) a day's sick leave for every 26days worked, (c) compassionate leave for a period of 5days in 12 months which is fully paid, and (d) leave on public holidays,</p> <p>-That female employees that have completed 6 months of employment are entitled to 12 weeks of maternity leave, which can be extended for a further period of one month</p> <p>-That the minister is empowered to make regulations in relation to safety, health, hygiene, sanitation, and welfare of persons employed in or about mines, including sea-bed operations</p> <p>The Proponent is expected to be compliant with the above provisions and as such the above provisions were accounted for in this assessment.</p>
Relevant Guidelines, Policies and Regulations		
Environmental Assessment Policy (1994)	MEFT: DEA	This policy aims to promote sustainable development and economic growth while protecting the environment in the long term by requiring environmental assessment prior to undertaking of certain activities. Annexure B of the policy contains a schedule of activities that may have significant detrimental effects on the environment, and which require authorization prior to undertaking.
Mine Health & Safety Regulations (under section	MME: Mine Safety & Services Division	These set of regulations are aimed at ensuring that mineral prospecting projects as well as operational mines are operated in a safe manner to prevent

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
<p>138A of the Mining Act, 1992)</p>	<p>MoHSS: Occupational Health Division</p>	<p>and/ or minimize injuries, lost time, fatalities, or long-term health hazards. The regulations make provision for:</p> <ul style="list-style-type: none"> -Employee's right to leave unsafe working places -Obligation of a project manager to provide for all safety gear and enforce all safety and health measures on site -Reporting of accidents to the chief inspector and keeping a record of such accidents -Requirements for the project manager to provide occupational health services at area of exploration activity -Requirements for stability of excavations; provision of waiting areas; schemes for working in vicinity of water body. -The project manager and field supervisors' responsibility to formulate a scheme for identifying hazards at the area of prospecting activity and provision of appropriate protective equipment -Ensure that the project manager provides first aid and firefighting equipment and procedures where exploration activities are being conducted <p>All the above-mentioned provisions are relevant to this project and were thus considered in the ESA.</p>
<p>National Solid Waste Management Strategy of Namibia</p>	<p>MEFT and Local Municipalities</p>	<p>The Vision of this Strategy is for Namibia to become the leading country in Africa in terms of standards of solid waste management by 2028.</p> <p>The Specific Objectives of the Strategy are:</p> <ol style="list-style-type: none"> 1. To strengthen the institutional, organisational and legal framework for solid waste management, including capacity development. 2. To install a widespread culture of waste minimisation and to expand recycling systems. 3. To implement formalised solid waste collection and management systems in all populated areas, including under the administration of Regional Councils.

LEGISLATION CONSIDERED	CUSTODIAN ORGAN OF STATE	ASPECT OF PROJECT
Relevant Acts		
		<p>4. To enforce improvements in municipal waste disposal standards.</p> <p>5. To plan and implement feasible options for hazardous waste management including healthcare waste management</p> <p>It is envisaged that a significant amount of solid waste will be produced in the form of litter, sewage, disposable samples bags, soil/ sediment samples, waste food, etc.</p>

5 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section provides an overview of the current status quo of the climatic, biophysical and socio-economic landscape through the analysis of baseline data and information as deduced from field observations/ assessments, literature and community engagements.

For this project the data has been collected through a desktop study of various data sources, existing literature as well as site observations and consultations with the project proponent, the immediate affected community. In this respect, baseline information is provided on the receptors described under the following subsections:

The aim of this section is to provide a baseline against which changes that may occur as a result of the current and proposed project activities can be measured, gauged and monitored through time.

5.1 Physical Environment

5.1.1 Climatic Conditions

The climatic conditions of the project area have been obtained from Mendelsohn et al (2002), Meteoblue (2023) and World Weather Online (2023) for Ehomba area which is the closest to the EPL (about 10km north of EPL-8955) and have available climatic information as presented below.

The area experiences annual temperatures in the range of 20°C and 22°C, minimum temperatures ranging between 6°C and 8°C and maximum temperatures ranging between 32°C and 34°C. In terms of rainfall, the project area receives between 250 and 350mm of rainfall per year (Mendelsohn et al, 2002).

The average temperatures and rainfall observed for the period of fourteen (14) years, i.e., between 2009 and 2023 from World Weather Online indicates maximum temperature recorded within the period as 37°C in October and minimum as 10°C in June/July as shown in Figure 5-1 (A).

The average high and low temperatures of the area are 35°C (in October) and 12°C around June and July, respectively as shown in Figure 5-1 (B).

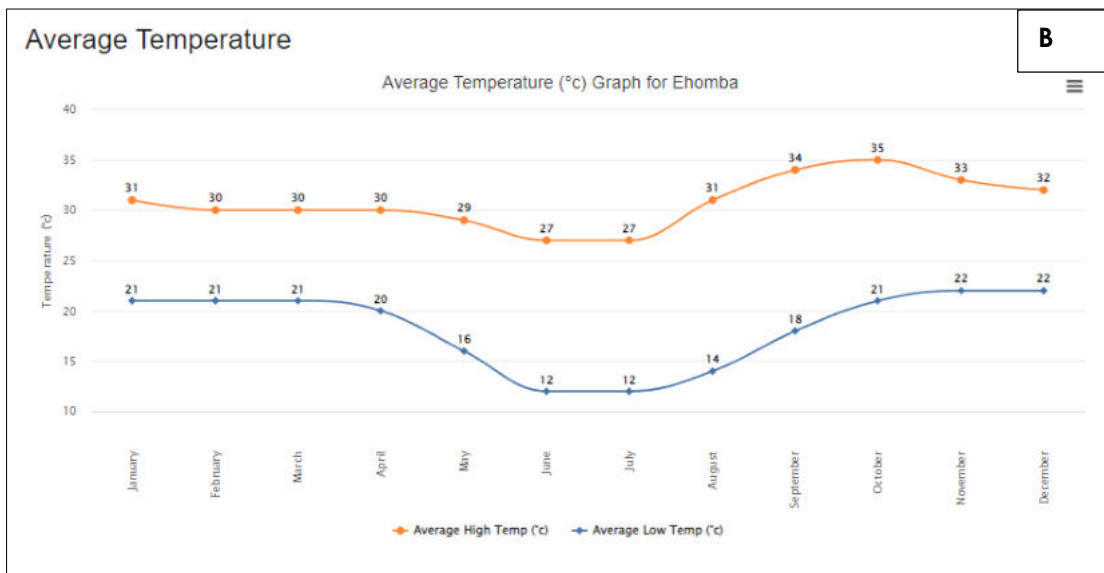
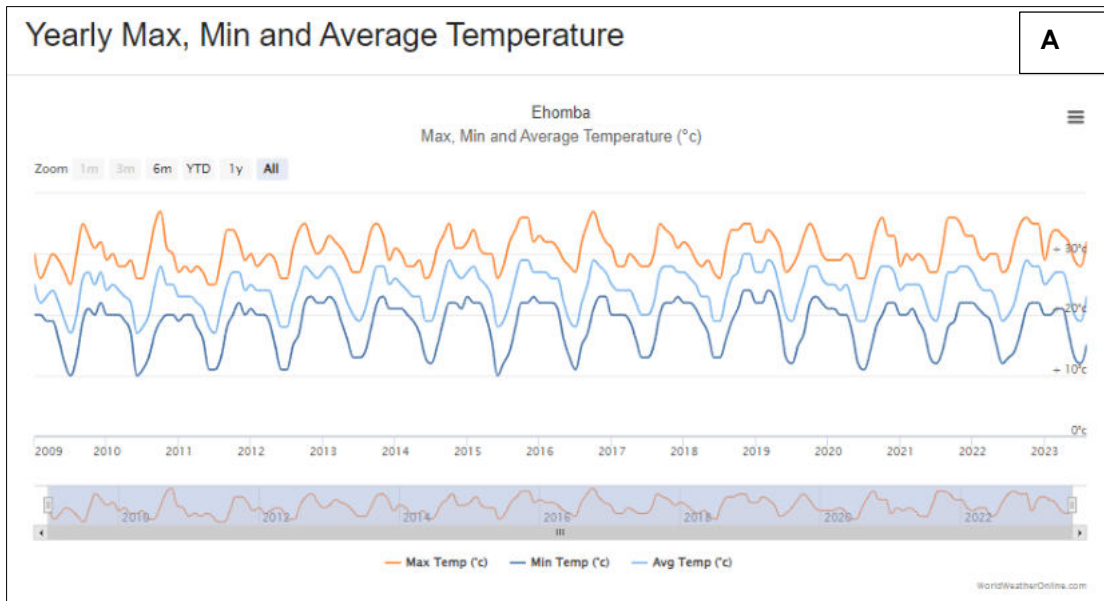


Figure 5-1: A – Yearly minimum and maximum as well as B - average temperatures chart for the project area (source: World Weather Online, 2023)

The highest rainfall recorded between 2009 and 2023 was 383mm in February 2009 followed by 291mm in December 2012 and 258mm in February 2010 (Figure 5-2 (A)). The average highest rainfall as shown in Figure 5-2 (B) is 140mm in February, followed by 139mm in January and 130mm in December.



