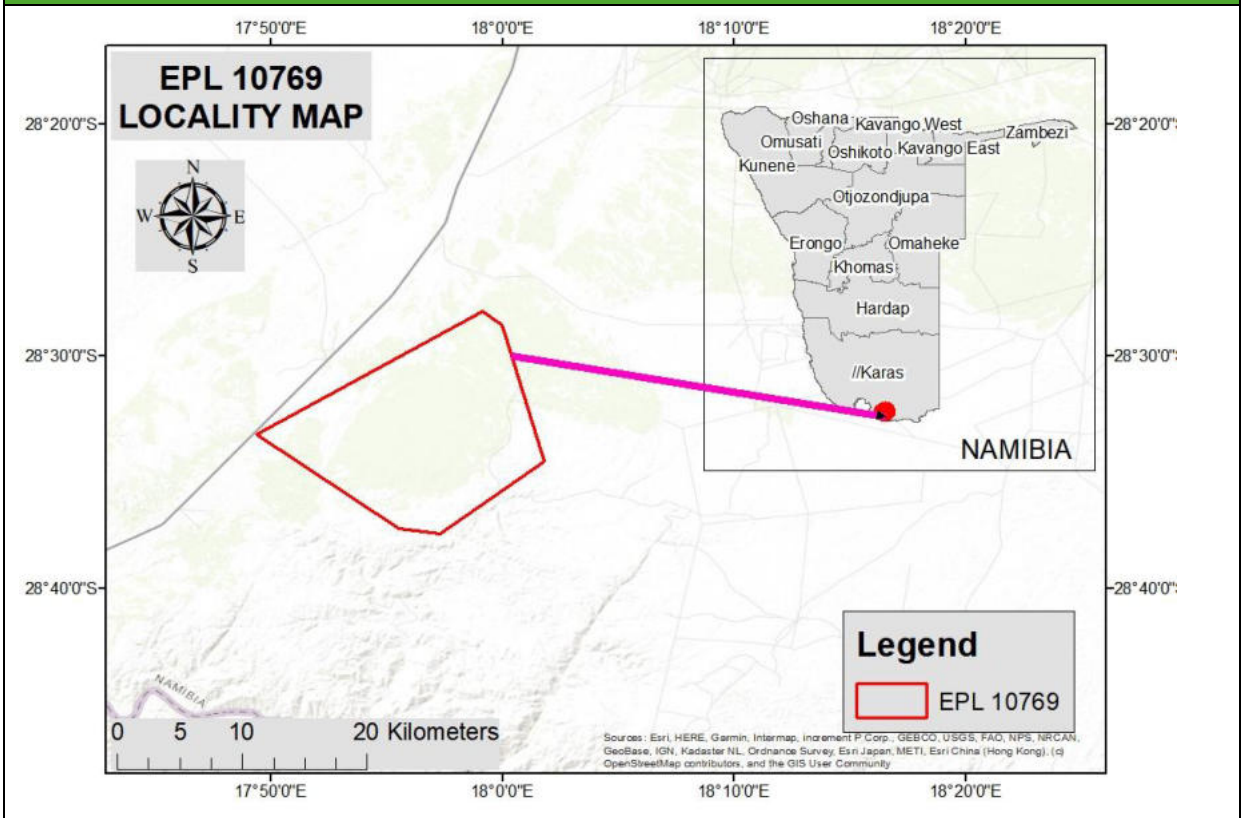
ENVIRONMENTAL SCOPING REPORT: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR DIMENSION STONE AND RARE METALS, INDUSTRIAL MINERALS, PRECIOUS METALS, AND NUCLEAR FUEL MINERALS AT EPL10769, 10KM OUTSIDE THE NOORDOEWER SETTLEMENT, KARASBURG WEST CONSTITUENCY, ||KARAS REGION, NAMIBIA



DOCUMENT REFERENCE NO: 2026 || KALAHARI GEOLOGICAL AND ENVIRONMENTAL SOLUTIONS - EPL NO: 10769

ENVIRONMENTAL SCOPING REPORT: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED EXPLORATION STUDY FOR DIMENSION STONE AND RARE METALS, INDUSTRIAL MINERALS, PRECIOUS METALS, AND NUCLEAR FUEL MINERALS AT EPL10769, 10KM OUTSIDE THE NOORDOEWER SETTLEMENT, KARASBURG WEST CONSTITUENCY, ||KARAS REGION, NAMIBIA

SCOPING REPORT

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Report status	***Final***		

DECLARATION

We hereby declare that:

a. We have the knowledge of and experience in conducting assessments, including knowledge of the Acts, regulations, and guidelines that are relevant to the proposed exploration project.

b. We have performed the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.

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Position: Director/Environmental Assessment Practitioner (EAP)

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS AND ACRONYMS

EMP	Environmental Management Plan
EIA	Environmental Impact Assessment
EC	Environmental Commissioner
SADC	Southern African Democratic Country
RSA	Republic of South Africa
MIME	Ministry of Industries, Mines, and Energy
MEFT	Ministry of Environment, Forestry and Tourism
MAFWLR	Ministry of Agriculture, Fisheries, Water, and Land Reform
DWA	Department of Water Affairs
ML	Mining License
DEA	Department of Environmental Affairs
SM	Site Manager
ENC	Environmental Coordinator
EPL	Exclusive Prospecting License
SF	Site Foreman
PS	Project Staff
PP	Project Proponent
EIA-C	Environmental Impact Assessment Consultant
I&Aps	Interested and Affected Parties
EAs	Environmental Assessments

EXECUTIVE SUMMARY

Kalahari Geological and Environmental Solutions (the proponent) is a Namibian-registered company that has been awarded a preparedness-to-grant letter by the Ministry of Industries, Mines and Energy for exclusive rights to EPL No. 10769. on 08 October 2025. As a condition of the letter, an Environmental Authorization for the EPL no 10769 should be obtained from the Ministry of Environment, Forestry, and Tourism before the EPL is awarded to Kalahari Geological and Environmental Solutions Cc (the Proponent). EPL No. 10769 covers Dimension Stone and Rare Metals, Industrial Minerals, Precious Metals, and Nuclear Fuel Minerals, for which the proponent would like to undertake exploration activities. **Acacia Enviro Consulting** was appointed to conduct the EIA and develop an Environmental Management Plan (EMP) for the proposed project.

Kalahari Geological and Environmental Solutions Cc (the Proponent), a Namibian-registered company, has received a preparedness-to-grant letter dated 8 October 2025 from the Ministry of Industries, Mines and Energy for Exclusive Prospecting License (EPL) No. 10769. As a precondition for the final EPL award, an Environmental Clearance Certificate (ECC) must be obtained from the Ministry of Environment, Forestry and Tourism (MEFT).

EPL No. 10769 targets exploration for Dimension Stone, Rare Metals, Industrial Minerals, Precious Metals, and Nuclear Fuel Minerals. Acacia Enviro Consulting was appointed as the independent environmental assessment practitioner to conduct the Environmental Scoping Assessment and develop an Environmental Management Plan (EMP) for the proposed activities.

Order	Lat Deg	Lat Min	Lat Sec		Long Deg	Long Min	Long Sec	
1	- 28	37	26.00	S	17	55	32.00	E
2	- 28	33	21.00	S	17	49	21.00	E
3	- 28	28	5.00	S	17	59	7.00	E
4	- 28	28	39.00	S	17	59	59.00	E
5	- 28	34	30.00	S	18	01	48.00	E
6	- 28	37	37.00	S	17	57	18.00	E

Certified by:.....
Ministry of Industries, Mines and Energy
Office of the Mining Commissioner
Mining Commissioner
08 OCT 2025

Figure 1: EPL No: 10769 Coordinates

The proposed exploration activities constitute the listed activities under the Environmental Management Act, 2007 (Act No. 7 of 2007) and the Environmental Impact Assessment Regulations, 2012. Accordingly, an ECC is required prior to commencement. This Environmental Scoping Assessment Report, including the EMP, forms part of the ECC application submitted to MEFT.

Exploration methods will commence with non-invasive techniques, including desktop studies, aerial or remote sensing, mineral sampling, and ground-penetrating radar. If mineralization is indicated, a drilling program may follow. Should no viable mineralization be identified, the site will be fully rehabilitated, and the EPL relinquished to the Ministry of Mines and Energy.
The EPL area lies in the arid Nama Karoo biome, approximately 10 km outside Noordoewer Settlement. Annual rainfall ranges from 50 to 150 mm, predominantly during summer (November–March), with peaks in January–February and high variability. Vegetation is sparse dwarf-shrubland with scattered grasses, supporting reptiles, avifauna, and other wildlife (many of which are endemic to the region). Notable nearby features include the Fish River Canyon and Quiver Tree Forest, though the EPL itself contains no visible lichen outcrops or highly sensitive ecological zones.

Acacia Enviro Consulting conducted a comprehensive scoping process, incorporating desktop research and site visits. The assessment identified no significant adverse impacts requiring further detailed investigation. Based on these findings, Acacia Enviro Consulting recommends issuance of the ECC, subject to the Proponent's strict adherence to the following key conditions during implementation of the exploration program:

i. Conduct thematic mapping to identify local land-use plans, potential coexistence areas, and no-go zones.
ii. Apply the precautionary principle/approach prior to any site-specific invasive activities (e.g., trenching or drilling).

iii. Comply fully with all provisions of the EMP and relevant national regulations.
iv. Exclude community tourism, wildlife breeding, and transit areas from detailed exploration activities (e.g., trenching, drilling) or any future mining, as requested by the local community.
v. Where resources permit, support Corporate Social Responsibility initiatives, such as improvements to water supply, education, or health projects in the broader community.
vi. Ensure full rehabilitation of all exploration sites upon completion.
vii. If groundwater is encountered during detailed exploration, support compatible land uses by providing access to freshwater for human consumption, wildlife, and agriculture (as requested by the community or landowners). Groundwater abstraction must include bi-annual water-level monitoring, sampling, and quality testing, with results shared with affected landowners as part of ongoing stakeholder engagement and disclosure requirements for shared resources.

This scoping-level assessment confirms that the proposed exploration can proceed responsibly, with appropriate mitigation measures, aligning with sustainable development principles under Namibia's environmental legislation.

1. INTRODUCTION

1.1. PROJECT BACKGROUND

The proponent, Kalahari Geological and Environmental Solutions, intends to undertake exploration activities for **Dimension Stone and Rare Metals, Industrial Minerals, Precious Metals, and Nuclear Fuel Minerals** covering desktop studies, followed by site-specific activities using techniques such as geophysical surveys, geological mapping, trenching, drilling, and bulk sampling 10km outside the Noordoewer Settlement, Karasburg West Constituency, ||Karas Region (Figure 2) on the following registered EPL No: 10769. Acacia Enviro Consulting was appointed to conduct the EIA and develop an Environmental Management Plan (EMP) for the proposed project.

