# Mitten Minerals Exploration (Pty) Ltd

Final Environmental Impact Assessment (EIA) Report to Support
the Application for Environmental Clearance Certificate (ECC)
for the Proposed Minerals Exploration Activities in the
Exclusive Prospecting License (EPL) No. 9372
**Outjo District, Kunene Region, Northcentral Namibia**

**March 2025**

13 Feld Street, P. O. Box 3489
**WINDHOEK, NAMIBIA**

# PROPONENT, LISTED ACTIVITIES AND RELATED INFORMATION SUMMARY

## TYPE OF AUTHORISATIONS REQUIRING ECC

Exclusive Prospecting License (EPL) No. 9372
for ECC for Exploration

## MEFT ECC REFERENCE APPLICATION No.

APP No. 005565

## NAME OF THE PROPONENT

Mitten Minerals Exploration (Pty) Ltd

## COMPETENT AUTHORITY

Ministry of Mines, Energy and Industry (MMEI)

## ADDRESS OF THE PROPONENT AND CONTACT PERSON

13 Feld Street, P. O. Box 3489
**WINDHOEK, NAMIBIA**
**Contact Person**: Mr Edwin Dawet
**Email:** edaweti@osinoresources.com

## PROPOSED PROJECT

Proposed Minerals Exploration / Prospecting activities in the Exclusive Prospecting License (EPL) No. 9372

## PROJECT LOCATION

Outjo District, Kunene Region, Northcentral Namibia
(Latitude: -20.279194, Longitude: 15.554194)

## ENVIRONMENTAL CONSULTANTS

Permitting / De-Risking Advisors / Environmental Consultants
Risk-Based Solutions (RBS) CC
10 Schützen Street, Erf No. 7382, Sivieda House
Windhoek Central Business District (CBD),
P. O. Box 1839, **WINDHOEK, NAMIBIA**
**Tel:** +264-61-306058 / 224780 / 236598, **Fax:** +264-61-245001,
**Global Office / URL:** www.rbs.com.na

## ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Dr Sindila Mwiya
*PhD, PG Cert, MPhil, BEng (Hons), Pr Eng*
*Email: frontdesk@rbs.com.na*

**CITATION:** ***Risk-Based Solutions (RBS), 2025***. *Final Environmental Impact Assessment (EIA) Report to Support the Application for Environmental Clearance Certificate (ECC) for the Proposed Minerals Exploration Activities by Mitten Minerals Exploration (Pty) Ltd in the Exclusive Prospecting License (EPL) No. 9372, Outjo District, Kunene Region, Northcentral Namibia.*

**DR SINDILA MWIYA, TEAM LEADER / ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP), PERMITTING / DE-RISKING ADVISORS / ENVIRONMENTAL CONSULTANTS DECLARATION**

I, Dr Sindila Mwiya, working for Risk-Based Solutions (RBS) CC, the Permitting / De-Risking Advisors / Environmental Consultants and being the Environmental Assessment process Team Leader and EAP for the preparation of this Environmental Impact Assessment (EIA) Report to support the application for an Environmental Clearance Certificate (ECC) for the proposed minerals exploration activities by Mitten Minerals Exploration (Pty) Ltd (the Proponent), in the Exclusive Prospecting License (EPL) No. 9372, Outjo District in Kunene Region, northcentral Namibia, hereby declares that:

1. This Environmental Impact Assessment (EIA) Report has been prepared in accordance with the provisions of the Minerals (Prospecting and Mining) Act (No 33 of 1992), the Environmental Management Act, 2007, (Act No. 7 of 2007), all other applicable national laws, and Regulations and Good International Industry Practice (GIIP).

2. I am highly qualified and experienced in environmental assessments and management for onshore and marine mineral exploration and mining operations. My academic knowledge and experience in minerals exploration covers initial desktop exploration, regional reconnaissance field-based operations, initial local field-based activities, and detailed local field-based activities such very detailed geological mapping, trenching, bulk sampling, surveying, and detailed drilling to determine the feasibility of any delineated local minerals resources targets and conduct test mining activities as may be applicable. In mining operations, I am academically qualified and highly experienced with respect to the preparation of feasibility reports and Mining License (ML) application and compliance support services, support in the infrastructure planning, design, construction, production, closure, decommissioning and aftercare support services. I hold a PhD with research interests, academic training, and technical knowledge in Engineering Geology, Geotechnical, Geoenvironmental and Environmental Engineering, Artificial Intelligence and Knowledge-Based Systems with special focus on EIAs, EMPs, EMSs, SEAs, SEMPs and ESG with respect to subsurface resources (minerals, petroleum, water) and energy in arid and semiarid environments.

3. I am an Engineering and Environmental Geologist with extensive technical knowledge and experience in conducting environmental assessments, management, and monitoring for offshore and onshore subsurface resources (petroleum, solid state minerals, water, geothermal), exploration and utilisation and have undertaken more than 300 projects since 2004, covering resources exploration and production related environmental assessments, management, and monitoring projects in different parts of the World.

4. I have performed the work relating to this project in an objective manner, even if the outcomes will result in views or Records of Decision that may not be favourable to the Stakeholders or the Proponent, and.

5. I am an independent consultant not related to the Proponent, I co-own and operate an independent company (Risk-Based Solutions CC) which is not related to the Proponent. Except for the fees payable for professional consulting services rendered to the Proponent, I have no shares, interests, or involvement in the license, financial or other affairs or business or operational decisions of either the Proponent or the decision-making structures of Government.


……

Dr Sindila MWIYA
Environmental Assessment Practitioners (EAPs)\Team Leader
Permitting / De-Risking Advisors / Environmental Consultants
**RISK-BASED SOLUTIONS (RBS) CC**

# Contents List

# List of Figures



# List of Tables

# NON-TECHNICAL SUMMARY

**Mitten Minerals Exploration (Pty) Ltd (the "PROPONENT")** has been granted the preparedness to grant application for Exclusive Prospecting Licenses (EPL) No. 9372 with respect to dimension stone, base and rare metals, industrial minerals and precious metals group of minerals. The physical license will only be granted by the Mining Commissioner in the Ministry of Mines, Energy and Industry (MMEI) if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism (MEFT). If the ECC is granted, the Proponent intends to conduct exploration / prospecting activities starting with desktop studies including the processing and interpretation of the existing geophysical and other historical minerals exploration datasets, followed by regional field-based reconnaissance activities. If the initial exploration results are positive, the Proponent will implement detailed site-specific field-based activities using techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests.

The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without an Environmental Clearance Certificate (ECC). In fulfilment of these environmental requirements, the Proponent has appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Reports to support the application for ECC. This Environmental Impact Assessment (EIA) Report has been prepared by Risk-Based Solutions on behalf of the Proponent to support the application for ECC with respect to the proposed prospecting / exploration activities.

The Exclusive Prospecting Licence (EPL) No. 9372 is situated in Kunene Region, Outjo District, Kamanjab and Outjo Constituencies, northcentral Namibia. The EPL 9372 has a total area of 22570.2970 Ha and covers the following privately owned commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans 100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88.

Based on the 2023 population Census, the Kunene Region covers an area of 115, 293km$^2$ and it is home to 120,762 inhabitants representing 4% of the Namibian population. The region has a total number of males is 60 573 and 60 189 females. The EPL area falls in the Kamanjab and Outjo Constituencies. The Kamanjab Constituency has a population of 11349 with 6568 and 4781 being male and females, respectively. The constituency has a total area of 17130.63 km² Area and a population density of 0.7/km². The Outjo Constituency has a population of 19,743 with 10,229 and 9,514 being male and females, respectively. The constituency has a total area of 7,468 km² Area and a population density of 2.644 /km². The socioeconomic setting of the region is dependent on commercial and subsistence agriculture cattle and small stock farming, conservation, tourism, and hospitality, and limited minerals exploration and mining operations.

The EPL 9372 falls within the Kalahari, Thornbush shrubland and Karstveld vegetation zones. It is estimated that at least 57 species of reptile, 8 amphibian, 87 mammal, 190 birds, 107 larger trees and shrubs and up to 80 grass species occur in the general/immediate area of which a high proportion are endemics (e.g., reptiles – 49.1%).

Project alternatives have been considered in this EIA Report covering location of the proposed EPL Area, mineral exploration methods to be used, transport options, water resources, energy sources, the no-action alternative, other current and future alternative land uses, potential land use conflicts, and ecosystem function, services, use values, and non-use or passive use.

As part of the environmental assessment process and as provided in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012, public consultation process was undertaken through the publication of notices in the local newspapers undertaken during Months February and March 2025. A stakeholder register was opened on the 27$^{th}$ February 2025. Subsequent public notices were published in five (5) consecutive working days in Windhoek Observer Daily Newspaper during the month of March 2025. The deadline for written submissions and input to the environmental assessment process was Thursday 20$^{th}$ March 2025. No registrations or written submission were received during the consultation period.

The impacts that the proposed exploration activities and associated infrastructure such as access and exploration supporting facilities will have on the receiving environment (physical, biological, and socioeconomic) will depend on the extent of the proposed activities over the development area/s, management of the affected area/s and how the mitigations as detailed in the EMP Report are eventually implemented and monitored by the Proponent. Based on the findings of this EIA Report, it is hereby recommended that the proposed exploration activities be issued with an Environmental Clearance Certificate (ECC). The Proponent shall take into consideration the following key requirements in implementing the proposed exploration programme:

(i) The Proponent shall negotiate Access Agreements with the landowner/s as may be applicable.

(ii) The Proponent shall obtain all other applicable permits such as freshwater abstraction, wastewater discharge as may be required.