Figure 5-2: A - Yearly rainfall & rainy days averages and B - average rainfall charts for the area (source: World Weather Online, 2023)

5.1.2 Geology

A. Regional Geology

The project area lies within the Kaoko belt which forms coastal arm of the Neoproterozoic Damara Orogen. The Kaoko belt forms a narrow, north-northwest trending linear belt parallel to the Atlantic coastline of northern Namibia and can be traced northwards into Angola where it joins with the intracontinental west Congo Belt (Kroner and Correia, 1980). On the basis of stratigraphy, metamorphic grade and structure the belt is divided into an eastern, central and western Kaoko Zone separated by the Sesfontein thrust and Purros lineament (see Figure 5-3). The EPL-8955 falls dominantly within the Eastern Kaoko Zone and is truncated by the Sesfontein thrust on the south-west. The Eastern Kaoko Zone is characterised by an autochthonous, sub-greenschist –facies grade (Guj, 1970; Coward, 1983; Hoffmann et al., 1994; Goscombe et al., 2003a), upright, open to close folded package of feldspathic to orthoquartzite, shale and marble of the Nosib and Otavi Groups (Stanistreet and Charlesworth, 2001).

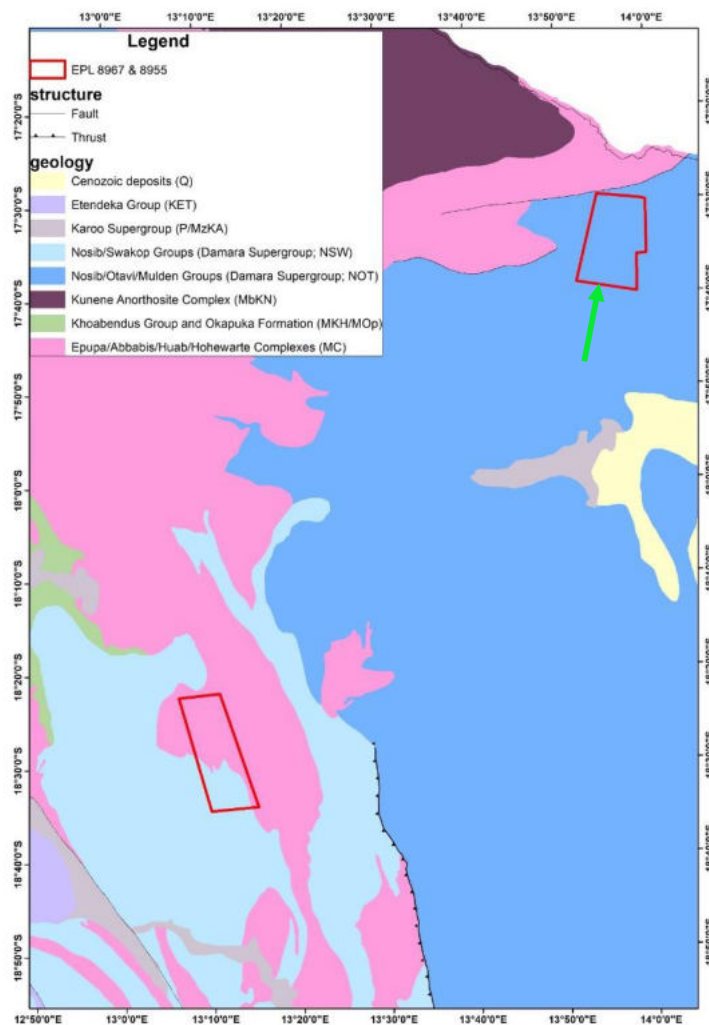


Figure 5-3: Simplified Regional Geological map of area showing the regional geology around the EPL area, with EPL-8955 indicated by the green arrow (map source: Geological Survey of Namibia).

The oldest rocks in the area belongs to the Archaean to Mesoproterozoic Epupa Metamorphic complex, mostly outcropping southwest of town Opuwo. These rocks are not found in the EPL area. These rocks are overlain by metasedimentary (conglomerates, quartzites, phyllites, schists) and subordinate felsic volcanic rocks of the Okapuka Formation and together they form the basement. The basement rocks are overlain by the most extensive, Namibian- age meta-sedimentary rocks of the Damara sequence. These rocks are further intruded by various intrusive bodies of Neoproterozoic to Cambrian age that were emplaced during or after regional deformational and metamorphic events. The Proterozoic stratigraphy are covered by clastic sediments of the Cambrian – Jurassic Karoo Super-group, volcanic and minor sedimentary rocks of the Etendeka Group and Cenozoic sediments of the Namib Group. The project area is entirely covered by rocks of the Damara Supergroup.

B. Local Geology

The EPL 8955 geology is mainly dominated by rocks of Damara Orogeny comprises of Otavi Group sediments that are super-positioned (unconformity) on the basement rocks of the Epupa Complex. These units are shown in Figure 5-4 below and are described in detail as following.

The Epupa Metamorphic Complex is a sack term for a complex association of basement granitic ortho- and paragneisses and minor basic rocks which extend from the middle reaches of the Hoanib River west of Sesfontein to the Kunene River. Apart from preliminary distinctions made by Goscombe (1999), the complex is poorly mapped. It includes highly deformed Archaean, Palaeoproterozoic and Mesoproterozoic rocks which are difficult to distinguish from each other because of the intensity of both pre- and post-Damara deformation.

The Otavi Group is estimated to have a thickness of up to 2000 meters in this region, conformably and gradually overlying the Nosib Group (quartzite-Nabis formation) and at places are unconformity seat on the Epupa Metamorphic Complex. The group was deposited during the spreading stage of the Damara Orogen and is dominated by a sequence carbonates characterised by stromatolitic beds and reef complexes with localised calc- arenites and calcareous schists. The group is subdivided into three subgroups (Ombombo, Abenab and Tsumeb), each group separated by interbedded glaciogenic formations (Chuoss/Ghaub) that locally contain significant iron-formations (Hoffmann and Prave, 1996). The group is further pre-dominated by dolomite and limestone, with minor chert, shale and quartzite that belong to the Tsumeb and Abenab Subgroups. The Ombombo subgroup is represented by the Devede Formation

consisting of a 400m –thick stack of grain stone and 5 to 25m thick stromatolite-dominated cycles. Rocks in the area are regionally deformed and gently folded, and have undergone low grade regional metamorphism. Adding to that, they show evidence of magmatic activity, with concomitant hydrothermal and volcanogenic exhalative mineralization.

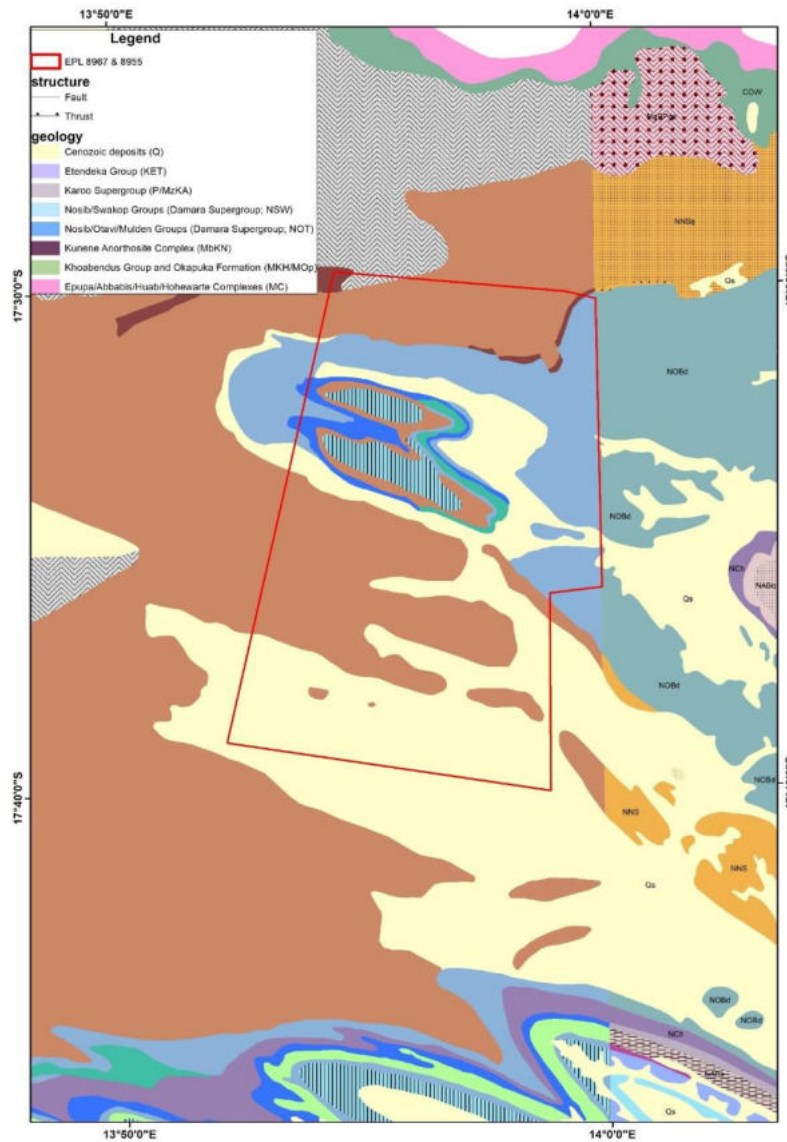


Figure 5-4: The local geology of the EPL license (Data source: Geological Survey of Namibia)

From a local and simplified perspective in Figure 5-5, the EPL is overlain by the rock units of quartzite, conglomerate, schist and marble as well as dolomite and limestone.



