DRAFT ENVIRONMENTAL MANAGEMENT PLAN

FOR THE PROPOSED MINERALS EXPLORATION FOR
BASE & RARE METALS, INDUSTRIAL MINERALS,
PRECIOUS METALS, AND SEMI-PRECIOUS STONES
WITHIN EPL 9852

Near Tsumeb

Oshikoto & Otjozondjupa Regions

Date: MAY 2023, Updated: FEBRUARY 2025

Proponent: KDN Geo-Consulting/
Philco One Hundred and Seventy-Three (Pty) Ltd

APP: 250217005375

Alliance
ENVIRONMENTAL CONSULTANCY

DOCUMENT INFORMATION

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DOCUMENT APPROVAL

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Client			

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1. INTRODUCTION

Alliance Environmental Consultancy CC (AEC) (herein referred to as the consultant) has been appointed by KDN Geo Consulting (herein referred to as the proponent) to act on their behalf in obtaining an Environmental Clearance Certificate (ECC) for the proposed minerals exploration for base & rare metals, industrial minerals, precious metals, and semi-precious stones within EPL9852 near Tsumeb in the Oshikoto and Otjozondjupa regions. The project area is located approximately 16km East of Tsumeb and about 30km North of Grootfontein in the Oshikoto and Otjozondjupa Regions. The site is accessible via the D3039 or D3021district roads from the M75 main road north and east of Tsumeb respectively. The EPL covers approximately an area of 78906 hectares in total. The licence covers portions of farmlands in the area (see Figure 1&2).

The proponent pegged the area through the MME on 07 December 2023. . The physical EPL is pending approval subject to submission of an ECC to the MME, after it's issued by the MEFT. This environmental scoping and impact assessment will form part of the ECC application that will be submitted to the MEFT.

The corner coordinates of the EPL are provided in the table below.

TABLE 1 - CORNER COORDINATES FOR THE EPL

ID	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE		LATITUDE	LONGITUDE
1	-18.999317	17.957203	**10**	-19.280379	18.0926100	**19**	-19.256063	17.889912
2	-18.999608	18.176300	**11**	-19.292246	18.0764460	**20**	-19.164218	17.890282
3	-19.117619	18.162620	**12**	-19.299281	18.0703590	**21**	-19.164617	17.961144
4	-19.122401	18.220082	**13**	-19.307541	18.0459310			
5	-19.201562	18.219816	**14**	-19.297030	18.0422500			
6	-19.227700	18.170696	**15**	-19.304863	18.0184910			
7	-19.209812	18.159018	**16**	-19.315642	18.0224300			
8	-19.226063	18.116775	**17**	-19.321305	18.0028860			
9	-19.272577	18.1163400	**18**	-19.256065	18.002716			

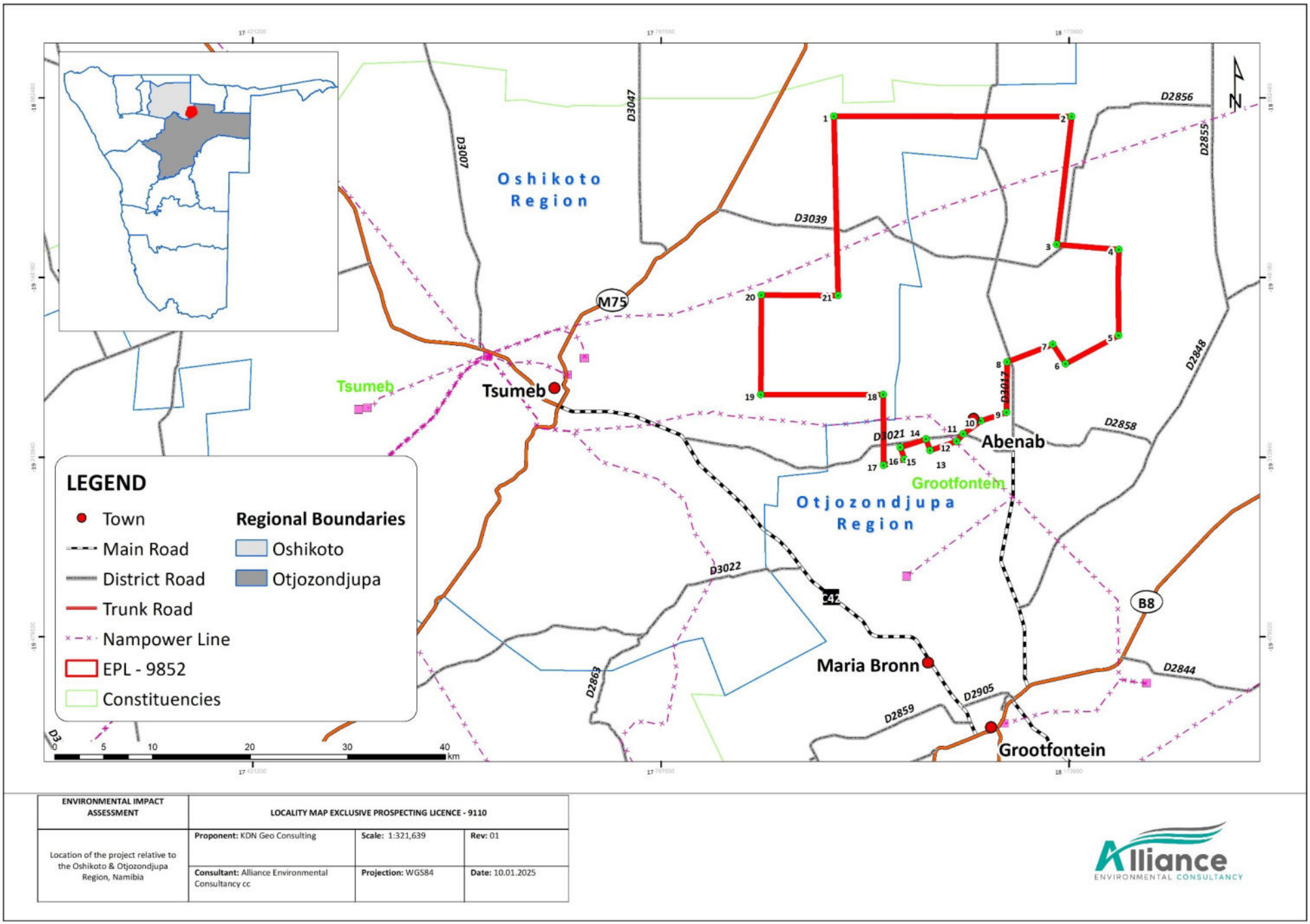
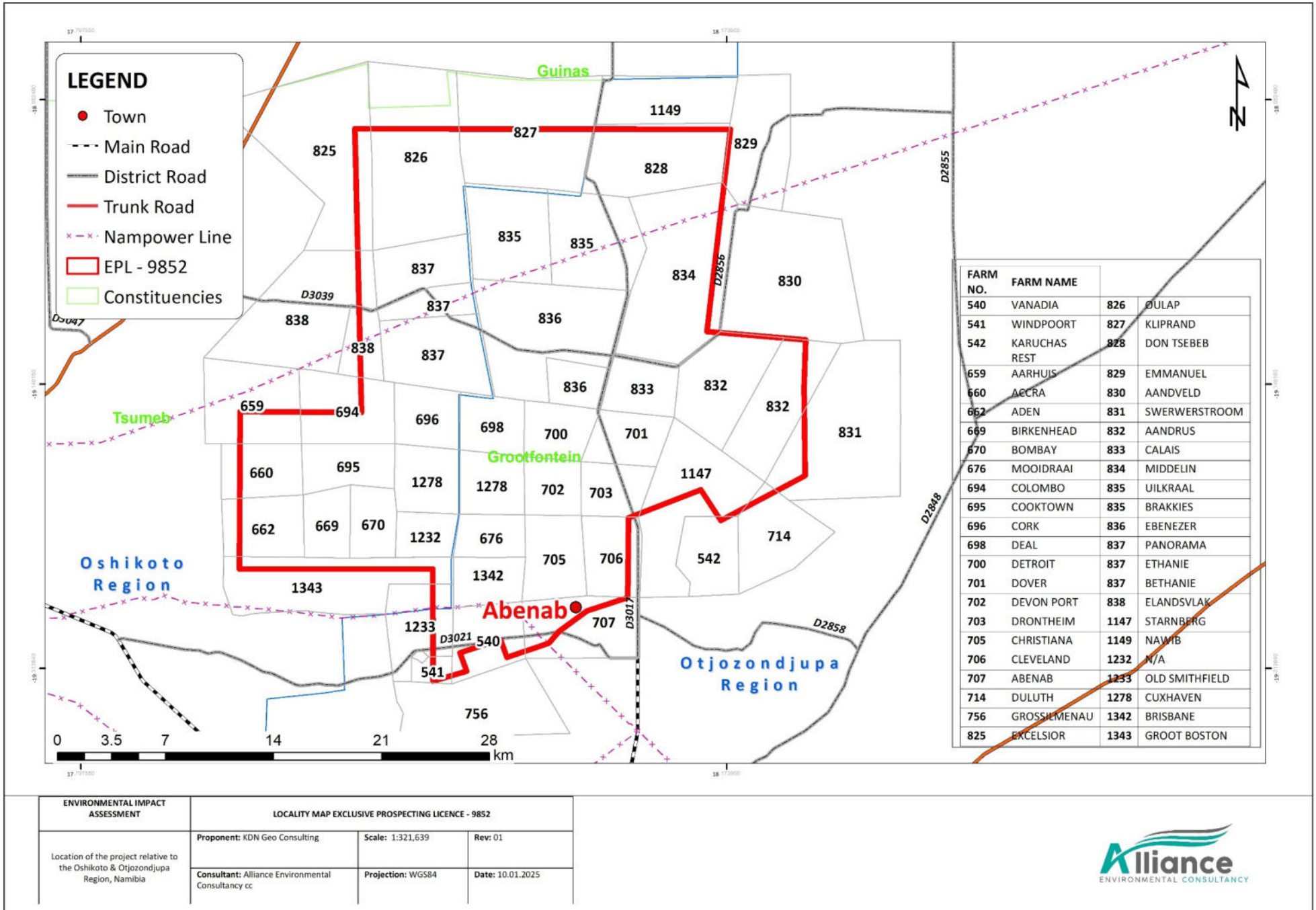


FIGURE 1 – REGIONAL LOCATION OF THE EPL AND SURROUNDING INFRASTRUCTURE.



