# ENVIRONMENTAL IMPACT ASSESSMENT

## FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPL 8281, UIS DITSRICT, ERONGO REGION, NAMIBIA

# ENVIRONMENTAL SCOPING REPORT

## FINAL

## NOVEMBER 2022


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# Acronyms

| TERMS | DEFINITION |
|---|---|
| BID | Background Information Document |
| CA | Competent Authorities |
| EAP | Environmental Assessment Practitioners |
| ECC | Environmental Clearance Certificate |
| ECO | Environmental Control Officer |
| EIA | Environmental Impact Assessment |
| ESIA | Environmental and Social Impact Assessment |
| EMP | Environmental Management Plan |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gasses |
| ISO | International Organization for Standardization |
| I&Aps | Interested and Affected Parties |
| JBIC | Junior Baiano Industrial Consultants |
| MEFT: DEA | Ministry of Environment, Forestry and Tourism's Directorate of Environmental Affairs |
| PPE | Personal Protective Equipment |

# EXECUTIVE SUMMARY

**Junior Baiano Industrial Consultants (JBIC) cc** has been engaged by **Glock Investments cc** to conduct an Environmental Impact Assessment (EIA), develop an Environmental Management Plan (EMP) and apply for an Environmental Clearance Certificate for the proposed exploration activities an area covered by EPL 8281, Erongo Region - Namibia.

In terms of the Environmental Impact Assessment Regulations 2012, the proposed project triggered the application for an environmental clearance certificate because of the following activities:

### Environmental Impacts

- Generation of waste during construction and operation.
- Impacts on vegetation and biodiversity through clearing of land during construction.
- Health and safety impacts during construction and operation.
- Surface and groundwater impacts during construction.

### Social and Economic Impacts

- Validate the viability of Lithium mining in the project area and if feasible make efficient use of the resource and contribute to the nation's macro economy;
- Contribute to the economic and social well-being of people and households of the Uis local community and the Erongo region through the provision of household incomes and development outcomes that can be derived from the exploration and potential mining activities;
- To offer an alternative source of income to the local community through direct employment; and indirect employment from various business that support the project activities.
- An EMP has been developed to mitigate any anticipated possible impacts of the project to the environment.

### Public Participation Process

Interested and Affected Parties were notified of the project through site notices and newspaper adverts. All relevant information regarding consultation is covered in Chapter 4 of this document and attached in Appendix A.

### Recommendation

Based on the Environmental Assessment it is concluded that most of the impacts identified can be addressed through the recommended mitigation and management actions for both the construction and operation phases of the project. Should the recommendations included in this report and the EMP be implemented the significance of the impacts can be reduced to reasonably acceptable standards and duration. All developments could proceed provided that general mitigation measures as set out are implemented at a minimum.

In this respect it is recommended that the proposed exploration receives an Environmental Clearance Certificate, provided that the recommendations described in this report and the EMP are implemented.

# 1 CHAPTER ONE: BACKGROUND

## 1.1 INTRODUCTION

Glock Investments cc intends to carry out exploration activities in an area covered by EPL 8281, in Uis District, Erongo Region. Environmental Management Act, 2007 (Act No.7 of 2007) and the regulations for Environmental Impact Assessment as set out in the Schedule of Government Notice No. 30 (2012) echoes the need of an Environmental Impact Assessment (EIA) for projects (such as the proposed exploration activities) that are specified by the Act.

Non-compliance to legal obligations presents liabilities and it is in the wake of the need to attain sustainability that Glock Investments cc has opted to undertake an EIA for its proposed exploration activities. EIA is required to obtain an Environmental Clearance Certificate (ECC) from the Ministry of Environment and Tourism (MET) before the project can proceed. In this context the company has set out to conduct the Environmental Impact Assessment (EIA) for its exploration activities. The EIA is the official appraisal process to identify, predict, evaluate and justify the ecological, social and related biophysical impacts of the project on both the environment and, affected and interested stakeholders. It provides insight on alternatives and measures to be adopted to prevent or mitigate any impacts/risks that may ensue from the exploration activities.

As per the requirements of the Environmental Management Act No. 7 of 2007, Glock Investments cc has appointed JBIC to conduct the EIA and develop an Environmental Management Plan (EMP) for the proposed project. In this respect, this document forms part of the application to be made to the DEA's office for an ECC for the proposed project, in accordance with the guidelines an statutes of the Environmental Management Act No.7 of 2007 and the environmental impacts regulations (GN 30 in GG 4878 of 6 February 2012).

## 1.2 PROJECT LOCATION

The project site is located in the Uis district, Erongo region, Namibia. The images and locality maps below gives a local layout view of the project site. The coordinates of the site are also shown in the table below.

**Table 1-1:** Site Locality

| LOCALITY COORDINATES | |
|---|---|
| **Latitude** | **Longitude** |
| -21.431748 | 14.375508 |
| -21.414888 | 14.304444 |
| -21.333198 | 14.324001 |
| -21.334083 | 14.355103 |
| -21.335014 | 14.390132 |