Figure 5-5: The rock types underlying the EPL and immediate surroundings

Some of the rock units observed during area visit are shown in Figure 5-6 below.



Figure 5-6: The rock types (shale and weathered dolomite) underlying some areas of the EPL and immediate surroundings

5.1.3 Soils

The EPL area is mainly overlain by rocky surfaces (rock outcrops protruding to the surface) as shown in Figure 5-7.



Figure 5-7: The soil cover (rock outcrops) observed around the EPL and immediate surroundings

To its southern area, the EPL is overlain by chromic cambisols as shown on the soil map in Figure 5-8. According to Mendelsohn et al (2002), the chromic soils are these that have bright colours, while the cambisols (second part of the soil name) are defined as soils that were formed quite recently in geological time, mainly from medium and fine textured parent material deposited during sporadic flooding. Since the parent material is only slightly weathered, cambisols are characterized by the absence of appreciable quantities of accumulated clay, organic material, aluminium and iron.

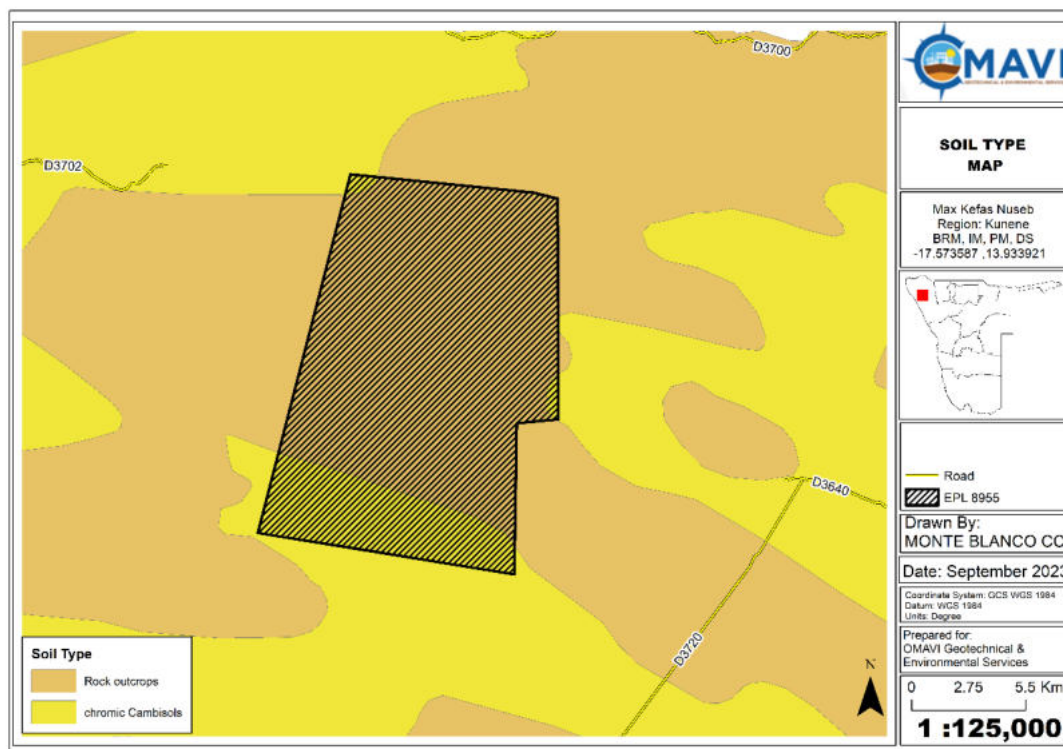


Figure 5-8: The soil types on and around the EPL

5.1.4 Water Resources: Surface Water and Groundwater

The nearest major (and perennial) river to the project area is the Kunene River with a catchment area of 107,000km² and an annual volume of 5,100 million m³ per year

(Mendelsohn et al, 2002). There are some visible ephemeral rivers and stream crossing the EPL site and in the immediate surroundings as shown on the map in Figure 5-9.

In terms of groundwater (hydrogeology), the EPL and its eastern side of the area are partly underlain by fractures, fissured and karstified aquifers, and partly by rock bodies with little groundwater potential. The immediate western side of the EPL is characterized by rock bodies with little groundwater potential as shown on the water resources map in Figure 5-9.

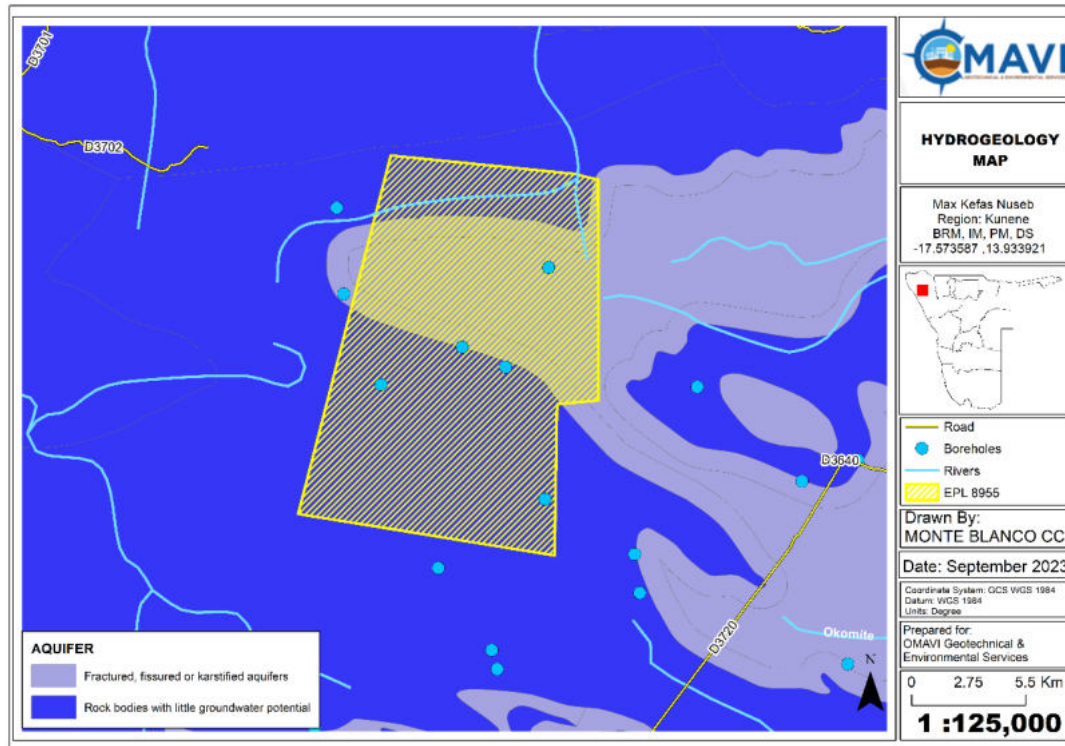


Figure 5-9: The hydrological and hydrogeological conditions of the EPL and surroundings

5.1.5 Topography and Landscape

The topography of the area is characterized by rocky hills and mountains as well as in some areas, flat surfaces. According to Mendelsohn et al (2002), the project area falls within the elevation range of 961 and 2,559 meters above sea level (masl) as shown on the topographic map in Figure 5-10.

From a landscape perspective, the EPL area is found within the Kaokoveld Hills and partly lies within the Etanga-Epembe Plains as shown in Figure 5-10. The Kaokoveld landscape is a vast and empty wilderness occupying the north-western quarter of Namibia, is roughly divided in two by the Hoanib River. It is harsh, remote, unpopulated and makes for some of Namibia's finest scenic landscapes.