FARM NO.	FARM NAME		
540	VANADIA	826	OULAP
541	WINDPOORT	827	KLIPRAND
542	KARUCHAS REST	828	DON TSEBEB
659	AARHUIS	829	EMMANUEL
660	ACCRA	830	AANDVELD
662	ADEN	831	SWERWERSTROOM
669	BIRKENHEAD	832	AANDRUS
670	BOMBAY	833	CALAIS
676	MOOIDRAAI	834	MIDDELIN
694	COLOMBO	835	UILKRAAL
695	COOKTOWN	835	BRAKKIES
696	CORK	836	EBENEZER
698	DEAL	837	PANORAMA
700	DETROIT	837	ETHANIE
701	DOVER	837	BETHANIE
702	DEVON PORT	838	ELANDSVLAK
703	DRONTHEIM	1147	STARNBERG
705	CHRISTIANA	1149	NAWIB
706	CLEVELAND	1232	N/A
707	ABENAB	1233	OLD SMITHFIELD
714	DULUTH	1278	CUXHAVEN
756	GROSSILMENAU	1342	BRISBANE
825	EXCELSIOR	1343	GROOT BOSTON

ENVIRONMENTAL IMPACT ASSESSMENT	LOCALITY MAP EXCLUSIVE PROSPECTING LICENCE - 9852		
Location of the project relative to the Oshikoto & Otjozondjupa Region, Namibia	**Proponent:** KDN Geo Consulting	**Scale:** 1:321,639	**Rev:** 01
	Consultant: Alliance Environmental Consultancy cc	**Projection:** WGS84	**Date:** 10.01.2025

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FIGURE 2 - EPL LOCATION WITH FARMS

1.1. PURPOSE OF THE DOCUMENT

Alliance Environmental Consultancy CC (AEC) has prepared this document as part of the Environmental Scoping and Impact Assessment for the proposed prospecting which was conducted in terms of the Environmental Management Act, 2007 (Act No 7 of 2007). This Environmental Management Plan is a live document that has been prepared based on the environmental impacts identified in the Environmental Scoping and Impact Assessment (ESIA) and should be read in conjunction with the ESIA Report.

The aim of this document is to provide management measures to address the environmental impacts that have been identified and to give possible mitigation measures/recommendations. It is essential for personnel involved to be fully aware of the possible environmental issues and the means to avoid or minimize the potential impacts of activities on site.

Furthermore, the proponent fully understands the legal and policy requirements as a holder of the EPL. Impacts identified in the EIA form the basis of a set of environmental specifications that will be implemented on-site. These environmental specifications act as an agreement between the proponent and the Ministry of Environment, Forestry, and Tourism (MEFT).

1.2. LIMITATIONS OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The project-specific information used in this document is that provided by the Proponent, Consultants experience, relevant literature, as well as from direct communication with the farmers and landowners, a heritage specialist study was conducted for this project. AEC makes the assumption that all project-related technical data and information provided by the Proponent is complete and accurate and that all information required for the creation of this EMP has been revealed. Additionally, it is expected that the pertinent data from the many sources of literature studied is accurate. Lastly, this EMP was created under the presumption that the planned project will not undergo any substantial changes. Where project activities alter, or new impacts are identified this EMP should be updated to cater for the new impacts and mitigation measures should be provided herein

1.3. PROJECT ACTIVITIES

The proponent wishes to conduct an exploration program on EPL 9852 for base & rare metals, industrial minerals, precious metals, and semi-precious stones. Once granted by MME, the licence will be valid for three years with possible renewal after this period. The commencement of the project is planned as soon as the environmental clearance certificate and physical EPL licence has been issued. The exploration program will be carried out as outlined in more detail below:

PLANNING PHASE ACTIVITIES

This will incorporate the procurement of all required permits and agreements with various state and parastatal agencies as well as surface landowners/land custodians. These will result in various agreements to be entered into between the proponent and the respective parties.

Possible parties that will be/are being consulted include the following:

- Ministry of Mines and Energy (MME)
- Ministry of Environment Forestry & Tourism (MEFT, this application)
- Respective Regional Councils
- Ministry of Agriculture, Water & Land Reform (MAWLR)
- National Heritage Council of Namibia (NHCN)
- Landowners/ Land custodians

INITIATION/PRE-OPERATIONAL PHASE

I. Accommodation

Personnel accommodation is planned at an established campsite, or field camp, or farmhouse, with basic infrastructure as required for operations to provide accommodation for approximately 5 to 10 (depending on the labour needs). Alternatively, the workers can commute from the nearby towns/settlements or any accommodation places that may be deemed sufficient by the proponent. Any infrastructure will be erected with the permission of land custodians in the area. The accommodation area will be demarcated to limit the movement of equipment and personnel beyond the footprint of the camp area, and also to limit the movement of animals onto the site from the surrounding area.

II. Access

Existing access roads will be predominantly utilized, and where necessary new access roads will be constructed in consultation with the landowners/custodians. Existing tracks may be upgraded to accommodate heavy motor vehicles and operational machines at a later stage in the exploration. The selective clearing of vegetation in areas designated for prospecting will be minimal. Usually, land is cleared at areas where drilling operations will be conducted or where the camping area will be erected. When lateral expansion is required the removal of vegetation will be done in association with the Directorate of Forestry that issues the relevant permits before any trees could be felled.

III. Waste management

Solid waste will be removed off site and taken to the nearest registered dumpsite (Tsumeb). Portable toilets may be used at work sites with prolonged activities, with a possibility of long drop toilets in some locations. Alternatively, toilets may be established when the staff reside at the working area, with septic tanks to be emptied regularly using a tanker truck which removes the sewerage and takes it to the municipal sewerage works. For a longer-term field camp arrangement, a French drain system could be devised and constructed.

OPERATIONAL SUPPORT SERVICES

I. Water supply

Water supply sources being considered are either.

- Ground water extraction; and
- NamWater

The volume of water will depend on the exploration program and phase of exploration. Water needs in the initial phases of mineral exploration will be minimal for drinking and ablution facilities. If diamond drilling is required to test a target then larger volumes will be required. The proponent does not expect to use much water in the initial phase, and the needs will mostly be for camp use (drinking, cooking, ablution) and only much later in the programs for drilling. Water needs can be sourced from the nearest NamWater supply scheme or from one of the surrounding neighbors or community boreholes and trucked/piped to the exploration sites and/or accommodation.

If more water is required then extraction of ground water will be considered, a borehole can be sunk to augment supply volumes or an existing borehole can be utilized with the owner's permission. For this option groundwater exploration would be undertaken followed by the required permit application process with the Directorate of Water Affairs (DWA).

II. Power supply

The proponent will evaluate what electrical supplies are readily available to the project. Generators may be used in remote locations for short-term work, and a small field of photovoltaic panels is also envisaged for power generation in the medium term in semi-permanent camps and during long-term work. No infrastructure development to get electricity from the national grid has been planned. All mobile equipment is diesel driven and self-propelled. Static equipment will use electricity generated by diesel generators.

III. Onsite fuel storage

Diesel storage at the site will be only temporary and intermittent during drilling and bulk sampling operations. Approximately 200 – 400 litres of diesel will be stored in a bunded fuel tank system, conveniently placed and accessible for deliveries. This facility will be of modern construction, either double-skinned or 110% bunded to ensure spills are prevented.

Delivery systems will use sealed fittings to prevent spillage. The fuel facility, when in operation, is to be actively manned. Standardized spill kits and reporting systems will be in place to deal with any hydrocarbon spills. Contaminated soils will be transferred to a remediation site, which is specifically designed for such treatment.

PROSPECTING/OPERATIONAL PHASE ACTIVITIES

The company is targeting rare and base metal mineralization of the Otavi Mountain Land (OML) which can be associated with precious metals and industrial mineral mineralization. More than 620 mineral occurrences are known in the area, with the majority being located in the Gauss Formation of the Abenab Subgroup and in the Elandshoek Formation of the Tsumeb Subgroup. The exploration team is envisioned to consist of up to fifteen (15) skilled and non-skilled workers. Initially the company may start with 2-3 exploration geologists and 2-3 field technicians. Additional support like logistics, labourers, cooks etc., will likely be needed. Employment will ramp up as needed in each phase of exploration. Laborers will be sourced from the communities nearest to the projects. Field operations may operate 10 hours a day (7am to 5pm) for up to seven days per week, or as needed. The personnel will be transported to and from the operational site by company transport.

I. Vehicle, machinery and associated equipment

The initial stages of mineral exploration, the company will use 4x4 vehicles. Heavy machinery will be used from drilling stages. The number of vehicles will depend on the work program. Main equipment types to be used will include 4X4 bakkies, drill rigs (Reverse Circulation (RC) or Diamond Drill Hole (DDH)), excavators and front-end loaders, water tankers for the camp site and support drilling operations, portable geophysical equipment, sampling equipment (bags, sieves, spades etc.). The equipment will be stored in designated areas at the exploration camp/accommodation.

The projected mineral exploration activities during prospecting follow a staged approach. The different work aspects and consecutive phases are summarized as follows:

II. Desktop studies including geological mapping.

High resolution data are purchased from the MME to assist in a desktop review of existing historic geological exploration reports data as well as all past research conducted in the general area to see if there are any prospective targets. The data available is used to understand the background of the

area through remote sensing and topographic surveys. This involves a review of geological maps of the area and on-site ground traverses and observations. The maps and data will be updated where relevant information has been obtained.