(iii) The Proponent shall adhere to all the provisions of the EMP and conditions of the Access Agreement to be entered between the Proponent and the landowner/s in line with all applicable national regulations.

(iv) The Proponent shall adopt the precautionary approach / principles in instances where baseline information, national or international guidelines or mitigation measures have not been provided or do not sufficiently address the site-specific project impact.

(v) Before entering any private or protected property/ area such as a private farm, the Proponent shall give advance notices and obtain consent to access the EPL area, and.

(vi) Where possible, and if water is found during the detailed exploration boreholes drilling operations, the Proponent shall promote access to freshwater supply for both human consumption, wildlife and agricultural support as may be requested by the local community / landowners/s or as may be needed for environmental protection including wildlife management. The abstraction of the groundwater resources shall include water levels monitoring, sampling, and quality testing on a bi-annual basis, and that the affected landowner/s must have access to the results of the water monitoring analyses as part of the ongoing stakeholder disclosure requirements on shared water resources as may be applicable.

Once and if economic minerals resources are discovered, a separate field-based and site-specific Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports shall be prepared as part of the feasibility study for possible mining operations. The site-specific EIA and EMP reports shall cover the area identified to have potential economic minerals resources including the pit / shaft area/s, waste rock, tailings dump, access, office blocks, water, and external infrastructure support areas such as water pipeline, powerline, and main road/s. In addition to the Terms of Reference (ToR) to be developed during the Environmental Scoping study phase for any possible mining operations, the following field-based and site-specific specialist studies shall be considered in the TOR for the EIA and EMP studies in an event of a discovery of economic minerals resources and possible development of a mining project within the EPL No. 9372:

(i) Groundwater studies including modelling as maybe applicable.

(ii) Field-based flora and fauna diversity.

(iii) Dust, noise, and sound modelling linked to engineering studies.

(iv) Archaeological assessment.

(v) Socioeconomic assessment, and.

(vi) Others as may be identified / recommended by the stakeholders/ landowners/ Environmental Commissioner or specialists.

# 1. BACKGROUND

## 1.1 Introduction

**Mitten Minerals Exploration (Pty) Ltd** (the "**Proponent**") has been granted the preparedness to grant application for Exclusive Prospecting Licenses (EPL) No. 9372 with respect to dimension stone, base and rare metals, industrial minerals and precious metals group of minerals.

The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism (MEFT).

Mitten Minerals Exploration (Pty) Ltd is locally owned Namibian company focused on the acquisition and development of mining projects in Namibia.

## 1.2 Proposed Scope of Work

The Proponent intends undertake exploration activities covering desktop studies, followed by site-specific activities on targets that may be delineated and using exploration techniques/ methods such as geophysical surveys, geological mapping, trenching, drilling, bulk sampling, and test mining.

If the proposed exploration activities lead to positive results, the exploration data collected will then be put together into a prefeasibility report and if the prefeasibility result proves positive then a detailed feasibility study supported by detailed site-specific drilling, bulk sampling, laboratory tests and conduct test mining activities on the discovered mineralised locality will be undertaken.

A positive feasibility study will be required to support the application for a Mining License (ML) together with a new site-specific Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) with specialist studies such as flora, fauna, socioeconomic, water, traffic, dust and noise modelling and archaeology to be undertaken to support the application for the new ECC for mining and minerals process.

## 1.3 Regulatory Requirements

The proposed minerals exploration / prospecting activities in the EPL 9372 falls under the activities that are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and cannot be undertaken without an Environmental Clearance Certificate (ECC).

To obtain the ECC for the listed activities, the Proponent is required to have prepared Environmental Assessment comprising Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) Reports or Environmental Impact Assessment (EIA) and EMP) Reports for the proposed minerals prospecting programme.

In fulfilment of these environmental requirements, the Proponent has appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Reports to support the application for ECC. Interested and Affected Parties (I&APS) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting activities.

## 1.4 Location, Land Use, Infrastructure and Services

### 1.4.1 Location and Land Use

The Exclusive Prospecting Licence (EPL) No. 9372 is situated in Outjo District in Kunene Region, northcentral Namibia (Fig. 1.1 and 1.2). The EPL 9372 has a total area of 22570.2970 Ha and covers the following privately owned commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans

100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88 (Fig. 1.3).

The land use of the local area dominated by commercial cattle and small stock agriculture, conservation, tourism, and hospitality centred around game farming, and limited minerals exploration and mining operations in the region.

The game farms are also important conservation areas for endemic and protected flora and act as sanctuaries for endangered faunal species.

The game farms offer visitors the opportunity to be close to nature with a variety of tailor-made tourism products such game viewing, trails, and hunting activities. Bush thickening or encroachment is viewed as an economic problem in the general area. The EPL area is not part of the communal or commercial conservancy system.

### 1.4.2 Supporting Infrastructure and Services

The EPL is accessible through the B1 Road from Outjo into the C39 and D2752 (Fig. 1.1-1.3). The nearest towns to the EPL area are Khorixas and Outjo which are 70 km and 75 km respectively, along the C39 road (Figs. 1.2 - 1.4).

The town of Opuwo, the regional centre of the Kunene Region and Walvis Bay, the main Port are situated about 422 km and 532 km away, respectively, from the EPL area. Namibia's capital City, Windhoek, is located approximately 390 km form the EPL 9372 Area via the B1 Road (Fig. 1.1).

The proposed exploration programme will not require major water and energy resources. Water requirements for exploration will be provided from the available local water resources supplied by private boreholes and NamWater local / regional water supply schemes.

Electricity needs will be supplied by generators and solar installations while diesel and petrol will be the main sources of fuels and readily available in the nearby towns of Khorixas and Outjo.

In an event of a discovery of economic minerals resources, and the subsequent development of a mining project within the EPL Area, there will be a need to have reliable energy and water supply sources.

Sources of the water supply will be provided by NamWater from possible local and regional groundwater resources still to be determined. Electricity supply will be provided by NamPower from already existing infrastructure in the region also still to be determined.

The assessment of the energy and water resources requirements for any possible mining operations will be evaluated in detail in the environmental assessment that will be undertaken as part of the feasibility study if economic resources are discovered within the EPL 9372 Area.

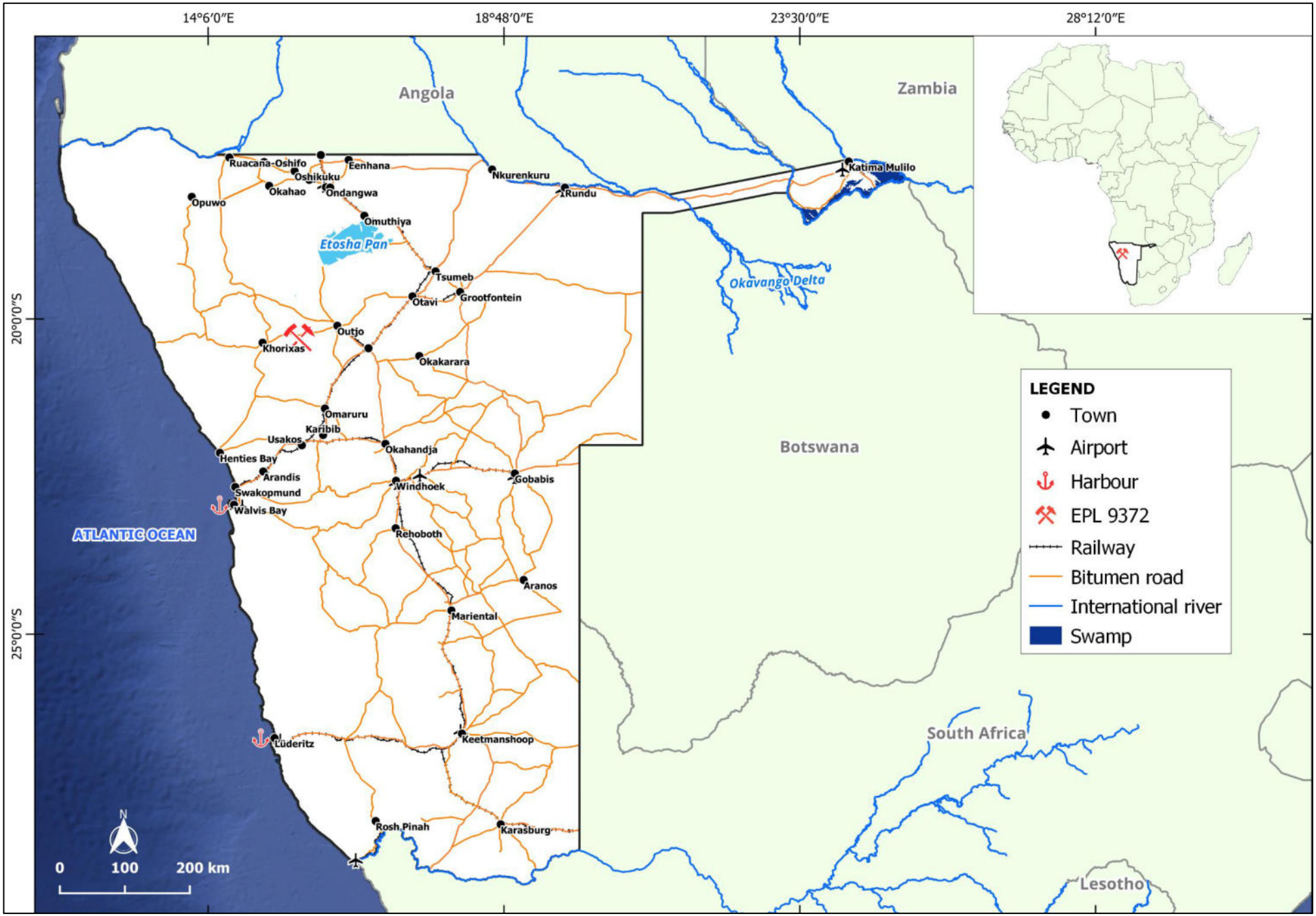



Figure 1.1: Regional location of the EPL No 9372 Area.