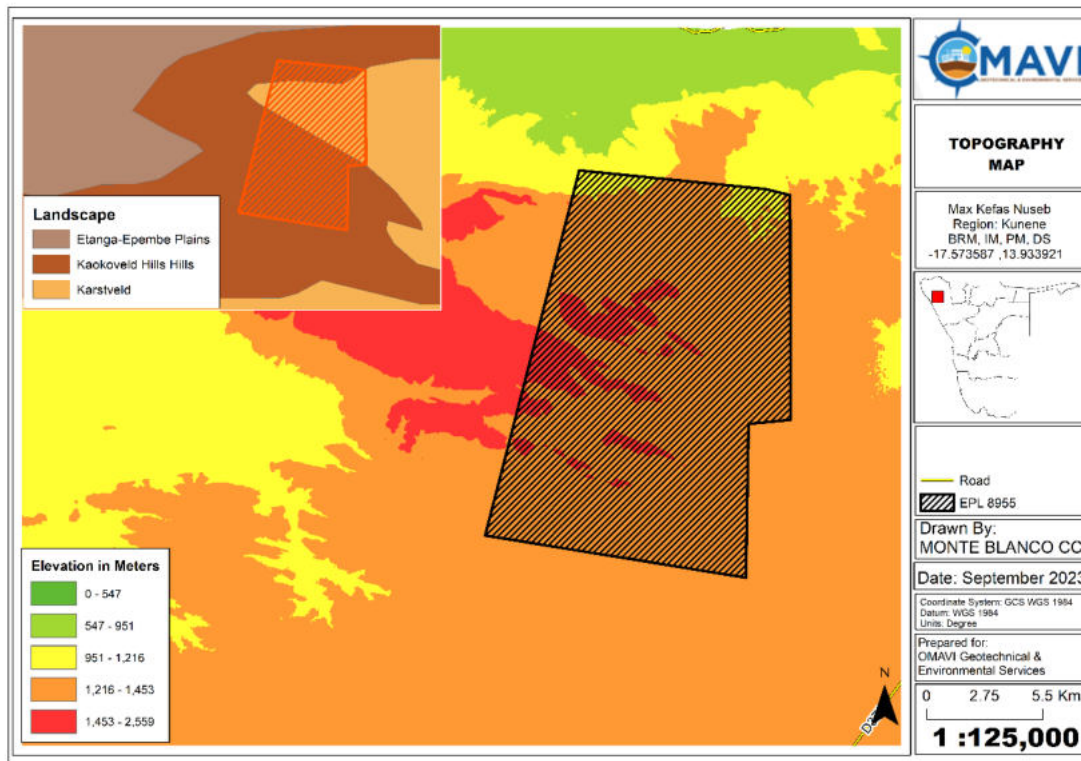


Figure 5-10: The topographic and landscape map of the EPL and surroundings

The topographic view of the EPL area is shown on some photos provided in Figure 5-11.



Figure 5-11: The topographic view of the EPL area

5.1.6 Wind

The wind information of the area indicates that the predominant wind direction is from southwest (SW) to northeast (NE) (Meteoblue, 2023) as shown on the wind rose in Figure 5-12. The wind speed chart showing the days per month, during which the wind reaches a certain speed is shown in the same Figure 5-12.

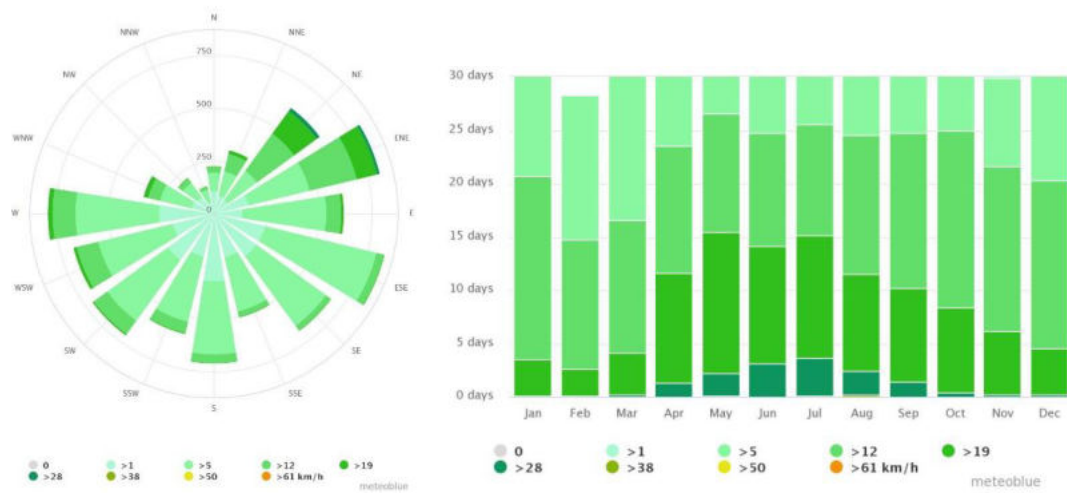


Figure 5-12: The wind rose and wind speed chart of the project area (Meteoblue, 2023)

5.2 Biological Environment

5.2.1 Biodiversity

5.2.1.1 Fauna

The EPL falls within a communal conservation area (Kunene River Conservancy) which is home to some wildlife as well as domestic animals. During the consultation meeting conducted on the 21st of September 2023 in Ehomba, the community mentioned some of the wildlife known to occur in the area are kudus and others. However, during the time of the visit in the area between 21 and 22 September 2023, the wildlife was not observed owing to the fact that it was midday and animals were in hiding from the sun. According to NACSO (2023), the wildlife occurring within the Conservancy include black-faced impala, kudu, black-backed jackal, Damara dik dik, leopard, hippo, mountain zebra, springbok, ostrich, duiker, elephant, crocodile, steenbok, spotted hyena, and black-backed jackal.

In terms of domestic animals, the areas around the EPL, there are villages that on a subsistence level farm with small and large livestock comprising goats, sheep, cattle and donkeys. Some of the livestock observed mainly along the local roads are shown in Figure 5-13 (as seen near Okahozu Village south of the EPL).



Figure 5-13: Livestock (goats and cattle) observed from Okahozu Village towards the EPL

5.2.1.2 Flora

The vegetation structure of the EPL area is characterized by woodlands, which are typical for northern Namibia (Mendelsohn et al., 2002). The dominant vegetation in the EPL area is woodland shrubs as shown on the vegetation map in Figure 5-14.



Figure 5-14: The vegetation map of the EPL area

The observed vegetation in the EPL area are shrubs and young trees purple-pod cluster-leaf or purple-pod terminalia (*Terminalia prunioides*), mopane (*Colophospermum mopane*), corkwood (*Commiphora*) species, as well as shepherd's Tree (*Boscia albitrunca*). The *Vachellia* species such as the red-thorn/black-thorn (*Vachellia reficiens* and *mellifera*) are rare but do occur in the area. The observed vegetation are shown in Figure 5-15.



Figure 5-15: The purple-pod, mopane and corkwood young trees in the EPL area

5.3 Socio-Economic Aspects

5.3.1 Demographic Aspects

The EPL is within the Kunene Region which according to the last National Population and Housing Census in 2011 has a total population of 86,856. Of the total population, 43,253 were females and 43,603 were males (Namibia Statistics Agency, 2014).

The Epupa Constituency houses the EPL, and the Constituency has a population of 17,696, of which there are more female (9,318) residents in the area than male. The area has a literacy rate of 29% of the total population of the area, 70% of the children from this constituency never attended school. The area has a 60% labor force participation rate, it is the lowest labor participation rate and the least developed in the Region (Kunene Regional Council, 2015).

5.3.2 Economic Activities

According to the Namibia Statistics Agency (2014), the main source of income in households in the Epupa Constituency is farming (77%), wages and salaries (6%), cash remittance (1%), business and non-farming (5%) and pension (8%). Furthermore, the main economic activities in the Constituency are communal farming and crop production, with 77% of the population depends on farming as their main source of income (Kunene Regional Council, 2015).

The collective main economic activities in the Kunene Region are as follows:

5.3.2.1 Agriculture

Livestock production is one of the key sources of livelihood to many rural households of the Kunene Region. The trading of animals during formal auctions especially in Outjo, Kamanjab, Khorixas and informal sales in Opuwo, creates a source of income for farmers residing in these constituencies. The exportation of animals from Kunene Region to neighboring countries continues to boost the economy of the Region. In support of

the industry, the Government established five Quarantine camps to improve the quality and health of animals marketed namely, at Swartbooi Drift, Ehomba, Khowarib, Condor, Palmwag, Otjakati and Omutambo-maowe, which is situated in Omusati Region but under the jurisdiction of Opuwo state veterinary office.

From a local perspective, the economic activities in the Epupa Constituency are tourism hotspots in the region including Epupa Falls, Otjandjasemo Hot Spring, Swartbooi Graves, Great Trek of Germans and Kapika Traditional Homestead.