III. Geophysical survey

The geophysical surveys include the collection of information of the substrata, by ground and airborne techniques, through sensors such as radar, magnetic and electromagnetic to detect any mineralization in the area. Ground geophysical surveys would be carried out using sensors mounted on vehicles or carried by hand. Aerial geophysical surveys would be carried out using sensors mounted on low flying aircraft or unmanned drones. The airborne geophysical technique tries to measure electrical conductivity and magnetic variations of the ground using measuring instruments suspended underneath a helicopter, drone or aircraft. Where necessary, permits will be obtained from Namibia Civil Aviation Authority (NCAA) to support the airborne geophysical surveys. Generally, these techniques are not intrusive in terms of impacts on the environment.

Prior communication should be conducted with the relevant landowners before surveys are conducted.

IV. Geochemical sampling

This stage incorporates geochemical analyses, geochemical soil sampling programs, and additional ground geophysical surveys.

For soils sampling, it is done at depths of at least 10 - 30cm therefore firstly removing the upper surface of the soil that will be filled back once a sample is collected. The samples are collected into bags of approximately 100 - 500grams. Usually, soil samples are to be collected where drainage and catchment basins are poorly developed. Sampling can be carried out in up to 8 teams, each consisting of a field technician or geologist and local field assistants.

Other surface samples collected may include termite mounds and rocks if exposed at surface.

Once the exercise concludes, the samples are collected and sent to an analytical laboratory (as preferred by the proponent) for geochemical trace element analysis to determine if sufficient quantities of the desired mineralization are present.

Using the results obtained through the geophysical and geochemical surveys, a guidance map is created. When target areas are determined, it may be necessary for drill pads to be established. Efforts will be made to limit or minimize the amount of clearing of trees and shrubs, including by considering alternative sites for drilling. Should sensitive/protected species be present in the target area a trees removal and clearing permit is applied for through the Department of Forestry (DoF).

V. Exploration Drilling

Exploration drilling is the process of sampling rock below surface, where it is suspected that there may be mineralization. The most commonly used drilling techniques are Reverse Circulation Drilling (RC) and Diamond Drilling. Both methods are applied in exploration, resource evaluation and subsequently in defining an ore reserve. The proponent will store the drill products (rock chips and/or drill core) near the exploration site, or the exploration camp, or may choose to erect a storage warehouse in proximity to the project or may rent a warehouse near the project area. Further work such as XRF analysis, core cutting and sampling, will be conducted on the drill products at the storage facility.

Drill targets are generated from the analysis of results from the combination of desktop, geological mapping, geophysical, and geochemical studies. It may be necessary to clear tracks and drill platforms/pads in preparation for drilling activities. Efforts will be made to limit or minimize the amount of clearing of trees and shrubs for drilling purposes. Should sensitive/protected species be present in the target area a trees removal and clearing permit is applied for through the Department of Forestry (DoF).

During Diamond drilling a solid core representing the lithology/rocks below ground, is extracted from depth, for examination at surface. The key technology of the diamond drill is the actual diamond bit itself. It is composed of industrial diamonds set into a soft metallic matrix. The drill produces a "core" which is logged, photographed and which can be split longitudinally for sampling purposes. Half of the split core is assayed while the other half is permanently stored for future use and reference.

RC Drilling uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample, which is comprised of rock chips. RC is relatively quick and cheap compared to Diamond Drilling. In mineral exploration RC drilling is commonly used in uncomplicated geology, or for infill drilling, at a much higher density or narrower spacing to allow extrapolations of the rock units. Usually, the drill platform/pad is approximately 25 m x 15 m, and for safety reasons during the drill process is off-limits to those not part of the exploration team.

Once the samples submitted to the laboratories are analysed and the results are received, the results are evaluated, and a decision will be taken whether to continue to the next phase of mineral exploration on the EPL. If exploration drilling results are positive the information will be used to determine follow-up drilling phases which may lead to resource drilling and modelling.

Initially, drilling would be localized on discrete targets identified through the different stages of mineral exploration, and if the results are positive then more drilling would be planned.

VI. Advanced prospecting/exploration

In the advanced stages of exploration, if an economic mineral deposit is found on the EPL, larger amounts of rock sample material may be required for performing processing trials and for metallurgical testing programs. Ground conditions and geotechnical parameters also need to be established for planning and costing purposes.

Bulk sampling for metallurgical tests and processing trials will be done to complement the material obtained during drilling. A bulk sample can be collected via trenching if the weathering of the rocks is not too deep, or from drilling with larger bit sizes, or from localized blasting for bulk sampling/trial mining. The size of the sample required depends on the nature of mineralization as observed from drilling and sampling.

VII. Pre-feasibility and feasibility studies

If the advanced exploration activities yield positive results, the exploration data will be compiled into a pre-feasibility report, and upon positive results from further work, a detailed feasibility and/or bankable feasibility study will be conducted on the identified site-specific area where an economic mineral deposit is defined.

Additional detailed and site-specific resource or geotechnical drilling, bulk sampling, laboratory and metallurgical testing, and trial mining may be conducted.

VIII. Mining Licence Application or End of exploration Program

If an economic mineral resource is discovered within the EPL area, the proponent will compile an application for a mining licence, and a separate and detailed environmental impact assessment study will be undertaken. The EIA will comprise of detailed site-specific specialists' studies which may include the following impact assessments; socio-economic, hydrology and geohydrology, archaeology, air quality, traffic, biodiversity (fauna & flora), visual and soil etc.

Should there be no discovery of any economic mineralization on the EPL during the various stages of prospecting activities, the proponent can decide at any point to discontinue the activities planned on the EPL, rehabilitate the areas disturbed during their exploration, and relinquish the EPL back to the MME.

DECOMMISSIONING AND FINAL REHABILITATION

The proponent should have funds available and allocated for rehabilitation. This fund should continually be available during the period of the active operation and be sufficient to cover all decommissioning activities when required. Decommissioning activities will include the removal of any temporary infrastructure, rehabilitation of roads and other linear infrastructure, drill sites and bulk

sampling pits, as necessary. This is done to reduce the effects of soil erosion and to re-establish normal ecosystem functionality so as to rehabilitate the environment. Functional water boreholes (if any were drilled by the proponent) and solar panels could be donated to the local communities. Rehabilitation efforts can be expected to be low if economic mineralization is not found on the EPL, because the mineral exploration activities will have minimal impact on the environment or may be limited to non-invasive activities, if there is no justification to trench or drill test any of the targets.

1.4. SUMMARY OF THE RECEIVING ENVIRONMENT

Generally, Tsumeb lies in the areas that receive higher annual rainfall in the country with more than 550mm annually, hence allowing successful intensive agricultural practices. The EPL overlaps with more than 35 commercial farmlands and/or farm portions which is the predominant land use. Despite the importance of agriculture in the area, minerals occurrence in the surrounding is considered prominent. The importance of proactive communication between the proponent, farmers, and owners of nearby properties is emphasized. Excellent relationship should be maintained throughout the life of the project.

The Tsumeb climate is classified as hot semi-arid climate where the wet season is normally hot and mostly cloudy whilst the dry season is warm, windy, and clear. The hot season lasts for 3.5 months, from September to December, with an average daily high temperature above 31°C. Tsumeb receives an average precipitation of 528mm per year. The average percentage of cloud cover near the Tsumeb surrounding area fluctuates seasonally over the course of the year. The maximum windspeed recorded for areas around Tsumeb ranges from 10 – 14.9 mph easterly winds with an average of 3.2mph (Iowa weather, 2023).

The study area lies within the Karstveld of the Tree-and-shrub Savanna vegetation biome. The vegetation within the study site was found to be dominated by mopane (Colophospermum mopane) and purple pod terminalia (Terminalia prunioides). Plant diversity is estimated at >500 species (Mendelsohn et al, 2002), notwithstanding the fact that terrain and water availability may contribute to local differentiation. Other species with commercial potential that could occur in the general area include Hyphaene petersiana (Makalani palm) – a palm tree native to the subtropical, low-lying regions of south-central Africa, Combretum imberbe (Lead wood), Peltophorum africanum (African Wattle), Acacia mellifera detinens (Black-thorn acacia) and Acacia luederitzii (Kalahari acacia) (Enviro Dynamics, 2014). Mopane trees are prevalent in the area, and it is protected due to its high value to humans and their livestock. Although several protected species occur in this habitat, with the exception of Colophospermum mopane, they are present in low numbers.

According to the Atlas of Namibia, nationally, the area is regarded as a relative medium - high mammal, reptile and intermediate amphibian diverse. Although many endemic species are known to

occur from the general area, it cannot be determined if any of these are expected with the EPL area. Species most likely to be adversely affected by exploration would be the variety of reptiles and ground nesting birds specifically associated with this area. Mitigation measures aimed to prevent any serious or lasting damage to this diversity including limiting damage to habitat in general and prohibiting poaching is detailed in the EMP.

The soils in this area are broadly categorized to the group of leptosols and defined by a Mollic leptosols domination soils. Mollic Leptosols, the predominant soil type in the EPLs, have strong surface structure but poor water-holding capacity. The EPL area consists of Kalahari and Namib sands as well as Otavi group. The basement in the EPL area is made up of Palaeoproterozoic granitic gneiss and amphibolites which have been intruded by Mesoproterozoic granite. The underlying geology primarily consists of limestones (including calcrete), dolomites and marbles. Pre-historic weathering of surface and underground limestone by water caused them to dissolve and a "karst landscape" developed. The company is targeting rare and base metal mineralization of the OML which can be associated with precious metals and industrial mineral mineralization.

The proposed EPL lies in the Owambo Groundwater basin. The EPLs fall within the hydrogeological region of the Otavi Mountain Land, an area characterized by a productive fractured aquifer mainly recharged through rainfall and water quality is generally of a high standard (Christelis, 2001). The water table in the area is extremely shallow; past research shows that at some places intersected at only 4m below surface (Enviro Dynamics, 2014). The majority of the area has been designated a "Groundwater Control Area," highlighting the value of its potential for groundwater on a national scale (Christelis, 2001). The entire area is dependent on groundwater resources for domestic purposes and stock watering. There are more than 30 boreholes situated within and around the EPL area and farmers around the area predominantly use water from borehole extraction. Provided that the boreholes within the area are operational, it is highly probable that water will be obtained from some of these existing boreholes during the exploration activities. Appropriate permits should be obtained from the DWA should borehole water use be realized.