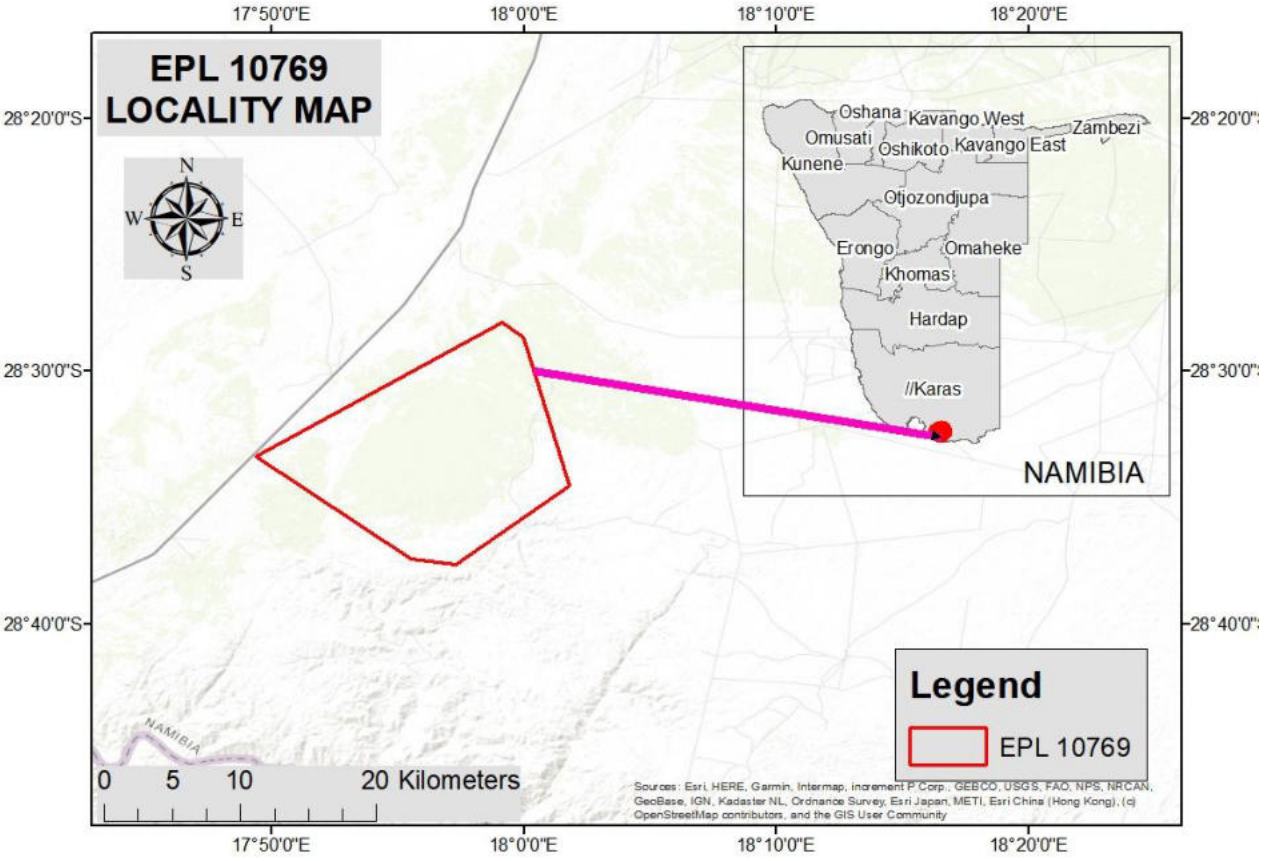

Figure 2: EPL10769 in //Karas Region

In accordance with the Environmental Management Act (2007) and EIA Regulations (2012) an Environmental Impact Assessment (EIA) is required for any "Mining and Prospecting Activities". Acacia Enviro Consulting was appointed to conduct the EIA and develop an Environmental Management Plan (EMP) for the proposed project.

1.2. LOCATION, LAND USE, INFRASTRUCTURE AND SERVICES

1.2.1. Location and Land Use

The EPL No. 10769, totalling 19738.39.9 Ha, is located 10km outside the Noordoewer Settlement, Karasburg West Constituency, ||Karas Region (Fig. 2). EPL falls into an area which primarily features minimal agricultural land use, with farming

being the dominant activity for wildlife and small livestock, goats and sheep. Due to the region's favourable grazing conditions (Fig. 3), in addition to agriculture, the district has areas allocated for small-scale mineral extraction, particularly copper and semi-precious stones.

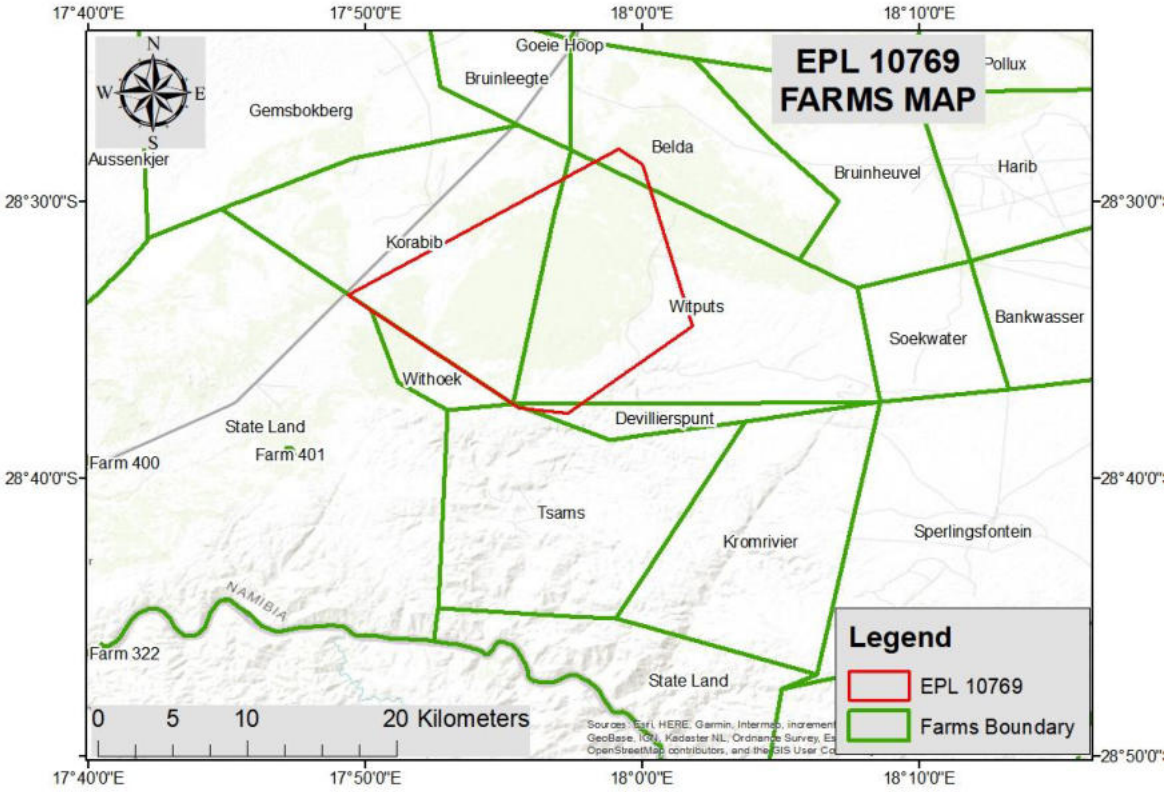

Figure 3: EPL location with farming activities

1.2.2. Supporting infrastructures and Services

The EPL is linked to the national road network by B1. To access the EPL, a short turnoff will be created, or the farm access road will be used, since the area is just off the B1 road. (Fig.4). A number of minor local community tracks cross the EPL area and, with permission from the local community and farm owners, may be used to access exploration areas of interest delineated within the EPL area (Fig.4). The construction of new access, if truly required, shall only be undertaken with strict permission from the local community/farm owner and shall be carried out in accordance with the provisions of the EMP regarding environmental protection. The EPL area lacks mobile services and national and local water; however, electricity infrastructure networks are available (Fig. 4). The proposed mineral exploration activities will not require significant water or energy resources. Sources of water supply for exploration, especially drilling, will be obtained from local boreholes, if available, or from a water tanker truck collecting water from a nearby reliable supply. Electricity supply will be provided by diesel generators and solar power, as required.

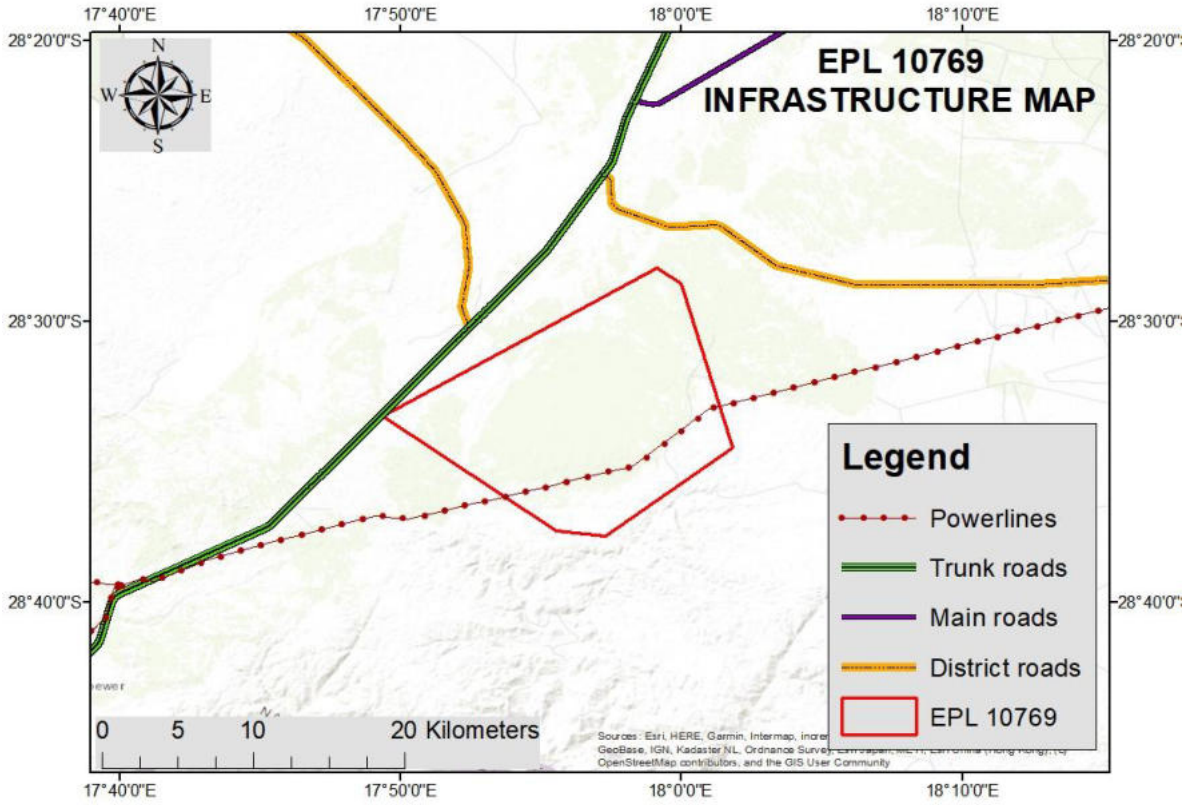

Figure 4: Associated infrastructure near or within the EPL area

1.3. PROJECT MOTIVATION

Several mineral occurrences, such as copper, are known to exist in the general area, linked to the regional geology of the EPL area. The proponent intends to explore/ prospect for all licensed mineral groups. Suppose economic mineral resources are discovered, which can lead to the development of mine. In that case, this will be of great benefit to the sustainability of the mining industry and to Namibia's economic landscape. Mineral's exploration is a key driver of the mining industry and without the discovery of new resources and research, the mining industry will eventually cease to exists in Namibia and so doing will go with a big slice of the national economy and leave a significant gap in state financing, export goods, forex earnings, employment and overall contribution to the Gross Domestic Product (GDP). It is highly important to support each and every exploration effort. Mineral exploration is a long-term and high-risk process and to advance a mineral exploration project from exploration to the application of a Mining License can take up to ten (10) years or more and cost millions of dollars of high-risk capital with zero guarantee for recovering the cost of exploration or discovering a mineable and profitable minerals deposit. The chance of discovering economically viable minerals that could become a mine in any EPL is as low as 0.001%, while the cost of undertaking exploration can run into millions of Namibian dollars. The high risk of capital investment in exploration, with no guarantee of cost recovery, makes it a no-go zone for Governments globally. It is for this reason that mineral exploration is primarily driven by a few international and local investors, including wealthy individuals with an interest in resources and a high appetite for risk financing, as well as international corporations and publicly listed companies.