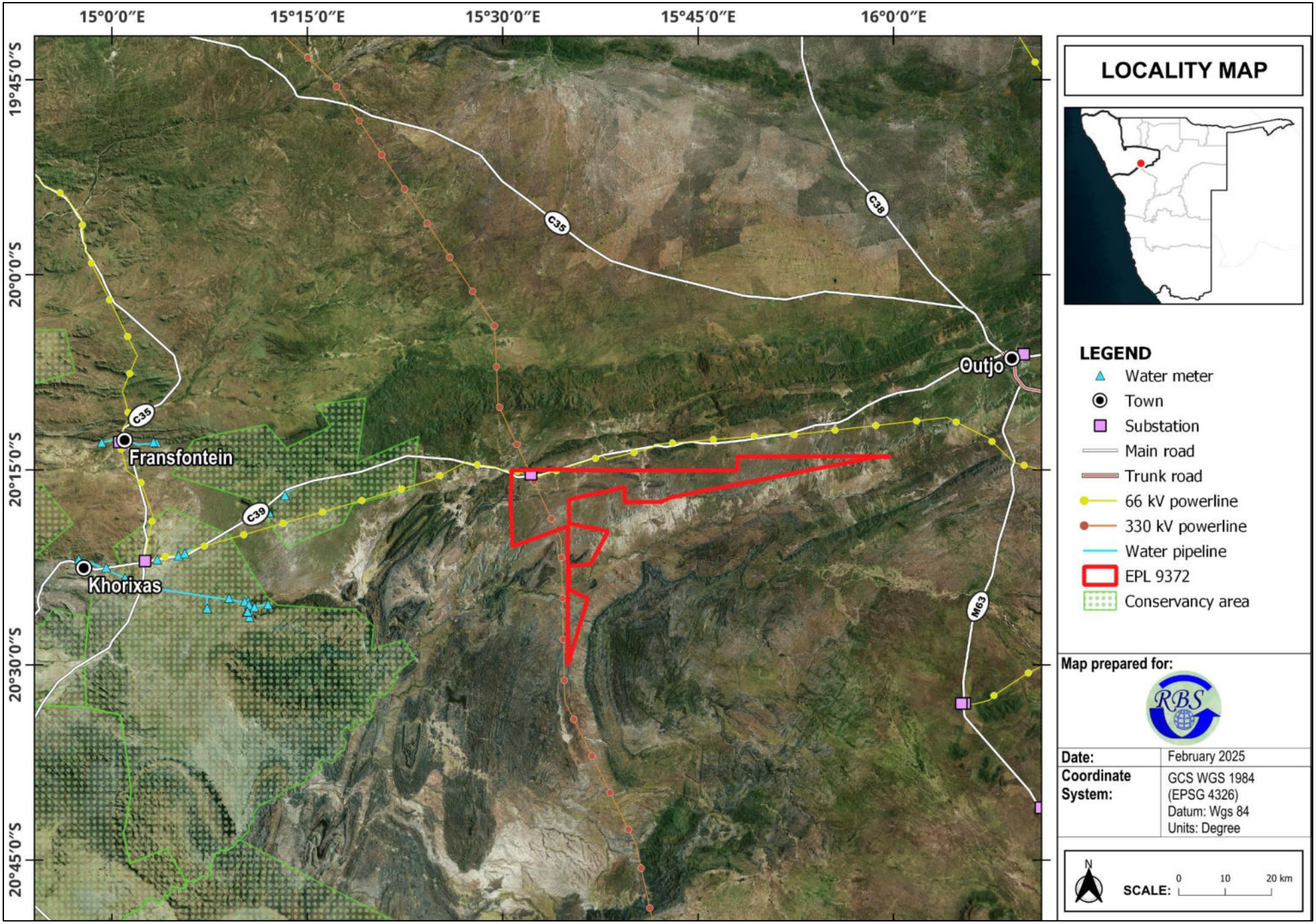



Figure 1.2: Detailed regional location of the EPL 9372 Area and surrounding land uses.

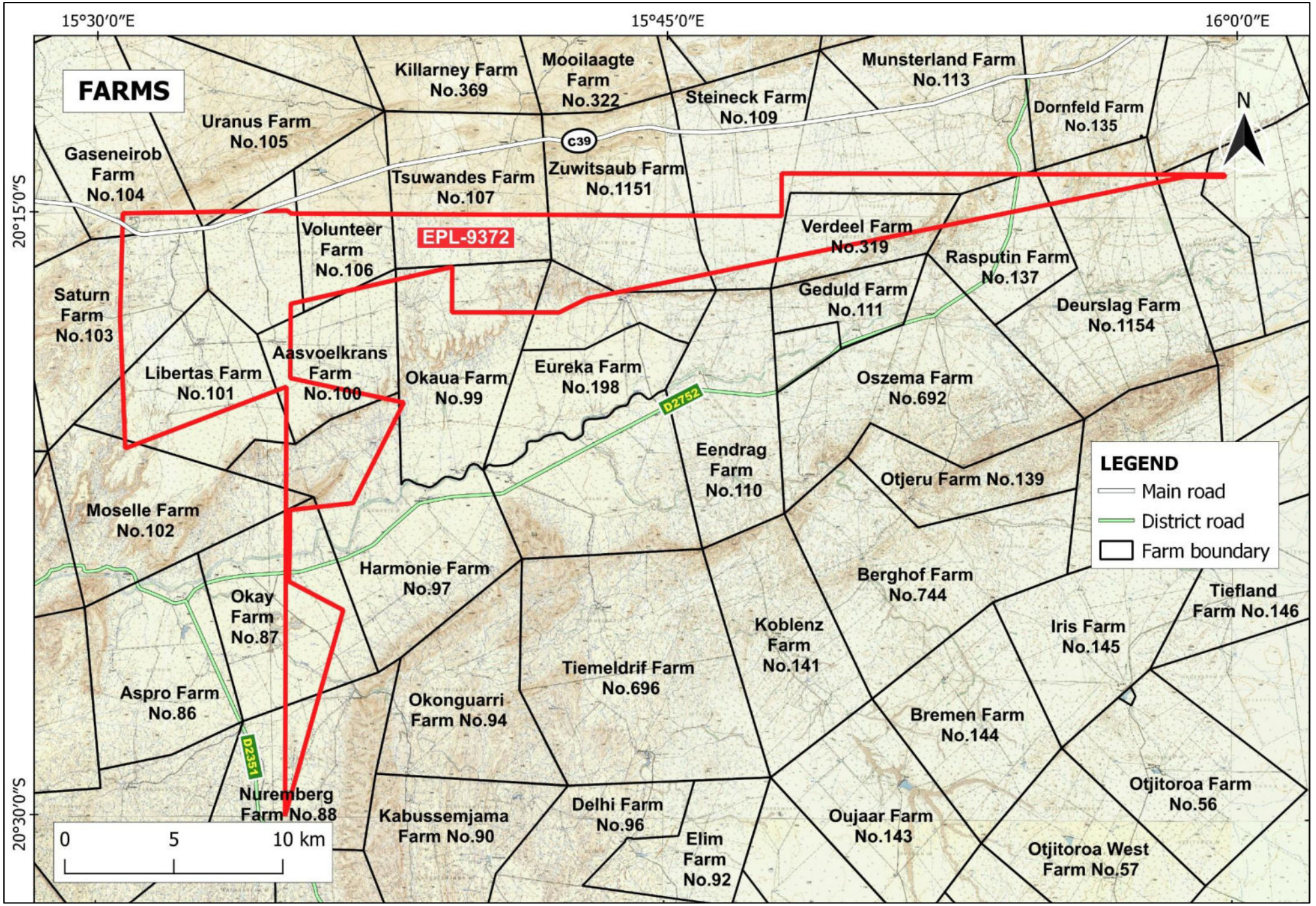



Figure 1.3: Detailed location of the EPL 9372 with respect to the commercial farmland and supporting road infrastructures.

## 1.5 Project Motivation

The EPL 9372 is situated in a highly prospective area for dimension stone, base and rare metals, industrial minerals and precious metals associated with local Damara and post Damara rocks. A number of minerals are known to occur in the general area.

The proposed exploration activities have some limited socioeconomic benefits which are mainly centred around the payment of the annual license rental fees to the Central Government through the Ministry of Mines, Energy and Industry (MMEI) and value addition to the potential underground mineral resources in the area which otherwise would not have been known if the exploration in the EPL 9372 did not take place.

The potential discovery of additional economic minerals resources and the development of new mining project in the area will have much greater and positive socioeconomic benefits to the local community of Otjiwarongo and other smaller settlements in the Otjozondjupa Region.

Additional socioeconomic benefits will also be realised at regional and national levels in terms of capital investments, value addition opportunities, license rental fees, royalty taxes payable to Government, direct and indirect contracts and employment opportunities, export earnings, foreign direct investments, and various taxes payable to the Government.

## 1.6 Approach, Alternatives, Key Issues and Methodology

### 1.6.1 Terms of Reference (ToR) and Approach

Risk-Based Solutions (RBS) was appointed by the Proponent to prepare the EIA and EMP Reports to support the application for renewal of the Environmental Clearance Certificate (ECC) for the EPL No. 9372 with respect to the proposed exploration activities.