**Figure 1-1:** Project Site

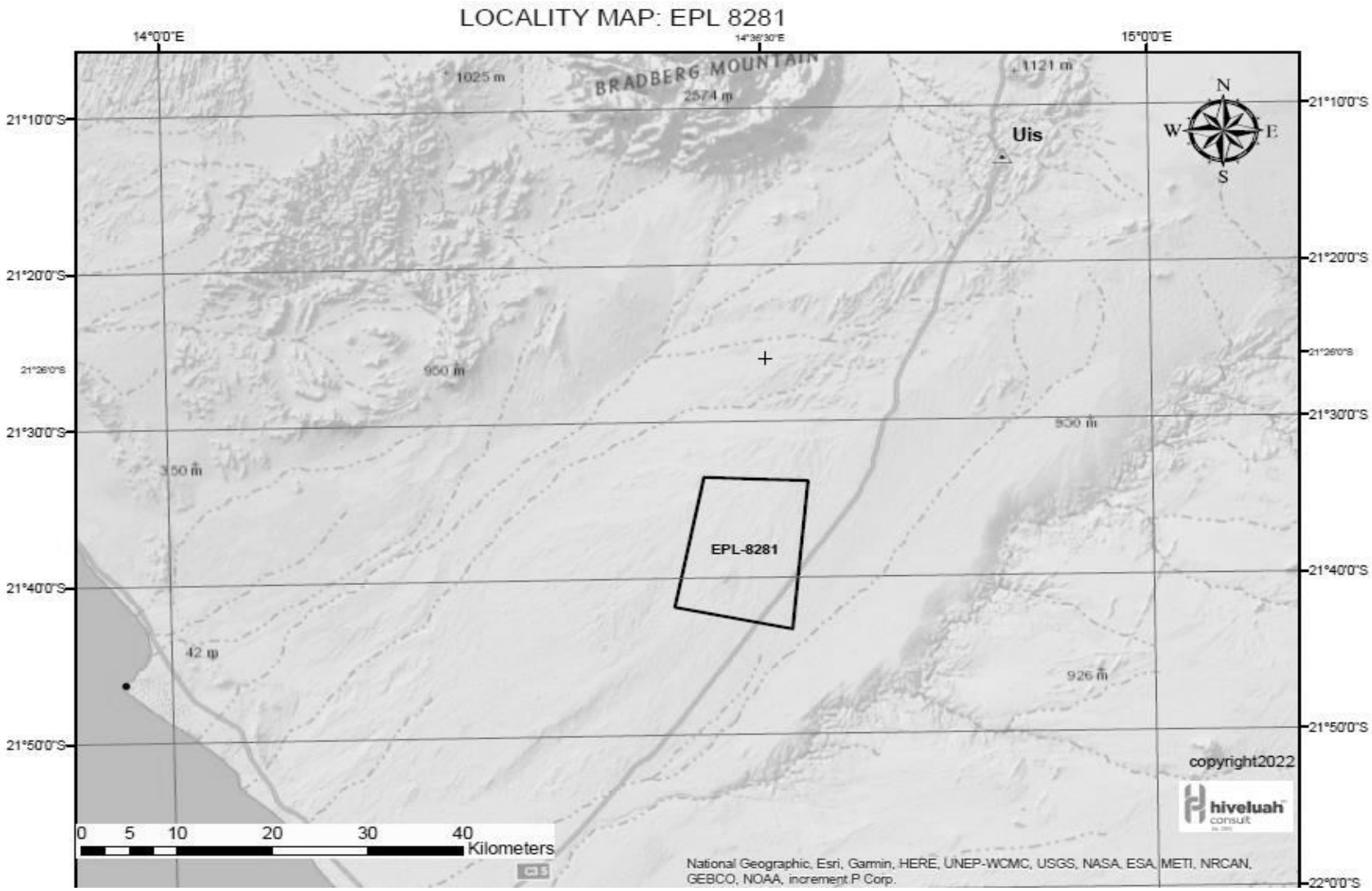


**Figure 1-2:** Locality Map

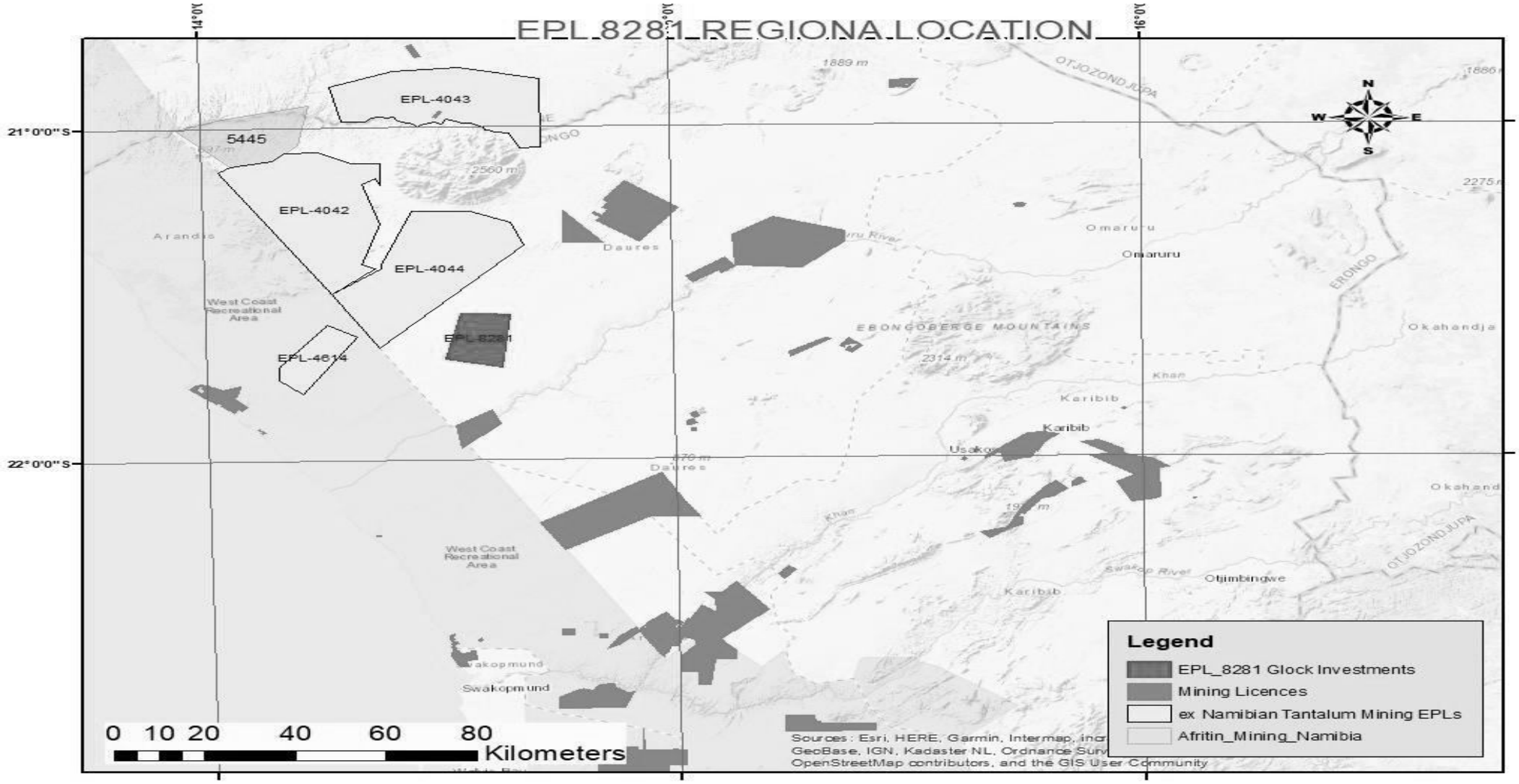


**Figure 1-3:** Project ELP in relation to other mine licenses

## 1.3 PROJECT OVERVIEW

The diagram below gives an overview of the project phases of the proposed Lithium exploration operation.

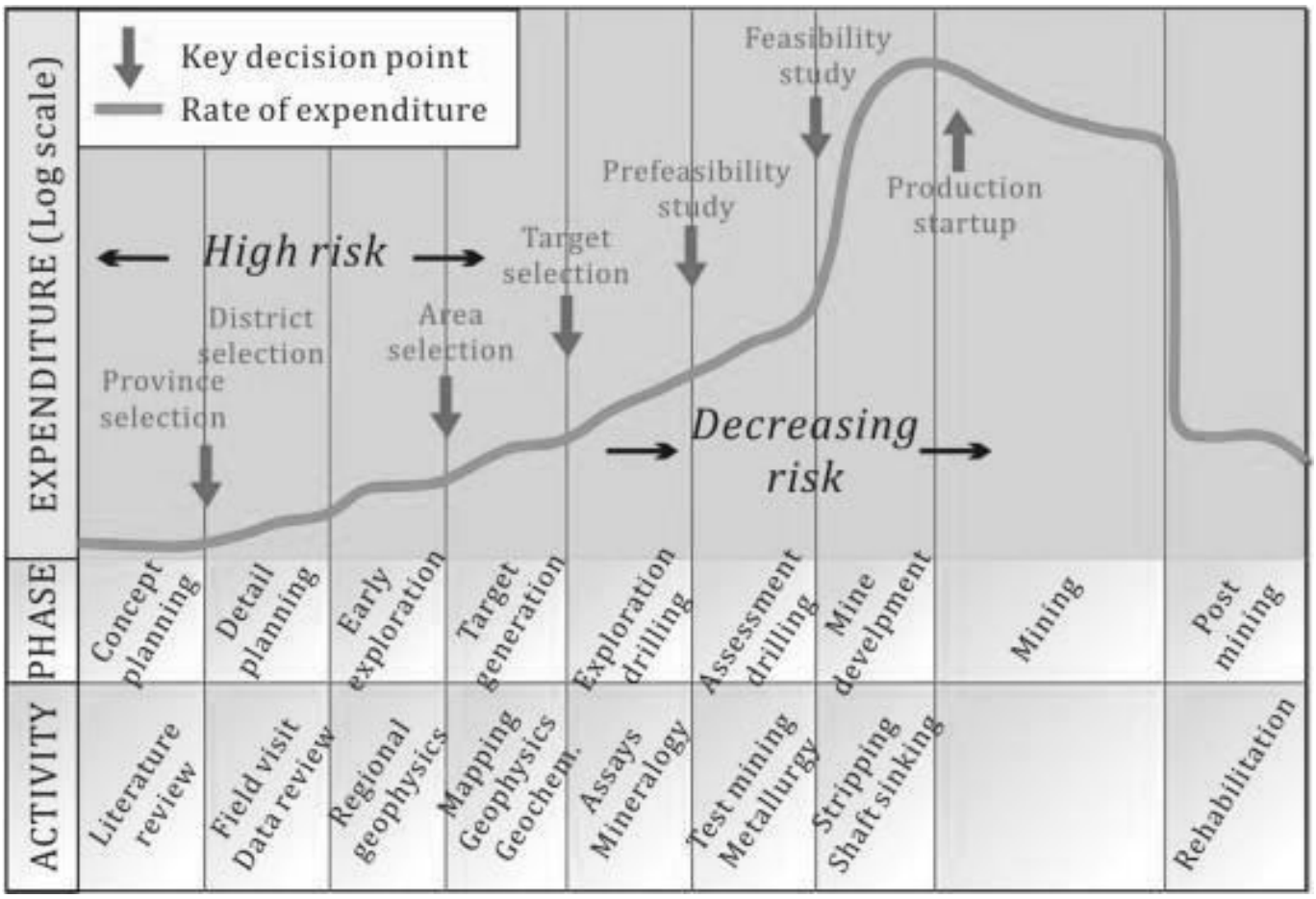


**Figure 1-4:** Exploration Project Phases

The overall aim of the proposed exploration project to search for potential economic lithium mineral resource within prospect area. The proposed exploration programme methodologies could be characterised into desktop, regional or local field-based activities summarised as follows:

- Satellite imagery: Initial desktop exploration activities;
- Geochemical sampling and analysis: Regional field-based reconnaissance activities;
- Transient pulse: Regional or local field-based reconnaissance activities;
- Radiometric: Regional or local field-based reconnaissance activities;
- Ground Telluric: Local field-based reconnaissance activities;
- Well Drilling (Stratigraphic): Detailed site-specific field-based validation activities.

The figure below shows the project's area of lithium potential.

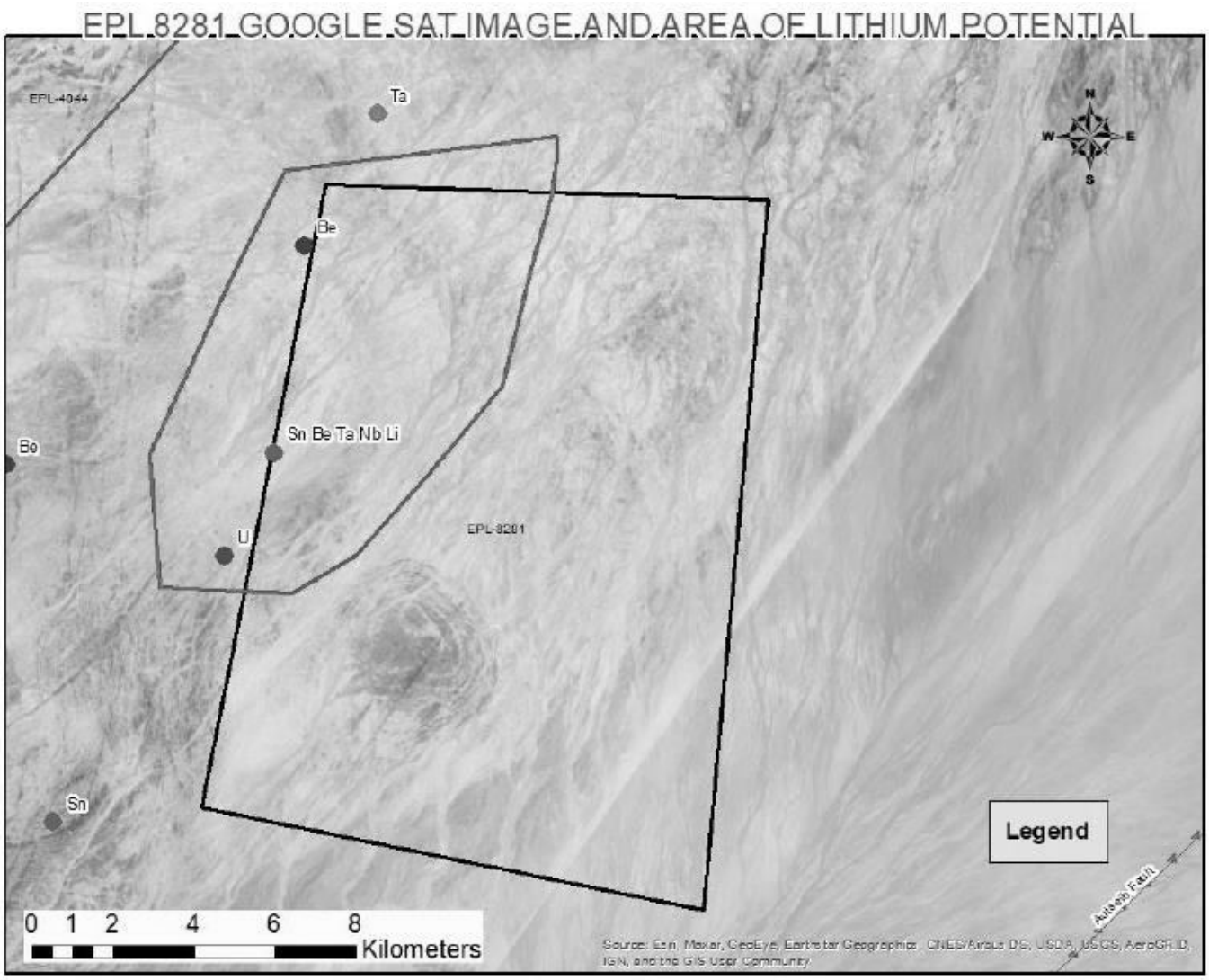


**Figure 1-5:** Google SAT Image and Area of Lithium Potential

The field-based support and logistical activities will depend on the levels of the regional, local or site-specific activities being undertaken. The activities will be supported by existing tracks and campsites / farmstead.