1.4. PROJECT ALTERNATIVES

The proponent believes that it has sought the best technical, environmental, and economic solution for the proposed prospecting project. The prospecting location is dependent on the local tectonostratigraphy and the potential regional economic geology. Therefore, finding an alternative location for the planned exploration activities is not possible. In other words, the target mineralisation is area-specific, meaning exploration targets are primarily determined by the site's geology (host rocks) and tectonic environment (ore-forming mechanism). The tenement has sufficient surface area that, should an economic-grade stone deposit be defined, there is adequate area for potential tailings storage areas, waste disposal, heap leach pads (if required), and processing facilities.

1.5. THE OBJECTIVES OF THE ENVIRONMENTAL ASSESSMENT PROCESS

The study will involve investigation and assessment of the likely short and long-term positive and negative environmental impacts of the proposed exploration activities, with the following main objectives:

- To prepare an Environmental Impact Assessment report, including details of the proposed exploration.
- Develop an Environmental Management Plan (EMP) based on the outcomes of this study report to support the environmental management of the proposed exploration.

1.6. TERMS OF REFERENCE

Terms of reference" means a document which forms part of a scoping report and sets out how an assessment must be carried out. The terms of reference for the proposed project were set out in accordance with the requirements of the Environmental Management Act (2007) and the Regulation (2012). The steps which were followed are described as follows:

a) a description of all tasks to be undertaken as part of the assessment process, including any specialists to be included if needed.
b) an indication of the stages at which the Environmental Commissioner is to be consulted.
c) a description of the proposed method of assessing environmental issues and alternatives; and
d) the nature and extent of the public consultation processes to be conducted during the assessment process.

2. DESCRIPTION OF THE EXPLORATION

2.1. GENERAL OVERVIEW

The overall aim of the proposed project (exploration and prospecting activities) is to identify potential economic mineral resources, including base, rare, and precious metals, as well as dimension stones, nuclear fuel, and industrial minerals, within the EPL area. The exploration activities to be undertaken, as assessed in this environmental assessment, are as follows:

i. Initial desktop exploration activities (no fieldwork undertaken);
ii. Regional reconnaissance field-based mapping and sampling activities (subject to the positive results of i.
iii. Initial local field-based mapping and sampling activities (subject to the positive results of i. and ii.
iv. Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling (subject to the positive results of i. – iii. Above), and
v. Pre-feasibility and feasibility studies (Subject to positive results of i. – iv. Above).

The scope and scale of the possible fieldwork are very limited, focusing on visiting specific, delineated localities to validate the recommendations from the initial desktop activities.

2.2. INITIAL LOCAL FIELD-BASED ACTIVITIES

The following is a description of the proposed initial desktop exploration activities to be implemented by the proponent as assessed in the EIA report:

i. General evaluation of satellites, topographic, land tenure, accessibility, supporting infrastructures and socioeconomic environment data.
ii. Purchase and analysis of existing Government high-resolution magnetics and radiometric geophysical data.
iii. Purchase and analysis of existing Government aerial hyperspectral, and
iv. Data interpretation and delineating of potential targets for future reconnaissance, regional field-based activities for delineated targets

No fieldwork is envisaged at this stage of the proposed exploration activities, which are expected to last between six (6) and twelve (12) months.

2.3. REGIONAL RECONNAISSANCE FIELD-BASED ACTIVITIES

The following is a detailed outline of the proposed regional reconnaissance field-based exploration activities to be implemented by the proponent, as assessed in the EIA report

i. Regional geological, geochemical, topographical and remote sensing mapping and data analysis;
ii. Regional geochemical sampling aimed at identifying possible targets based on the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken;

iii. Regional geological mapping aimed at identifying possible targets based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken;
    i. Limited field-based support and logistical activities lasting between one (1) and two (2) days, and;
iv. Laboratory analysis of the collected samples, interpretation of the results, and delineation of potential targets for future, detailed site-specific exploration, if the results are positive and support further investigation of the delineated targets.

The scope and scale of the possible fieldwork are very limited, limited to visiting specific, delineated localities to validate the recommendations from the initial desktop activities.

2.4. INITIAL LOCAL FIELD-BASED ACTIVITIES

The following is a detailed outline of the proposed initial local field-based exploration activities to be implemented by the Proponent as assessed in the EIA Report;

i. Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during regional reconnaissance field activities;
ii. Local geological mapping aimed at identifying possible targeted resources based on the results of the regional geological analysis undertaken.
iii. Ground geophysical survey (subject to the positive outcomes of i and ii above)
iv. Possible trenching (subject to the outcomes of i–iii above)
v. Field-based support and logistical activities will be very limited, with a focus on site-specific areas for a very short time (maximum five (5) days) and;
vi. Laboratory analysis of the samples collected, interpretation of the results and delineation of potential targets

Scope and scale of the possible field work is very limited, working on specific delineated localities in order to assess the economic viability of the target/s

Detailed Local Field-Based Activities

The following is a detailed outline of the proposed local field-based exploration activities to be implemented by the Proponent as assessed in the EIA report if economic and viable targets are delineated within the EPL area:

i. Access preparation and related logistics to support activities;
ii. Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during the initial field-based activities;
iii. Local geological mapping aimed at identifying possible targets based on the results of the regional geological analysis undertaken, and
iv. Ground geophysical survey, trenching, drilling and sampling (subject to the positive outcomes of i and ii above)

Scope and scale of the possible field work is likely to be extensive over a localised, specific, delineated locality in order to assess the economic viability of the target/s

2.5. PRE-FEASIBILITY AND FEASIBILITY STUDIES

The following is a detailed outline of the proposed prefeasibility and feasibility studies related to exploration activities to be implemented by the proponent, as assessed in the EIA report, if economic and viable targets are delineated within the EPL area:

i. Detailed site-specific field-based support and logistical activities, surveys, and detailed geological mapping;
ii. Detailed drilling, bulk sampling, and testing for ore reserve calculations;
iii. Geotechnical studies for mine designs;
iv. Mine planning and designs, including all supporting infrastructures (water, energy and access) and test mining activities;
v. EIA and EMP to support the ECC for mining operations, and
vi. Preparation of a feasibility report and application for a mining license

Field-based support and logistical activities will be extensive, as local field activities will be undertaken in a specific area for an extended period (up to 1 year, or longer in some instances). The activities will be supported by existing tracks and campsites/lodging facilities in the area.

3. LEGAL AND REGULATORY FRAMEWORK REVIEW

The national regulations governing mineral exploration in Namibia fall within the jurisdiction of the Ministry of Industries, Mines, and Energy (MIME). The Minerals (Prospecting and Mining) Act (No. 33 of 1992) is the most important legal instrument governing the mining and prospecting industry in Namibia.

The Minerals (Prospecting and Mining) Act (No 33 of 1992) regulates reconnaissance licenses, prospecting licenses, and the mining of minerals, dimension stone or rocks. The Act details reporting requirements for monitoring activities and environmental performance, including disposal methods and rehabilitation. The Mining Commissioner, appointed by the Minister, is responsible for implementing the provisions of this Act and the associated regulations, including the Health and Safety Regulations. The Minerals Act contains several explicit references to the environment and its protection, providing for environmental impact assessments, the rehabilitation of prospecting and mining areas, and the minimisation or prevention of pollution.

3.1. MINERAL ACT OF 1992 AND THE TYPES OF LICENSES IT REGULATES

Below is an outline of the Mineral Act, linking the type of license it regulates, project activities at each license stage, and the environmental requirements (**Table 1**).

Table 1: Types of licenses regulated by the Mineral Act of 1992, activities and environmental requirements

Types of licenses	Activities	Environmental Requirements
Exclusive Reconnaissance License (ERL)	1. Project Identification, 2. Reconnaissance	None Complete Environmental Questionnaire
Exclusive Prospecting License (EPL)	Exploration based on the following steps: Desktop study, Detailed Mapping, Geophysical methods, Drilling and Bulk Sampling.	Scoping Report, Environmental Impact Assessment (EIA)

Types of licenses	Activities	Environmental Requirements
Mining License	Preconstruction and Construction, Operation and Ongoing Monitoring, Decommissioning, Closure, Restoration, and Aftercare	Full Environmental Assessment, covering Scoping, Environmental Impact Assessment (EIA) and the development of and Environmental Management Plan (EMP)covering the complete project lifecycle, including preconstruction, construction, operation, ongoing, decommissioning and aftercare. Aspects of the Environmental Management Plan are usually incorporated into Environmental Management Systems

3.1.1. Legal instrument relevant to this project

Various legal instruments address the environmental impacts of prospecting and exploration. Table 2 shows the summaries of the legislation that are relevant to this project:

Table 2: Legal instruments relevant to this project

Topic	Legislation	Provisions	Regulatory Authority
Mineral exploration	Mineral (Prospecting and Mining) Act of 1992	The Minerals Act of 1990 governs prospecting for and mining of minerals. The Act provides for reconnaissance, prospecting, and mining licenses, and for the disposal of minerals and the exercise of control over minerals in Namibia.	Ministry of Industries, Mines and Energy
Environmental Impact Assessment	Environmental Management Act of 2007 and EIA Regulation of 2012	Provides a list of activities that require an environmental assessment, including exploration. Activities such as exploration, prospecting, or mining for minerals. The Act also provides procedures for adequate public participation in the environmental assessment process, allowing interested and affected parties to voice and register their opinions and concerns about a project.	Ministry of Environment, Forestry and Tourism

Topic	Legislation	Provisions	Regulatory Authority
Water Supply and Effluent Discharge	Water Resources Management Act of 2004	This Act provides provisions for the control, conservation and use of water for domestic, agricultural, urban and industrial purposes. The Act states that a license or permit is required to abstract and use water, and also to discharge effluent. In accordance with the Act, and due to the nature of the project, abstraction and use permits won't be required for this project, as an on-site water tank (500L) will be used. The capacity of the onsite tank is less than the 20000 m3 benchmark for the water work permit. Effluent (i.e. Human Waste) from the mobile toilet will be discharged at the Okahandja Municipality sewerage system. No effluent will be discharged on a watercourse. Wastewater from dust suppression will be minimal, and the water is expected to evaporate faster than it infiltrates. Therefore, no effluent discharge permits will be required for this project	Ministry of Agriculture, Fisheries, Water, and Land Reform
Hazardous substances such as used oil (e.g. diesel)	Hazardous Substance Ordinance 14 of 1974	The Act 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"	Ministry of Health and Social Services

Topic	Legislation	Provisions	Regulatory Authority
Fauna and flora	The Nature Conservation Ordinance, Ordinance of 1975,	In the course of the Mine's activities, care must be taken to ensure that protected plant species and the eggs of protected and game bird species are not disturbed or destroyed. If such destruction or disturbance is inevitable, a permit must be obtained from the Minister of Environment and Tourism. For this project, due to its areal extent and location outside a protected area, a permit will not be required. .	Ministry of Environment, Forestry and Tourism (MEFT)
Used oil	Petroleum Products and Energy Act 13 of 1990	The Act provides provisions for any certificate holder or any other person in control of activities related to any petroleum product, who is obliged to report any major petroleum product spill (defined as a spill of more than 200ℓ per spill) to the Minister. Such a person is also obliged to take all steps as may be necessary to comply with good petroleum industry practices to clean up the spill. Should this obligation not be met, the Minister is empowered to take steps to clean up the spill and to recover the costs thereof from the person. Used oil from this project will be disposed of at the Walvis Bay Municipality Hazardous Waste Site. Permission from the facility owner will be required prior to the dumping of used oil.	Ministry of Industries Mines and Energy
Employees	The Labour Act, 2007 (Act No. 11 of 2007)	The Labour Act gives effect to the constitutional commitment of Article 95 (11), to promote and maintain the welfare of the people. This Act is aimed at establishing a comprehensive labour law for all employees; to entrench fundamental labour rights and protections; regulate basic terms and conditions of employment; to ensure the health, safety, and welfare of employees	Ministry of Labour and Social Welfare

Topic	Legislation	Provisions	Regulatory Authority
Archaeological sites	National Heritage Act 27 of 2004 Ministry of Youth	This Act provides provisions for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. The proposed exploration project will ensure that if any archaeological or paleontological objects, as described in the Act, are found in the course of its construction, mining operations or closure, such a find is reported to the Ministry immediately. If necessary, the relevant permits must be obtained before disturbing or destroying any heritage.	National Service, Sport, and Culture
Desertification	United Nations Convention to Combat Desertification 1992	The convention objective is to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability	United Nation Convention
Biodiversity	Convention on Biological Diversity (CBD) 1992	This convention advocates for the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilisation of genetic resources.	United Nation Convention

3.2. REGULATORY AUTHORITIES AND PERMITTING

The environmental regulatory authorities responsible for environmental protection and management in relation to the proposed exploration project, including their role in regulating environmental protection, are listed in Table 3. Table 3 below shows an extract from the legal instruments of the regulating authorities regarding the permits/licenses required for the proposed exploration study.