5.3.2.2 Mining

Kunene Region offers great opportunities for mineral exploration due to its rock and mountainous formations, which are pivotal for regional economic growth and development. Exploration and discovery of mineral resources is at an advanced stage and if found economically viable, could contribute significantly to the economic growth of the Region. The Namibia Chamber of Mines' 2013 annual review indicated that the Koako Base Metals Project have discovered Okanihova Copper targets and confirmed that there is a body of Iron Ore at Otuziru (e.g. Lead, Zinc and Silver deposits). In addition, Teck Namibia Limited have also been exploring for Copper in the Kunene Region.

5.3.2.3 Tourism

Kunene Region is classified as a prime tourist destination due to its rugged landscapes and ancient traditional diversity and practices. Tourism has been identified as a key economic sector for the region, predominated by wild animals in national parks and conservancies. The potential for further tourism development is very high due to its scenic beauty, wildlife, and the culture of its inhabitants. Eco-tourism in joint operations with community-based natural resource management is likely to be one of the region's major economic drivers. This is due to the continuous increase in the Region's wildlife numbers, which has led to the region becoming a major eco-tourism destination.

The creation of conservancies has boosted direct economic benefit to the communities' region-wide, to the communal areas of Kunene Region.

5.3.3 Land Use

The EPL falls within the Kunene River Conservancy (on the eastern side). The Conservancy was established in October 2006, covering a surface area of 2764 km², and hosts an approximate population of 7,929. The geographical features include the mountainous with river boundary along north. The particular features are the Kunene River forms northern boundary (NACSO, 2023).

The main economic activity in the Conservancy is the joint-venture tourism agreement with the Kunene River Lodge.

5.3.4 Infrastructure & Utilities

The EPL area has the following main services and infrastructure:

- Roads (accessibility): the EPL is accessed from C43 via D3700 and D3701 gravel roads in the area.
- Water: there are some solar and generator powered boreholes as well as hand dug wells in the area. The borehole water supply are managed by the Rural Water Supply Division of the MAWLR.
- Power supply: the area is powered by solar energy, electricity grid in major villages and firewood used to prepare food and for lighting.
- Telecommunication: the area has good network coverage in some area, and very poor to no telephone signal in some areas.

5.3.5 Archaeology and Heritage Aspect

According to TARO Consultants (2023), the Kunene Region hosts about seven (7) declared heritage sites and other archaeological records, it is based on this background that the EPL area is likely to have important archaeological sites. According to Kinahan (2013) Heritage Impact Assessment Report, the Kunene Region is not well explored archaeologically. Early investigations by MacCalman (1972) and MacCalman and Grobbelaar (1965) drew attention to the presence of late Pleistocene evidence from the area, and more spectacularly, observations on stone tool use by contemporary hunter-gatherer groups. More recent investigations have documented a late Holocene occupation sequence (Albrecht et al 2001) and some of the detailed archaeological characteristics of nomadic pastoral settlement patterns in the area (Kinahan 2001). Limited information is available from the adjacent parts of southern Angola (Ervedosa 1980). Some is evidence from this part of Kunene Region for human occupation over at least the last one million years. The earliest evidence, dating from the mid-Pleistocene, is primarily in the form of crude stone implements found as surface scatters in the vicinity of major drainage lines. Later Pleistocene remains include well fashioned bifacial stone hand-axes which in the last 200 000 years were superseded by a complex toolkit of smaller artefacts that could be attached to wooden spear shafts and scraper tool handles.

According to Deacon and Lancaster (1988) the late Pleistocene culminating in the Last Glacial Maximum brought important environmental changes to this region, including the establishment of the mid-Kunene drainage as it exists today. Hydrological changes

in major drainage basins had fundamental effects on the viability of human settlement, such that while the region immediately to the south was abandoned under conditions of extreme aridity, the northern Kunene Region sustained almost continuous occupation over the last 12 000 years. The archaeological record of human occupation in the early to mid-Holocene shows an emphasis on rock shelter sites along the escarpment, used as hunting camps.

According to the National Heritage Council of Namibia, Kunene Region has about 7 known heritage sites which are listed as national monuments (Declared Sites/Lists of National Heritage). Table 5-1 shows the declared heritage sites in Kunene Region in Namibia. However, these declared heritage sites are occurring far from EPL-8955.

Table 5-1. The declared Heritage Sites in Kunene Region (TARO Consultants, 2023)

Designation	Description	Built/Construction Period	Location	Monument number
Rock Engravings at Peet Alberts Koppie	Rock engravings		Kamanjab Karte	036/1967
Naulila-Denkmal	Monument	1933	Outjo Karte	052/1971
Stone Tower	Wasserturm	1900	Outjo Karte	027/1975
Dorsland Tractor Cottage	Historic building	1878		009/1951
Petrified Forest	Petrified Wood	250 million years	Khorixas	004/1950
Twyfelfontein	Cave, rock carvings	about 4000 BC Chr	Khorixas	016/1952
Burnt Mountain	Rock Formation	80 million years	Khorixas	024/1956

There were no records of archaeological sites from the National heritage Council database within the EPL, nor were these recorded during the visit to the site. However, there might be incidences of heritage site or items of heritage significance to be unearthed in the course of the prospecting and exploration activities, thus, a chance finds procedure will be followed as per the National Heritage Act, No. 27 of 2004 for enforcement, and concurrently the recommendation given in the statutory documents for this project will be strictly adhered to.

6 PUBLIC CONSULTATION AND ENGAGEMENT PROCESS

The Public Consultation process aims to ensure that all persons or organizations who may be affected or interested in the project are kept informed of the project activities, potential issues and benefits, and can register their views and concerns. Building from there, the process provides an opportunity to interested and affected parties to influence the project design so that its benefits can be maximized, and potential negative impacts minimized.

Current best practice model involves engaging in a process of continuous dialogue with the affected communities and other stakeholders as plans for the project evolve and the environmental assessment is advanced. A high level of interaction is maintained, potential and actual socio-economic plus environmental impacts are identified, and stakeholder needs and concerns are discussed and wherever possible built into the planned activities of the project, including decision-making and management practices. Good and transparent consultation helps foster genuine and positive relationships with mutual respect, shared concerns and objectives between the company pursuing or involved in the development and the community.

The public participation facilitator's role is to coordinate the above process of dialogue to ensure there is transparency and accountability in decision-making and public confidence in the proposed activities and its management.

6.1 Registered Interested and Affected Parties (I&APs)

At the beginning of this environmental assessment process, a preliminary list of the obvious stakeholders who needed to be informed about the proposed project was drawn up. As the public participation process evolved, this list was continuously updated. A complete summary of the I&APs identified and registered for the project is attached hereto. The pre-identified interested and affected parties (I&APs) were notified about the planned activities by e-mail, formal communication letters, advertisement in local newspapers, and display of written notices at strategic points in the Region.

Amongst key stakeholders identified and registered for this project were:

- Central or national government: Ministry of Environment, Forestry & Tourism, Ministry of Mines & Energy; Ministry of Agriculture & Land Reform, National Heritage Council of Namibia (under the Ministry of Education, Arts & Culture)
- Regional government: Kunene Regional Council including the Epupa Constituency.
- Members of the public, including the Kunene River Conservancy management.

6.2 Summary of Consultation Activities Undertaken

To ensure that I&APs were timeously and openly notified of the planned project activities, the following tasks were undertaken by OMAVI:

- A list of pre-identified stakeholders was compiled. These formed part of the first email communication sent out soon after the first newspaper adverts for the ESIA Study.
- Formal public notices announcing the commencement of the Environmental Assessment process and extending a formal invitation to the general public to register as I&AP as well as to attend the public consultation meeting were published in *New Era* and *Windhoek Observer* newspapers (dated 29 August and 05 September 2023) - please refer to Appendix D.
- A notification email (with Background Information Document (BID)) was circulated to all identified and registered I&APs on 05 September 2023 announcing the commencement of the EIA process and an invitation to register as an I&AP – Appendix E. The email also provided information on the community consultation meeting (an invitation) which was scheduled for 11h00 on 21st of September 2023. The BID contained a high-level and preliminary description of the planned scope of activities for the proposed mineral prospecting project.
- Printed formal written site notices were placed at various publicly accessible locations in the Region as outlined below (as per some photos in Figure 6-1):
 - Kunene Regional Council notice board
 - Ehomba Convenient Shop & Bar entrance
 - Kunene River Conservancy premises.

The clear copy of the site notice (poster) is attached to the Report as Appendix F.



Figure 6-1: The A3 Posters pasted at the; A - Kunene Regional Council in Opuwo and B - community convenient Shop & Bar IN Ehomba

- A community consultation meeting was scheduled and held with the local public on the 21st of September 2023 in Ehomba (being the closest to the EPL area and based on the community’s choice of meeting venue). The meeting was attended by twenty-three (23) people - Figure 6-2. The consultation meeting minutes were taken and are attached hereto as Appendix G.