In the absences of existing tracks, the field team will created such new tracks depending on the scale of exploration (regional, local or site-specific activities).

In the absence of existing suitable campsite / farmstead, temporary camp will be setup at suitable locations in line with the EMP provisions. The size of the exploration camp will depending on the scale (regional, local or site-specific activities) of exploration being undertaken.

The figure below shows the summarized environmental flow chart of the exploration project.

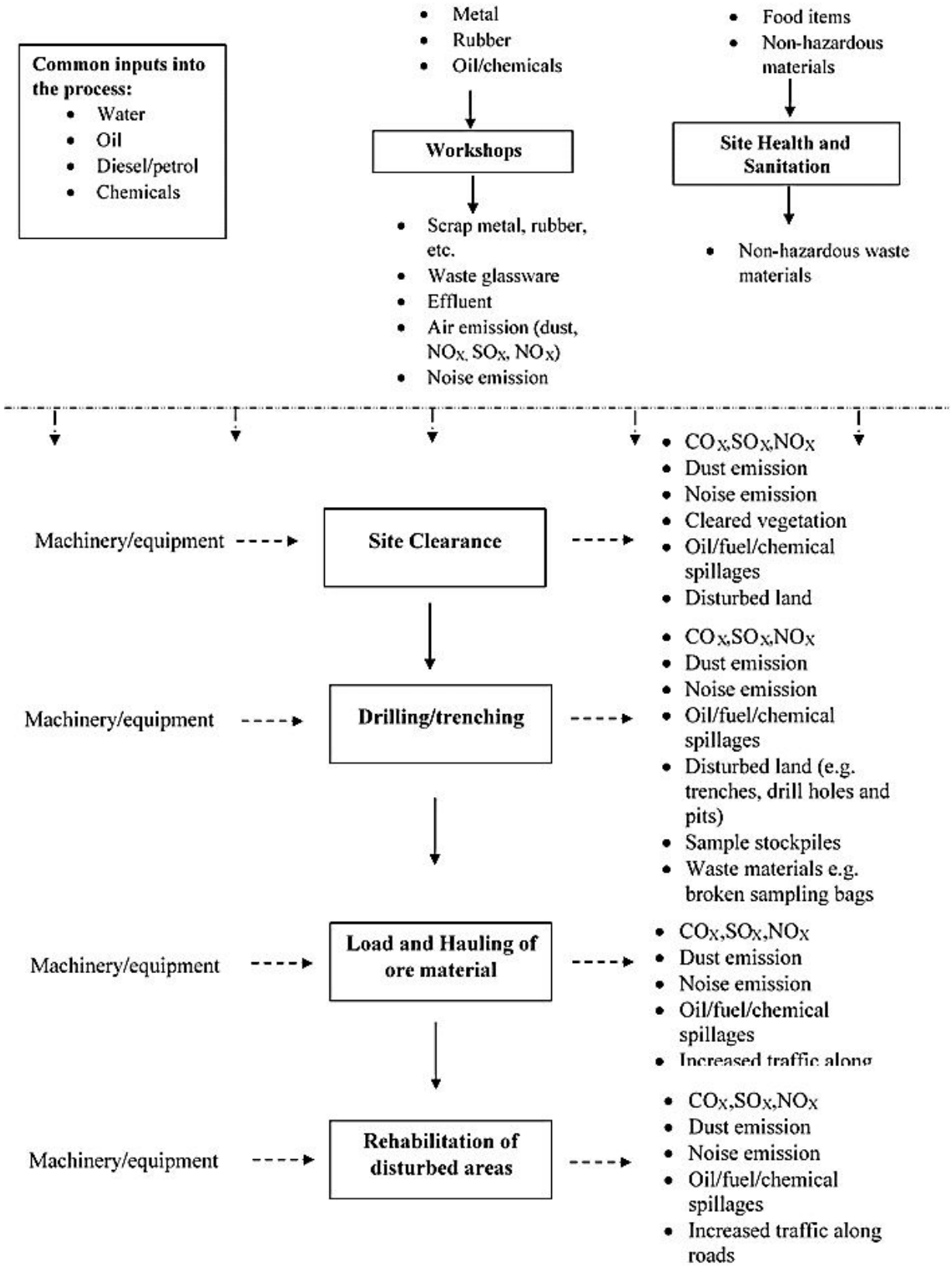


**Figure 1-6:** Summarized Project Environmental Flow Chart

## 1.4 ACCESSIBILITY

The site is easily accessible from an existing access roads connecting to the nearby town of Uis, Erongo region in the western part of Namibia.

## 1.5 INFRASTRUCTURE AND SERVICES

- The project area is near established infrastructure (i.e. good roads, rail, water and electricity) in Uis town.
- Borehole water capability of the area allows for borehole drilling to satisfy the operation's water requirements.
- During exploration phase, mobile temporary toilets will be used and these will be managed by an independent contractor.

## 1.6 NEED AND DESIRABILITY

Mining, Namibia's leading economic sector, accounts for roughly 20 percent of Namibia's GDP every year. Namibia has various natural resources including diamonds, uranium, copper, gold, lead, tin, lithium, cadmium, zinc, salt and vanadium. In 2015 the mining industry accounted for approximately 19,000 jobs in Namibia in comparison to 14,000 in 2011. Indirectly the mining industry contributes to the livelihood of 100,000 people. Namibia is an up-and-coming source country for critical minerals, which are important for renewable energy technologies. The country has the potential to develop new mining projects for cobalt and lithium. This shows that the mining sector has great potential to grow and continue to development in the country (BDO, 2018).

The Harambee Prosperity Plan and National Development Plans set the goals, targets, and strategy for Namibia to move on a path to economic prosperity through a concerted strategy for the development of Namibia's economic growth. These Plans also include specific growth targets milestones and strategies for the sustainable deployment of Namibia's resources to achieve the stated economic and social development goals. Mining is one of the major targets aimed in the NDP5. This project, is a major step in addressing the objectives of the developmental plans and targets of the Namibian government, as mineral exploration is key to ensuring the financial viability of mining operations.

## 1.7 PROJECT ALTERNATIVES

The project will not be implemented if the No-Go option is selected. The no-project alternative would mean that the various potential impacts/risks emanating from the proposed project would not be experienced. Thus the current uses and value and other potential land uses of the site are likely to be retained.

In addition there would no increased pressure on resources such as electricity and water which are already under strain. There also would be no increased chances of pollution and other potential negative impacts that would emanate from project activities.

If the project is implemented it is anticipated that the project will have the following benefits

- Validate the viability of Lithium mining in the project area and if feasible make efficient use of the resource and contribute to the nation's macro economy;
- Contribute to the economic and social well-being of people and households of the Uis local community and the Erongo region through the provision of household incomes and development outcomes that can be derived from the exploration and potential mining activities;
- To offer an alternative source of income to the local community through direct employment; and indirect employment from various business that support the project activities.

These benefits will not be realised if the project does not take place. With the current needs for economic growth in the region and nation, it is imperative that the project should be undertaken. If the proposed exploration activities are not carried out this will furthermore impede economic development and socio-economic progress.

Due to the project's numerous environmental and socio-economic benefits, and that the identified environmental impacts can be suitably mitigated it has been determined that the No Go option can be eliminated. Should the Competent Authorities (CA) refuse the authorisation of the proposed project, the 'No Go' option will be "implemented" and the status quo of the site will remain intact - leaving the site in its present state.

**Table 1-2:** Other Alternative Considerations

| Item | Description | Alternatives | Comments |
|---|---|---|---|
| 1. | Siting | • Current site | This is the only site that proponent may conduct the project activities (as per license given) |
| 2. | Transportation | • Road<br>• Rail<br>• Water (Atlantic ocean) | Given the location of the project road is the most cost effective means of transport. |
| 3. | Solid Waste Disposal | • Construction of a solid waste disposal site at the project site<br>• Disposal of solid waste off site | Construction of a waste disposal area on site is feasible. The Rs (Reuse, Reduce and Recycle) of waste management must be applied before disposal. |
| 4. | Water and Sanitation | • Drilling a Borehole on site<br>• Septic tank<br>• Mobile toilets | Boreholes may be drilled on site and mobile toilets put in place. |
| 5. | Energy | • Electrical energy.<br>• Gas.<br>• Wood based fuel.<br>• Solar.<br>• Diesel. | At the current moment the energy options that are available for the exploration operations are solar, wood fuel, electricity, gas, diesel and petrol. Electrical energy has to be connected via powerlines. A cost benefit analysis will be conducted to determine the feasibility of drawing power lines to the mine sites.<br>For all emissions released on onsite due to carbon based fuels, it is to be ensured that they within acceptable limits. . |

### 1.7.1 Conclusion

It is recommended that the project goes ahead, with the proposed exploration activities as a viable option as it is a cost effective and sustainable land use option.

# 2 CHAPTER TWO: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

## 2.1 INTRODUCTION

This EIA Report for the exploration project has been prepared in reference to identified Namibian laws and regulations that impinge on the project throughout all its phases. Legislation is one of the most important instruments of government that ensures the following:

- Acceptable pollution control and waste management
- Conservation and utilisation of resources
- Sustainable land-use planning and regulation
- Safe and healthy workplace environments
- Determination amongst others things of the rights and responsibilities of individuals and authorities to whom the legislation applies.