Table 3: The regulatory authority and permitting

Activities list	Applicable Legislation	Permitting Authority	Current Status
Exploration for minerals	Minerals (Prospecting and Mining) Act, 1992	Ministry of Mines, Industries, and Energy	Field Work to follow up on the issue of Environmental Clearance
EIA Clearance for Exploration	Environmental Policy and Environmental Management Act (Act No. 7 of 2007)	Ministry of Environment, Forestry and Tourism (MEFT)	To be applied to completion of this EIA and EMP Report for Exploration

Activities list	Applicable Legislation	Permitting Authority	Current Status
EIA Clearance for Mining	Environmental Policy and Environmental Management Act (Act No. 7 of 2007)	Ministry of Mines and Energy	To apply if Economic Resources are Discovered and Project Advances to Feasibility and if the Feasibility Proves Positive
Construction, alteration of Waterworks with the capacity to hold in excess of 20,000L. The abstraction of water other than that provided by Nam Water. Discharge of effluents or construction of effluent facility or disposal site	Water Resources Management Act, 2004 (No. 284 of 2004).	Ministry of Agriculture, Water and Land Reform	To Apply when Required
Removal, disturbances or destruction of bird eggs	Nature Conservation Ordinance 4, 1975.	Nature Conservation Ordinance 4, 1975.	To Apply when Required
Removal, destruction of indigenous trees, bushes or plants within 100 yards of a stream or watercourse	Forestry Act, 12 of 2001	Ministry of Water Affairs and Forestry (MWAF)	
Discarding or disposing of used oil	Petroleum Products and Energy Act 13 of 1990	Ministry of Mines and Energy (MME).	
Construction of waste Disposal sites.	Environmental Policy and Environmental Management Act (Act No. 7 of 2007)	Ministry of Environment, Forestry and Tourism (MEFT)	
License to Purchase store and the use of explosives	Explosives Act 26 of 1956 (As amended in SA to	Ministry of Safety and Security in	
Magazines for Blasting	April 1978),	consultation with Ministry of Mines and Energy (MME).	

3.3. CONCLUDING REMARK ON THIS SECTION

In this section, information on the relevant legislation and policies for the project, the types of licenses required, and the permits was presented. The relevant regulatory authorities for the project were also mentioned in this section.

4. RECEIVING ENVIRONMENT

4.1. SOCIAL-ECONOMIC ENVIRONMENT

4.1.1. ||Karas Region socio-economic perspectives of the project area

Karasburg West has a population of 17,741, making it one of the most populous constituencies in the //Karas Region, which has a total population of 109,893. Karasburg West displays a mixed socioeconomic profile characterised by a relatively young population, moderate educational attainment, and limited formal economic activities (NSA, 2024). A higher population is noted in the working-age groups (20–39 years). Education levels indicate that the majority have attained secondary education, but access to higher education remains low, with only 306 people having tertiary qualifications. Income sources are heavily dependent on salaries and wages, likely from agricultural activity, given that it is the primary economic activity in the area. While the majority are employed, a notable portion of the population (449 people) reports having no stable income. Access to drinking water varies, with many relying on public piped water and others depending on potentially unsafe sources, such as rivers, streams, or open tanks. The main source of energy for cooking is gas and wood/firewood, while battery-powered devices are used for lighting. Sanitation is also a major concern in the area, as ablution facilities are not available to the majority of the population.

Overall, while there are signs of socio-economic participation and basic education, Karasburg West faces challenges in income diversity, employment security, and access to safe water, pointing to broader developmental needs.

Two major settlements in the Project's sub-region are Noordoewer and Aussenkehr, with respective populations of approximately 5,000 and 7000-30000 in 2023. The region is predominantly characterised by irrigation-supported agricultural activities with numerous farms situated along the Orange River. Principal crops include grapes, lucerne and vegetables.

Aussenkehr, the larger of the two settlements, is situated approximately 60 km west of Noordoewer and 70 km from EPL no. 10769. The broader agricultural complex has been expanded over the past 20 years, growing from 381 ha under irrigation in 1985 to 1,385 ha in 2018. The primary agricultural activity is the production of table grapes for export. Both communities face similar development challenges, including large informal settlements, illegal dumping stemming from ineffective solid waste management, and suboptimal health services. Anticipated impacts associated with the development include changes to the region's current economic landscape (economic opportunities and impacts) and population influx (social impacts). These impacts will be confirmed and assessed against the current baseline towards the implementation of mitigation measures in line with the mitigation hierarchy.

4.2. ARCHAEOLOGY AND HERITAGE SITES

An archaeological field survey and assessment of EPL no. 10769 were conducted in early 2026, and low- to no-significance heritage sites were identified. All site locations have been continuously considered in the planning of exploration activities. It is recommended that specific mitigation measures be adopted, including further investigation of the sites and their demarcation as "no-go" sites. It is also proposed

that the heritage authorities consider measures to protect the most important historical sites from any future damage during exploration operations.

4.3. WATER RESOURCES

4.3.1. General hydrology of the study area

The EPL no 10769 straddles the Volstruis River, a tributary of the Haib River, which is an ephemeral tributary of the Orange River, located approximately 20 km south of the deposit area (Fig.5). Local water resources are limited to the Orange River and groundwater. All of the streams within the area are ephemeral but can flow very strongly after summer storm rainfall.

The Volstruis River catchment is 22.6 square kilometres (km2) in size, compared to the Haib River catchment of 3,610 km2. Small Annual Exceedance Probability (AEP) storms have low runoff potential (e.g., a 2-year AEP storm has a runoff coefficient as low as 0.0003), as the dry soil and the river's ephemeral nature mean that low storm depths mostly result in infiltration. Larger storms have greater runoff potential once the riverbeds become saturated (e.g., the 50-year AEP storm has a runoff coefficient of 0.19). The Volstruis River contributes less than 1% of runoff volume to the Haib River. Due to the small catchment size, the sediment potential in the Volstruis River is not considered high, with sediment loads expected to be approximately 4,000 tonnes per annum. Infiltration in the river basin is expected to be typical of clean sands and sand-gravel mixtures, with permeability rates in the range of 10 - 2 and 10 - 4 metres per second (m/s). Due to the limited surface-water features in the Project area and the limited rainfall, except for high-intensity events during the summer wet periods, the anticipated impacts are limited to stormwater management requirements and the maintenance of natural inflows to the Orange River via the Haib River.

The Orange River is a shared watercourse between Lesotho, South Africa, Botswana and Namibia. To align the member states of the shared watercourse, the Orange-Senqu River Commission (ORASECOM) was established in 2000. The aim of ORASECOM is to develop and manage a comprehensive basin perspective, determine water use and plan for future use and interventions, determine flow monitoring requirements, and conduct flood management. The Project’s water demand is estimated to be minimal during the exploration phase, with supply being investigated from local boreholes or a water tanker.

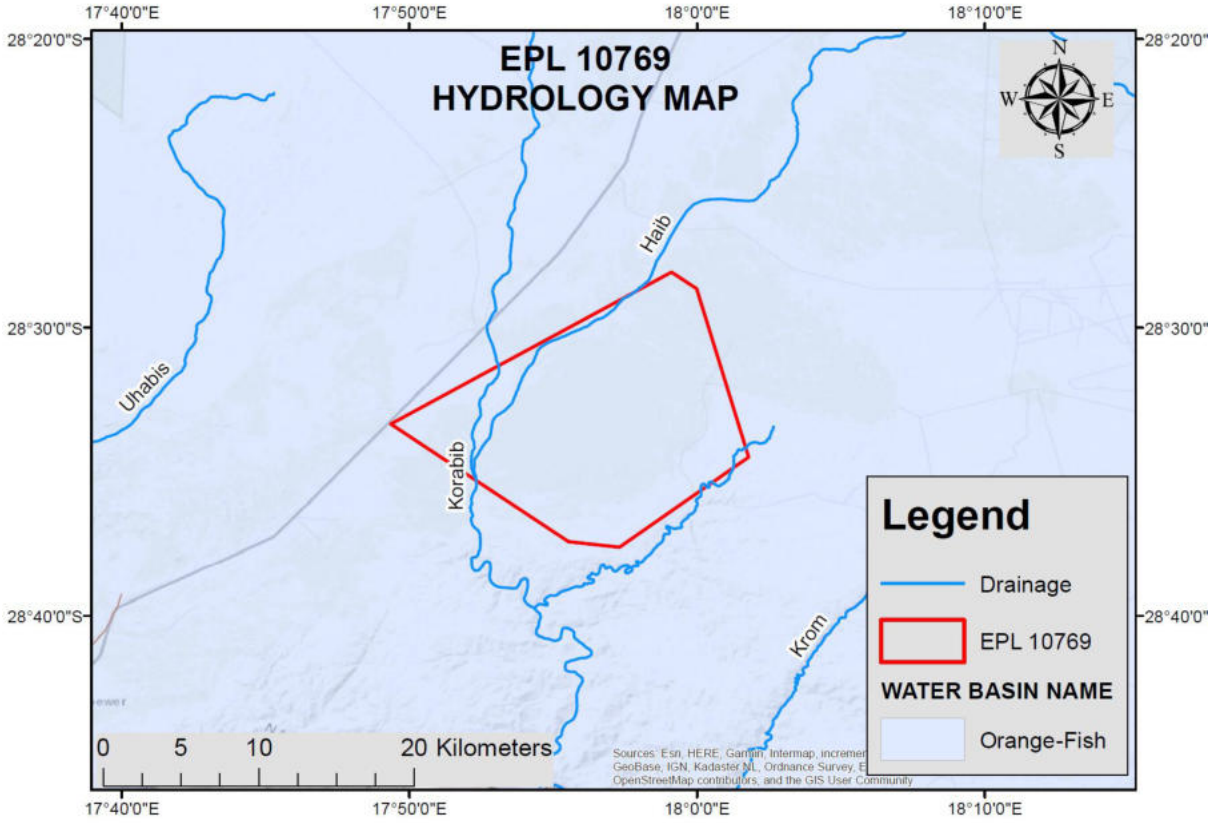

Figure 5: Hydrology of EPL 10769

4.3.2. General hydrogeology

EPL 10769 (Haib Copper Project) lies within a Namibian hydrogeological zone with very low to limited groundwater potential, typical of the fractured hard-rock basement terranes in southern Namibia's Karas Region near the Orange River (Christelis & Struckmeier, 2011; Namibia Hydrogeological Map). Borehole yields in the vicinity (within ~50 km) generally range from **0 to 2.7 L/s**, with most falling at the lower end (0–0.1 L/s) in fractured zones.