Figures 3 to 6 provide some baseline maps of the project area.

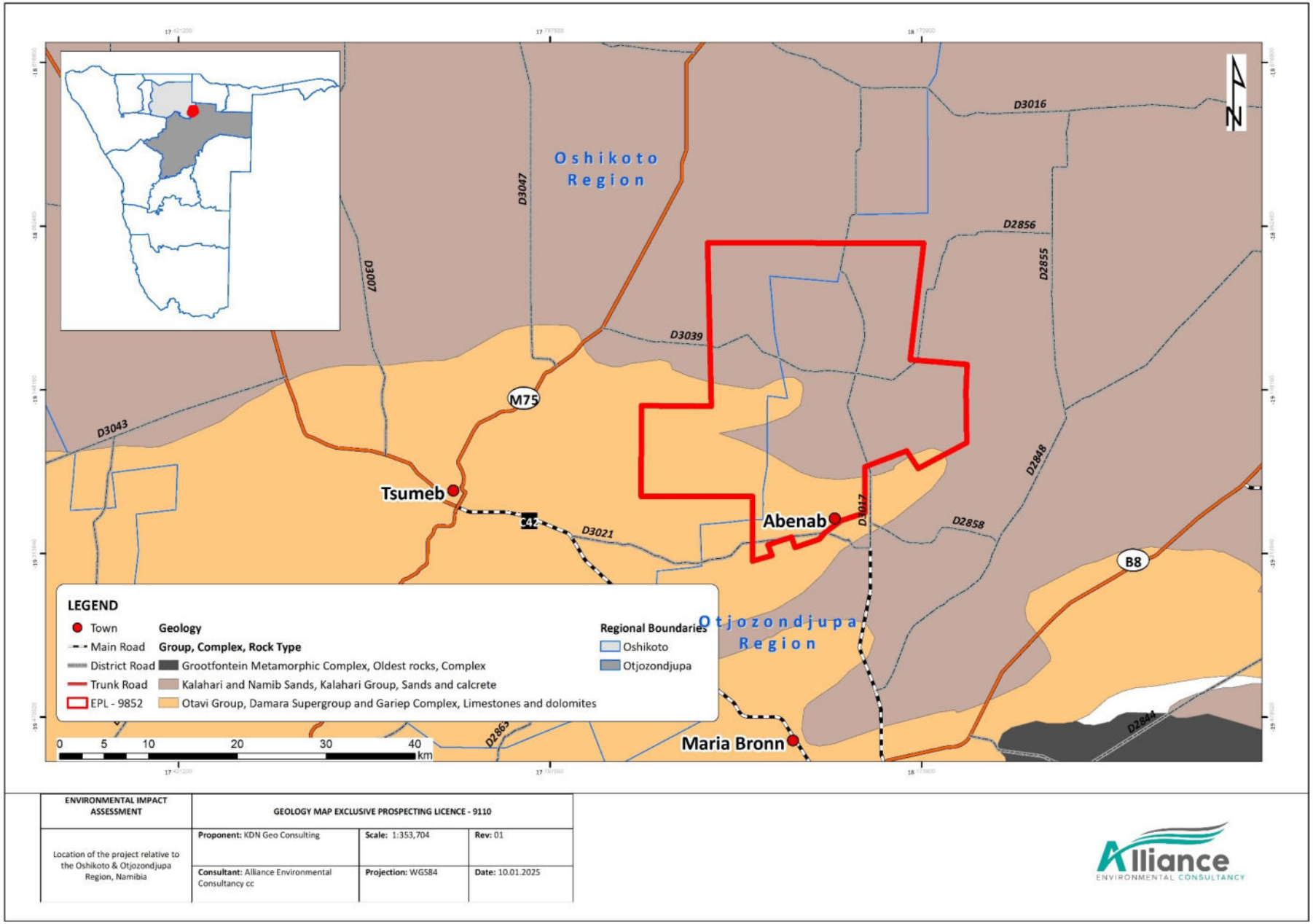

FIGURE 3 - GEOLOGY OF THE PROPOSED PROJECT AREA

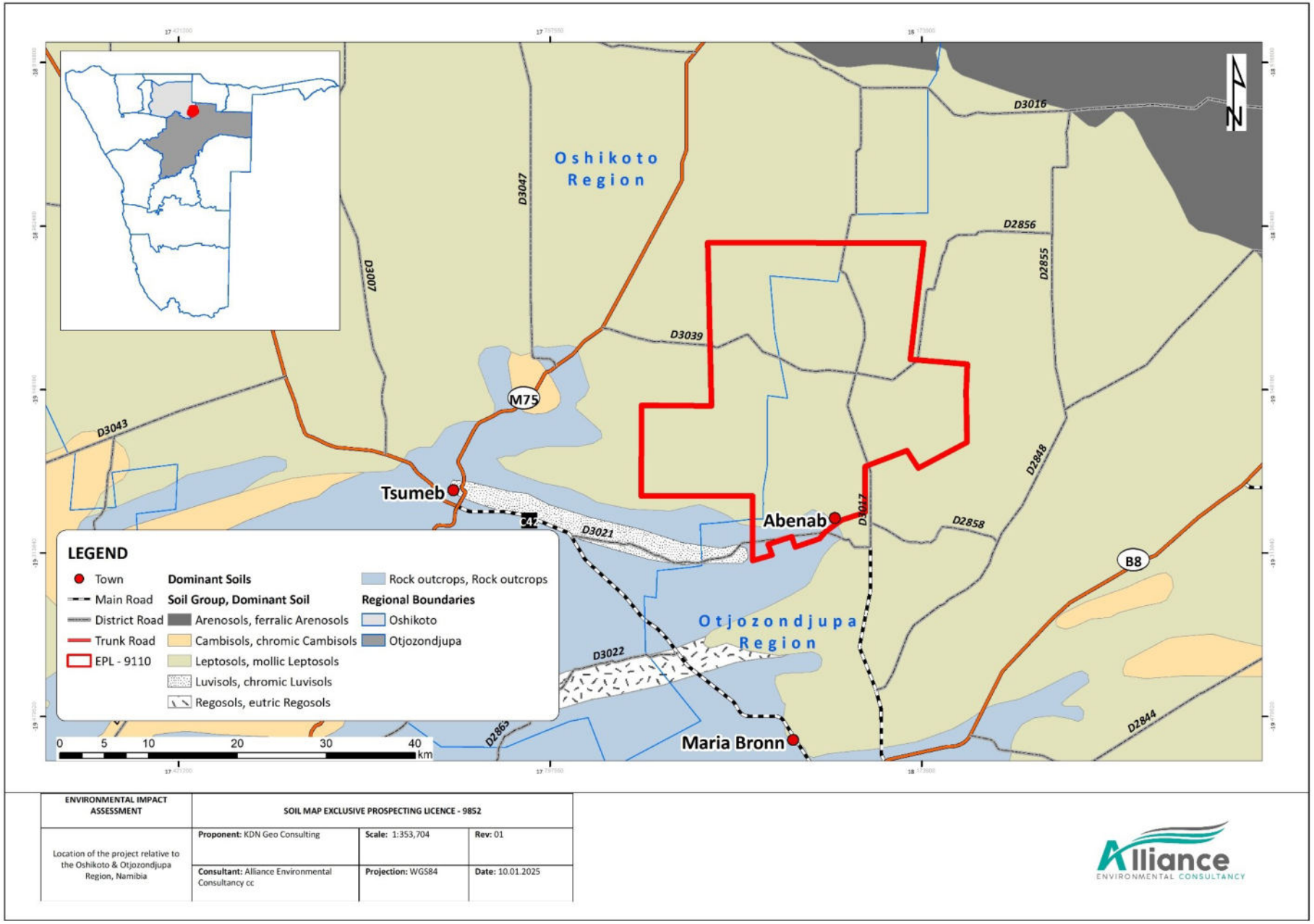

FIGURE 4 - DOMINANT SOIL TYPE SURROUNDING THE PROJECT AREA

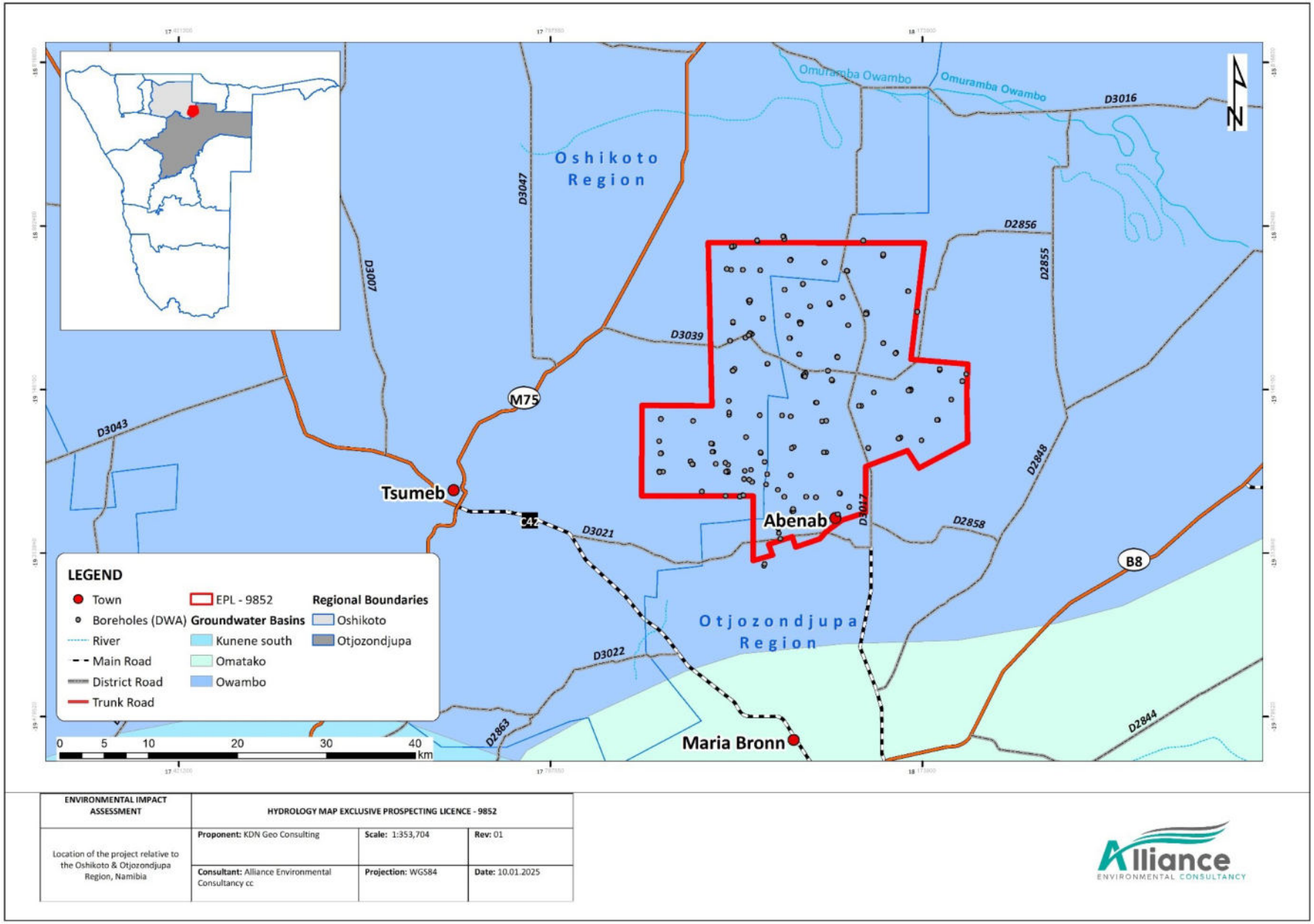

FIGURE 5 - GROUNDWATER BASINS AND HYDROLOGY OF THE PROJECT SITE

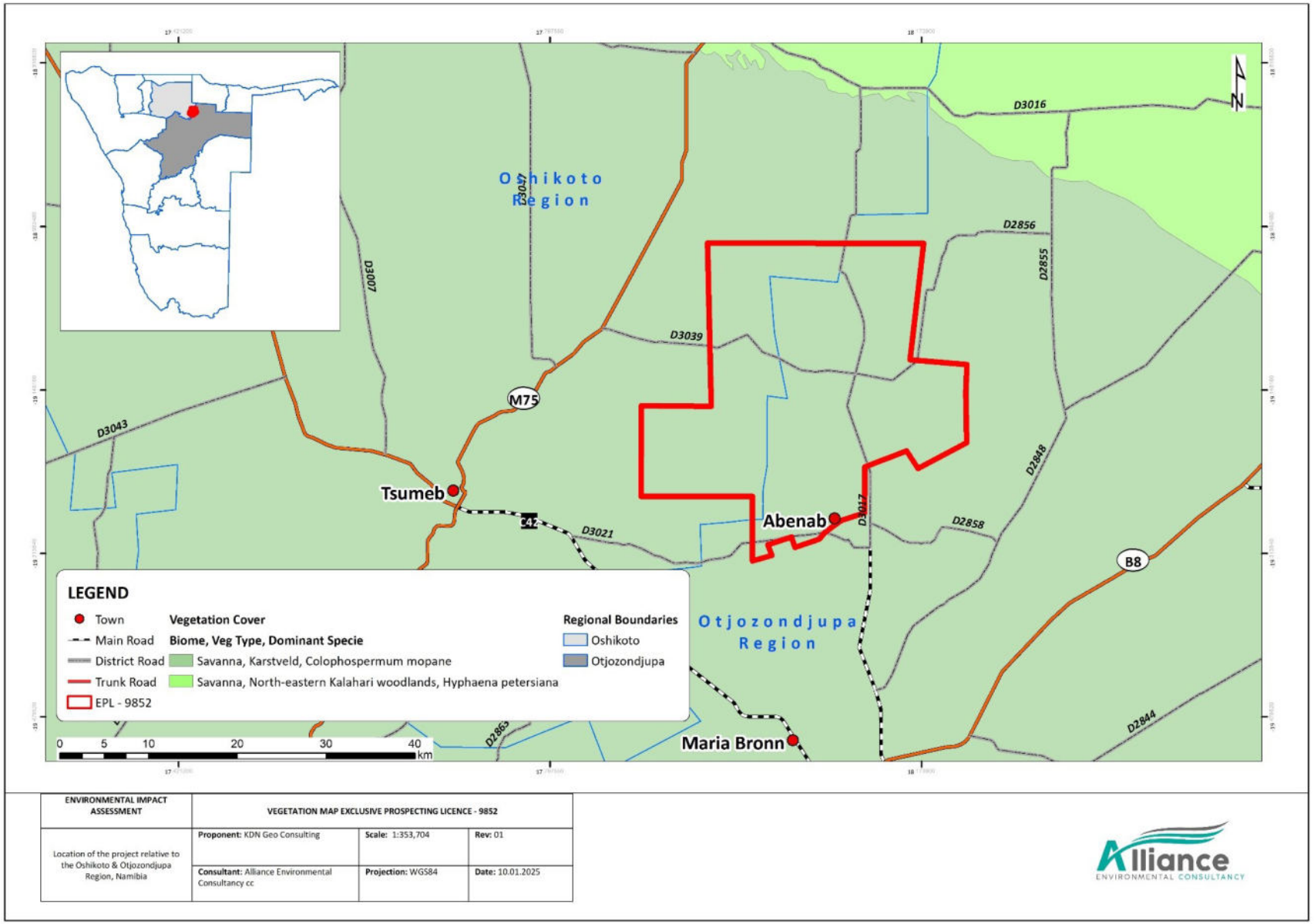

FIGURE 6 - VEGETATION OF THE PROJECT SITE

2. ENVIRONMENTAL MANAGEMENT PRINCIPLES

The Proponent will ensure that all project participants adhere to the following company goals:

i. All employees will be obliged to undertake activities in an ecologically and socially responsible way. This applies to all consultants, workers, contractors, and subcontractors, as well as transporters, and visitors who are directly or indirectly requested by the Proponent to attend the work area as part of normal operations.
ii. Safeguard the health and safety of project personnel and the public against potential impacts of the project. This includes issues of road safety, precautions against dangers on site, potential hazards; and,
iii. Promote good relationships with the surrounding settlements and other stakeholders.
iv. Wise use and conservation of environmental resources, giving due consideration to the use of resources by present and future generations;
    a. Prevent or minimize environmental impacts;
    b. Minimize air, water, and soil pollution; and
    c. Conserve Biodiversity.

In order to achieve the project's goal, the following principles must be followed:

TABLE 2 - EMP PRINCIPLES

TERM	DESCRIPTION
Accountability and Commitment	The Company Senior Executives and Line managers will be held responsible and accountable for: a. Health and safety of site personnel while on duty, b. Environmental impacts caused by exploration activities or by personnel engaged in the daily operations at the site.
Competence	The company will ensure a competent workforce through appropriate selection, training, and awareness of all safety, health, and environmental matters.

TERM	DESCRIPTION
Risk Assessment, Prevention, and Control	Identify, assess and prioritize potential environmental risks. Prevent or minimize risks through careful planning and design, allocation of financial resources, management, and workplace procedures. Intervene promptly in the event of adverse impacts arising.
Performance and Evaluation	Set appropriate objectives and performance indicators. Comply with all laws, regulations, policies, and environmental specifications. Implement regular monitoring and reporting of compliance with these requirements.