The international and national laws, agreements and treaties that govern the social and environmental issues of the project are outlined in the following sub-section. The sub-section take into account brief summarises of selected legislation; it do not seek to provide comprehensive details of all legal obligations that apply to the project but rather an overview.

## 2.2 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

The pursuit of sustainability is guided by a sound legislative framework. In this section, relevant legal instruments as well as their relevant provisions have been surveyed. An explanation is provided regarding how these provisions apply to this project.

**Table 2-1 - Legal Compliance**

| Aspect | Legislation | Relevant Provisions | Relevance to the Project |
|---|---|---|---|
| **The Constitution** | Namibian Constitution First Amendment Act 34 of 1998 | • Article 16(1) guarantees all persons the right to property, to acquire, own and dispose of property, alone or in association with others and to bequeath such property.<br>• "The State shall actively promote and maintain the welfare of the people by adopting policies that are aimed at maintaining ecosystems, essential ecological processes and the biological diversity of Namibia. It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future." (Article 95(l)). | • The project will enable the full execution of right to practice any profession, or carry on any occupation, trade or business by availing necessary provisions such as practising any profession, or carry on any occupation, trade or business in the country.<br>• Through implementation of the environmental management plan, the proposed mineral exploration activities will ensure conformity to the constitution in terms of environmental management and sustainability. |
| **National Development Plans** | | • Namibia's overall Development ambitions are articulated in the National Vision 2030. At the operational level, five-yearly national development plans (NDP's) are prepared in extensive consultations led by the National Planning | • The proposed project will propel NDP4 targets in mining and development, adding on this will come with increased employment opportunities in the local |

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| | | Commission in the Office of the President. The Government has so far launched a 4th NDP focusing on high and sustained economic growth, increased income equality Employment creation. | communities and Erongo region at large. |
| **Archaeology** | National Heritage Act 27 of 2004 | • Section 48(1) states that "A person may apply to the Namibian Heritage Council (NHC) for a permit to carry out works or activities in relation to a protected place or protected object" | • Any heritage resources discovered would require a permit from the NHC for relocation.<br>• No heritage resources were identified during field transact assessment and upon consultation with the local community. |
| | National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979 | • "No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia:<br>• Meteorites, fossils, petroglyphs, ornamental infrastructure graves, caves, rock shelters, middens, shells that came into existence before the year 1900 AD; or<br>• any other archaeological or palaeontological finds | • The proposed site of development is not within any known monument sites, both movable and immovable as specified in the Act, however in finding any materials specified in the Act, contractors on site will take the required route and notify the relevant commission.<br>• An archaeological impact assessment was deemed not necessary for this piece of land because of its locality and field reconnaissance survey conducted. |
| **Environmental** | Environmental Management Act 7 of 2007 | • Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). | • This Act and its regulations should inform and guide this EIA process.<br>• The project proponent will ensure that all provisions of the mining EMP |

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| | | • Requires for adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions about a project (Section 2(b-c)).<br>• According to Section 5(4) a person may not discard waste as defined in Section 5(1)(b) in any way other than at a disposal site declared by the Minister of Environment and Tourism or in a manner prescribed by the Minister.<br>• Details principles which are to guide all EIAs | are implemented and regular environmental compliance auditing conducted by independent consultants. |
| | EIA Regulations GN 57/2007 (GG 3812) | • Details requirements for public consultation within a given environmental assessment process (GN No 30 S21).<br>• Details the requirements for what should be included in a Scoping Report (GN No 30 S8) an EIA report (GN No 30 S15). | • This Act and its regulations should inform and guide this EIA process. |
| | Pollution and Waste Management Bill (draft) | • This bill defines pollution and the different types of pollution. It also points out how the Government intends to regulate the different types of pollution to maintain a clean and safe environment.<br>• The bill also describes how waste should be managed to reduce environmental pollution. Failure to comply with the requirements considered an offence and is punishable. | • The project should be executed in harmony with the requirements of the act to reduce negative impacts on the surrounding environs from waste during construction or operation.<br>• A waste management strategy that follows recycling, reuse and reducing will be commissioned throughout the operations. |

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| | Soil Conservation Act 76 of 1969 | • This acts makes provision for combating and for the prevention of soil erosion, it promotes the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic of Namibia. | • The Project impact on soil will rather be localised, however this document aims at guiding the proponent during their mineral exploration activities to prevent soil erosion and contamination during operation. |
| | National Biodiversity Strategy and Action Plan (NBSAP2) | • The action plan was operationalised in a bid to make aware the critical importance of biodiversity conservation in Namibia, putting together management of matters to do with ecosystems protection, biosafety, and biosystematics protection on both terrestrial and aquatic systems. | • Forming part of the EIA of and EMP for this Project, the proponent will consider all associated impacts, both acute and long term, and will propose methods and ways to sustain the local biodiversity. |
| | Hazardous Substance Ordinance 14 of 1974 | • Provisions for hazardous waste are amended in this act as it provides "for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances; to provide for the prohibition and control of the importation, sale, use, operation, application, modification, disposal or dumping of such substance; and to provide for matters connected therewith" | • The proposed Mineral exploration operations will ensure that all possible "hazardous" categorised substances and waste will be handled by a certified hazardous waste handler. |
| | Atmospheric Pollution | • This regulation sets out principles for the prevention of the pollution of the atmosphere and for matters | • The proposed mineral exploration activities will involve the use of |

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| | Prevention Ordinance 11 of 1976; | incidental thereto. Part III of the Act sets out regulations pertaining to atmospheric pollution by smoke. While preventative measures for dust atmospheric pollution are outlined in Part IV and Part V outlines provisions for Atmospheric pollution by gases emitted by vehicles. | combustible engines for vehicles and machinery, and thus appropriate vehicle servicing should be ensured to minimise pollution<br>• Dust generation and release of other particulate matter should be minimised by following the dust suppression procedures in the EMP. |
| | Parks and Wildlife Management Bill of 2006; | • The act enacts the legal framework, to provide for and promote the maintenance of ecosystems, essential ecological processes and the biological diversity of Namibia, and the utilisation of living natural resources on a sustainable basis for the benefit of Namibians, both present and future, and to promote harmonious and mutually beneficial co-existence of humans with wildlife, to give effect to Namibian's obligations under relevant international legal instruments including the Convention of Biological Diversity<br>• Provisions with regard to declaration of protected areas, entry into and residence are made in chapter V. Regulations on the protection of species of wildlife and plants are provided in Chapter VII of the Act. | • It is to be ensured that the Parks and Wildlife management bill is taken into consideration with great emphasis and compliance. |
| **Forestry** | Forest Act 12 of 2001 | • Tree species and any vegetation within 100m from a watercourse may not be removed without a permit (S22(1)<br>• Provision for the protection of various plant species. | • The clearing of vegetation is prohibited (subject to a permit) 100m either side of a river. Certain tree species occurring in the area |

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| | | | are protected under this Act. Permits must be obtained from MAWF in accordance with the Act. However, on site there are no trees that require clearing permit. |
| **Water** | Water Act 54 of 1956 | • The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force:<br>• A permit application in terms of Sections 21(1) and 21(2) of the Water Act is required for the disposal of industrial or domestic wastewater and effluent.<br>• Prohibits the pollution of underground and surface water bodies (S23(1).<br>• Liability of clean-up costs after closure/ abandonment of an activity (S23(2)).<br>• Protection from surface and underground water pollution | • The proposed mineral exploration activities will be using a dry process, hence water requirements for operations are minimal since most of the water will be for sanitation and domestic usage.<br>• All relevant permits for envisaged boreholes will be applied for with the relevant department. |
| **Health and Safety** | Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'. | • 135 (f): "the steps to be taken by the owners of premises used or intended for use as factories or places where machinery is used, or by occupiers of such premises or by users of machinery about the structure of such buildings of otherwise to prevent or extinguish fires, and to ensure the safety in the event of fire, of persons in such building;" (Ministry of Labour and Social Welfare).<br>• This act emphasizes and regulates basic terms and conditions of employment, it guarantees prospective | • The proponent will employ several people from the local and shall ensure securing a safe environment and preserving the health and welfare of employees at work. This will include applying appropriate hazard management plans and enforcing Occupational Health and Safety (OHS) enforcement by contractors. |

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| | | health, safety and welfare of employees and protects employees from unfair labour practices. | |
| | Public Health and Environmental Act, 2015 | • Under this act, in section 119: "No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health." | • The project will ensure compliance to the terms of the Act. |
| **Mining** | Minerals (Prospecting and Mining) Act, 1992 | • The Minerals Act governs minerals prospecting and mining. The Act provides for the reconnaissance, prospecting and mining for, and disposal of, and the exercise of control over minerals in Namibia; and to provide for matters incidental thereto.<br>• The Act also ensures that mining entities undertake environmental responsibility which includes rehabilitation and waste management.<br>• A new Minerals Bills is currently under preparation. | • This document has been conducted in compliance to the requirements of the Act, as well as ensuring that the sought after mineral exploration authorisation is granted by the ministry of Mines-Namibia. |
| | Minerals Policy 2004 | • The Minerals Policy is developed to ensure long-term sustainable growth in the mining sector of Namibia. One of the objectives of the Policy, relevant to EIAs is to ensure compliance with national environmental policy and other relevant policies to develop a sustainable mining industry. | • The fact that mining involved extraction/interaction with the natural resources, environmental responsibility will be ensured by the proponent as part of compliance to the Minerals policy.<br>• Further on the policy calls for value addition, and the proposed project will entail mineral processing. |

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|---|---|---|---|
| **Services and Utilities Infrastructure** | Road Ordinance 1972 (Ordinance 17 0f 1972) | • Width of proclaimed roads and road reserve boundaries (S3.1)<br>• Control of traffic during operational activities on trunk and main roads (S27.1)<br>• Infringements and obstructions on and interference with proclaimed roads. (S37.1)<br>• Distance from proclaimed roads at which fences are erected (S38) | • Although the project will not directly affect the major roads, the ore carrying trucks will at some point use the major roads.<br>• No new road developments, power lines or sewer reticulation systems will be constructed, thus there will be minimal environmental impacts from Services and utilities infrastructure. |

N.B: All identified crucial pieces of legislations will have to be adhered to by the proponent using different provisions and vehicles of compliance as indicated in their respective pieces of legislations. Where there is need to engage private consultants to facilitate compliance, the proponent is encouraged to consult qualified and certified personnel. Legal compliance auditing is to be done as part of all bi-annual reports to be conducted by the Environmental consultant.