Figure 6-2: The community consultation meeting in progress on 21 September 2023 in Ehomba, north of EPL-8955

A summary of the main issues and concerns raised during these engagements is provided in Table 6-1. Overall, no objections with merit were raised or received from the I&APs in relation to the project particularly during the one-on-one meeting.

Table 6-1. Summary of key issues and concerns raised in relation to activities on EPL-8955

Issue	Summary
Employment opportunities	The community requests that the Proponent should consider them for job opportunities during exploration
Infrastructure improvement	The access roads to the EPL should be able to serve the communities so that they can reach the villages east and south of the EPL instead of the D3701
Timely communication	The Proponent should timely communication their intentions to commence exploration to the leaders and communities

7 IMPACT IDENTIFICATION AND ASSESSMENT

7.1 Key impacts Identified

The following impacts have been identified as associated with the proposed exploration activities.

Positive impacts:

- Socio-economic development through local (temporary) employment creation resulting in the generation of income for the communities.
- Empowerment of local businesses: procurement of goods and services for exploration activities, where possible
- Commitment to the implementation of corporate social responsibility (CSR) in the community by supporting the community with long-term needs (community projects) to improve livelihoods.
- Payment of land use fees, and if necessary, the payment of rental fees for setting up structures such as campsites in the area. This funds can be used to uplift communities.

- Where possible, exploration holes that have good water strike would be donated to the community, after completion of exploration works in such holes.
- Contribution towards national economy through the payment of taxes and royalties to the responsible institutions of the Government of the Republic of Namibia.

Negative impacts:

- Physical land/soil disturbance (to enable exploration works) leaving soils prone to erosion,
- Loss of biodiversity (fauna and flora) through the removal of vegetation that may be found within the project footprints, and loss of habitats for small animal under the rocks,
- Illegal hunting (poaching) of wildlife by project workers within and around the Conservancy,
- Visual impact (from lightings and unrehabilitated areas (scars) left by exploration activities),
- Impact on water resources (groundwater) in terms of quantity (over-abstraction) to meet project water demand,
- Disturbance to grazing land,
- Air pollution by potential dust and gas emissions from exploration activities,
- Vehicular traffic: potential increase in local traffic due to project activities,
- Impact on services infrastructure such as roads,
- Occupational and community health and safety: improper handling of site materials and equipment may cause health and safety risks,
- Noise (nuisance): potential increase in noise level generated by machinery and vehicles may lead to nuisance to locals,
- Potential conflicts between the Proponent and small-scale miners who applied for Mining Claims (MC) or actively within the boundaries of the EPL (if issues measures are not put in place or issues not resolved amicably),
- Soil and water pollution: improper handling of wastewater may lead to surrounding soil pollution and water resources systems,
- General environmental pollution through mishandling of waste leading to environmental pollution,

- Archaeological or cultural heritage impact through uncovering and damaging of archaeological objects or sites from unintentional project activities on the EPL, and
- Land use conflict, i.e., tourism versus exploration activities.

7.2 Impact Assessment Methodology

An impact assessment matrix was used to assess all possible impacts of the project on the environment. In line with EMA No. 7 of 2007 and the Environmental Impacts Regulations (GN 30 in GG 4878 of 6 February 2012) with the direction on impacts analysis the following impact assessment criteria (Table 7-1) was deemed suitable.

Table 7-1: Impact Screening Criteria

Aspect	Description
Nature	Focuses on the type of effect that the proposed project will have on environmental components. Addresses questions related to "what will be affected and how?"
Extent	Spatial extend of the project and anticipated spatial extend of impacts indicating whether the impact will be within a limited area (on site where exploration is to take place); local (limited to within 15km of the area); regional (limited to ~100km radius); national (extending beyond Namibia's borders).
Duration	This looks at the temporal issues pertaining to time frames e.g., whether the impact will be temporary (for a certain period only, i.e., exploration), short term (1-5 years), medium term (5-10 years), long term (longer than 10 years, but will cease after operation) or permanent.
Intensity	Establishes whether the magnitude of the impact is destructive or innocuous and whether it exceeds set standards and is described as none (no impact); low (where natural/ social environmental functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements).
Probability	Considers the likelihood of the impact occurring and is described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of prevention measures).
Significance	Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project

Aspect	Description
	design or alternative mitigation (the route can be used, but with deviations or mitigation) High where it could have a “no-go” implication regardless of any possible mitigation (an alternative route should be used).

The application of the above criteria will be used to determine the significance of potential impacts using a combination of duration, extent, and intensity/magnitude, augmented by probability, cumulative effects, and confidence. Significance is described as follows in Table 7-2.

Table 7-2: Impact Rating Criteria

Significance Rating	Criteria
Low	Where the impact will have a negligible influence on the environment and no modifications or mitigations are necessary for the given development description. This would be allocated to impacts of any severity/ magnitude, if at a local scale/ extent and of temporary duration/time.
Medium	Where the impact could have an influence on the environment, which will require modification of the development design and/or alternative mitigation. This would be allocated to impacts of moderate severity/magnitude, locally to regionally, and in the short term.
High	Where the impact could have a significant influence on the environment and, in the event of a negative impact the activity(ies) causing it, should not be permitted (i.e., there could be a ‘no-go’ implication for the development, regardless of any possible mitigation). This would be allocated to impacts of high magnitude, locally for longer than a month, and/or of high magnitude regionally and beyond.

7.3 Assessment of Impacts

The potential negative impacts can occur if the planning and design of an activity is not properly done. At times, the planning and designs are properly done, and environmental management and mitigation measures provided to avoid and/or minimize these impacts. However, if these management measures are not effectively implemented on site, the potential impacts would be inevitable.

The potential positive and adverse impacts anticipated from the project activities. However, since the positive impacts are few, this assessment focuses on the potential negative impacts where mitigations will need to be implemented to minimize the impact on the environment. These impact are described and assessed in Table 7-3 . The management actions (measures/mitigations) are provided in the accompanying Draft EMP (EMP) developed for the proposed project activities.

Table 7-3: Assessment of the potential impacts stemming from the proposed exploration activities