Groundwater occurs primarily in secondary porosity (fractures and joints) within the Palaeoproterozoic volcanic and plutonic rocks of the Orange River Group and Vioolsdrift Intrusive Suite. These fractured aquifers exhibit poor fracture connectivity, decreasing aperture with depth, and very low primary hydraulic conductivity in fresh rock. As a result, sustainable yields are minimal, and the units function as poor aquifers overall.

Ephemeral drainage lines show little to no hydraulic connection with the underlying aquifers, with no observable groundwater baseflow contribution to surface streams. Consequently, any groundwater abstraction (e.g., for exploration or potential future operations) is expected to produce a limited drawdown cone, with negligible impact on surface streamflow volumes or on the perennial Orange River, located ~9–15 km away. Project water supply planning, therefore, focuses on surface sources, primarily abstraction from the Orange River, rather than local groundwater, aligning with the region's constrained subsurface resources and ongoing environmental studies (Koryx Copper technical reports, 2024–2025).

4.4. GEOLOGY OF THE AREA

EPL 10769 lies within the Richtersveld Subprovince of the Namaqua-Natal Province and is underlain by Palaeoproterozoic (ca. 1,800–2,000 Ma) volcanic and plutonic rocks of the Orange River Group (ORG) and Vioolsdrift Intrusive Suite (VIS) (Miller 2008) (Fig.6. The basement succession comprises the Haib Subgroup of the ORG, dominated by feldspar-porphyritic andesite with subordinate intercalated rhyolite, particularly in the northern sector. These volcanics are intruded by the VIS, a suite of granodiorite- to granite-batholiths. Geochemical similarity between the ORG lavas and VIS intrusions indicates they are cogenetic and comagmatic. The entire basement package has been subjected to regional greenschist-facies metamorphism yet remains remarkably fresh and only weakly altered for its age. In the central portion of the licence, the basement is unconformably overlain by Karoo Supergroup sediments of the Karasburg Rift Basin. These comprise a basal tillite containing clasts of Vioolsdrift and Haib basement rocks, grading upward into limestones, siltstones and shales. Both the basement and Karoo cover are cut by a prominent swarm of northwest-trending, late-Cretaceous dolerite-gabbro dykes and sills.

Local Lithostratigraphy

The western half of EPL 10769 is underlain by Haib Subgroup volcanics, which are unconformably overlain by Karoo sediments on the eastern half. The dominant lithology is feldspar-porphyritic andesite, with minor rhyolite flows and tuffs in the north. VIS intrusions form large, concordant to semi-concordant batholiths that cross-cut and locally engulf the Haib volcanics. All basement units exhibit a pronounced east-west elongation and a preferred orientation, interpreted as the primary arc-parallel fabric.

Structure

Two major east-west shear zones transect the property. The northern shear zone, located immediately north of the deposit, is relatively narrow (20–50 m wide). The southern shear zone, several kilometres south of the deposit, is significantly broader and locally exceeds 1 km in width. Structural data show that the majority of veins, faults and shear fabrics trend east-west and dip moderately to steeply south. A subordinate population trends north-south and dips east. Most individual faults display only metre-scale offsets, although a small number exhibit larger displacements (Fig 10). The two principal shear zones accommodate the bulk of the regional strain. This revised version is concise, logically structured (regional → local lithostratigraphy structure), uses consistent professional terminology, eliminates repetition and awkward phrasing, and maintains full fidelity to the original content while significantly improving readability and scientific tone.

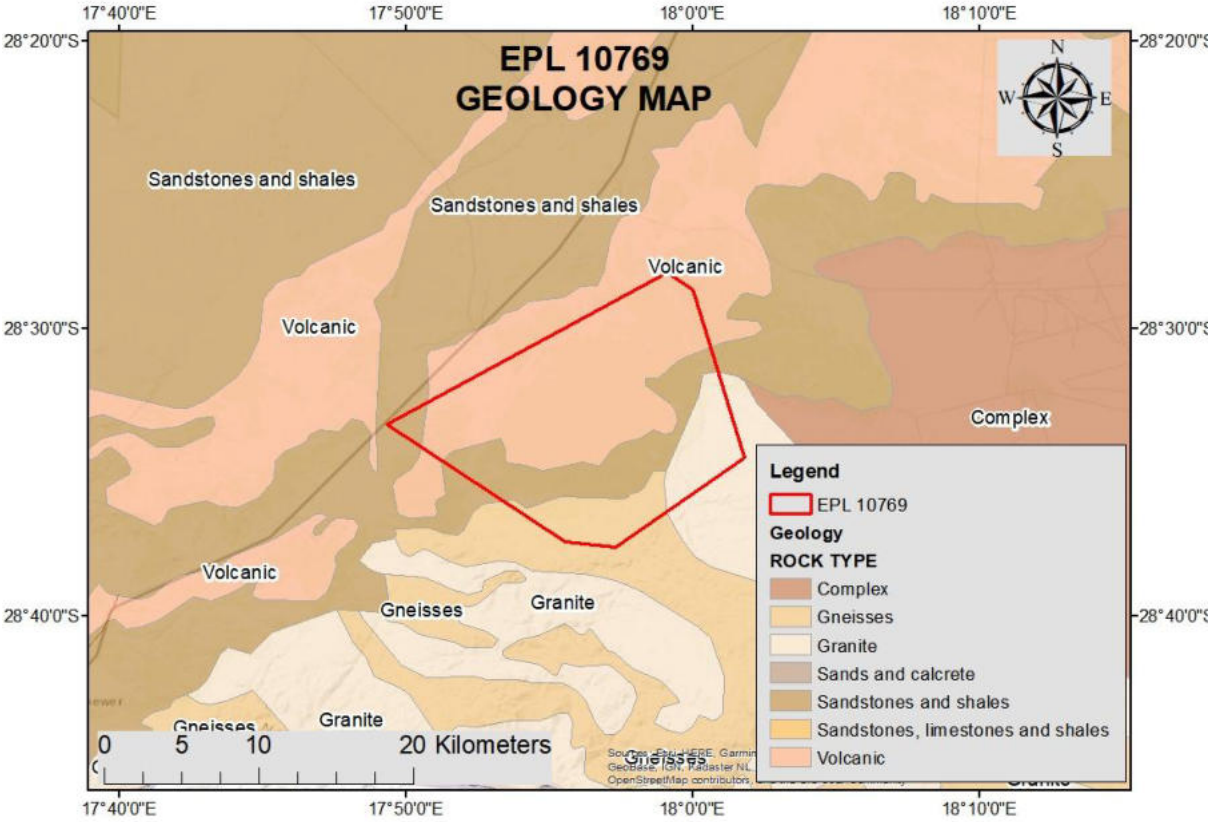

Figure 6: Geology of EPL10769

4.5. BIODIVERSITY (FAUNA AND FLORA)

EPL 10769 lies within the Nama-Karoo Biome (Karas Dwarf Shrubland transitioning to Northwestern Escarpment and Inselbergs vegetation types), an arid landscape of open grasslands, dwarf shrubs, succulents, and scattered trees, grading into Succulent Karoo elements (Mendelsohn et al., 2022) (Fig.7).Terrestrial biodiversity is low overall, with average endemism. Expected/known species include ≥53 reptiles, 11 amphibians, 64 mammals, 153 breeding-resident birds, ≥54 larger trees/shrubs (>1 m), and up to 49 grasses, with a notable proportion of regional endemics. Key taxa of conservation concern Reptiles: Bushman Tortoise (Psammobates tentorius veroxii) and Nile Monitor (Varanus niloticus).

Amphibians: Up to 11 species are possible near the Orange River; the Marbled Rubber Frog (Phrynomantis annectens) is the most notable endemic, but it is widespread and not restricted to a single site. No amphibians or breeding habitat were observed during fieldwork.

Mammals: 6 endemics (9.4%). IUCN Vulnerable: Leopard, Black-footed Cat, Hartmann's Mountain Zebra; Near Threatened: Straw-coloured Fruit Bat, Brown Hyena, African Clawless Otter. Namibian protected: Angolan Hairy Bat, Black-footed Cat, Cape Grey Mongoose. Most are river-associated or transient; none are exclusively site-dependent.

Birds: Notable endemics (e.g., Rosy-faced Lovebird) and IUCN-listed species: Critically Endangered (White-backed Vulture); Endangered (Ludwig's Bustard, Lappet-faced Vulture); Vulnerable (Black Harrier, Tawny Eagle, Martial Eagle,

Secretarybird); Near Threatened (Kori Bustard), among others (Simmons et al. 2015).

Flora: ≥9 Namibian Red Data Book species, including endemic Moraea garipensis, rare Aloe meyeri, Othonna cyclophylla, Ozoroa namaquensis, and near-threatened Lapidaria margaretae. Key succulents/herbs (e.g., Aloe gariepensis, Hoodia gordonii, Tylecodon rubrovenosus) occur mainly on rocky outcrops/plateaus. No important plants are exclusively site-associated; grasses are unremarkable.

Sensitive areas to avoid/minimise disturbance:

- Orange and Haib River riparian zones
- Ephemeral drainage lines
- Rocky outcrops and elevated plateaus
- Booted Eagle nest sites
- Migratory bird flyways

Exploration and infrastructure planning should avoid these features to preserve wildlife corridors and habitat connectivity in an already anthropogenically disturbed landscape.