Stakeholder Consultation	Create and maintain opportunities for constructive consultations with employees, authorities, and other interested or affected parties. Seek to achieve an open exchange of information and mutual understanding in matters of common concern.
Continual Improvement	Through continual evaluation, reports, and innovation, seek to improve performance regarding social health and well-being as well as environmental management throughout the lifespan of the project.
Financial Provisions for project activities	In line with the internationally recognised "polluter pays principle" the company will make the necessary financial provision for compliance with the EMP.

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT

3.1. COMMUNICATION BETWEEN PARTIES

Emphasis will be put towards open communication between all parties, in order to reach a proactive approach towards potential environmental issues deriving from the project. This approach should guarantee that environmental impacts are anticipated and prevented, or minimized, rather than adopting a negative "policing" approach after negative impacts have already occurred.

The importance of a proactive approach cannot be over-emphasized, particularly in relation to preventing unnecessary tracks, and damage to vegetation (i.e., protected and endemic species) as these impacts cannot easily be remedied.

3.2. THE EXPLORATION COMPANY

KDN/Philco is ultimately responsible for all stages of the project and the impacts resulting from those activities. The responsible persons will be the company's appointed Environmental Control Officer (ECO), Project Manager (PM) and Managing Director (MD) to ensure that:

- The EMP and its environmental specifications are included in contractual documents, and it is required that contractors, and subcontractors, consultants etc. do meet the EMP requirements;
- The company and all its subcontractors, consultants etc. comply with all Namibian legislation and policies and any relevant International Conventions;
- Compliance with the environmental specifications is enforced on a day-to-day basis;
- Environmental audits are conducted periodically by a suitably qualified Environmental Control Officer ECO to confirm that the environmental requirements are properly understood and effectively implemented;
- Sufficient budget is provided to implement those measures that have cost implications;
- The PM must commission tree surveys well in advance of planned track creations so that the necessary site visits by forestry personnel and forestry permits are acquired; and
- Open and effective communication is maintained between all parties concerning environmental management on the project.