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
Planning, Exploration and Maintenance Phase – Adverse (Negative) Impacts								
Physical land / soil disturbance	-The movement of heavy vehicles and equipment may lead to compaction of the soils. -The exploration and mining activities such as excavations and land clearing to enable siting of project structures and equipment will potentially result in soil disturbance which will leave the site soils exposed to erosion. This impact is probable since the EPL area has very little to scattered vegetation that would hold the soils in place with their roots and the fact that desert soils are prone to disturbance	Local	Short-term	Medium	Definite	High	-Exploration activities should be restricted to defined areas of the EPL. -The topsoil stripped from certain site areas should be returned to its initial position during rehabilitation. -Soils not within the intended footprints of the site areas should be left undisturbed and conserved. -Project vehicles should stick to access roads provided to avoid re-creation of further tracks resulting in soil traffic compaction. -Overburden should be handled more efficiently during exploration to avoid erosion when subjected erosional processes -Stockpiled topsoil and overburden waste rocks should be used to backfill the explored site areas/spots for rehabilitation. Further measures are provided in the Draft ESMP.	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	and erosion. This would also trigger the challenge of sediment control during rainy seasons.							
Impact on biodiversity: Fauna	<p>-Small reptiles and site animals in the locality are bound and likely to be affected by exploration activities.</p> <p>-The site activities would push away fauna that live onsite (in vegetation and rocky environment).</p> <p>-The noise from exploration activities will also drive away site wildlife.</p> <p>-There is risk of illegal hunting of wildlife by project personnel especially that the EPL falls within a Conservancy.</p>	Local	Short-term	Medium	Definite	High	<p>-Workers should refrain from disturbing, killing or stealing animals and killing small soil and rock outcrops' species found on sites.</p> <p>-Minimize animal fatalities from collisions with vehicles by adhering to speed limits onsite and avoid night driving.</p> <p>-The Hazardous substances such as fuel should kept in tightly close tanks and fenced off.</p> <p>-The hunting (illegal hunting) or snaring or intentionally disturbing wildlife in and around the EPL area is strictly prohibited.</p> <p>-Exploration trenches should be backfilled or fenced off, when in use for a longer period and unattended. This is to prevent the injuries to both animals and people</p>	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	-The exploration trenches and uncapped holes may pose a risk to wildlife onsite, if not backfilled or fenced off.						in the area owing to open and unsecured trenches.	
Impact on biodiversity: Flora	-The removal of vegetation to enable exploration and associated infrastructure and service would lead to the reduction of the vegetation on and around the site. -The uncontrolled dust emanating from the drilling activities may be trapped on the vegetation leaves, resulting in reduced photosynthesis which would affect vegetation functionality. -The disposal of hazardous waste such	Local	Long-term	Medium	Probable	High	-Vegetation outside the site boundary should not be disturbed. -Trees onsite must be marked and pegging personnel must know that marked trees must not be touched for continued preservation). -Trees within the site boundaries should be preserved. -The Proponent should aim to use the already damaged area with little to no vegetation for the site activities. -Onsite vegetation should NOT be cut or used for firewood related to the project outside the site boundaries. -Provide environmental awareness training to promote environmental education on the importance of floral biodiversity preservation to workers.	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	as oils and fuels would affect vegetation health. Therefore, should be prohibited.							
		Local	Long-term	Medium	Probable	Medium		Low
Environmental pollution (solid, domestic and wastewater)	Exploration activities are associated with generation of waste of all kinds (domestic, hazardous, and general). Improper handling, storage and disposal of wastes may lead to environmental degradation/pollution. If not handled, store and disposed of properly, the waste may scatter around the EPL and pollute the immediate project area.	Local	Long-term	Medium	Definite	Medium	-Waste should be disposed of in designated waste containers onsite. -No waste should be buried or burned on site in both phases. -Waste burning onsite should be done at designated sites only outside the EPL area. -The site should be equipped with separate waste bins for hazardous and general waste/domestic. -A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented. -The site should be equipped with sufficient portable toilets for workers, and visitors.	Low
Environmental contamination by hydrocarbons	There is a potential of oils and fuel storage on site to supply the	local	Short Term	Medium	Probable	Medium	-The Proponent should implement a maintenance programme to ensure all vehicles, machinery and	-Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
release into the environment (grease, oils, fuel spills and leakages from machinery and fugitive wastes.)	vehicles and equipment. Therefore, there is a risk of spillage of hydrocarbons from vehicles and machinery through leakages and spillages which may result in: -Washing away of contaminated soils by rains into nearby rivers resulting in both possible surface water and groundwater pollution -Pollution of soil and affecting small living organisms habituating the soil. -Possible fire risk on and around the site from these flammable substances.						equipment are and remain in proper working order. -Vehicle maintenance should be done in designated areas only, preferably off-site. If maintenance is to be conducted on site, these areas should be designed to contain spillages i.e., maintenance site must be bundled and paved, and the use of chemicals must be controlled. -Waste oil, fuels and other chemicals from drip trays on stationery vehicles and machinery will be disposed of as hazardous waste at a licensed facility by a specialist hazardous waste handler. -Spill kits will be easily accessible, and workers will be trained in the use thereof. -Personnel should be trained in the handling and storage of oils, fuels, chemicals and other hazardous substances.	
Contamination of soils and water resources	-The mishandling and poor disposal of contaminants such as	Local	Temporary	Medium	Probable	Medium	-All runoff materials such as hydrocarbons, wastewater and other potential contaminants	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
(groundwater and surface water)	hazardous waste and wastewater from site activities would pollute soils, get washed into surface water run-off and eventually infiltrating into the ground and pollute aquifers (groundwater).						should be contained on site in designated containers and disposed of in accordance with municipal wastewater discharge standards, so that they do not reach to water systems. -Consider exploration works such as drilling to be carried out during dry months of the years and not during rainy months (to avoid ease contaminants like hydrocarbons from transported off site through run-off). -No washing of vehicles or equipment near or in ephemeral river or streams onsite.	
Water resources (over-abstraction of water) and soils pollution	-Drilling requires a lot of water. Therefore abstraction of water from local aquifers would negatively affect these aquifers due to low groundwater potential of the area in some areas of the EPL.	Local	Temporary	Medium	Definite	High	-Avoid abstraction of water from local boreholes but rather obtain a permit to abstract and use water from bulk water supply sources. -Water should be efficiently used by implementing water saving measures such as recycle and re-use where necessary and possible. This includes using water for cooling	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
							exploration equipment for the cleaning of project equipment. -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 become accountable.	
Occupational and public health and)	The risk of injuries from mishandling of project equipment and machinery by workers.	Local	Temporary to Long-term	Medium	Definite	High	-The site workers and visitors should be equipped with appropriate and sufficient PPE (hand gloves, safety goggles, boots, earplugs, overalls, face masks, hard hats, etc.). -Workers should be provided with refresher training on machinery and equipment use. -Trainings and "know-how" to use PPE should be provided to all workers as part of their induction. -The site should be equipped with a minimum of two first aid kits. Two or three of the workers should be trained on how to administer first aid. -Risk areas such as open trenches should be fenced off and warning	Medium / Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
							signs written in Otjiherero, Zemba and English languages for better understanding and placed on the fences. -The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any harm or injury to the personnel or wild animals. -Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible. -An emergency preparedness plan should be compiled, and all personnel appropriately trained. -Workers should not be allowed to drink alcohol prior to and during working hours.	
Air quality (drilling dust & emissions from vehicles and unpaved access roads)	Exploration drilling is usually associated with dust and vehicles travelling on gravel and unpaved access sandy roads. This will lead to	Local	Short-term	Medium	Definite	Medium	-During extremely windy days, a reasonable amount of water should be used to suppress the dust that may be emanating from certain site areas (limited to the site only) or certain parts of the local utilized	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	the decrease in the air quality around the site.						gravel roads that is generating a lot of dust. -All access roads leading to the site should have speed limits of no more than 30km/h to minimise the amount of dust generated by the vehicles, which will minimise air quality concerns to any potential receptors. -Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) should be provided to the workers on site operating or working at the excavated areas, where they may be exposed to dust. -The transportation of project materials, equipment and machinery should be limited to twice a week to reduce dust generated by heavy vehicles in the area. -Project vehicles and heavy machines should not be left idling when not in use, such that they emit air polluting gases.	

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
							-Project vehicles and machinery should be maintained through regular servicing to ensure that they do not release harmful and air polluting fumes while on and off site.	
Vehicular traffic	Project associated heavy vehicles will obtain access to the site from the local roads that connects the EPL to exploration activities' service providers (water exploration machinery, equipment, and others). The movement of trucks would potentially increase slow moving heavy vehicular traffic in the area. The impact would not only be felt by the road users but the local road users. This would add	Local	Short-term	Medium	Probable	Medium	<ul style="list-style-type: none"> -The transportation of exploration materials, equipment and machinery should be limited to once or twice a week only, but not every day. -The heavy truck loads should comply with the maximum allowed limit while transporting materials and equipment/machinery on the public and access roads. -Vehicles drivers should be in possession of valid and appropriate driving licenses. -Vehicle drivers should adhere to the road safety rules. -Drivers should drive slowly (30km/hour or less), and on the lookout for livestock and wildlife. -Ensure that the site access roads are well upgraded and in good 	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	additional pressure on the roads.						condition to cater for vehicles travelling to and from site. -Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents due to mechanical faults of vehicles. -Vehicle drivers should only make use of designated site access roads provided. -Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol.	
Archaeological or cultural heritage impact	The greatest impact is likely to be caused by earthworks in the form of clearing, removing, or micro-sitting of the project equipment. These resources may be impacted through inadvertent destruction or damage. There are no recorded significant archaeological resources and heritage sites within the EPL boundaries. However,	Local	Short-term	Medium	Probable	High	-If any archaeological materials or human burials or skeletal remains are uncovered during prospecting or exploration activities, then the work in the immediate area should be halted, the finds would need to be reported to the Heritage Authority and may require inspection by an Archaeologist. The Environmental Officer should have the area fenced off and contact NHC (Tel: +264 61 244 375), National Forensic Laboratory (+264 61 240 461) immediately.	Medium / Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	<p>there may be community graves (marked and unmarked) likely to be at villages where there are people around the EPL. Thus, these should be avoided by maintaining a 1km buffer of a no-go zone/operations. For resources that may be unearthed during exploration, the chance finds procedure, and archaeological mitigation measures and heritage monitoring approaches are highly recommended. These are to be adopted and implemented throughout the exploration activities to</p>						<p>-Known sites should be marked so that they can be avoided during exploration activities.</p> <p>-The contractors and exploration crews/workers should be notified that archaeological sites might be exposed during the prospecting and exploration activities.</p> <p>-Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible.</p> <p>-All archaeological sites or resources encountered during exploration within the EPL should be avoided by establishing a 1km buffer from the site. In other words, no exploration activities should be conducted within 1km of the site.</p>	