The EIA process reviewed the receiving environmental settings (physical, biological, socioeconomic and ecosystem services, function, use values and non-use) and proposed exploration activities, identified the impacts and then assessed the likely impacts (positive and negative) on the receiving environment (Table 1.1).

The key deliverable comprised this EIA Report and a separate Environmental Management Plan (EMP) report detailing appropriate mitigation measures that will enhance the positive impacts and reduce the likely negative impacts identified.

The EIA and EMP report and the completed Application for Environmental Clearance Certificate (ECC) shall be submitted to the client (Proponent) and the Office of the Environmental Commissioner, Department of Environmental Affairs (DEA), Ministry of Environment, Forestry and Tourism (MEFT) through the Ministry of Mines, Energy and Industry (MMEI) (the Competent Authority) for review and issue of the Records of Decisions (RDs).

The EIA and EMP processes have been performed with reasonable skill, care, and diligence in accordance with professional standards and practices existing at the date of performance of the assessment and that the guidelines, methods and techniques that have been applied are all in conformity to the national regulatory requirements, process and specifications in Namibia as required under the Ministry of Mines, Energy and Industry (MMEI), Ministry of Environment, Forestry and Tourism (MEFT) and Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR).

Both the EIA and EMP Reports have been prepared in line with the January 2015 MET Environmental Assessment Reporting Guideline.

Table 1.1: Summary of the proposed activities, alternatives and key issues considered during the Environmental Assessment (EA) process covering Scoping, EIA and EMP Processes.

<table>
<tr><th colspan="2">PROJECT ACTIVITIES</th><th>ALTERNATIVES CONSIDERED</th><th colspan="2">Key Issues Evaluated and Assessed with Environmental Management Plan (EMP) / Mitigation Measures Developed</th></tr>
<tr><td>1. Project Implementation and Initial Desktop Exploration Activities</td><td>Review of existing information and all previous activities in order identify any potential target/s in within the EPL Area</td><td rowspan="5">(i) Location for Minerals Occurrence: Several economic deposits are known to exist in different parts of Namibia, and some have been explored by different companies over the years. The proponent intends to explore / prospect for possible economic minerals occurrence in the EPL area as licensed. Minerals occurrence is linked to the geology or local rock outcrops and site-specific.<br><br>(ii) Other Alternative Land Uses: Game farming, tourism, and agriculture<br><br>(iii) Ecosystem Function (What the Ecosystem Does.<br><br>(iv) Ecosystem Services.<br><br>(v) Use Values.<br><br>(vi) Non-Use, or Passive Use.<br><br>(vii) The No-Action Alternative<br><br>(viii) Others to be identified during the public consultation process and preparation of the EIA and EMP Reports</td><td colspan="2">Potential land use conflicts / opportunities for coexistence between proposed exploration and other existing land uses such as conservation, tourism, and agriculture</td></tr>
<tr><td>2. Regional Reconnaissance Field-Based</td><td>Reginal mapping and sampling to identify and verify potential targeted areas based on the recommendations of the desktop work undertaken under (1) above</td><td rowspan="3">PHYSICAL ENVIRONMENT</td><td rowspan="3">• Water Quality<br>• Physical infrastructure and Resources<br>• Air quality,<br>• Noise and dust<br>• Landscape and topography value<br>• Soil quality<br>• Climate Change Influences</td></tr>
<tr><td>3. Initial Local Field-Based Activities</td><td>May include Widely spaced geological mapping, sampling, surveying and possible trenching and drilling to determine the viability of any delineated local target/s</td></tr>
<tr><td>4. Detailed Local Field-Based Activities on Delineated Targets If Any</td><td>Following the delineation of potential target/s, conduct detailed mapping, trenching, sampling, surveying, and drilling in order to determine the viability of the project.</td></tr>
<tr><td>5. Prefeasibility and Feasibility Studies</td><td>Assess the viability of any delineated local target/s and more detailed mapping, trenching, bulk sampling, drilling, and test mining activities where applicable. If the project proves viable, a feasibility report and application for Mining License will be undertaken.</td><td>BIOLOGICAL ENVIRONMENT</td><td>• Habitat Protected Areas<br>• Flora<br>• Fauna<br>• Ecosystem functions, services, use values and non-Use or passive use</td></tr>
<tr><td colspan="2"></td><td>SOCIOECONOMIC, CULTURAL, AND ARCHAEOLOGICAL ENVIRONMENT</td><td>• Local, regional, and national socioeconomic settings<br>• Commercial Agriculture<br>• Community Protected Areas<br>• Tourism and Recreation<br>• Cultural, Biological and Archaeological Resources</td></tr>
</table>

### 1.6.2 Environmental Assessment Process and Steps

The EIA and EMP process used for this project took into considerations the provisions of the Environmental Impact Assessment (EIA) Regulations, 2012 and the Environmental Management Act (EMA), 2007, (Act No. 7 of 2007) as outlined in Fig. 1.4. The environmental assessment steps undertaken or still to be taken are summarised as follows (Fig. 1.4):

(i) Project screening process (**Undertaken in January 2025**).

(ii) Preparation of the Draft BID/Draft Scoping Report with Terms of Reference (ToR) for review by the Proponent (**Undertaken in February 2025**).

(iii) Preparation of the Public Notice to be published in the local newspapers as part of required public consultation process (**Undertaken in February 2025**).

(iv) Opened the Stakeholder register (**Undertaken in February 2025**).

(v) Project registration / notification through the completion of the online formal registration / notification form on the Ministry of Environment, Forestry and Tourism (MEFT) online Portal (www.eia.meft.gov.na), together with the hardcopies of the Draft BID/Scoping Report with ToR submitted to the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism (MEFT) through the Ministry of Mines, Energy and Industry (MMEI), Mining Commissioner (Competent Authority) for review (**Undertaken in February 2025**).

(vi) Published public notices inviting stakeholders and the public to participate in environmental assessment process. Notices were published in the local newspapers (**Undertaken in February and March 2025**).

(vii) Consultation duration pf twenty-one (21) days and deadline for written submissions is: **Thursday, 20th March 2025.**

(viii) Preparation of the Draft EIA and EMP Reports for client review (**Undertaken in February and March 2025**).

(ix) Comments and inputs from the client and stakeholder consultations used to finalise the EIA and EMP Reports (**Undertaken in March 2025**).

(x) The final EIA and EMP reports to be submitted to the Environmental Commissioner in Ministry of Environment, Forestry and Tourism (MEFT) through the Ministry of Mines, Energy and Industry (MMEI) (Competent Authority) in fulfilment of all the requirements of the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 and the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007) for application of the Environmental Clearance Certificate (ECC) for the proposed project (**Undertaken in March 2025**).

(xi) Following the submission of the application for ECC to the Environmental Commissioner, the public and stakeholders who are interested or affected by the proposed project will have additional **fourteen (14) days** to submit comments / inputs about the proposed project direct to the Environmental Commissioner when the application will be made available for additional comments / inputs by the Environmental Commissioner on the MEFT digital Portal www.eia.meft.gov.na, (**To be Undertaken in March 2025**), and.

(xii) Wait for the Records or Decisions (RDs) from the Environmental Commissioner (**From March 2025**).

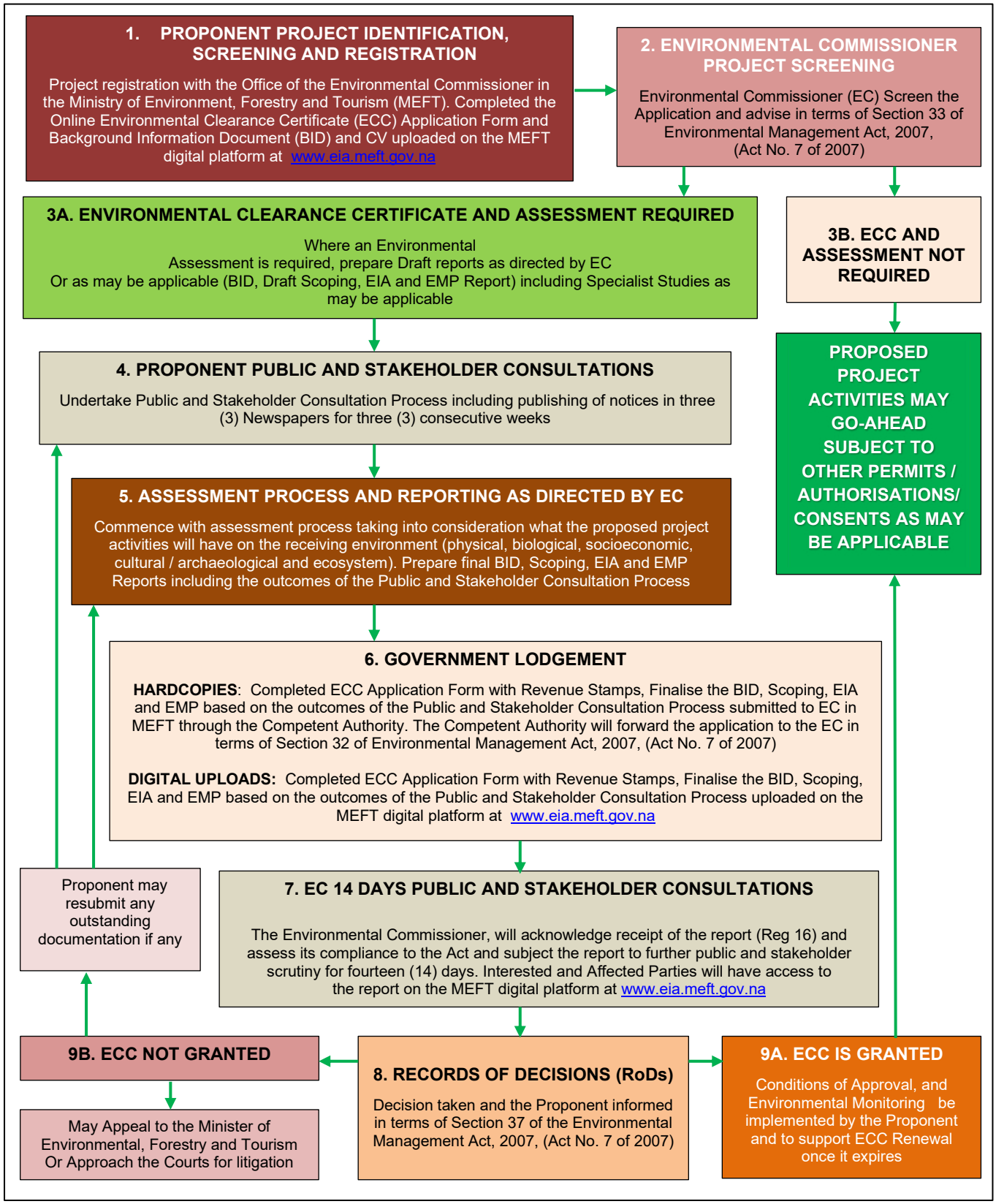



Figure 1.4: RBS Schematic presentation of Namibia's Environmental Assessment Procedure.