Permits and licenses that are required, as part of compliance and authorization will have to be in place before operations commences. The most crucial license to be required before operations are as follows;

- Removal, destruction of indigenous trees, bushes or plants within 100 yards of stream or watercourse.
- Water abstraction permit, Effluent disposal permit
- Hazardous waste Storage/disposal /transportation permit
- Mineral Prospecting License

# 3 CHAPTER THREE: RECEIVING ENVIRONMENT

## 3.1 SOCIO-ECONOMIC

The proposed exploration project is located in Uis which in the Dâures constituency of Namibia's Erongo region. The Brandberg, Namibia's tallest mountain, inspired the constituency's previous name, Brandberg Constituency. In 2011, there were 11,350 people living there, up from 10,289 in 2001. The Dâures Constituency has a radius of nearly 120 km and stretches from the national road B2 to the Ugab River. Uis is the largest district in the constituency. Along with the smaller populated areas of Omihana, Ovitua, Odama, Okamapuku, Ozondati, and Tubusis, it also includes the Okombahe and Omatjette (NSA, 2011).


**Figure 3-1: Erongo Region and its constituency**

Source: Erongo Regional Council, 2011.

### 3.1.1 Local Economy and Infrastructure

Uis settlement is situated at the base of Namibia's tallest mountain, the Brandberg. Due to its location on the C36, the primary route between the coast and the interior of Damaraland, Uis sees a fair lot of traffic, which is by far the majority of the town's economic activity. The settlement is home to a small supermarket, guesthouses, a rest camp, a bakery, a gas station, and a few other miniature stores. The town is traversed by the transient Uis River, a tributary of the Ugab River (Denver, 2017).

In Uis, there are two schools with a combined enrollment of 300 students: Brandberg Primary School and Petrus Ganeb Secondary School. The facilities at Petrus Ganeb SS are fairly outdated because it was constructed prior to Namibia's independence.

The Uis region is also known for tin mining activities at Uis mine. Rare rocks and minerals can also be found in the region. Since much of Namibia's interesting geology and peculiar rocks are located on the surface rather than at the tops of mountains or deep below, the country is well known for being mineral-rich. Geologists from all over the world travel to Namibia (including Uis) to study there.

Extrapolating from the national unemployment statistics, the constituency has an unemployment rate of 33.40% and youth unemployment rate of 46.10% (Namibia Central Bureau of Statistics, 2019). This shown in the figure below.

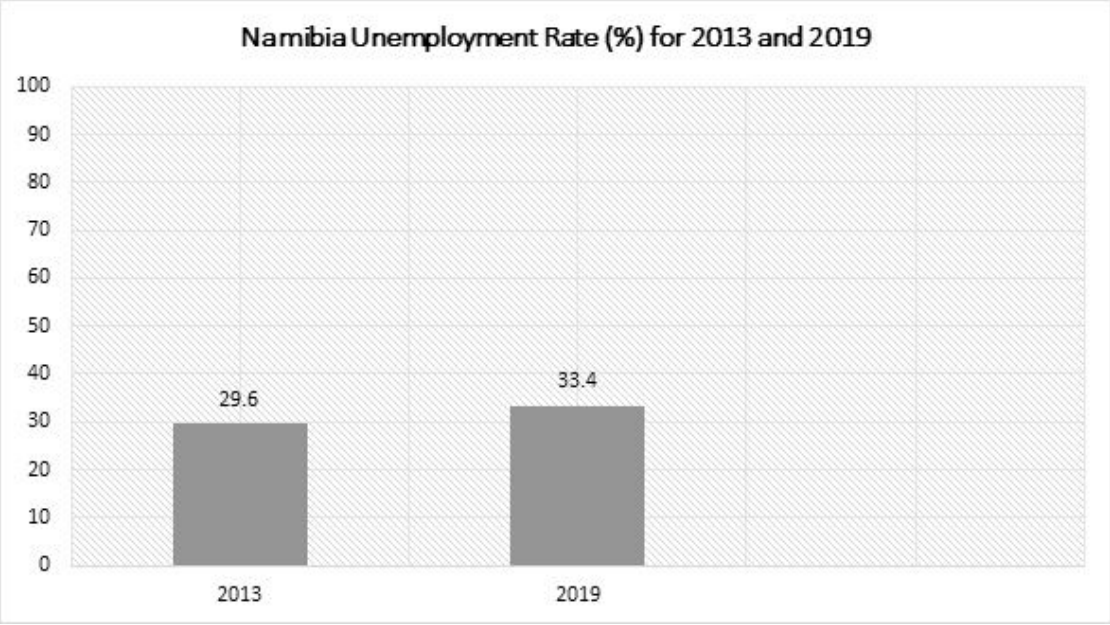


**Figure 3-2: Namibia Unemployment Rate and Youth Unemployment Rate**

The project will support the district's need for employment as well as the expansion of the local economy. Numerous employment opportunities are to be created for work personnel throughout the project phases. In addition other forms of employment are likely to result from spillover effects, through indirect services such as supply of raw materials, equipment, machinery, etc.

## 3.2 CLIMATE

The project area is a generally dry and hot location, with the coolest months from June to August having minimal average temperatures of 10°C. The warmest months are from October to March, when the maximum average temperature is between 33°C and 34°C. Rainfall in the area is minimal, totaling only 130 mm a year. The month with the lowest relative humidity, September, has a relative humidity of 21%, while March has the highest relative humidity, at 51%.

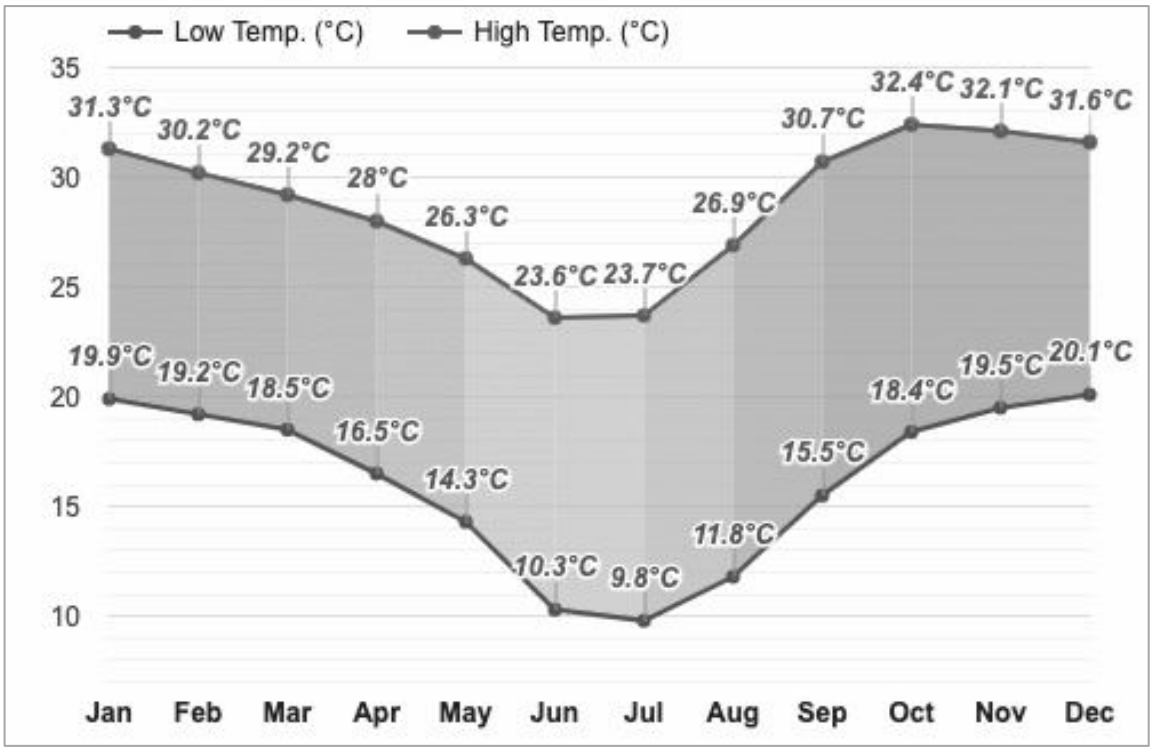


**Figure 3-3:** Uis Climatic Graph

Source: Climate-data.org, 2022

The predominant average hourly wind direction varies throughout the year in and around the project area. July has an average peak wind speed of 13.1 km/h, making it the windiest month. The average wind speed varies from 11 to 11.7 km/h between May and June and August and October. The typical wind speed varies from 9.9 to 10.3 km/h from November through January and during the month of April. Wind speeds in February and March, which

range between 9.0 and 9.2 km/h, are the calmest. In February, when it averages 9.0 km/h, the wind speed is at its lowest. Below is a graphic that shows monthly average wind speeds for the project area.