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	avoid any destruction and disturbances of the known and unknown archaeological materials. The most potentially affected resources are Stone artefacts, rock shelters and caves, graves and military campsites, etc. identified onsite.							
Noise associated with drilling activities and heavy vehicles moving on and around the EPL	-The noise created by moving heavy trucks, drilling works would be a nuisance to the residents in the nearby villages. Prolonged exposure to excessive noise to the site personnel would also be a health risk if there is no appropriate Personal Protective Equipment (PPE). -Excessive noise may impact the animals such as birds and	Local	Short-term	Medium	Definite	High	-All workers on site must be equipped with ear plugs to be used when exposed to excessive noise. -Switch off machines that are not used. -All locals must be notified on time about drilling activities prior. -All noisy exploration works such as drilling activities must not be carried out in the night, early morning (before 08h00) and evenings (after 17h00). -Avoid drilling within 100m of trees where birds are likely to have nests. -Target exploration sites that may be found to be within less than 1 km	Medium / Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	reptiles. Birds tend to abandon their nests if subjected to continuous noise. -Noise would also disturb wildlife moving within the Conservancy side of the EPL.						from villages should be avoided at all cost. This is done to preserve some tranquillity for the residents. -Traditional Authority and Conservancy Management should be notified of drilling dates and locations on the EPL.	
Visual impacts	-The project structures and dust created by heavy vehicles may create a visual impact. -The sight of exploration equipment and vehicles on the EPL may be a nuisance to the residents, motorists and tourists travelling on the local roads. -The lights associated with the campsite infrastructure such as ablution would be a nuisance in the nights.	Local	Long-term	Medium	Probable	Medium	-A buffer zone of 1km should be created to minimize visual intrusion. -There should be no exploration works done after 17h00 to avoid night lightings. -All gravel roads should have a speed limit of no more than 30km/h to minimise the amount of dust generated by the vehicles. -The support infrastructure lights should be installed at low level on the structures and facing the side without homes to impact. -The color of the infrastructure should not be bright to cause a discrepancy, thus, visual nuisance.	Low
Lack of communication	-A campsite will be required and because	Local	Long-term	Medium	Probable	Medium	-A Public Relation Officer (PRO) should be appointed for the	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
cooperation and transparency	of this, some of the project workers may behave contrary to the wishes of the land custodians and users (Conservancy) or nearby occupiers of land. Not only the workers potential unacceptable behaviors but other inconveniences to the land users/custodians' biophysical and social aspects related to the project activities. If not managed effectively, these have the potential to result in destructive conflicts between the Proponent and local leaders.						<p>project. They will be responsible for ongoing consultations (liaising) with the affected occupiers of land or land custodians/users as well as handling potential grievances related to the project activities, as and when required.</p> <p>-The PRO should be introduced to the communities and his or her contact details provided to them prior to undertaking activities for easy communication during the exploration activities.</p> <p>-The Proponent should compile a clear communication procedure/plan which should include a grievance and response mechanism.</p>	

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
Community and Surrounding services Infrastructure (roads, fence, and pipelines)	The movement of vehicles such as heavy truck around private and even communal land may lead to the destruction / damaging of buried public water pipelines and or power supply cables. This is likely to happen; especially during rainy seasons when the buried pipes get compacted or deformed once driven over by heavy vehicles.	Local	Long-term	Medium	Probable	Medium	-Consult with the community to help in locating possible buried cables and pipelines on properties to avoid damages to buried services such as water and power supply lines and cables. -If possible, heavy trucks should avoid driving over areas that are known to have pipelines or any related infrastructure buried. -Project equipment and machinery should not be left leaning on the communal fences (using the fences as support). -Agreement and continued engagement with land custodians on use and maintenance of community infrastructure (roads) should be implemented and maintained.	Low
Social Grievance: Property intrusion and Disturbance or Damage	The presence of some workers may lead to social annoyance to the local community. This could particularly be a concern when	Local	Long-term	Medium	Probable	Medium	-Workers should be informed of the importance of respecting the locals' properties by not intruding or damage their homes, fences or snaring and killing of communal animals.	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	workers enter or damage properties of the locals. The locals' private properties could be homes, yards/fences, vegetation, or domestic or wild animals or any properties of value to the communities 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 certain significant community sites may cause social crashes between the local community (affected property owners) and the Proponent (being responsible for the						<ul style="list-style-type: none"> -Any workers or site employees that will be found guilty of intruding peoples 'privately owned properties should be called in for disciplinary hearing and/or dealt with as per their employer' (Proponent)'s code of employment conduct -Site workers should be advised to respect the locals' properties, values, and norms. -No worker should be allowed to wander in people's private yards or fences without permission. -Workers are not allowed to kill or in any way disturb local livestock. -No worker should be allowed to cut down or damage community trees. 	

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	overall project activities).							
Impact on tourism and associated land use conflicts	The exploration activities will potentially have an impact on tourism due to the fact that the area is presently undisturbed. The disturbance caused by exploration may reduce the attractiveness of the area to tourists, thus negatively impact the industry.	Local	Long term	Medium	Definite	High	-Exploration activities should be done away from the communal access roads to reduce visual impacts emanating from drilling dust and exploration set ups, thus limiting the impact on tourism. -The disturbed areas should be rehabilitated soon after completion of work (progressive rehabilitation). -The poaching of wildlife should not be tolerated. -The venting of project workers should be done to ensure that the workers can be trusted to work in such a sensitive area where tourists are visiting.	Medium/Low
The spread of HIV/AIDS and other STDs throughout the project.	-The inflow of employees and other people into the area can result in the spread of HIV/AIDS, other STDs	Local	Long term	Medium	Highly probable	Low	-Awareness should be raised at workplace and provision of condoms to all onsite workers. -Promote the education of the employees and the public on the importance of having protected sex	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
Occupational and community health and safety	<p>-Project personnel (workers) involved in the exploration activities may be exposed to health and safety risks. These are in terms of accidental injury, owing to either minor or major (i.e., involving heavy machinery or vehicles) accidents. The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any harm or injury to the Proponent's personnel or wildlife.</p> <p>The use of heavy equipment, especially during drilling and the presence of hydrocarbons on sites may result in accidental fire outbreaks. This could</p>	Local	Long-term	Medium	Probable	Medium	<p>-The Proponent should commit to and make provision for bi-annual full medical check-up for all the workers at site to monitor the impact of project related activities on workers.</p> <p>-As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs.</p> <p>-When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc.</p> <p>-Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</p> <p>-Drilled holes 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.</p>	Low

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
	<p>pose a safety risk to the project personnel and equipment and vehicles too.</p> <p>If machinery and equipment are not properly stored and packed, the safety risk may not only be a concern for project workers but residents and animals (wildlife).</p>						<ul style="list-style-type: none"> -Ensure that after completion of exploration holes, drill cuttings are put back into the hole and the holes filled and levelled. -An emergency preparedness plan should be compiled, and all personnel appropriately trained. -Workers should not be allowed to drink alcohol prior to and during working hours as this may lead to mishandling of equipment which results into injuries and other health and safety risks. -Workers should not be allowed on site if under the influence of alcohol. -The site to be equipped with "danger" or "cautionary" signs for any potential danger or risk area identified on site. -Temporary enclosed boundaries should be erected around high-risk area sites for the duration of project activities at that specific site area. -A security guard or guards should be part of the team so that they can look after the project equipment 	

Impact	Triggering activity and potential Impact	Extent	Duration	Intensity	Probability	Significance of an Impact		
						Before Mitigation	Impact mitigation & enhancement measures (high-level)	Post Mitigation
							and vehicles that would be left on site in weekends or public holidays (when no work is done) to ensure that no unauthorized person enters the area. -All employees and contractors (personnel) to be trained on environmental awareness, the Proponent's internal Environmental Health and Safety Policy, and EMP.	

8 RECOMMENDATIONS AND CONCLUSIONS

The impact assessment done for the proposed exploration and associated activities indicates that the activities will have some negative impacts on the biophysical and socio-economic environment. However, based on the impacts' description and assessment, it showed that most of the impacts have a medium/high to high significance, if any mitigation measure is not implemented. However, upon re-assessing the impacts after the implementation of mitigation measure, the significance would be reduced from high to medium and eventually low or from medium to low. Therefore, the significance can be reduced by the effective implementation of the provided management and mitigation measures accompanied by monitoring.

It has also been noted that the project will bring about few temporary positive impacts on the social and economic aspects. To prevent or mitigate negative impacts, coordinated project management strategy according to an Environmental Management Plan (EMP) / Rehabilitation Plan (EMRP) has been developed for the proposed project (exploration). The EMP contains the mitigation measures to reduce the impact's significance during project implementation when avoidance is not possible, to ensure that the project activities are undertaken in an environmentally and socially sustainable manner.

To ensure that the EMP (ESMP) implementation is effective and yields the desired management results/indicators, monitoring of such implementation should be done by an Environmental Control Officer/ Safety Health Environment (SHE) Officer reporting to the Proponent during project implementation. Therefore, the Environmental Clearance Certificate (ECC) may be issued by the Environmental Commissioner for the proposed activities, on condition that the Proponent and their associated contractors implement the EMP for impacts' management and monitoring measures outlined in this Report and its EMP.

9 REFERENCES

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