### 1.6.3 Assumptions and Limitations

The following assumptions and limitations underpin the approach adopted, overall outcomes and recommendations for this study:

- The proposed exploration activities as well as all the plans, maps, EPL Boundary / coordinates and appropriate data sets received from the Proponent, project partners, regulators, Competent Authorities and specialist assessments are assumed to be current and valid at the time of conducting the studies and compilation of this environmental report.

- The impact assessment outcomes, mitigation measures and recommendations provided in this report are valid for the entire duration of the proposed exploration / prospecting activities.

- A precautionary approach has been adopted in instances where baseline information was insufficient or unavailable or site-specific locations of the proposed project activities is not yet available, and.

- Mandatory timeframes as provided for in the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 and the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007) have been observed and will apply to the review and decision of this report by the Competent Authority and the Environmental Commissioner.

## 1.7 Structure of the Report

The following is the summary structure outline of this EIA report.

1. **Section 1: Background** covering the proposed project location with available infrastructure and services.

2. **Section 2: Project Description** covering the summary of the proposed project exploration activities.

3. **Section 3: Regulatory Framework** covering the proposed exploration with respect to relevant legislation, regulations and permitting requirements.

4. **Section 4: Receiving Environment** covering physical, biological and socioeconomic environments of the proposed project area.

5. **Section 5: Impact Assessment** covering the likely positive and negative impacts the proposed project activities are likely to have on the receiving environment.

6. **Section 6: Conclusions and Recommendations**- Summary of the findings and way forward.

7. **SECTION 7: Annexes**

# 2. DESCRIPTION OF THE EXPLORATION

## 2.1 General Overview

The overall aim of the proposed project activities (exploration / prospecting programme) is to search for potential economic minerals resources (base and rare metals, dimension stones, industrial minerals, and precious metals) within the EPL area.

The following is the detailed overview of the proposed activities:

(i) Initial desktop exploration activities (review of existing information and all previous activities in order identify any potential target/s in the EPL Area).

(ii) Regional reconnaissance field-based activities such as reginal mapping, aerial survey and existing data analysis and sampling to identify and verify potential targeted areas based on the recommendations of the desktop work undertaken under (i) above.

(iii) Initial local field-based activities such as widely spaced geological mapping, sampling, surveying and possible trenching and drilling to determine the viability of any delineated local target, and.

(iv) Detailed local field-based activities such very detailed geological mapping, trenching, bulk sampling, surveying, and detailed drilling to determine the feasibility of any delineated local targets and conduct test mining activities.

The scope of the required field-based support and logistical activities will depend on the scale of proposed exploration activities to be undertaken.

The proposed exploration activities will be supported by existing tracks and campsites / farmstead as well as existing accommodation in in the area. In the absences of existing tracks, the field team will create such new tracks with the permission of the landowner/s and depending on the scale of exploration.

In the absences of existing suitable campsite / farmstead, temporary camp will be setup at suitable locations within the EPL area in line with the EMP provisions. The size of the exploration camp will be of very limited footprints during the exploration phase but may be expanded for the test mining and mine development phases in an event of a discovery of economic minerals resources.

## 2.2 Proposed Detailed Local Field-Based Activities

Several regional reconnaissance field-based mapping and sampling activities as well as initial local field-based mapping and sampling activities have already been undertaken within the EPL area but will still be extended to other parts of the EPL Area where potential minerals occurrences are expected.

Other activities to be undertaken as part of the detailed local field-based activities include the following:

(i) Surface and subsurface geological mapping including boreholes drilling and logging, sampling, and laboratory analyses / assessments.

(ii) Trenching, logging, sampling, and laboratory analyses of shallow targets.

(iii) Baseline studies such as fauna and flora diversity spanning across the seasons in twelve (12) months and hydrogeological assessments including boreholes drilling and possible groundwater modelling, and.

(iv) Logistical support such as access preparation, exploration, and camp sites management.

## 2.3 Prefeasibility and Feasibility Study

Prefeasibility and feasibility studies will be implemented on site-specific area and is subject to the positive outcomes of the detailed local field-based exploration activities. The activities to be undertaken as part of the prefeasibility and feasibility will include the following:

(i) Detailed site-specific surveys.

(ii) Detailed geological mapping.

(iii) Bulk sampling and testing.

(iv) Ore reserve calculations.

(v) Geotechnical studies for mine plan and, design.

(vi) Detailing technical viability studies including forecasts of estimated expenditure and financial.

(vii) Mine planning and designs including all supporting infrastructures (water, energy, and access).

(viii) Environmental Impact Assessment for mining.

(ix) Environmental Management Plan for mining.

(x) Test mining activities, and.

(xi) Preparation of feasibility report and application for Mining License.

Field-based support and logistical activities will be very extensive because the local field-based activities will be undertaken on a specific area for a very long time (up to one year or more in some instances).

The activities will be supported by existing tracks and campsites / lodging facilities available in the area.

# 3. LEGISLATIVE FRAMEWORK

## 3.1 Overview

There are four sources of law in Namibia: (1) statutes (2) common law (3) customary law and (4) international law. The constitution is the supreme law of Namibia. All other laws must be in line with the Namibian Constitution.

The most important legislative instruments and associated permits\licenses\authorisations\concerts\ compliances applicable to the proposed exploration activities and possible test mining include Minerals exploration and mining, environmental management, land rights, water, atmospheric pollution prevention and labour as well as other indirect laws linked to the accessory services of exploration and possible test mining operations.

## 3.2 Key Applicable Legislation

### 3.2.1 Minerals Exploration and Mining Legislation

The national legislation governing minerals prospecting and mining activities in Namibia fall within the jurisdiction of the Ministry of Mines, Energy and Industry (MMEI) as the Competent Authority (CA) responsible for granting authorisations.

The Minerals (Prospecting and Mining) Act (No 33 of 1992) is the most important legal instrument governing minerals prospecting and mining activities in Namibia. A new Bill, to replace the Minerals (Prospecting and Mining) Act (No 33 of 1992) is being prepared and puts more emphasis on good environmental management practices, local participation in the mining industry and promotes value addition as prescribed in the Minerals Policy of 2003.

The Minerals (Prospecting and Mining) Act (No 33 of 1992) regulates reconnaissance, prospecting (exploration) and mining activities. The Mining Commissioner, appointed by the Minister, is responsible for implementing the provisions of this Act including reporting requirements, environmental obligations as well as the associated regulations such as the Health and Safety Regulations.

### 3.2.2 Environmental Management Legislation

The Environmental Assessment (EA) process in Namibia is governed by the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazetted under the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007) in the Ministry of Environment, Forestry and Tourism (MEFT).

The objectives of the Act and the Regulations are, among others, to promote the sustainable management of the environment and the use of natural resources to provide for a process of assessment and control of activities which may have significant effects on the environment.

The Minister of Environment, Forestry and Tourism (is authorised to list activities which may only be undertaken if an environmental clearance certificate has been issued by the environmental commissioner, which activities include those relating to exploration and mining operations.

In addition to the requirements for undertaking Environmental Assessment prior to the project implementation, the Environmental Management Act and the EIA Regulations also provide for obligations of a license holder to provide for project rehabilitation and closure plan. In the regulations, the definition of “rehabilitation and closure plan” is a plan which describes the process of rehabilitation of an activity at any stage of that activity up to and including closure stage.

### 3.2.3 Water Legislation

The Water Act 54 of 1956 has now been replaced by the Water Resources Management Act, 2013 (Act No. 11 of 2013), which commenced in August 2023 following the Gazetting of the Water Resources Management Regulations, 2023.

The Water Resource Management Act 2013 and the Regulations provides for the management, development, protection, conservation, and use of water resources. The Water Resources Management Regulations, 2023, comprising the following fourteen (14) parts:

1. Preliminary.
2. Pricing policy for services in water sector.
3. Basin management committees.
4. Water management standards and licensed laboratories.
5. Water services, abstraction and use licenses.
6. Procedures and conditions for artificial recharge of aquifers.
7. Driller's licences.
8. Water pollution control.
9. Dams, dam safety and flood management.
10. Control of activities affecting wetlands, water resources and resource quality.
11. Removal of rocks, sand, or gravel from watercourse for sale or commercial exploitation.
12. Control of aquatic invasive species.
13. Protection of riparian zones, and.
14. Water services provided by State.