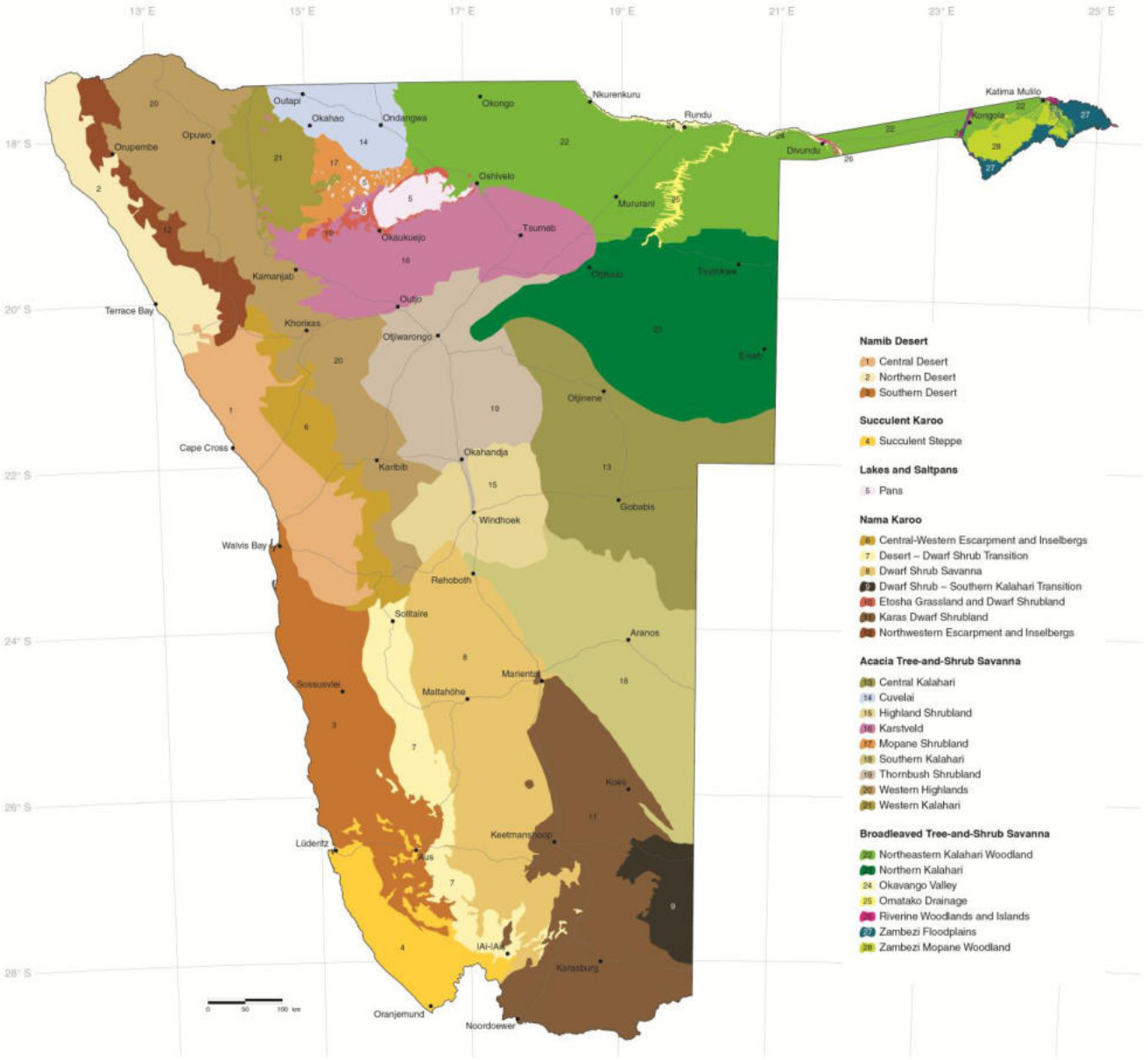

Figure 7: Biomes found in Namibia and the project area

4.6. TOPOGRAPHY AND LANDSCAPE

The topography is varied, characterised by relatively flat gradients in the west and extensive hills with prominent dolerite sills in the east, within the Gomkab Basin. Elevations vary from 200 to 700 metres above mean sea level (mamsl). The topography across most of the EPL area is rocky and sediment-covered, with undulating hills featuring gentle rises and dips.

4.7. CLIMATE

The EPL 10769 area (Haib Copper Project), located in southern Namibia near the Orange River in the Karas Region, experiences a hyper-arid to arid subtropical climate typical of the Richtersveld and adjacent low-altitude zones.

Precipitation: Annual rainfall averages 25–50 mm, with most falling during the summer months (November–March) as short, intense thunderstorms . Winter precipitation (May–September) is rare, typically light drizzle or occasional heavier events. Rainfall is highly variable year-to-year, often resulting in prolonged droughts interspersed with infrequent wetter periods. This extreme variability severely limits surface water availability and agricultural potential, necessitating careful water resource management and reliance on the perennial Orange River as a potential supply source (Namibia Meteorological Service data; technical reports on the Haib Project, 2024).

Temperature: The region features hot summers and mild winters, with large diurnal ranges. Summer maximum temperatures frequently exceed **40°C** (occasionally reaching mid-40s °C or higher in low-lying areas), while winter minimum temperatures can drop to **0°C** or below, with occasional frost. Daytime winter temperatures remain pleasant (often 20–25°C), but nights cool significantly. High evaporation rates and low humidity exacerbate aridity, contributing to sparse vegetation and a rugged landscape (Namibia Climate Atlas; regional climate descriptions).

4.8. POTENTIAL IMPACT IDENTIFIED

4.8.1. Positive impacts

- Employment creation
- Support for local retail shops
- Export taxes and VAT payment
- Provision of infrastructure, i.e. roads
- increase the demand for goods and services in remote and impoverished towns

4.8.2. Negative impacts

- Liquid waste: oil spillage and wastewater
- Solid waste: wires, drill bits, and human waste
- Biodiversity: fauna and flora
- Air pollution
- Noise pollution
- Water resources

4.9. CONCLUDING REMARK ON THIS SECTION

In this section, the affected environment was described. The social and biophysical environmental information was provided, and the project's potential positive and negative impacts were identified.

5. PUBLIC CONSULTATION PROCESS

5.1. LEGAL AND POLICY REQUIREMENTS

5.1.1. Environmental Management Act (2007) and its EIA regulations (2012)

Public consultation forms a cornerstone of Namibia's Environmental Impact Assessment (EIA) process, enabling stakeholders and the public to access project information, raise concerns, and influence decision-making. The process is governed by the **Environmental Management Act, 2007 (Act No. 7 of 2007)** and the **Environmental Impact Assessment Regulations, 2012 (Government Notice No. 30 of 2012)**. Key objectives of the Act (Section 2) include preventing and mitigating significant environmental effects by:

- Ensuring timely participation of interested and affected parties (I&APs) throughout the assessment; and
- Incorporating assessment findings into decisions on listed activities.

Core principles (Section 3) emphasise the promotion of the participation of all I&APs, with decisions that account for their interests, needs, and values.

Regulation 21 details mandatory public consultation steps, requiring the proponent to notify potential I&APs by:

- Displaying a conspicuous notice board at the site boundary or fence;
- Providing written notice to:
  - Owners and occupiers of adjacent land;
  - Relevant local authority, regional council, and traditional authority;
  - Any organ of state with jurisdiction over aspects of the activity; and
- Publishing advertisements once a week for two consecutive weeks in at least two widely circulated Namibian newspapers.

Notices must include project details, location, nature of the activity, submission to the Environmental Commissioner, availability of further information, and procedures for submitting representations. The process must provide accessible, relevant information and reasonable opportunities for comment (Regulation 21(6)). Notification methods (Regulation 28) include personal delivery, registered post, or other specified means to ensure effective communication.

5.2. CONSULTATION APPROACH

To comply with legal requirements and facilitate meaningful engagement, the following steps were implemented:

- A Background Information Document (BID) was prepared, summarizing the proposed exploration activities, potential impacts, and mitigation measures. The BID was distributed digitally (via email and website) and served as an invitation for I&APs to register concerns (Appendix D).
- Advertisements inviting registration and comment were published in Confidente and New Era newspapers for two consecutive weeks (Appendix B). These measures aligned with Regulation 21, targeting a broad reach in relevant regions.

5.3. THE INTERESTED AND AFFECTED PARTIES (I & AP'S)

I&APs were identified using:

- The consultant's existing Kalahari Geological and Environmental Solutions stakeholder database;
- Responses to newspaper advertisements inviting public registration; and
- Targeted selection of organizations likely to be interested or affected (e.g., government agencies, local authorities, NGOs, adjacent landowners).
    - An I&AP is defined (Regulations) as any person, group, organization interested in or affected by the activity, or any organ of state with jurisdictional relevance.
    - A register of registered I&APs was maintained and updated throughout the process.

5.4. THE OUTCOME OF THE PUBLIC CONSULTATION MEETING

Interested and Affected Parties were notified about the project via email. Only one response was received, requesting the BID or further project information via email. No comments were received, and therefore, no public meeting was requested or held, and no formal representations or concerns were submitted during the consultation period (Appendix E).

5.5. CONCLUDING REMARK ON THIS SECTION

This section outlines the legal framework, consultation methods, I&AP identification, and outcomes of the public participation process for the EPL 10769 exploration activities. The approach adhered to the Environmental Management Act 2007 and EIA Regulations 2012, ensuring transparency, accessibility, and opportunity for input. While engagement was limited (no registrations or comments were received), it satisfied statutory requirements and confirmed that there were no significant stakeholder concerns at this stage. All records are appended for reference.

6. IMPACT ASSESSMENT

6.1. THE METHODOLOGY USED OR ADOPTED FOR THE IMPACT ASSESSMENT

The impact assessment methodology developed by Acacia Enviro Consulting follows standard Namibian EIA practice under the Environmental Management Act (2007) and the EIA Regulations (2012). It relies on a desktop review of available literature, baseline data, previous EIAs/EMPs for similar mineral exploration in Namibia and surrounding areas, and relevant regulatory documents.

Key sources reviewed include:

- Environmental regulations (environment, water, energy, health & safety) and associated policies/guidelines;
- Mining regulations and introductory information from the Office of the Mining Commissioner, Ministry of Industries, Mines and Energy;
- Topographic maps, location data, and site characteristics for EPL 10769 (note: assumed reference to the relevant licence area);
- Biodiversity and natural environment datasets from the Directorate of Environmental Affairs, Ministry of Environment, Forestry and Tourism.
- Regional/local geology, geological maps, published materials, and open-file documents from the Directorate of Geological Survey, Ministry of Industries, Mines and Energy.

Potential impacts were identified from baseline conditions, legal requirements, and public participation inputs. Significance was determined using a qualitative, criteria-based approach that combined nature, extent, duration, intensity, probability, cumulative effects, and confidence in predictions.

Table 4: Definition of criteria for assessing the significant impact

Criterion	Description / Rating Categories
Nature	Type of effect on the environmental component ("what will be affected and how?") – e.g., direct/indirect, positive/negative.
Extent	Spatial scale: Site-specific; Local (<15 km); Regional (~100 km); National (Namibian coastline); International (beyond borders).
Duration	Temporal scale: Short-term (days to <1 month); Medium-term (months to <1 year); Long-term (years to <10 years); Permanent (>10 years or generational).
Intensity / Magnitude	Severity: None (no impact); Low (negligible effect on functions/processes); Medium (noticeable modification but functions continue); High (functions cease temporarily/permanently or exceed standards).
Probability	Likelihood: Improbable (low); Probable (distinct possibility); Highly probable (most likely); Definite (will occur regardless of measures).
Degree of Confidence	Based on availability of specialist knowledge/data: Low, Medium, High.

Significance rating integrates the above criteria (with emphasis on nature, extent, duration, and intensity) and is modified by probability and confidence. Ratings are qualitative:

Table 5: Definitions of various significant ratings

Significance Rating	Criteria / Implications
Low	Negligible environmental impact; no modifications or mitigations required. Typically applies to impacts of any magnitude if site-specific, temporary/short-term.
Medium	Influence on the environment requires design modifications and/or mitigation. Typically moderate magnitude, local to regional extent, short- to medium-term.

High	Significant influence; negative high-significance impacts may imply 'no-go' unless fully mitigated. Typically high magnitude, local (>1 month) or regional/beyond, long-term/permanent. Positive high impacts are beneficial and should be enhanced.

This methodology ensures transparent, consistent evaluation aligned with Namibian EIA requirements (e.g., assessment of significance, mitigation potential, and cumulative effects).

6.2. IDENTIFICATION OF KEY ISSUES

Potential impacts were screened against baseline data, legal triggers, and stakeholder inputs to determine which require full assessment and which are manageable through standard mitigation in the EMP. Screening followed a decision-tree process (flowchart described below) considering proponent responsibility, sufficiency of existing information, and availability of mitigation.