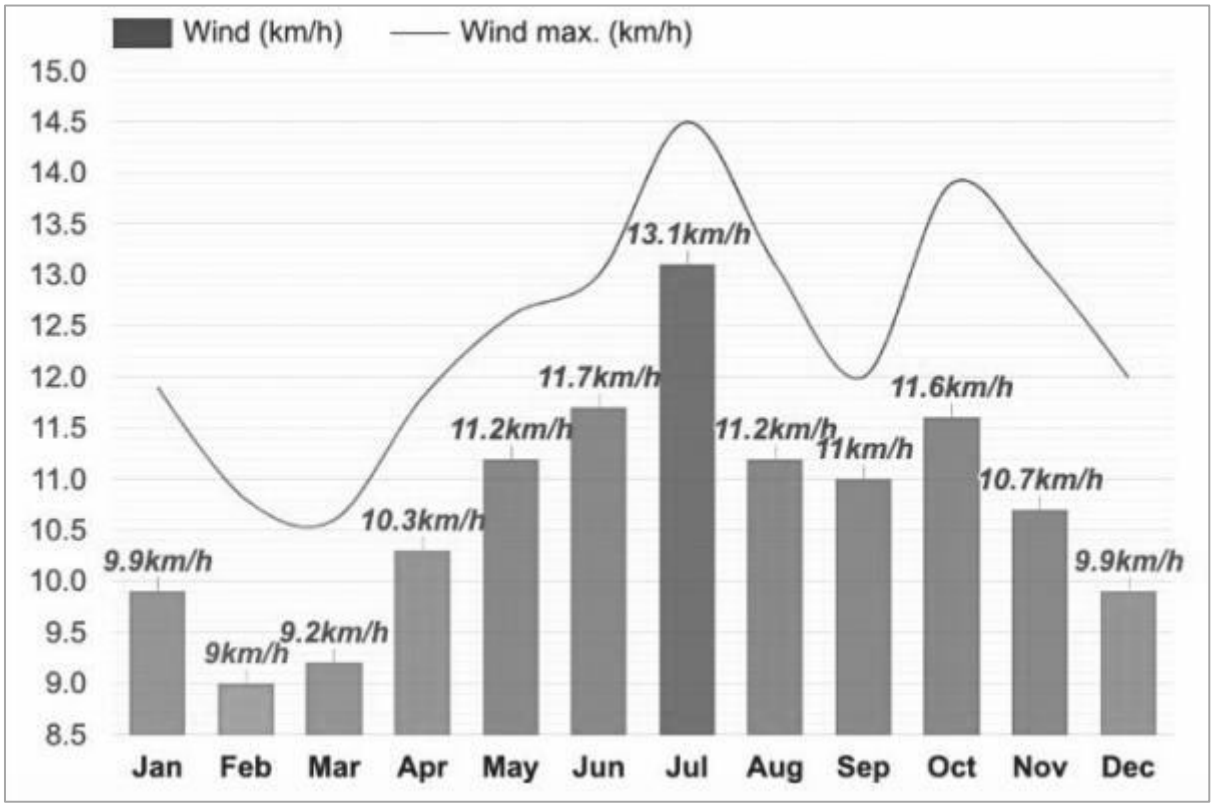


**Figure 3-4:** Average Monthly Wind Speed
Source: Climate-data.org, 2022

## 3.3 FLORA AND FAUNA

The subject area falls within the Namib Desert Biome (Mendelsohn, Javis, Roberts, & Robertson, 2002). This is within subtropical and tropical desert climate, characterized as dry and hot with occasional rainfall. The region generally has little vegetation growing because of low rainfall, and the fauna found in the project area and its surroundings can survive in a dry, hot climate. *Acacia spp*, Cacti *spp* and other similar plants are the most prevalent trees and bushes in and around project site. The area is also known to be home to wildlife species include mules, gazelles, camels, snakes, and lizards.

All of the region's endemic plant species are thought to be either succulent or drought tolerant. In the Namib plains, short-lived annuals that grow following localized rains and floods are a crucial source of food for wildlife grazing. In the general as well as immediate coastal areas, it is predicted that at least 56 reptile, 5 amphibian, 31 mammal, and 124 bird species (breeding residents) are known to or expected to occur, with a significant number

being endemics. At least 55% of the reptiles, 40% of the amphibians, 19% of the mammals, and 50% (7 of the 14 Namibian endemics) of all breeding and/or resident birds known to exist or anticipated to do so in the region are endemics.

The importance of the region in general for reptiles is highlighted by the relatively high number of rare and/or endemic species (55 percent). Most species are understudied, and it is unclear how important they are to the overall ecology—for example, *Afroedura africana africana* and *Pedioplanis husabensis*. Amphibians are poorly represented in Namibia's dry western regions, and it is unknown whether they are present in the Khan River and its tributaries, which may provide habitat for them.

Due to the limited information of actual habitat preferences and uses, as well as actual area utilization, small animals, particularly rats and bats, are considered to be fauna of special interest in and around the project area. The two bats, Angolan Wing-gland Bat (*Cistugo seabrae*) and Namib Long-eared Bat (*Laephotis namibensis*), as well as the subspecies of Littledale's Whistling Rat (*Parotomys littledalei*) are viewed as the most important species, but it is currently unknown whether or not they actually exist in the project area.

50 percent of all Namibian endemic birds are found in the region, which is also home to a significant number of southern African endemics (6.5 percent) and near-endemics (27 percent). The species most likely to be of concern are those found on gravel plains, such the Rüppell's Korhaan (*Eupodotis rueppellii*), Gray's Lark (*Ammomanopsis grayi*), and Herero Chat (*Namibornis herero*). These species are known to breed in the surrounding area, but it is still uncertain how common they are in the project area.

## 3.4 GEOLOGY AND HYDROLOGY

Major local units occurring within and around the EPLs are the Damaran Granites and pegmatites. Cretaceous units like the Brandberg Massif (KgBBgea) and Karoo Group including both sediments (PGa) and dolerite dikes occur within the EPL area or the vicinities. The pegmatites are usually intruded within structures and low pressure zones (fractures, joints or faults within the Damaran granites and in low pressure zones within the Zerrissene schists, predominantly along the regional foliation or at a low angle with the foliation).

In addition to the schist, there are predominant thin zones of amphibolites within the Zerrissene schist. These amphibolite are usually boudinaged and they can be distinguished from the schists by remote sensing images/Google earth by their very dark to black color. (Haimbodi, Hiveluah Consult 2022). The figures shows the mineral trends and rock types of the project site.