The Proponent shall take not of all the provisions of the Water Resources Management Regulations, 2023 including licensing requirements related to the proposed minerals explorations. In accordance with the Act, the proposed exploration must ensure that mechanisms are implemented to prevent water pollution. Certain permits will also be required to abstract groundwater as well as for "water works".

The broad definition of water works will include the reservoir on site, water treatment facilities and pipelines. Due to the water scarcity of the area, all water will be recycled (including domestic wastewater). The Act requires the license holder to have a wastewater discharge permit for discharge of effluent.

### 3.2.4 Atmospheric Pollution Prevention Legislation

The Atmospheric Pollution Prevention Ordinance, 11 of 1976 falling under the Ministry of Health and Social Services (MHSS) provide for the prevention of the pollution of the atmosphere, and for matters incidental thereto. Part III of the Act sets out regulations pertaining to atmospheric pollution by smoke. While preventative measures for dust atmospheric pollution are outlined in Part IV and Part V outlines provisions for Atmospheric pollution by gases emitted by vehicles.

### 3.2.5 Labour, Health, and Safety Legislations

The Labour Act, 1992, Act No. 6 of 1992 as amended in the Labour Act, 2007 (Act No. 11 of 2007), falling under the Ministry of Justices and Labour Relations (MJLR) refers to severance allowances for employees on termination of a contract of employment in certain circumstances and health, safety and welfare of employees.

In terms of the Health Safety and Environment (HSE), the Labour Act, 2007 protects employees and every employer shall, among other things: provide a working environment that is safe, without risk to

the health of employees, and that has adequate facilities and arrangements for the welfare of employees, provide and maintain plant, machinery and systems of work, and work processes, that are safe and without risk to the health of employees, and ensure that the use, handling, storage or transportation of hazardous materials or substances is safe and without risk to the health of employees.

All hazardous substances shall have clear exposure limits and the employer shall provide medical surveillance, first-aid, and emergency arrangements as fit for the operation.

### 3.2.6 Summary of the Regulatory Register

The following is the summary of the key legislation relevant to the proposed mineral exploration activities by the Proponent:

1. Minerals (Prospecting and Mining) Act, 1992 (No. 33 of 1992) and Minerals (Prospecting and Mining) Amendment Act, 2008 (No. 8 of 2008).

2. Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007).

3. Environmental Impact Assessment (EIA) Regulations No. 30 of 2012.

4. Agricultural (Commercial) Land Reform Act, 1995, Act No. 6 of 1995.

5. Communal Land Act (No. 10 of 2002).

6. Communal Land Reform Amendment Act (No. 13 of 2013).

7. Forest Act (No. 12 of 2001) and Forest Amendment Act (No. 13 of 2005).

8. The Labour Act, 1992, Act No. 6 of 1992 as amended in the Labour Act, 2007 (Act No. 11 of 2007).

9. Labour Act (No. 11 of 2004) – Health & Safety Regulations (1997).

10. Traditional Authorities Act (No. 17 of 1995).

11. Atomic Energy & Radiation Protection Act (Act No 5 of 2005) and Radiation Protection and Waste Disposal Regulations (No 221 of 2011) - National Radiation Protection Authority (NRPA), Ministry of Health and Social Services (MHSS).

12. Atomic Energy & Radiation Protection Act (Act No 5 of 2005) and Radiation Protection and Waste Disposal Regulations (No 221 of 2011).

13. Petroleum Products and Energy Act 13 of 1990 (as amended by the Petroleum Products and Energy Amendment Act 29 of 2004, Act 3 of 2000 and Act 16 of 2003.

14. Nature Conservation Ordinance, 1975 as Amended.

15. Public Health Act 36 of 1919 (as last amended by Act 21 of 1988).

16. Public and Environmental Health Act, 2015 (Act No. 1 of 2015).

17. Water Resources Management Act, 2013 (Act No. 11 of 2013), and the Water Resources Management Regulations, 2023.

18. National Heritage Act 27 of 2004 (and the Regulations/Appointments/Declarations made under the National Monuments Act 28 of 1969 and the Regulations 2005).

19. National Monuments Act 28 of 1969 (as amended by the National Monuments Amendment Acts 22 of 1970 and 30 of 1971, the Expropriation Act 63 of 1975, and the National Monuments Amendment Act 35 of 1979).

20. Soil Conservation Act 76 of 1969 (as amended in South Africa (SA) to March 1978. section 13 is amended by the Forest Act 12 of 2001).

21. Hazardous Substance Ordinance 14 of 1974.

22. Atmospheric Pollution Prevention Ordinance 11 of 1976.

23. Road Traffic and Transport Act 22 of 1999 (as amended by the Road Traffic and Transport Amendment Act 6 of 2008).

24. Electricity Act 2 of 2000 and Electricity Act 4 of 2007 (and the Electricity Regulations: Administrative Electricity Act 2 of 2000 and the Electricity Control Board: Namibian Electricity Safety Code, 2009: Electricity Act, 2007).

25. Tobacco Products Control Act 1 of 2010 (and the Regulations), and.

26. Disaster Risk Management Act 10 of 2012.

Table 3.1 summarises the key selected legislations relevant applicable to the proposed exploration in the EPL 9372.

Table 3.1: Legislation relevant to the proposed exploration operations in the EPL 9372.

| LAW | SUMMARY DESCRIPTION |
|---|---|
| **Constitution of the Republic of Namibia, 1990** | The Constitution is the supreme law in Namibia, providing for the establishment of the main organs of state (the Executive, the Legislature, and the Judiciary) as well as guaranteeing various fundamental rights and freedoms. Provisions relating to the environment are contained in Chapter 11, article 95, which is entitled "promotion of the Welfare of the People". This article states that the Republic of Namibia shall – "Actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at … maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for all Namibians, both present and future. The Government shall provide measures against the dumping or recycling of foreign nuclear waste on Namibian territory." |
| Minerals (Prospecting and Mining) Act, 1992 ***Ministry of Mines, Energy and Industry (MMEI)*** | The Minerals Act governs minerals prospecting and mining. The Act *provides for the reconnaissance, prospecting, and mining for, and disposal of, and the exercise of control over minerals in Namibia. and to provide for matters incidental thereto. A new Minerals Bills is currently under preparation.* |
| Environmental Management Act (2007) - ***Ministry of Environment, Forestry and Tourism*** **(MEFT)** | The purpose of the Act is *to give effect to Article 95(l) and 91(c) of the Namibian Constitution by establishing general principles for the management of the environment and natural resources. to promote the co-ordinated and integrated management of the environment. to give statutory effect to Namibia's Environmental Assessment Policy. to enable the Minister of Environment and Tourism to give effect to Namibia's obligations under international conventions*. In terms of the legislation, it will be possible to exercise control over certain listed development activities and activities within defined sensitive areas. The listed activities in sensitive areas require an Environmental Assessment to be completed before a decision to permit development can be taken. The legislation describes the circumstances requiring Environmental Assessments. Activities listed as per the provisions of the Act will require Environmental Assessment unless the Ministry of Environment, Forestry and Tourism, in consultation with the relevant Competent Authority, determines otherwise and approves the exception. |
| Water Resources Management Act, 2013 (Act No. 11 of 2013) and the Regulations, 2023 **Minister of Agriculture, Fisheries, Water and Land reform (MAFWLR)** | This Act provide for the management, protection, development, use and conservation of water resources; to provide for the regulation and monitoring of water services and to provide for incidental matters. The Act provides for no rights of ownership in public water and its control and use is regulated and provided for in the Act. In accordance with the Act, the proposed project must ensure that mechanisms are implemented to prevent water pollution. Certain permits will also be required to abstract groundwater (already obtained) as well as for "water works". The broad definition of water works will include the reservoir on site, water treatment facilities and pipelines. Due to the water scarcity of the area, all water will be recycled (including domestic wastewater) and the Mine will be operated on a zero-discharge philosophy. It will, therefore, not be necessary to obtain permits for discharge of effluent. |
| *Forest Act 12 of 2001* - **Minister of Environment, Forestry and Tourism (MEFT)** | The Act provide for the establishment of a Forestry Council and the appointment of certain officials. to consolidate the laws relating to the management and use of forests and forest produce. to provide for the protection of the environment and the control and management of forest fires.<br>Under Part IV Protection of the environment, Section 22(1) of the Act, it is unlawful for any person to: cut, destroy, or remove:<br>(a) any vegetation which is on a sand dune or drifting sand or in a gully unless the cutting, destruction or removal is done for the purpose of stabilising the sand or gully or<br>(b) any living tree, bush or shrub growing within 100m of a river, stream, or watercourse.<br>Should either of the above be unavoidable, it will be necessary to obtain a permit from the Ministry. Protected tree species as listed in the Regulations shall not be cut, destroyed, or removed. |
| Hazardous Substance Ordinance 14 of 1974 ***Ministry of Health and Social Services*** | Provisions for hazardous waste are amended in this act as it provides "*for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances. to provide for the prohibition and control of the importation, sale, use, operation, application, modification, disposal or dumping of such substance. and to provide for matters connected therewith".* |