3.3. SITE/PROJECT MANAGERS

Day-to-day responsibility for environmental management will be assigned to the Site/Project Manager as well as the Environmental Control Officer (ECO) for the duration of the project to:

- Be familiar with the contents of the EMP and applicable sections of the EIA and the measures recommended therein.
- Monitor compliance with the environmental specifications on a daily basis and enforce the environmental compliance on-site by communicating the ECO's directions to all personnel involved; In the event of any infringements leading to environmental damage, personnel need to consult with the ECO and seek advice on any remedial measures to limit or rectify the damage.
- Maintain a record (photographic and written) of "before-and-after" conditions on site.
- Facilitate communication between all role players in the interests of effective environmental management.

3.4. ENVIRONMENTAL CONTROL OFFICER (ECO)

The proponent must appoint a suitably qualified ECO who is responsible to:

- Undertake environmental audits of overall compliance with the environmental specifications. This should be done at least bi-annually for the project area.
- Submit a site inspection report to the Managing Director.
- Advise the MD on interpretation and implementation of the environmental specifications as required; and,
- Make recommendations for remedial action in cases of non-compliance with the environmental specifications.
- The report should be submitted to the MEFT periodically at the time interval stipulated by law and as per the conditions of the Environmental Clearance Certificate.

3.5. CONTRACTORS AND SUB-CONTRACTORS

The contractors will have the responsibility to:

- Familiarize themselves with the requirements of the EMP and comply with the environmental specifications within.
- Timeously, notify the ECO of any actions that might have significant negative impacts. Mitigatory measures should be discussed before negative impacts arise and implemented if the impact occurs. Conduct or arrange for environmental training for employees and subcontractors.
- Undertake rehabilitation measures where required. Rehabilitation measures should be carried out progressively and not left till the end of the project.

4. ENVIRONMENTAL SPECIFICATIONS

All activities will be conducted in an environmentally and socially responsible manner. The proponent, contractors, and all personnel on-site will comply with the environmental specifications contained in this section.

4.1. TRAINING AND AWARENESS

All site personnel and site contractors will receive the training to equip them with the necessary knowledge to comply with the environmental specifications. The proponent will ensure that appropriate training is provided to all site personnel.

4.2. STAKEHOLDER RELATIONS

All site personnel will endeavor to maintain good relations with the landowners and members of the public. Any complaints received by the PM/ECO should be recorded and will be addressed.

4.3. PERMITS

All relevant permits shall be obtained from relevant authorities.

Any removal or relocation of rare and endangered plants will be for conservation, and removal or relocation shall be done by a specialist and with the required permits from the Directorate of Forestry. Further information on the possible permits required is presented in (TABLE 3).

TABLE 3 - APPLICABLE PERMITS TO THE PROPOSED PROJECT

PERMITS/CERTIFICATES	ACTIVITY	VALIDITY
Exclusive Prospecting Licence - MME	Issued once the mining commissioner is satisfied if all requirements outlined in the preparedness to grant are met.	3- Years
Environmental Clearance Certificate - MEFT	Issued once the environmental commissioner is satisfied with the EMP submitted in support of the project. The EMP will be the legally binding document between the MEFT and the proponent.	3-Years
Fuel Consumer Installation Certificate - (MME)	Regulates the amount of fuel product in possession	Temporary/ permanent
Notice of intention to drill – (MME)	This is submitted to the mining commissioner prior to drilling operation	Valid for the drilling period in notice
Water abstraction permit – (DWA)	This is applied for at the Directorate of Water Affairs to outline the borehole locations and the quantities of water you intend to abstract ad for what sort of activities	Permit dependent
Forestry Permits – (DOF)	Regulates the forest species to be cleared.	Temporary.

4.4. ROAD SAFETY

The access roads can be dangerous at times due to dust from passing vehicles, poor camber, patches of loose sand, careless drivers, animals and other external factors. All drivers must be aware of these hazards and take precautions to avoid them. Such precautions will include, but not be limited to:

- Complying with speed limits.
- Reducing speed considerably when visibility is poor.
- Being wary of other vehicles.
- Travelling with lights on even in daylight.
- Slowing down for animals and birds on the road; and,
- Being cautious of other road users– taking into account reduced visibility due to dust.

4.5. ACCESS TRACKS

- The proponent will predominantly use existing tracks, and any new tracks or extensions should be established with the permission of the landowners and the Department of Forestry DoF when necessary (if larger areas require clearing).
- The selected access and site roads will be clearly marked. A single road only will be used to and from each destination. Turning points for vehicles will also be pre-selected and marked.
- Particular care will be taken to avoid damage to plants.
- Any elevated sites, or sites away from existing tracks, will be accessed on foot rather than by a vehicle.

4.6. CONSERVATION OF BIODIVERSITY

- Damage to protected species will be avoided at all costs. The list of plant species that could potentially occur in the area and their status in terms of sensitivity is presented in the scoping report for reference (Appendix E).

4.7. WILDLIFE POACHING

NB: It is an offence to poach wildlife.

No animal or bird is to be captured, killed or harmed in any way. Anyone caught violating this law will face suspension from the project and could be liable for prosecution. Likewise, domestic livestock on farms may not be harmed.

4.8. SOIL MANAGEMENT AND EROSION CONTROL

- During any excavating and clearing the Contractor shall take care to remove as little topsoil as possible. All soil within 100mm of the cleared surface level shall be regarded as topsoil.
- Remove and separately stockpile any subsoil material that can be used for site backfilling.
- Avoid handling soil when wet as this may result in the loss of soil structure and compaction. Soils should not be handled during windy conditions, which may lead to the loss of soil through wind erosion.
- Soil erosion must be prevented at all times. Where evidence of soil erosion can and/or is taking place, this should be reported by the Contractor to the Project Manager (PM) or ECO.
- Unnecessary compaction of construction areas must be prevented, to reduce runoff velocity.

4.9. POLLUTION CONTROL

4.9.1. Spillage Incidents

- Should any spillage incident occur, they should be reported immediately to the PM/ECO and shall be contained and cleaned up. All to ensure that correct mitigation of the pollution is undertaken.

4.9.2. Air pollution / Dust emission

- Soil and sand stockpiles shall be located in sheltered areas not exposed to the wind.
- Retention of vegetation where possible will reduce dust travel.
- Exposed surfaces must be re-vegetated as soon as possible.
- The movement of vehicles should be strictly controlled in order to reduce the impact of increased air pollution.
- Adherence to speed limits shall be enforced.
- Ensure sensible and responsible use of equipment which generates dust.
- Limit operations during dusty working weather conditions.
- Vehicles and operating equipment must be regularly serviced.

4.9.3. Noise pollution

- Noise levels shall be kept within acceptable limits. All noise and sounds generated shall adhere to SABS 0103 specifications for maximum allowable noise levels for residential/communal areas.
- Noisy activities must be limited to daytime to avoid disturbance towards adjacent/nearby landowners and other receptors.
- Pre-arrangements must be made for noisy activities that will take place over weekends and public holidays, or during night hours

- Vehicles and operating equipment must be regularly serviced.

4.10. WASTE MANAGEMENT

- The area needs to be kept clean, neat, and tidy to the satisfaction of the proponent and ECO. The proponent will provide bins at the worksites and will be responsible for the collection and containment of daily refuse and waste generated by staff. Bins will be secured in such a way that wind cannot remove papers and plastics. Bins will also be secured against animals around the vicinity.
- No waste will be buried/burnt on site. All waste will regularly be removed to an approved waste disposal facility (Tsumeb).

4.11. HAZARDOUS SUBSTANCES

- All containers of fuel, oil, and any other hazardous substances will be kept sealed, and clearly labeled for identification.
- Tanks for fuels, oils, and any other hazardous substances need to be bunded to hold 110% of the capacity of the tank to contain any possible spills.
- If any spills occur, clean–up shall occur immediately and disposed of appropriately.

4.12. FIRE PREVENTION

- Ensure an Emergency Response Plan.
- No fires are to be left unattended.
- Charcoal sourced from the surrounding area should be 100% cured to avoid combustion.

4.13. ARCHAEOLOGICAL SITES

- All archaeological remains are protected under the National Heritage Act (2004) and are not to be destroyed, disturbed, or removed. The Act also requires that any archaeological finds be reported to the Heritage Council Windhoek (**Tel. 061-244375**). The same applies to rock art sites.
- Contractors working on the site should be made aware that under the National Heritage Act, 2004 (Act No. 27 of 2004) any items protected under the definition of heritage found in the course of development should be reported to the National Heritage Council.
- The chance finds procedure as outlined in the HIA must be implemented at all times. Reference should be made to the Heritage Impact assessment **Appendix E** of the scope report.

- The ECO will be notified without delay of any archaeological finds.

4.14. HEALTH AND SAFETY

All company personnel will receive a detailed induction upon joining the project. The PM and/or ECO will ensure regular safety 'tool box' meetings are carried out at the site in order to maintain safety awareness and to inform staff of any changes or developments pertaining to safe operations since the last induction/meeting. These meetings and inductions will be recorded and will include all names of staff present and any follow-up or action required from the meeting.

- ***Dust:*** All staff will receive dust masks and proper PPE to prevent inhalation of potential dust while carrying out any dust-producing activities associated with the project
- Eating, drinking, and **smoking** while working with any materials that may contain radioactive or hazardous substances is forbidden. Good personal hygiene is encouraged (e.g., washing hands before eating) to prevent ingestion of potentially hazardous or radioactive materials.
- **Bees:** Bee stings are potentially dangerous to persons who are allergic to them. Bees are attracted to water, so water / liquid should not be left standing.
- **Snakes & Scorpions:** A number of poisonous snake and scorpion species may occur in the area. Therefore, precautions are required which include: -
  - Exercising caution when picking up rocks or equipment from the ground.
  - Looking at the ground when walking; and,
  - Wearing closed shoes and not walking barefoot.

In case of emergency, ensure that Aspivenin (suction syringe) is permanently available at all workstations for the first aid treatment of snake bites, scorpion stings and bee stings. Antihistamine tablets should also be available for the first aid treatment of allergic reactions to bee stings.