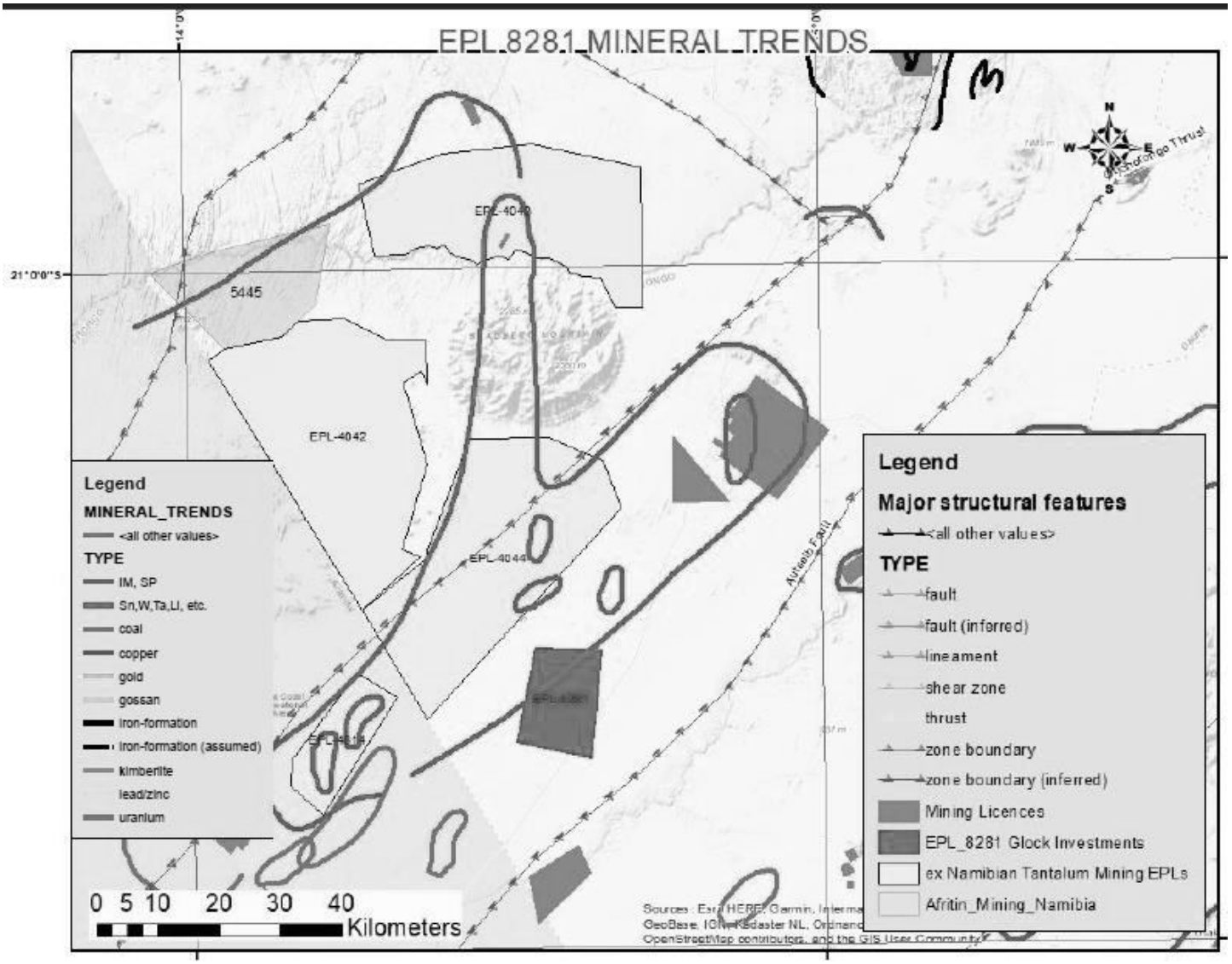


**Figure 3-5:** Mineral Trends

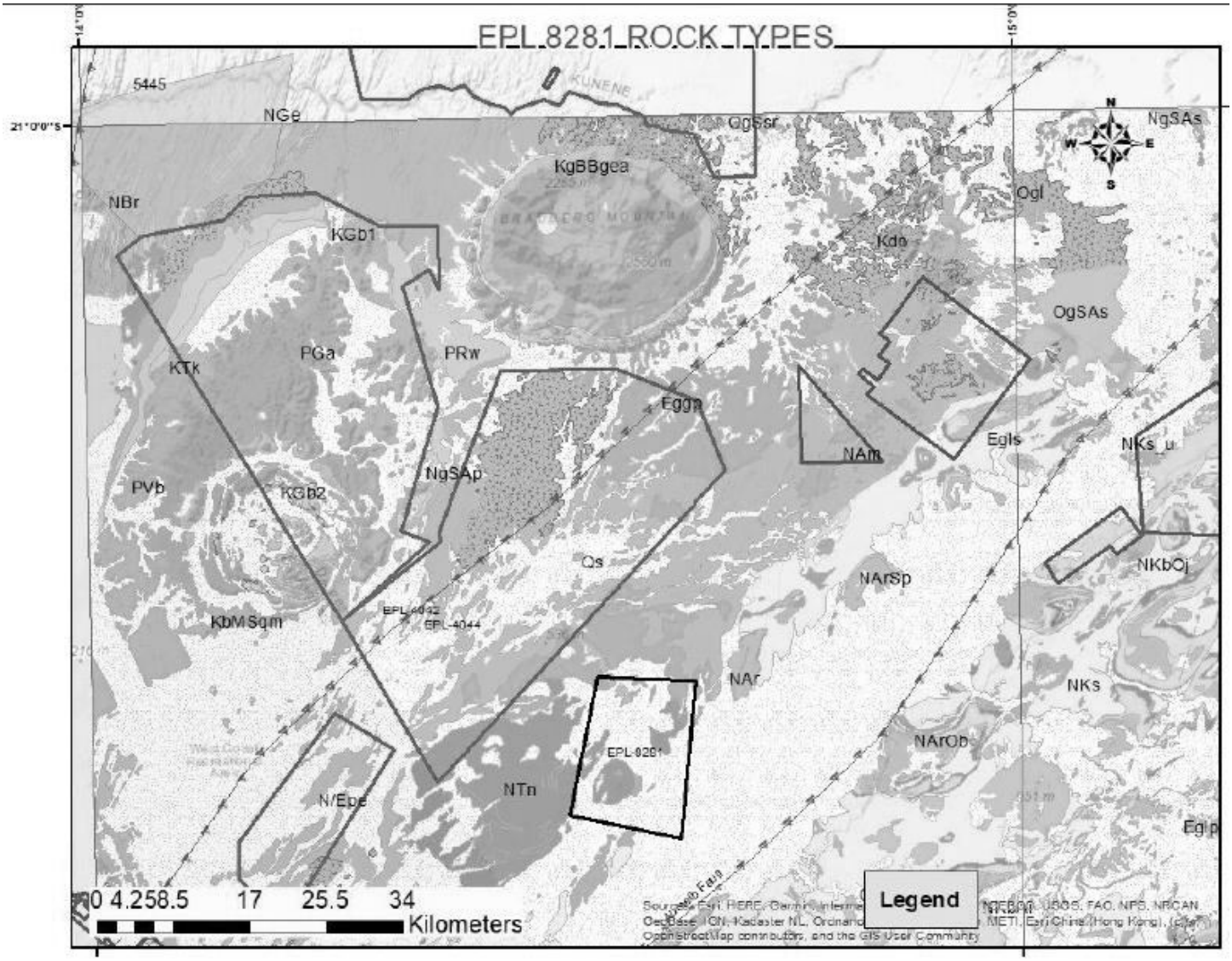


**Figure 3-6:** Rock Types

The project's location is in a region with little or no ground water (Fig. 3.6). Permission will be obtained for drilling boreholes and groundwater abstraction should the necessity for groundwater uses arise. The region's significant carbonate deposits and sparse surficial coverings have good secondary hydraulic properties that are connected to the groundwater.

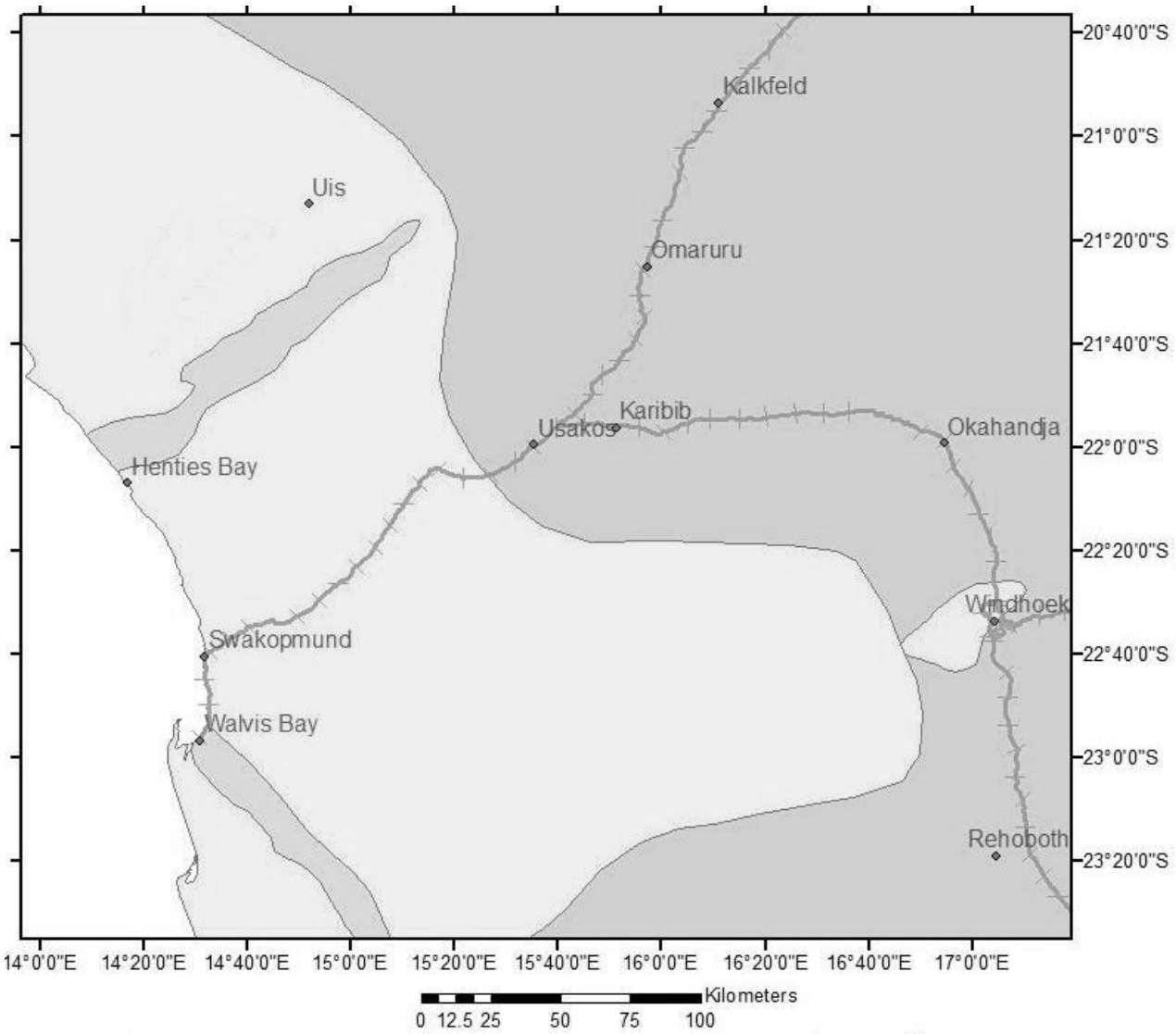


**Figure 3-7:** Regional Hydrogeological Map

## 3.1 ARCHEOLOGY IMPACT ASSESSMENT

An archeological impact assessment for the project was carried out and the detailed findings are attached in the Appendices. A summary of the findings are:

- The archaeological sensitivity of the surrounding area of EPL 8281 is considered to be relatively high. Although there are few significant surface indications of precolonial occupation in the area to be affected by the proposed mining exploration activities within EPL 8281, this can impact can be avoided and minimised if the proponent adheres to the below recommendations.
    i. At this stage it is important that the client is made aware of the fact that archaeological/heritage sites in the project area are protected under the National Heritage Act (27 of 2004). When prospecting is underway, the proponent should make sure that all personnel and contractors are aware of the protected nature of archaeological sites as well as the legal obligation to report any new finds to the National Heritage Council as soon as possible. The proponent should take steps to avoid either direct damage to the sites or to their immediate landscape setting.
    ii. At least a 50-meter buffer zone be maintained free of any exploration activities from granite shelter and the dry – stone wall structures.
    iii. The project proponents or contractors should adopt the Chance Finds Procedure attached in Appendix 1 of the AIA Report, so that buried archaeological remains are discovered may be handled following the provisions of Part V Section 46 of the National Heritage Act (27 of 2004).
    iv. Vehicle tracks should not to approach within 50m of any sensitive sites and should be deviated accordingly.
    v. Annual site inspections by the NHC should be carried out
    vi. The foot print impact of the proposed exploration activities should be kept to minimal, to limit the possibility of encountering chance finds within servitude.

# 4 CHAPER FOUR: PUBLIC CONSULTATION

## 4.1 OVERVIEW

The public consultation process forms an important component of the Environmental Assessment process. It is defined in the EIA Regulations (2012), as a "*process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters*" (S1). Section 21 of the Regulations details steps to be taken during a given public consultation process and these have been used in guiding our process.

Formal public involvement has taken place via public consultations and focal meetings, newspaper announcements to inform the public that such a large-scale project is under consideration. The public consultation process has been guided by the requirements of Environmental Management Act (EMA) No. 7 of 2007 and the process has been conducted in terms of regulation 7(1) as well as in terms of the EMA Regulations of GN 30 of 6 February 2012 and the World Bank EIA standards and project ToR.

Its overriding goals have been to ensure transparency in decision making and to.

- ✓ Ensure stakeholder concerns are incorporated in project design and planning;
- ✓ Increase public awareness and understanding of the project and
- ✓ Enhance positive development initiatives through the direct involvement of affected people.

The objectives of the public participation is to build credibility through instilling integrity and of conducting the EIA, Educate the stakeholders on the process to be undertaken and opportunities for their involvement and build stakeholders by establishing an agreed framework accordingly. This requires accessible, fair, transparent and constructive participation at every stage of process. Inform stakeholders on the proposed project and associate issues, impacts and mitigation and using the most effective manner to disseminate information.

In this section of the report, the results of consultations with various classes of stakeholders are summarized. The results of consultations with other stakeholders and community members who took part in this EIA are attached as Appendices.

The consultation was facilitated through the following means:

- ❖ A Background Information Document (BID) containing the project description, the EIA process and an invitation to participate was shared with stakeholders and community members.