Table 3.1: *Cont.*

| | |
|---|---|
| Agricultural (Commercial) Land Reform Act, 1995, Act No.6 of 1995 ***Ministry of Agriculture, Fisheries, Water and Land Reform*** **(MAFWLR)** | This Act provide for the acquisition of agricultural land by the State for the purposes of land reform and for the allocation of such land to Namibian citizens who do not own or otherwise have the use of any or of adequate agricultural land, and foremost to those Namibian citizens who have been socially, economically, or educationally disadvantaged by past discriminatory laws or practices. to vest in the State a preferent right to purchase agricultural land for the purposes of the Act. to provide for the compulsory acquisition of certain agricultural land by the State for the purposes of the Act. to regulate the acquisition of agricultural land by foreign nationals. to establish a Lands Tribunal and determine its jurisdiction. and to provide for matters connected therewith. |
| Explosives Act 26 of 1956 (as amended in SA to April 1978) - ***Ministry Home Affairs, Immigration, Safety and Security (MHAISS)*** | All explosive magazines are to be registered with the Ministry of Mines, Energy and Industry (MMEI) as accessory works. In addition, the magazines must be licensed as required by Section 22. The quantity of explosives and the way it is stored must be approved by an inspector. The inspector has powers to enter the premises at any time to conduct inspections regarding the nature of explosive, quantity, and the way it is stored. At closure, all explosives are to be disposed of accordingly. |
| Atmospheric Pollution Prevention Ordinance 11 of 1976. ***Ministry of Health and Social Services (MHSS)*** | This regulation sets out principles for *the prevention of the pollution of the atmosphere and for matters incidental thereto.* Part III of the Act sets out regulations pertaining to atmospheric pollution by smoke. While preventative measures for dust atmospheric pollution are outlined in Part IV and Part V outlines provisions for Atmospheric pollution by gases emitted by vehicles. |
| The Nature Conservation Ordinance, Ordinance 4 of 1975, ***Ministry of Environment, Forestry and Tourism*** **(MEFT)** | During 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 in this regard from the Minister of Environment, Forestry and Tourism. Should the Proponent operate a nursery to propagate indigenous plant species for rehabilitation purposes, a permit will be required. At this stage, however, it is envisaged that this type of activity will be contracted out to encourage small business development. |
| Labour Act, 1992, Act No. 6 of 1992 as amended in the Labour Act, 2007 (Act No. 11 of 2007 **Ministry of Labour, Industrial Relations and Employment Creation (MLIREC)** | 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. to regulate basic terms and conditions of employment. to ensure the health, safety and welfare of employees* under which provisions are made in chapter 4. *Chapter* 5 of the act improvises on the *protection of employees from unfair labour practice.* |
| Petroleum Products and Energy Act 13 of 1990 ***Ministry of Mines, Energy and Industry (MMEI)*** | Any consumer installation as envisaged in this Act must be licensed. Appropriate consumer installation certificate will need to be obtained from the Ministry for each fuel installation. The construction of the installation must be designed in such a manner as to prevent environmental contamination.<br>Any certificate holder or other person in control of activities related to any petroleum product is obliged to report any major petroleum product spill (defined as a spill of more than 200ℓ per spill) to the Minister. Such person is also obliged to take all steps as may be necessary in accordance 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.<br>General conditions apply to all certificates issued. These include conditions relating to petroleum spills and the abandonment of the Site. The regulation further provides that the Minister may impose special conditions relating to the preparation and assessment of environmental assessments and the safe disposal of petroleum products. |
| National Heritage Act 27 of 2004 ***Ministry of Education, Innovation, Youth, Sport, Arts and Culture (MEIYSAC).*** | 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 activities will ensure that if any archaeological or paleontological objects, as described in the Act, are found during the implementation of the activities, such a find shall be reported to the Ministry immediately. If necessary, the relevant permits must be obtained before disturbing or destroying any heritage. |

## 3.3 Standards and Guidelines

Industrial effluent likely to be generated by the proposed activities must comply with provisions of the provisions of the Water Resources Management Regulations, 2023. The only key missing components to the regulatory frameworks in Namibia are the standards, and guidelines with respect to gaseous, liquid, and solid emissions.

However, in the absence of national gaseous, liquid, and solid emission limits for Namibia, the proposed project shall target the Multilateral Investment Guarantee Agency (MIGA) gaseous effluent emission level and liquid effluent emission levels (Table 3.2).

Noise abatement measures must target to achieve either the levels shown in Table 3.3 or a maximum increase in background levels of 3 dB (A) at the nearest receptor location off-site (MIGA guidelines).

Table 3.2: Liquid effluent emission levels (MIGA /IFC).

| **Pollutant** | **Max. Value** |
|---|---|
| pH | 6-9 |
| Total suspended solids | 50 mg/l |
| Total metals | 10 mg/l |
| Phosphorous (P) | 5 mg/l |
| Fluoride (F) | 20 mg/l |
| Cadmium (Cd) | 0.1 mg/l |

Table 3.3: Noise emission levels (MIGA /IFC).

| | **Maximum Allowable Leq (hourly), in dB(A)** | |
|---|---|---|
| Receptor | Day time (07:00 – 22:00) | Nighttime (22:00 – 07:00) |
| Residential, institutional, educational | 55 | 45 |
| Industrial, commercial | 70 | 70 |

## 3.4 International and Regional Treaties and Protocols

Article 144 of the Namibian Constitution provides for the enabling mechanism to ensure that all international treaties and protocols are ratified. All ratified treaties and protocols are enforceable within Namibia by the Namibian courts, and these include the following:

- The Paris Agreement, 2016.
- Convention on Biological Diversity, 1992.
- Vienna Convention for the Protection of the Ozone Layer, 1985.

- ❖ Montreal Protocol on Substances that Deplete the Ozone Layer, 1987.
- ❖ United Nations Framework Convention on Climate Change, 1992.
- ❖ Kyoto Protocol on the Framework Convention on Climate Change, 1998.
- ❖ Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal, 1989.
- ❖ World Heritage Convention, 1972.
- ❖ Convention to Combat Desertification, 1994. and
- ❖ Stockholm Convention of Persistent Organic Pollutants, 2001.
- ❖ Southern Africa Development Community (SADC) Protocol on Mining, and.
- ❖ Southern Africa Development Community (SADC) Protocol on Energy.

## 3.5 Recommendations on Permitting Requirements

It is hereby recommended that the Proponent must follow the provisions of all relevant national regulatory throughout the proposed project lifecycle and must obtain the following permits/ authorisations as maybe applicable / required as the proposed project develops:

(i) Valid EPL as may be applicable from Department of Mines in the Ministry of Mines, Energy and Industry (MMEI).

(ii) Valid ECC from the Department of Environmental Affairs and Forestry in the Ministry of Environment, Forestry and Tourism (MEFT).

(iii) The Proponent shall apply for all the applicable permits as provided in the Water Resources Management Regulations, 2023 including freshwater abstraction and wastewater discharge permits from the Department of Water Affairs (DWA) in the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR), before drilling a water borehole and discharge wastewater into the environment respectively, and.

(iv) All other permits as may be applicable for the proposed exploration operations and test mining activities.

# 4. SUMMARY OF NATURAL ENVIRONMENT

## 4.1 Climate

Summer rainfall is brought by northeast winds, generally from October to April. The average rainfall varies considerably and ranges between 380 mm and 450 mm.

The mean annual gross evaporation is between 3000 mm -3200 mm. The numbers of rainfall events expressed as an annual average in days as determined from the regional data is 10-30 days. The sun shines for an annual average of 10 hours a day.

The annual mean temperature for Otjiwarongo area is around 24°C with the mean monthly temperatures ranging between 23°C to 14°C throughout the year (Fig. 4.1). Based on regional data sets, temperatures at 08h00, 14h00 and 20h00 are estimated to be around 14°C, 24°C and 18°C respectively.

## 4.2 Topography

The regional terrain around the EPL 9372 is rocky and rugged in nature with steep slopes characterising the mountainous sections whilst the foothills of the mountains are flat and gently undulating. Within the EPL area, the drainage is dendritic in nature with ephemeral streams, often steeply incised, forming small early-stage tributaries of the Ugab Ephemeral River and its tributaries of Omabakan, Erundu and Urundu Ephemeral Rivers (Fig. 4.2).

## 4.3 Vertebrate Fauna and Flora Diversity

### 4.3.1 Reptiles

The overall reptile diversity and endemism in the general area is estimated at between 71-80 species and 5-8 species, respectively (Fig. 4.3 and Mendelsohn et al. 2002). Griffin (1998a) presents figures of between 41-50 and 31-40 for lizard and snake diversity, respectively, from the general area in north-central Namibia.

According to Alexander and Marais (2007), Branch (1998), Branch (2008), Boycott and Bourquin 2000, Broadley (1983), Buys and Buys (1983), Cunningham (2006), Griffin (2003), Hebbard (n.d.), Marais (1992), Tolley and Burger (2007), endemic reptile species known and/or expected to occur in the general license area make up 35.1% of the reptiles from the general area and although not as high as endemism elsewhere for example the western escarpment areas of Namibia but still makes up a large portion of the reptiles.

Reptiles of greatest concern are probably the tortoises – Stigmochelys pardalis and Psammobates oculiferus which are often consumed by humans. Python anchietae and P. natalensis which are indiscriminately killed throughout their range and Varanus albigularis as well as the various Pachydactylus species geckos of which 80% are viewed as endemic.

Other important species would be the 3 Blind snakes (Rhinotyphlops species of which 2 species are endemic) and 2 Thread snakes (Leptotyphlops species of which 1 species is endemic) which could be associated with the sandier soils in the area.

### 4.3.2 Amphibians

According to Mendelsohn et al. (2002), the overall frog diversity in the general area is estimated at between 12-15 species (Fig. 4.3).

According to Carruthers (2001), Channing (2001), Channing and Griffin (1993), Du Preez and Carruthers (2009), Passmore and Carruthers (1995), of the 9 species of amphibians are likely to occur in the general license area, 33.3% (3 species) are of conservation value with 2 species being endemic

(Poyntonophrynus hoeschi and Phrynomantis annectens) (Griffin 1998b) and 1 species (Pyxicephalus adspersus) viewed as near threatened (Du Preez and Carruthers 2009).