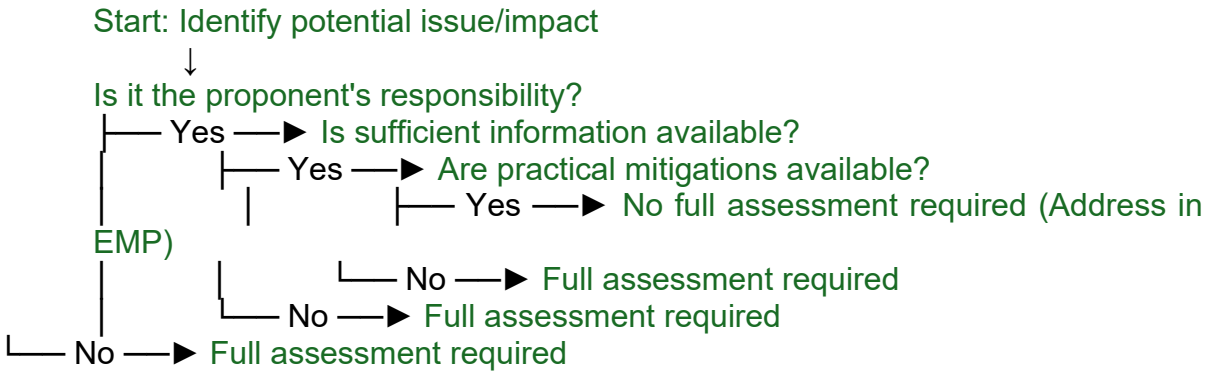

Table 6: Potential significant impact screening process

Issue / Impact	Proponent Responsibility	Sufficient Info Available?	Mitigation Available?	Full Assessment Required?	Addressed In
Employment creation	Yes	Yes	Yes	No	EMP
Support for local retail shops	No	Yes	Yes	No	EMP
Export taxes and VAT payments	Yes	Yes	Yes	No	EMP
Liquid waste (used oil, wastewater)	Yes	Yes	Yes	No	EMP
Solid waste (wires, drill bits, human waste)	Yes	Yes	Yes	No	EMP
Land and soil disturbance (on-site + proposed 8 km access road)	Yes	Yes	Yes	No	EMP
Impact on biodiversity (fauna and flora)	Yes	Yes	Yes	No	EMP

All screened issues were deemed manageable through standard EMP measures (e.g., waste management plans, erosion control measures, and biodiversity safeguards). No issues triggered a full specialist assessment or high residual significance after mitigation.

6.3. SOCIAL-ECONOMIC IMPLICATIONS

6.3.1. Background to the problem

Unemployment remains a shared responsibility between the government and citizens in Namibia, with private sector initiatives playing a key role in job creation. The project area falls within the Karasburg West Constituency (//Karas Region), which has a population of 17,741 out of the region's total 109,893 (NSA, 2023 Census update 2024). The constituency exhibits a relatively youthful demographic profile, with a high proportion of working-age residents (especially those aged 20–39), moderate educational attainment (predominantly secondary schooling), and limited access to tertiary education (only 306 individuals with post-secondary qualifications).

The local economy is dominated by agriculture (primarily livestock and subsistence farming), as reflected in income sources that are heavily reliant on salaries/wages from farming and related activities. While formal employment exists, a significant number of residents (449) report no stable income, highlighting persistent vulnerability and underemployment in the area.

The proposed mineral exploration programme on EPL 10769 aims to create 50–70 direct jobs during the initial three-year exploration phase, with potential for additional temporary and skilled positions if promising results lead to further work. Should economic mineralisation be confirmed, progression to a mining phase could substantially increase local employment opportunities.

6.3.2. The potential Socio-Economic Effects

Positive impacts during the exploration phase (3 years) include:

- Direct employment of 50–70 Namibians, prioritising local recruitment.
- Indirect economic benefits through increased spending by workers at local retailers and service providers.
- Contribution to national revenue via export taxes (if minerals are eventually produced) and VAT payments.
- If exploration confirms viable mineral resources, transition to mining would amplify these benefits through larger-scale employment, skills development, and sustain economic stimulus in the Karasburg West area.

If exploration confirms viable mineral resources, transition to mining would amplify these benefits through larger-scale employment, skills development, and sustained economic stimulus in the Karasburg West area.

6.3.3. Significance

By implementing the exploration study, the socioeconomic significance of the project can be summarised as follows:

Table 7: The expected significance of the project on social-economic implications

Criterion	Rating	Rationale
Extent	Local	Benefits are confined to communities near the project site and the immediate surroundings.
Duration	Short-term	Primarily during the 3-year exploration phase (extendable if mining proceeds).
Intensity	Low	A modest number of jobs relative to the regional population and unemployment levels.
Probability	Definite	Employment will occur as part of the approved exploration

		programme.
Significance before mitigation	Low	Limited scale and temporary nature of impacts.
Significance after mitigation	Low	Mitigation/enhancement measures further optimise local benefit.
Degree of confidence	High	Based on clear project plans, local labour market data, and standard recruitment practices.

Overall, the project delivers a low but positive socio-economic significance, focused on temporary job creation and local economic circulation.

6.3.4. Mitigation and enhancement measures

To maximise positive socio-economic outcomes and ensure equitable benefits:

- Prioritise recruitment of local residents from Karasburg West and surrounding communities for all casual, semi-skilled, and entry-level positions.
- Implement a **gender-sensitive** and transparent recruitment process to promote equity and inclusion.
- Conduct pre-employment consultations with local communities and constituency leadership to align hiring with community needs and expectations.
- Encourage workers to support local retailers and service providers through awareness and payroll practices.

6.3.5. Monitoring

The proponent will track and report the number and origin of employees recruited, with emphasis on local hires from affected communities (particularly those in proximity to the project site and Okahandja Town area, if relevant overlap exists).
Employment processes will be supervised in consultation with the relevant constituency councillor(s) to verify adherence to the “local first” policy.
Quarterly reporting on employment statistics (by gender, origin, and skill level) will be included in environmental compliance reports submitted to the Environmental Commissioner.

6.4. LIQUID WASTE: USED OIL OR OIL SPILLAGE AND WASTEWATER

6.4.1. Background to the problem

Liquid waste management is a well-recognised challenge in mineral exploration and mining worldwide. Used oil and hydrocarbon spills pose significant risks due to their persistence and toxicity; once released, hydrocarbons can coat soils, rocks, and vegetation, impairing soil function, plant health, and wildlife habitats (Richards, 2009). In sensitive environments, oil can infiltrate wetlands, marshes, or aquifers, causing long-term ecological damage.

In exploration activities, water is primarily used for drill-bit cooling, dust suppression, and equipment cleaning. While much of this water is recycled where possible, poorly managed wastewater can contaminate surface or groundwater if containment systems fail or spills occur. Global incidents highlight the importance of robust maintenance, containment, and spill-response protocols to prevent such releases.

For this low-impact exploration programme on EPL 10769, liquid waste volumes are expected to be minimal due to the small scale of activities (limited drilling rigs, vehicles, and personnel).

6.4.2. Potential effect of liquid waste

Used oil/hydrocarbon spills

- Potential sources include minor leaks or drips from vehicles, drilling equipment, and lubrication during rig mobilisation and operation.
- If hydrocarbons reach the ground, they may sorb to soil particles or, in rare cases where drilling intersects the shallow groundwater table, migrate into fractured aquifers, causing localised contamination.
- No bulk storage of fuels or oils will occur on site, further reducing spill risk. Volumes of used oil generated are expected to be very low (small quantities from routine maintenance).

6.4.3. Wastewater

- Daily wastewater generation (from drill-water recirculation, equipment wash-down, and domestic use) is estimated at <25 L/day.
- In the hyper-arid climate of the project area (average rainfall <50 mm/a, high evaporation rates), most wastewater is expected to evaporate rapidly rather than infiltrate significantly.
- Surface run-off or groundwater contamination is considered unlikely provided standard mitigation measures are implemented.

6.4.4. Significance

The significance of the identified problem of the study can be summarized as follows:

Table 8: The expected significance of the project on liquid waste

Criterion	Rating	Rationale
Extent	Local	Any release would be confined to the immediate work area or access tracks.
Duration	Short-term	Exploration phase only (3 years); impacts recoverable with prompt response.
Intensity	Low	Very small volumes; low toxicity potential in arid settings with rapid evaporation.
Probability	Definite (without mitigation)	Minor drips/leaks are possible during normal operations.

Significance before mitigation	Medium (used oil/hydrocarbons) Low (wastewater)	Potential for localised soil/groundwater impact from hydrocarbons; wastewater impact is negligible due to volume and climate.
Significance after mitigation	Low (both)	Standard controls effectively eliminate or reduce risk to negligible levels.
Degree of confidence	High	Based on project scale, arid hydrogeology, low waste volumes, and proven industry controls.

6.4.5. Mitigation measures

To prevent and manage liquid waste risks:

- No on-site storage of fuels, oils, or hazardous liquids will be permitted; all supplies will be transported daily or stored off-site in bunded facilities.
- Implement a strict preventive maintenance programme for all vehicles, drilling rigs, and equipment to minimise leaks; maintenance must occur only in designated, impermeable areas (preferably off-site).
- Install drip trays under stationary machinery and vehicles to capture minor leaks.
- Collect and remove all used oil, oily rags, drip-tray contents, and other hydrocarbon waste as hazardous waste for disposal at a licensed facility by a registered hazardous-waste contractor.
- Ensure all wastewater (drill-water, wash water) is contained in portable tanks or lined sumps for evaporation or authorised off-site disposal, no direct discharge to ground or drainage lines.
- Maintain spill kits on site (absorbents, booms, PPE) and train personnel in immediate spill response procedures.

6.4.6. Monitoring

The Environmental Control Officer (ECO) will conduct daily visual inspections of active work areas, vehicles, and machinery for signs of oil leaks, drips, or spills.
Weekly documented inspections by the ECO to verify:

- Condition and integrity of drip trays and containment systems;
- Proper maintenance records for all equipment;
- Correct storage and removal of any waste oils/hazardous materials.

Any detected spill or leak must be reported immediately, cleaned up, and documented in the ECO's weekly report.
Monthly summary reports on liquid waste management (volumes removed, incidents, corrective actions) will be submitted as part of environmental compliance reporting.

6.5. SOLID WASTE: WIRES, DRILL BITS, AND HUMAN WASTE

6.5.1. Background to the problem

Solid waste generation is a common aspect of mineral exploration. In small-scale programmes, wastes typically include metal scraps (wires, drill bits, discarded tools), packaging (plastic, paper), and domestic/human waste from camp facilities. Improper management can lead to littering, soil contamination, visual pollution, and risks to wildlife (e.g., ingestion of plastics or sharp objects).

6.5.2. Potential effects of solid waste

Unmanaged solid waste may cause localised litter accumulation, attract scavengers, and degrade site aesthetics and soil quality. Human waste, if not properly contained, can contaminate surface soils and pose minor health risks in the immediate work area. Given the short duration and small scale of exploration, effects remain site-specific and reversible.

6.5.3. Significance

The significance of the identified problem of the study can be summarised as follows:

Table 9: The expected significance of the project on solid waste

Criteria	Solid waste
Extent	*local*
Duration	*short*
Intensity	*low*
Probability	*definite*
Significance before mitigation	*Medium*
Significance after mitigation	*Low f*
Degree of confidence in predictions	*high*

6.5.4. Mitigation measures

- Establish clearly demarcated, on-site waste collection areas for segregation (recyclables, general waste, hazardous/scrap metal).
- Prohibit burning of any waste on site or at disposal points.
- Remove all solid waste (including wires, drill bits, plastics, paper) on a regular schedule to the nearest licensed municipal disposal site (e.g., //Karas Region approved facilities; Okahandja reference appears inconsistent with location—confirm regional equivalent).
- Provide portable chemical toilets or long-drop facilities for workers; service regularly and disposal of contents at an approved municipal sewage or waste facility.
- After trenching/drilling, backfill excavations with original material and recontour surfaces to restore pre-disturbance topography.

6.5.5. Monitoring

- Daily visual inspections by the Environmental Control Officer (ECO) to verify housekeeping, waste segregation, and absence of litter.
- Weekly documented checks to confirm timely waste removal and toilet servicing.