TABLE 4 - EMERGENCY CONTACT NUMBERS IN TSUMEB

Ambulance	+264 67 221082
Fire Brigade	+264 67 221004
Electricity	+264 67 221056
Hospital / Clinic	+264 67 221082
Police	+264 67 10111
Water / Sewage	+264 67 221056

4.15. WORK STOPPAGE

The PM will have the right to order work to stop in the event of environmental specification infringements that could result in damage to plants, wildlife, or personnel. Work will continue once the situation is rectified and brought to a state of compliance.

4.16. COMPLIANCE MONITORING

Where necessary during exploration activities, the company ECO will conduct regular site compliance inspections. After each inspection the ECO will compile an EMP compliance report for submission to the PM and biannually to the MEFT or as required. Environmental monitoring programme is part of the EMP performances assessments and will need to be compiled and submitted as determined by the Environmental Commissioner. The process of undertaking appropriate monitoring as per specific topics (such as fauna and flora) and tracking performances against the objectives and documenting all environmental activities is part of internal and external auditing.

The monitoring of the EMP performance will require a report outlining all the activities related to effectiveness of the EMP at the end of the planned mineral exploration to be undertaken by the Project ECO with the support of the external specialist consultants as maybe required. The objective will be to ensure that corrective actions are reviewed, and steps are taken to ensure compliance for future EIA and EMP implementation.

The report shall outline the status of the environment and any likely environmental liability after the completion of the proposed / ongoing project activities. The report shall be submitted to the Environmental Commissioner in the Ministry of Environment Forestry and Tourism and will represent the final closure and fulfilment of the conditions of the ECC issued by the Environmental Commissioner and the conditions of the Pro-Forma Environmental Contract signed by the Proponent, Environmental Commissioner and the Mining Commissioner.

5. MITIGATION MEASURES

The purpose of the Environmental Management Plan is to provide a detailed plan to mitigate the negative and positive impacts identified in the environmental scoping and assessment report. Furthermore, it aims to provide actions with roles and responsibilities to implement the environmental specifications provided for to the proponent, contractors, subcontractors who will undertake exploration activities.

The following table provides a large-scale summary overview of all the major environmental management aspects. The scoping study submitted with this EMP also provides mitigation measures for impacts identified therein under **Chapter 9**.

TABLE 5 – EMP MITIGATION MEASURES

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
Access Control	• Use existing roads and tracks as far as practically possible. Any new tracks required for exploration should be constructed in consultation with the landowners/custodians. • Only drive along the existing tracks and avoid unnecessary drives around the area as it may harm vertebrate fauna and unique flora and may also cause erosion related problems, etc. • Avoid off-road driving at night as this increases mortality of nocturnal species. • Implement and maintain off-road track discipline with maximum speed limits (30km/h or as otherwise specified by the PM) • Where tracks must be made to potential exploration sites off the main routes, the routes should be selected along already disturbed areas or where there is minimal biodiversity expected to occur. • Avoid placing tracks within drainage lines. Avoid collateral damage (i.e., select routes that do not require the unnecessary removal of trees/shrubs, especially protected species). • Rehabilitate all new tracks created if they will not be used by the community in the future.	Contractor, Project Manager/Site Manager	On-going
Establishing Camping and storage Areas	• Establishment of the supporting project infrastructure should be done on an area with the least disturbance to the environment and within the non-sensitive areas. • Any site establishment should be done in consultation with the landowners. • Choice of location for storage areas must take into consideration prevailing winds, distance to water bodies and general on-site topography. • Storage areas must be designated, demarcated, and fenced if necessary. • Storage areas should be secure to minimize the risk of crime. • They should be safe from access by children and animals etc.	Contractor, Project Manager/Site Manager	On-going

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	• Fire prevention/fighting tools must be present at all storage facilities. • Avoid and/or limit the use of lights during nocturnal exploration activities as this could influence and/or affect various nocturnal species – e.g. bats and owls, etc. Use focused lighting for the least effect. • Avoid introducing dogs and cats as pets to camp sites as these can cause significant mortalities to local fauna (cats) and even stock losses (dogs). • Rehabilitate all areas disturbed by the exploration activities such as the camp sites, exploration sites including all excavated areas.		
Establishing Storage Areas	**Hazardous Material Storage** • Hazardous substances are those that are potentially poisonous, flammable, carcinogenic, or toxic. Some examples are diesel, petroleum, oil, bitumen, cement, solvent-based paints, lubricants, explosives, drilling fluids. • Material safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs should additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes. • Hazardous storage areas must be 110% bunded with an impermeable liner to protect groundwater and soil from contamination. The Contractor shall submit a method statement to the Project Manager for approval. • Storage areas containing hazardous substance materials must be clearly sign posted.	Environmental Control Officer(ECO), Proponent	

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
Education Of Site Staff on General Environmental Conduct	**<u>Environmental Education and Awareness</u>** • Ensure that all site personnel have a basic level of environmental awareness training. The proponent must submit a proposal for this training to the ECO for approval. Topics to be covered should include: o What is meant by "environment". o Why the environment needs to be protected and conserved. o How construction activities can impact on the environment. o What can be done to mitigate against such impacts. o Awareness of emergency and spills response provisions. o Social responsibility during operations, e.g., being considerate to local residents. • It is the proponent's responsibility to provide the site with the appropriate level of environmental training and to ensure that there is sufficient understanding to pass this information onto anyone operating at the site. • The need for a 'clean site' policy also needs to be explained to all workers.	Project Manager/Site Manager Environmental Control Officer(ECO), Proponent	During staff induction and ongoing
Education Of Site Staff on General Environmental Conduct	**<u>Workers Conduct on site.</u>** • A general regard for the social and ecological wellbeing of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules: • No alcohol / drugs to be present on site. • No firearms allowed on site or in vehicles transporting staff to / from site(unless used by security personnel). • Prevent excessive noise. • Prevent unsocial behavior.	Proponent, Employees, Environmental Control Officer(ECO)	During staff induction and ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	• Bringing pets onto the site is forbidden. • No harvesting of firewood from the site or from the adjacent areas. • Staff are to make use of the facilities provided for them, as opposed to ad-hoc alternatives, (e.g., fires for cooking, the use of surrounding areas / bush as a toilet is forbidden). • Trespassing on private / commercial properties adjoining the site is forbidden. • Driving under the influence of alcohol or illicit drugs is prohibited.		
Social Impacts	• Implement measures to reduce project-related influx. • Manage unrealistic expectations with the appropriate messaging. • Develop a standardized recruitment method for the hiring of sub-contractor and field workers. • Prioritize the employment of local residents and the contracting of local companies. • If required, the establishment of a camp should be conducted with the prior approval of the landowner. • Accommodation camp should consider provision of basic services. • The proponent shall develop a worker code of conduct. • Any criminal activity will be reported to the authorities. • Proponent to implement a no-tolerance policy regarding the use of alcohol and workers should submit to a breathalyzer test upon request when reporting for duty daily. • Request that the Roads Authority/proponent erect warning signs of heavy operation vehicles on affected public roads.	Contractor, Project Manager/Site Manager	During staff induction and ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	• Ensure that drivers adhere to speed limits and that speed limits are strictly enforced. • Ensure that vehicles are in good condition and road worthy, and drivers are licensed. • Train drivers in potential safety issues. • A feedback mechanism will be implemented to address complaints and grievances in a timely and culturally appropriate manner.		
Biodiversity	• Fauna and Flora • In the event where exploration intensifies, a site-specific vegetation survey should be conducted over the areas of interest. • No protected vegetation may be cleared without prior permission from the forestry department. • Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. • Engage interested stakeholders to participate on site in the rescue and relocation of indigenous and protected flora. • Disturbance to birds, animals and reptiles and their habitats should be minimized wherever possible. • Avoid unnecessarily affecting areas viewed as important habitat. • Avoid off-road driving at night as this increases mortality of nocturnal species. • Implement and maintain off-road track discipline with maximum speed limits (e.g.,30km/h). • Remove and relocate slow moving vertebrate fauna (e.g. tortoises, chameleon, snakes, etc.) to suitable habitat elsewhere on property. • Avoid rocky outcrops throughout the entire EPL area.	Employees, ECO, Contractor, Project Manager/Site Manager	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	• Prevent and discourage the collection of firewood as dead wood has an important ecological role – especially during the development phase(s). • Avoid and discourage open area fires as this could easily cause runaway veld fires causing problems that could result in major loss of grazing, domestic and wildlife mortalities. • Rehabilitate to an agreed upon use with stakeholders. • Implement erosion control. The area(s) towards and adjacent the drainage line(s) are easily eroded, and further development may exacerbate this problem. Avoid construction within 20m of the main drainage line(s) to minimise erosion problems as well as preserving the riparian associated fauna. • In an event of a discovery of economic minerals resources, a thorough investigation of water use, and ground water extraction should take place before actual mining activities commence as this would affect the local flora, especially the ephemeral riparian vegetation, not only locally, but downstream as well. • No domestic pets such as cats and dogs are allowed to accompany workers during the field-based exploration stage as cats decimate the local fauna and interbreed and transmit diseases to the indigenous African Wildcat that may be found in the local area. • KDN should engage and enter into agreements with individual farmers including those that are registered with the Department of Veterinary Services to export meat to the EU and other national and internation markets. • The proponent should familiarize themselves with the EU farming practice and veterinary regulations and laws where necessary should be taken into consideration during the planned exploration activities.		