- Invitation to participate notices were published in the local newspapers (New Era and Confidante) as shown in the table below and Appendix A of this document.
- Announcement of EIA process verbally in the common public meeting points.
- Placement of a public notice at the project site and various parts of city (see photos below).

**Table 4-1:** Details of public notification of the EIA study

| Method | Area of Distribution | Language | Date Placed |
|---|---|---|---|
| The Confidante | Country Wide | English | 04 - 10 November 2022<br>11 – 17 November 2022 |
| Windhoek Observer | Country Wide | English | 04 - 10 November 2022 |
| Traditional Authority Forum | Uis Community | English | 14 -23 November 2022 |
| Site notices | Uis Community | English | 22 -23 November 2022 |
| Public Meeting | Uis Community Hall, Uis upper town | English, | 24th November 2022 |


**Figure 4-1**: EIA Public Meeting at Uis Community Hall

**Figure 4-2:** Site Visits during EIA Study

✓ *Key Stakeholder Engagement Meeting*

A public meeting was organised on 24th November 2022 at Uis Community Hall, Uis upper town. Proof of public consultation is given in Appendix A of this document as well the attendance register explaining the project and the EIA study. Given below are the details of the meeting which was held:

✓ *Identification of Interested and Affected Parties (I&APs)*

The EIA team identified and consulted the following I&APs & key stakeholders for the proposed project:

- ❖ Tsiseb Conservancy
- ❖ Daure Daman Traditional Authority
- ❖ Erongo Regional Council, Uis Settlement Office
- ❖ Community Members.

Other I&APs were allowed to register to the EIA team and compiled a database containing their names and correspondence details. The registration was accomplished over a period of 14 days.

✓ *Consultation with Stakeholders*

Experts in relevant fields, leaders of thought in environmental matters, various Organs of the State and local communities have been consulted for their opinions on issues relating to the potential ecological and socio-economic impacts of the proposed project. This provided an opportunity for stakeholders and the public at large to engage in the process and to make comments or express their concerns regarding the proposed development.

**Table 4-2:** Key findings of the public consultation process

| **SUMMARY OF ISSUES** | |
|---|---|
| **THEME** | **ISSUE** |
| **Economic** | ➢ Employment of general labour must consider employing local people.<br>➢ The company must take the social responsibility<br>➢ Improve the life being of the local residents. |
| **Health and Safety** | ➢ Waste management concerns including both solid waste and wastewater.<br>➢ Potential air, noise and water pollution due to development.<br>➢ The company must provide enough health care to employees |
| **Ecological** | ➢ Concerns regarding machinery oil spillages and leaks resulting land contamination, surface and ground water pollution. |

| SUMMARY OF ISSUES | |
|---|---|
| **THEME** | **ISSUE** |
| | ▪ Hazardous waste (oil contaminated waste materials) should be contained and managed appropriately.<br>▪ Resources such as air and water should not be polluted during operations because communities, wild animals and livestock rely on these resources. |
| **Communication** | ▪ Clear communication needs to be promoted between relevant authorities and the local community.<br>▪ Clarify nature of new property (how it works, what processes involved). |

# 5 CHAPTER FIVE: ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

## 5.1 OVERVIEW

The proponent recognizes the importance of undertaking the project operation in line with sustainable development objectives and applicable legal requirements. To this end an Environmental Management Plan (EMP) for the project is being developed in order to address negative environmental impacts and enhance positive impacts. The EMP takes into account identification of potential impacts, assessment of the significance of the risks associated with these impacts and the establishment of preventive actions as well as mitigation measures. The EMP will be monitored, reviewed, and updated as necessary with the aim of continuous improvement, taking into account various changes in project operations, the biophysical environment and socio-economic circumstances.

## 5.2 ASSESSMENT OF IMPACTS

This section outlines how the overall methodology to assessing the project's possible environmental and social impacts. Each potential impact must be assessed in order to properly evaluate its significance. The definitions and explanations for each criterion are set out below in Table 5-1.

**Table 5-1: Assessment Criteria**

| **Duration – What is the length of the negative impact?** | |
|---|---|
| None | No Effect |
| Short | Less than one year |
| Moderate | One to ten years |
| Permanent | Irreversible |
| **Magnitude – What is the effect on the resource within the study area?** | |
| None | No Effect |
| Small | Affecting less than 1% of the resource |
| Moderate | Affecting 1-10% of the resource |
| Great | Affecting greater than 10% of the resource |
| **Spatial Extent – what is the scale of the impact in terms of area, considering cumulative impacts and international importance?** | |
| Local | In the immediate area of the impact |
| Regional / National | Having large scale impacts |
| International | Having international importance |

| **Type – What is the impact** | |
|---|---|
| Direct | Caused by the project and occur simultaneously with project activities |
| Indirect | Associated with the project and may occur at a later time or wider area |
| Cumulative | Combined effects of the project with other existing / planned activities |
| **Probability** | |
| Low | <25% |
| Medium | 25-75% |
| High | >75% |

(***Adopted from ECC-Namibia, 2017)***

**Table 5-2:** Impact Significance

| **Class** | **Significance** | **Descriptions** |
|---|---|---|
| 1 | Major Impact | Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non- compliance. |
| 2 | Moderate Impact | Impacts are long term, but reversible and/or have regional significance. |
| 3 | Minor | Impacts are considered short term, reversible and/or localized in extent. |
| 4 | Insignificant | No impact is expected. |
| 5 | Unknown | There are insufficient data on which to assess significance. |
| 6 | Positive | Impacts are beneficial |

**(Adopted from ECC-Namibia, 2017)**

**Table 5-3: Environmental Impacts and Aspects Assessment**

| Environmental Impact | Element | Impact | Phase | Duration | Magnitude | Extent | Type | Probability | Significance |
|---|---|---|---|---|---|---|---|---|---|
| **TOPOGRAPHY** | Topography and Landscape | Alternation of existing topography | Operation | Short term | Low | Local | Direct | Probable | Low |
| | Topography and Landscape | Topographic changes and Visual Impact from overburden material. | Operation | Medium term | Moderate | Local | Direct | probable | Moderate |
| **SOILS** | Soil | Loss of usable topsoil material | Operation | Long term | Low | Local | Direct | Highly probable | Moderate |
| | Soil | Contamination to soil from waste disposal | Operation | Long term | Moderate | Local | Direct | Improbable | Low |
| **LAND CAPABILITY** | Socio Economic Activities | Land utilisation for the benefit of the people | Operation | Long term | High | National | Indirect | Probable | Moderate |
| | Terrestrial ecology and biodiversity | Decreased in vegetated land (biodiversity zones) within the Exploration zones | Operation | Long term | Low | Local | Direct | probable | Low |
| | Groundwater quality | Groundwater source and soil may be polluted vehicular movements, mineral exploration drilling, etc. | Operation | Short term | High | Local | Direct | probable | Moderate |
| | Surface water quality | Increased sediment load from exposed surfaces | Operation | Short term | Low | Local | Direct | Probable | Moderate |

| Environmental Impact | Element | Impact | Phase | Duration | Magnitude | Extent | Type | Probability | Significance |
|---|---|---|---|---|---|---|---|---|---|
| | Surface water quality | Stormwater generation from, the large open surface area may create stormwater which may result in pollution. | Operation | Long term | High | Local | Direct | Highly Probable | Moderate |
| | Surface water quality | Increase in surface water run- off from a large open surface area on site because of vegetation removal | Operation | Short term | Moderate | Local | Direct | Improbable | Low |
| **AIR QUALITY** | Air Quality | Generation of dust during drilling and camp site construction. | Construction, operation | Short term | Low | Local | Direct | Probable | Moderate |
| | Noise Pollution | Generation of dust during drilling and camp site construction. | Construction and operation | Long term (operation) | Low | local | Direct | Probable | Low |
| | Topography and Landscape | Visual impacts due to use of unsustainable disposal methods | Construction and Operations | Long term | Low | Local | Direct | Probable | Moderate |
| | Terrestrial ecology and biodiversity | Loss of habitat, and clear or damage to vegetation | Construction and Operations | Long term | Moderate | Local | Direct | Probable | Low |
| **FAUNA** | Terrestrial ecology and biodiversity | Loss of habitat and clearing or damage to vegetation | Construction, Operation | Short Time | Moderate | Local | Direct | Highly Probable | High |
| **FLORA** | Terrestrial ecology and biodiversity | Proliferation of invasive species | Construction and Operations | Long Term | Low | Local | Direct | Probable | Low |

| Environmental Impact | Element | Impact | Phase | Duration | Magnitude | Extent | Type | Probability | Significance |
|---|---|---|---|---|---|---|---|---|---|
| | | Establishment of bush encroachers in disturbed areas. | | | | | | | |
| | Terrestrial ecology and biodiversity | Illegal collection of firewood | Construction and Operations | Long Term | Low | Local | Direct | Probable | Low |
| | Terrestrial ecology and biodiversity | Clearing of land may lead to destruction of protected vegetation and loss of biodiversity. Loss of mature and protected tree species due to clearing of land for parking space. | Construction | Short Term | Moderate | Local | Direct | Highly Probable | Moderate |
| | Terrestrial ecology and biodiversity | Uncontrolled/accidental fires | Construction and Operations | Long Term | High | Local | Direct | Probable | Moderate |
| **Socio-economic** | Socio Economic Activities | Temporary employment prospects in the area | Construction | Short Term | Low | Local | Direct | Probable | Moderate Positive |
| | Socio Economic Activities | Security concerns due to increased number of persons in areas | Construction and Operations | Long | High | Local | Direct | Probable | Moderate Positive |
| | Socio Economic Activities | Job creation construction workforce | Construction and operations | Long term | High | Local | Direct | Highly Probable | Moderate Positive |
| | Socio Economic Activities | Job creation permanent workforce | Operations and constructions | Long term | Moderate | Local | Direct | Probable | Moderate Positive |

| Environmental Impact | Element | Impact | Phase | Duration | Magnitude | Extent | Type | Probability | Significance |
|---|---|---|---|---|---|---|---|---|---|
| | Contributing to the National economy | Improved transport infrastructure and services | Operations | Long Term | Moderate | National | Direct | Highly Probable | High Positive |
| | Contribution to Local Economy | Employment and local procurement. | Construction and Operations | Long Term | Moderate | Local | Direct | Probable | Moderate Positive |