6.6. LAND OR SOIL DISTURBANCE

6.6.1. Background to the problem

Exploration activities (drilling, trenching, access tracks) will disturb surface soils and shallow bedrock in a rugged, semi-mountainous terrain with flat valley sections. Topsoil is typically thin and a scarce resource in arid environments.

6.6.2. The potential effect of land or soil disturbance

Unmanaged disturbance can lead to erosion, loss of the topsoil seed bank, reduced vegetation regrowth potential, and temporary habitat disruption for small fauna.

6.6.3. Significance

The significance of the identified problem of the study can be summarized as follows:

Table 10: The expected significance of the project on soil or land disturbance

Criteria	Soil or land disturbance:
Extent	*local*
Duration	*short*
Intensity	*low*
Probability	*definite*
Significance before mitigation	*Medium*
Significance after mitigation	*Low*
Degree of confidence in predictions	*high*

6.6.4. Mitigations and recommendations

- Strip and stockpile topsoil (0–30 cm depth) separately before any ground disturbance; where topsoil <150 mm thick, remove underlying unconsolidated material and treat as topsoil.
- Stockpile topsoil in low mounds (<2 m high), seed with native grasses/shrubs if feasible, and protect from erosion (e.g., mulch, berms).
- Replace topsoil during rehabilitation in reverse order (subsoil first, then topsoil) and recontour to match original slopes.
- Limit vehicle movements to designated tracks to minimise unnecessary compaction.

6.6.5. Monitoring

- Daily ECO inspections to confirm topsoil stripping and correct stockpiling.
- Quarterly ECO checks of stockpile condition (moisture, erosion, vegetation establishment).

6.7. IMPACT ON BIODIVERSITY: FAUNA AND FLORA

6.7.1. Background to the problem

The project area lies in the Nama-Karoo Biome, with low-biological-value vegetation (dwarf shrubland, sparse grasses). Fauna is limited and mostly mobile. Impacts are expected to be minor due to the small footprint and short duration.

6.7.2. The potential effect of biodiversity impact

Clearing, vehicle tracks, and trampling may damage sparse vegetation and disturb small invertebrates and reptiles. No protected or high-value species are exclusively site-dependent.

6.7.3. Significance

The significance of the identified problem of the study can be summarized as follows:

Table 11: The expected significance of the project on Biodiversity: fauna and flora

Criteria	Soil or land disturbance:
Extent	*Local*
Duration	*Short*
Intensity	*Low*
Probability	*Definite*
Significance before mitigation	*Medium*
Significance after mitigation	*Low*
Degree of confidence in predictions	*high*

6.7.4. Mitigations and recommendations

- Avoid removal of any protected or notable plant species; align activities to fit around them.
- Prohibit broad-scale clearing; confine disturbance to minimum necessary footprint.
- Erect physical barriers (e.g., tape, cones) to restrict off-track vehicle movement.
- Enforce strict no-poaching/no-plant-collection rules for all personnel.
- Limit vegetation trimming along tracks; retain as much roadside cover as possible.

6.7.5. Monitoring

- Regular ECO site walks during trenching/drilling to monitor vegetation condition and compliance with footprint limits.

6.8. AIR QUALITY ONSITE

6.8.1. Background to the problem

Dust will arise from vehicle movement on gravel tracks, drill cuttings, and minor earthworks in an already arid, naturally dusty environment.

6.8.2. The potential effect of impact on air quality

Inhalation of respirable dust poses short-term respiratory irritation risks to workers; long-term exposure may contribute to chronic conditions. Fugitive dust may temporarily affect nearby vegetation and fauna.

6.8.3. Significance

The significance of the identified problem of the study can summarize as follows:

Table 12: Expected significance of the project on dust generated on site

Criteria	Soil or land disturbance:
Extent	*Local*
Duration	*long to permanent*
Intensity	*Medium*

Criteria	Soil or land disturbance:
Probability	*Definite*
Significance before mitigation	*high*
Significance after mitigation	*Medium*
Degree of confidence in predictions	*High*

6.8.4. Mitigations and recommendations

- Apply water sprays on active tracks and work areas when water is available.
- Enclose or use wet methods for cutting/sampling where feasible.
- Enforce speed limits (30 km/h heavy vehicles, 60 km/h light) to reduce dust generation.
- Provide workers with appropriate PPE (dust masks/respirators) and enforce use.
- Conduct toolbox talks on dust hazards and PPE maintenance.

6.8.5. Monitoring

- Daily ECO inspections of dust levels on roads and site; trigger additional suppression if excessive.
- Daily verification that all workers wear required respiratory protection during dusty tasks.

6.9. ARCHAEOLOGICAL IMPACT

6.9.1. Background to the problem

No known heritage sites or artefacts have been recorded within EPL 10769.
However, subsurface chance finds (e.g., artefacts, graves) remain possible in any excavation.

6.9.2. Significance

The significance of the identified problem of the study can summarize as follows:

Table 13: Significance of the project's impact on archaeology

Criteria	Soil or land disturbance:
Extent	*local*
Duration	*Long-term*
Intensity	*low*
Probability	*definite*
Significance before mitigation	*Medium*
Significance after mitigation	*Medium*
Degree of confidence in predictions	*high*

6.9.3. Mitigations and recommendations

- Implement a chance-find procedure: cease work, demarcate area, notify ECO/Site Manager, contact archaeologist/National Heritage Council of Namibia immediately.
- Have archaeologist on call during ground-disturbing activities.
- Report any finds (human remains to police; artefacts to Heritage Council) and follow specialist recommendations (recording, avoidance, or recovery).

6.9.4. Monitoring

- Continuous ECO presence and inspections during trenching/drilling to identify potential finds early.

6.10. NOISE ON SITE

6.10.1. Background to the problem

Noise sources include drilling rigs (95–100 dB), compressors, vehicles, and equipment movement.

6.10.2. Potential effects of noise

Temporary nuisance to workers (risk of hearing damage); minor disturbance to local fauna. No nearby villages are expected to be affected.

6.10.3. . Significance

The significance of the identified problem of the study can summarize as follows:

Table 14: Significance of the project's impact on noise

Criteria	Soil or land disturbance:
Extent	*local*
Duration	*Short*
Intensity	*medium*
Probability	*definite*
Significance before mitigation	*Medium*
Significance after mitigation	*low*
Degree of confidence in predictions	*high*

6.10.4. Mitigations and recommendations

- Restrict operations to daytime hours (08:00–17:00) to avoid night/early-morning disturbance.
- Provide and enforce use of hearing protection (earplugs/muffs) for workers near noisy equipment.
- Maintain equipment to minimise unnecessary noise (e.g., by using mufflers and lubricating).
- Use barriers or natural topography to screen noise where practical.

6.10.5. Monitoring

- Daily ECO checks to confirm PPE compliance and adherence to operating hours.

6.11. DECOMMISSIONING PHASE

6.11.1. Background

At programme end, key impacts include temporary job losses, cessation of minor economic contributions, and the need for site rehabilitation.

6.11.2. Impact on Employment Opportunities and Economic Contribution

Loss of 50–70 temporary jobs and associated local spending; no long-term royalties if no mining proceeds. Significance reduces from medium to low with advance notice and support.

6.11.3. Mitigations and recommendations to minimize joblessness

- Provide at least 3 months' advance notice of closure to employees.
- Facilitate awareness of alternative job opportunities in the region.

6.11.4. Site rehabilitation

- Conduct the final site inspection with the ECO and the MEFT representative to define the scope.
- Commence rehabilitation immediately after cessation of activities.
- Backfill all drill holes/trenches, remove all waste and infrastructure, rake/compaction-remove vehicle tracks.
- Replace stockpiled topsoil/subsoil to reconstruct original profile.
- Leave rehabilitated areas as no-go zones post-closure.

6.11.5. Monitoring

- A site inspection will be held after completion of the mining process to determine the nature and scope of the rehabilitation work to be undertaken. The rehabilitation will be done to the satisfaction of both the proponent and MEFT.
- The rehabilitation work should commence soon after the end of the active mining period.
- The access road and all vehicle tracks should be rehabilitated by raking or dragging with tyres or tree branches (other suitable methods) behind a vehicle.
- With regard to both biological productivity and erosion, topsoil is arguably the most important resource in the project area; for that reason, the material recovered from topsoil and subsoil should be utilised to reconstruct the original soil profile.
- All waste shall be removed, and potential hazards, particularly pits, shall be closed and left in a safe disposition.

All rehabilitated areas shall be considered no-go areas, and the environmental coordinator shall ensure that no staff members enter them after rehabilitation.

6.12. CONCLUDING REMARK ON THIS SECTION

This section has screened and assessed key potential environmental impacts associated with the EPL 10769 exploration programme. All identified impacts are of

low to medium significance before mitigation and are reduced to low (or negligible) residual significance through the application of standard, practical controls detailed in the Environmental Management Plan (EMP). Implementation of the EMP, supported by regular ECO oversight, will ensure compliance and effective environmental protection throughout the project lifecycle.

7. CONCLUSION AND RECOMMENDATIONS

7.1. CONCLUSION

EPL 10769 is situated approximately 10 km outside the Noordoewer Settlement, in the Karasburg West Constituency, ||Karas Region. The proposed exploration activities will be conducted in full compliance with the Environmental Impact Assessment Regulations of 2012 (promulgated under the Environmental Management Act, 2007). The assessment of both positive and negative impacts associated with the proposed exploration study, including potential testing of ining activities, has identified several high-impact outcomes. Overall, the positive impacts of the proposed exploration outweigh the negative ones at local, regional, national, and global scales. Based on the findings of this Environmental Assessment, the proposed exploration activities may proceed in accordance with the provisions of the Environmental Management Plan (EMP). Should the exploration results demonstrate economic viability, a separate comprehensive Environmental Impact Assessment (EIA) and updated Environmental Management Plan (EMP) will be prepared and submitted to support the application for a Mining License. This will enable full-scale mining development, encompassing pre-construction, construction, operational, rehabilitation, closure, and post-closure aftercare phases.

7.2. RECOMMENDATIONS

It is recommended that the proponent implement all measures outlined in the EMP to ensure the successful and environmentally responsible execution of the proposed exploration study on EPL 10769, located 10 km outside the Noordoewer Settlement, Karasburg West Constituency, ||Karas Region. The following key actions should be prioritized by the proponent to manage potential impacts effectively:

- Appoint an Environmental Coordinator, Consultant, or suitably qualified in-house resource person to lead the development, implementation, and promotion of an environmental culture. This includes raising awareness among the workforce, contractors, and subcontractors throughout the entire duration of the exploration study and any mining testing program.
- Provide all necessary human and financial resources to support the implementation of proposed mitigation measures and effective environmental management during the planned activities.
- Develop and deliver a simplified environmental induction and awareness program for all personnel, contractors, and subcontractors.
- Identify potential environmental impacts from contracted service providers and incorporate corresponding environmental liability provisions (including costing) into contract agreements.
- Establish internal and external monitoring of the implemented actions and management strategies throughout the mineral exploration and possible mining testing period. A final Environmental Monitoring Report, prepared by the appointed Environmental Coordinator/Consultant/suitable in-house resource person, should be submitted to the relevant regulatory authorities upon completion of the exploration phase.
- Develop and implement a monitoring program aligned with the company's overall Environmental Management System (EMS), which can also serve as a foundation for any future full EIA required for potential mining projects.

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9. APPENDICES: LIST OF APPENDICES

- Appendix A: Abridged CV's
- Appendix B: Newspaper adverts
- Appendix C: Endorsement of Non-Exclusive Prospecting Licences
- Appendix D: Background Information Document (BID)
- Appendix E: Proof of consultations with I&Aps
- Appendix F: EIA Process