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	• Some affected farmers practice orchard plantation. They possibly operate under specific farming practice and regulations that should be adhered to maintain good standing status. Therefore, areas where this is being practice may be off limits from exploration.		
Visual	• Consider the landscape character and the visual impacts of the area (including camp site) from all relevant viewing angles, particularly from public roads. • Use vegetation screening where applicable. Do not cut down vegetation unnecessarily around the site and use it for site screening. • Avoid the use of very high fencing. • Minimise accessing roads or going off-road where it could result in land scarring . • Minimise the presence of secondary structures: remove inoperative support structures. • Remove all infrastructure and reclaim or rehabilitate the project site after project activities are completed.	Contractor, Project Manager/Site Manager	Ongoing
Air Quality	• Dust suppression techniques should be employed, where possible, if the specific operation activity is likely to create dusty atmospheric conditions in excess of the periodic extremes. • Avoid activities that create excessive dust on extremely windy days. • Personnel are required to wear personal protection equipment if excessive dust is created for prolonged working periods. • When necessary and if the dust is ongoing for a period of over 2 years continuously, establish a monthly dust monitoring exercise to collect the baseline dust conditions in the area before excessive activities such as trial mining commences.	Contractor, Project Manager/Site Manager, ECO	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
Noise	• Machineries and vehicles (moving and stationed) should be serviced regularly. • A noise management standard operating procedure (SOP) for the activities happening on-site should be developed. • Avoid creating unnecessary noise by making sure that equipment not in use are always turned off and by avoiding operations during odd hours. • Fit sound mufflers on all machinery where applicable. • Equip employees with appropriate PPE (noise reduction earplugs/earmuffs) • Employees should work in shifts to avoid prolonged working hours and consequently prolonged exposure to noise.	Contractor, Project Manager/Site Manager	Ongoing
Health and safety	• Physical hazards: Follow national and international regulatory and guidelines provisions, use of correct Personal Proactive Clothing at all times, training programme, as well as the implementation of a fall protection program in accordance with the Labour Act. • Some of the public access management measures that may be considered in an event of vandalism occurring are: – All exploration equipment must be in good working condition and services accordingly. – Control access to the exploration camp site through using gates on the access road(s) if required. – Should trial mining occur the entire trial pit site must be fenced off appropriately. • Notice or information boards relating to public safety hazards and emergency contact details to be put up at the gate(s) to the exploration area. • Access to operations area should be limited to authorized personnel only. Prior arrangement should be made for non-authorized individuals.	Contractor, Project Manager/Site Manager	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
Protection of Soil and Ground/surface water as well as general water usage	• Always use as little water as possible. Reduce, reuse and re-cycle water where possible. • All leaking pipes / taps must be repaired immediately as they are noticed. • Never leave taps running. Close taps after you have finished using them. • The Proponent must obtain the permission of the landowners before utilizing any water resources or any associated infrastructure. • Accidental spills that occur outside of the bund area must be contained and prevented from entering the stormwater system. • All spills must be reported to the project manager on site and treated with the appropriate spill absorbent. • Any significant spills or leak incidents must be reported in terms of the National Environmental Management Act and the Water Act. • If there is a need to drill a water borehole to support the proposed exploration programme the Proponent (Proponent) must obtain permission from the landowner and Department of Water Affairs in the Ministry of Agriculture and Forestry. • In an event of discovery of economic minerals resources, the sources of water supply for the mining related operations will be supplied by NamWater and the Proponent is advised to contact NamWater at the earliest stages of the development of any possible mining project, and. • If there are any further (larger scale) exploration/drilling activities and/or mining activities to follow from the initial planned drill holes, groundwater monitoring must be implemented to include water level monitoring and also water sampling on a bi-annual basis. In order to have greater transparency on the water monitoring activities, the affected landowners / farmers must be given full access to the results of the water monitoring analyses.	Contractor, Project Manager/Site Manager	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
Waste	• The domestic waste, which is separated from all paper and organic materials, is taken to the nearest official dumpsite. • Oil from the servicing of the vehicles and machines is collected in drums and is taken together with all other industrial waste that is generated on site to the nearest hazardous waste site. • Storage areas that contain hazardous substances must be bunded with an approved impermeable liner. • Bins and / or skips shall be provided at convenient intervals for disposal of waste within the project site. • Bins should have liner bags for efficient control and safe disposal of waste. • Recycling and the provision of separate waste receptacles for different types of waste should be encouraged. • Ensure good housekeeping. **Ablutions** • Waterless toilets are to be maintained in a clean state and should be moved to ensure that they adequately service the work areas. • The Contractor is to ensure that open areas or the surrounding bush are not being used as a toilet facility.	All personnel	Ongoing
Heritage sites destruction during exploration activities	• In addition, where possible, activities are to be aligned along previously disturbed areas. Habitats surrounding the washes (rivers) may host sensitive plant species which require permits for removal to avoid destruction. No wandering around the site, collecting of plant species or hunting should be allowed. • A 'chance find' is contained in the heritage specialist report conducted for the project. Any potential heritage site should be communicated to the police and the National Heritage Council of Namibia. • If activities occur at the location where a 'chance find' has been made, then the	Contractor, Project Manager/Site Manager	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	activities should cease until the necessary authorities have visited the site and provided the go ahead to proceed with activities		
Rehabilitation	• Small samples are preferably removed from site to avoid additional scars in the landscape. • Litter from the site has been taken to the appropriate disposal site. • Debris, scrap metal, etc is removed before moving to a new site or on completion of the project work. • Water / Fuel tanks are dismantled and removed if not needed for further use. • Tracks on site and the access road are rehabilitated by smoothing the middle ridge between the tracks and raking the surface unless the owner/farmer has provided the proponent a request in writing to retain the track(s) • if applicable the stockpiled subsoil to be replaced (spread) and/or the site is neatly contoured to establish effective wind supported landscape patterns. • Replace the stored topsoil seed bank layer.	Contractor, Project Manager/Site Manager	Progressively and prior ceasing project activities

6. DECOMMISSIONING AND REHABILITATION

Disturbance of the earth's surface by exploration activities may result in removal of existing vegetation and ecosystems within the disturbed area. The impacts are significant, but localized to the disturbed area, and the overall extent of the impact is determined by the concentration of the activity and the sensitivity of the disturbed ecosystems. The impact on the environment can be lessened by planning with future closure in mind. When an exploration area is abandoned the infrastructure and altered landscape can affect the safe access of wildlife and public if not rehabilitated. The altered habitat may or may not promote the re-establishment of organisms once found there. Visual rehabilitation to the original state is not always practical due to economic factors.

The objectives of the closure and decommissioning are to:

- Provide a safe and stable landform compatible with the intended final use.
- Comply with relevant regulatory requirements and attain regulatory consensus on the successful closure and rehabilitation of the Project area.
- Complete the closure, decommissioning and rehabilitation works as quickly and cost effectively as possible whilst achieving primary objectives
- Produce a final "walk away" landform that is stable and that blends aesthetically into the surrounding landforms, yet as far as possible does not limit possible future land uses

6.1. SITE REHABILITATION

Proponent should keep the disturbed areas to a minimum, plants should not be removed unless necessary; selective exploration should be adopted so that the entire site is not cleared and affected at once; backfilling the topsoil should be done as soon as possible where soil was removed, therefore topsoil should not be piled up for a long time as it will lose its natural nutrient content.

6.2. PLANNING FOR REHABILITATION

The proposed post exploration land-use will also influence the procedure and the plant species used for rehabilitation.

The following are the basic rehabilitation practices as summarized after the Minerals Council of Australia (Allan, 1998), which with appropriate modifications, will apply to most disturbed areas.

1. Making Safe: After planning for rehabilitation, the first step is to clean up and make the area rehabilitated, safe. This involves the following:
    - Removal of infrastructure and unused or unwanted equipment. No facilities or equipment should remain on site unless with the written approval of the landowner or relevant authority.

- Removal of rubbish for disposal at approved sites. Care is required with residual toxic or hazardous materials including contaminated packaging and containers.
- Restricting or preventing public access by removal or closure of access roads and tracks leading to high-risk explored areas until such a time that the area is clear of exploration activities induced ''risk or danger''

2. Erosion Control: Progressive rehabilitation will be undertaken to stabilize disturbed areas as quickly as practical and to limit erosion.
    - Restrict clearing to areas essential for the works.
    - Minimize length of time soil is exposed.
    - Divert run-off from undisturbed areas away from the works.
3. Topsoil Management: The rehabilitation strategy may include the following measures which are designed to minimize the loss of topsoil material, respread on rehabilitated areas and promote successful vegetation establishment.
    - Minimize the length of time that topsoil material is to be stockpiled.
    - Respread topsoil material in even layers at a thickness appropriate for the landform and land capability of the area to be rehabilitated.
    - Topsoil stockpiles are located in areas away from drainage lines or windy areas in order to minimise the risk of soil and wind erosion.
    - Rehabilitation areas of returned topsoil will be ripped, with care taken not to bring subsurface materials to the surface (e.g., large rocks). Ripping should only be sufficient to allow equipment to work efficiently. Ripping along slopes should be along contour.

It is anticipated that rehabilitation works will be marginal as most of the techniques to be employed in this exploration are minimally to non-invasive.

7. MONITORING PLAN

The project monitoring is conducted under the EMP includes:

(i) **EMP compliance monitoring -** To be conducted by the ECO to verify EMP compliance during project implementation especially if the program continues for over a period required for monitoring by MEFT.

8. CONCLUSION

This Environmental Management Plan highlights the management measures that will be implemented to mitigate the environmental impacts of the proposed activities. Additionally, it highlights the need / requirements for the Environmental Emergency Preparedness and Response procedure.

The EMP is a legal document, which commits the applicant to comply with all management measures, monitoring programmes and other plans as presented herein. As part of the EMP, monitoring programmes have been provided to manage and control critical components of the environment. This is a live document which may be amended if project activities alter.

It is advised that the Environmental Management Plan should be implemented from the beginning of each exploration phase and exploration program and generally on an ongoing basis; that environmental performance is regularly monitored (so that the lessons learnt during the exploration phase can be incorporated into the improvement of the Environmental Management Plan over time); and that corrective measures are taken as or when required.

In the event that economic minerals resources are discovered within the EPL 9852 area and could lead to the development of mining project, a new Environmental Clearance Certificate (ECC) for mining will be required. The ECC being supported by this Report only covers the exploration phase. A separate field-based and site-specific Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports supported by specialist studies as may be applicable must be prepared in order to support the application for the new ECC for mining operations. The EIA and EMP studies shall form part of the prefeasibility and feasibility study with respect to the test mining or possible mining operations.