However, the area does not have unique amphibian habitat with potential habits being associated with the various ephemeral drainage lines associated (Fig. 4.3).

### 4.3.3 Mammals

Overall terrestrial diversity and endemism – all species – is classified “average to high” in overall (all terrestrial species) diversity and “high” in endemism in the north-central part of Namibia (Fig. 4.3 and Mendelsohn et al. 2002).

The overall diversity and abundance of large herbivorous mammals (big game) is viewed as “high” with kudu, springbok and Burchell’s zebra having average densities while the overall diversity and density of large carnivorous mammals (large predators) is “average” with 4 species expected of which leopard and cheetah have high densities (Mendelsohn et al. 2002).

The overall mammal diversity in the general area is estimated at between 76-90 species with 3-4 species being endemic to the area (Mendelsohn et al. 2002). Griffin (1998c) puts the species richness distribution of endemics also between 9-11 species.

According to the literature at least 86 species of mammals are known and/or expected to occur in the general area of which 4 species (4.7%) are classified as endemic species. The Namibian legislation classifies 8 species as vulnerable, 3 species as rare, 1 species as specially protected game, 9 species as protected game, 4 species as insufficiently known, 1 species as peripheral, 1 species as migrant, 4 species as huntable game, 3 species as problem animals and 4 species not listed.

At least 29.1% (25 species) of the mammalian fauna that occur or are expected to occur in general Tsumeb area are represented by rodents of which 3 species (12%) are endemic.

This is followed by bats with 25.6% (22 species) of which 1 species (i.e., Cistugo seabrai) is endemic and rare (4.5%) and carnivores with 22.1% (19 species) of which 1 species (4.6%) are endemic (Fig. 4.3).

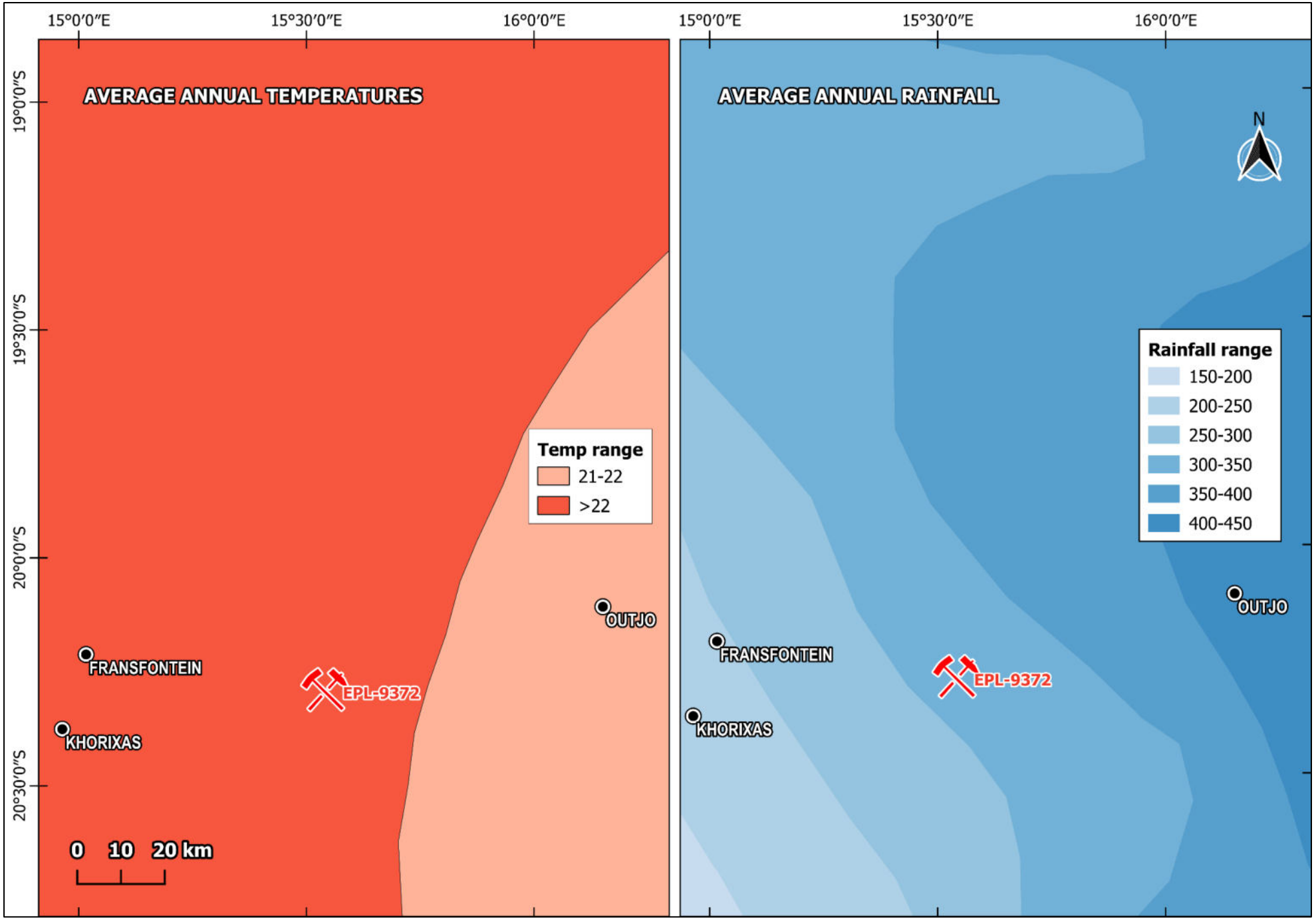



Figure 4.1: Average annual temperature and rainfall around the EPL No. 9372 area.

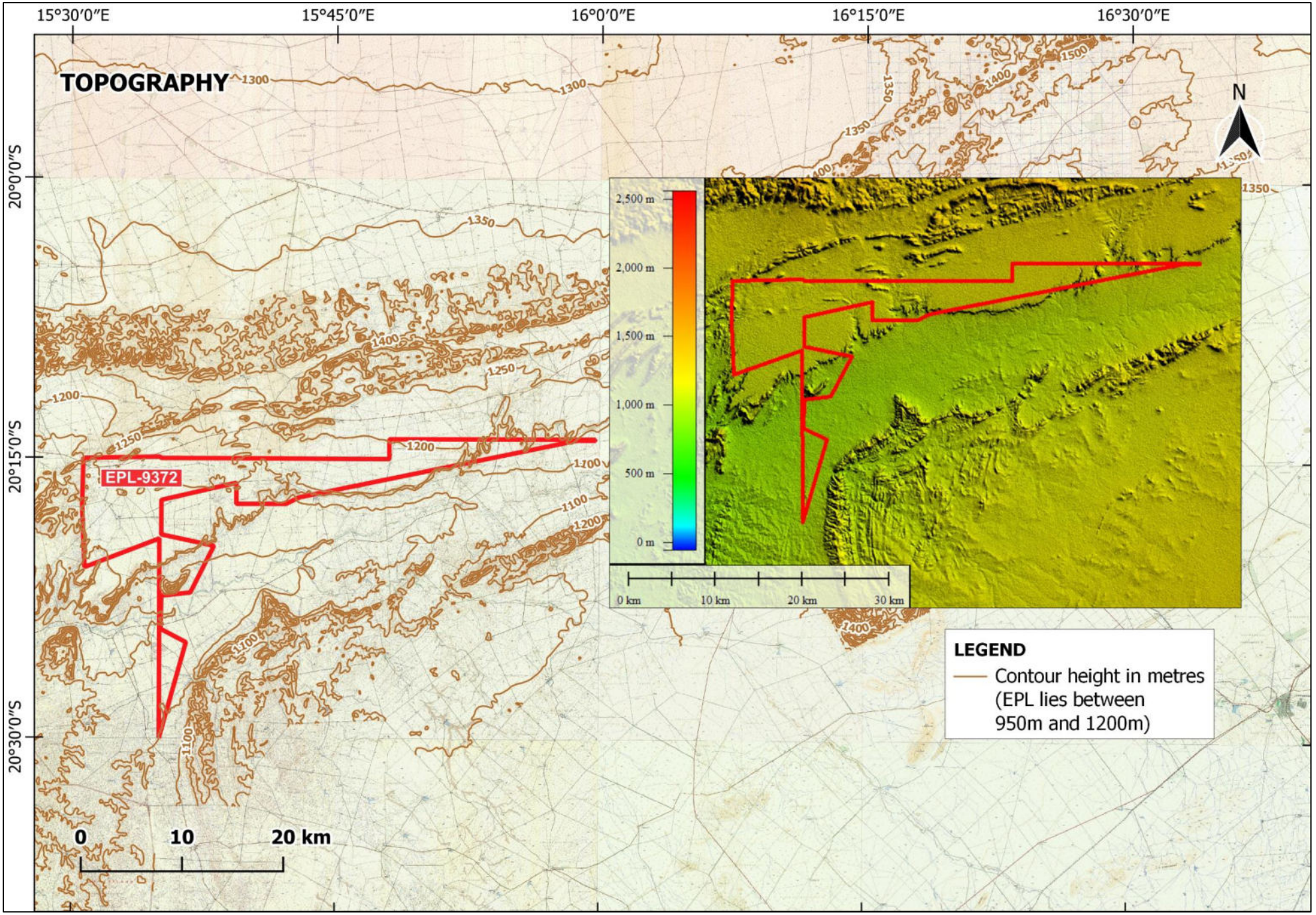



Figure 4.2: Topographic setting around the EPL No. 9372 area.

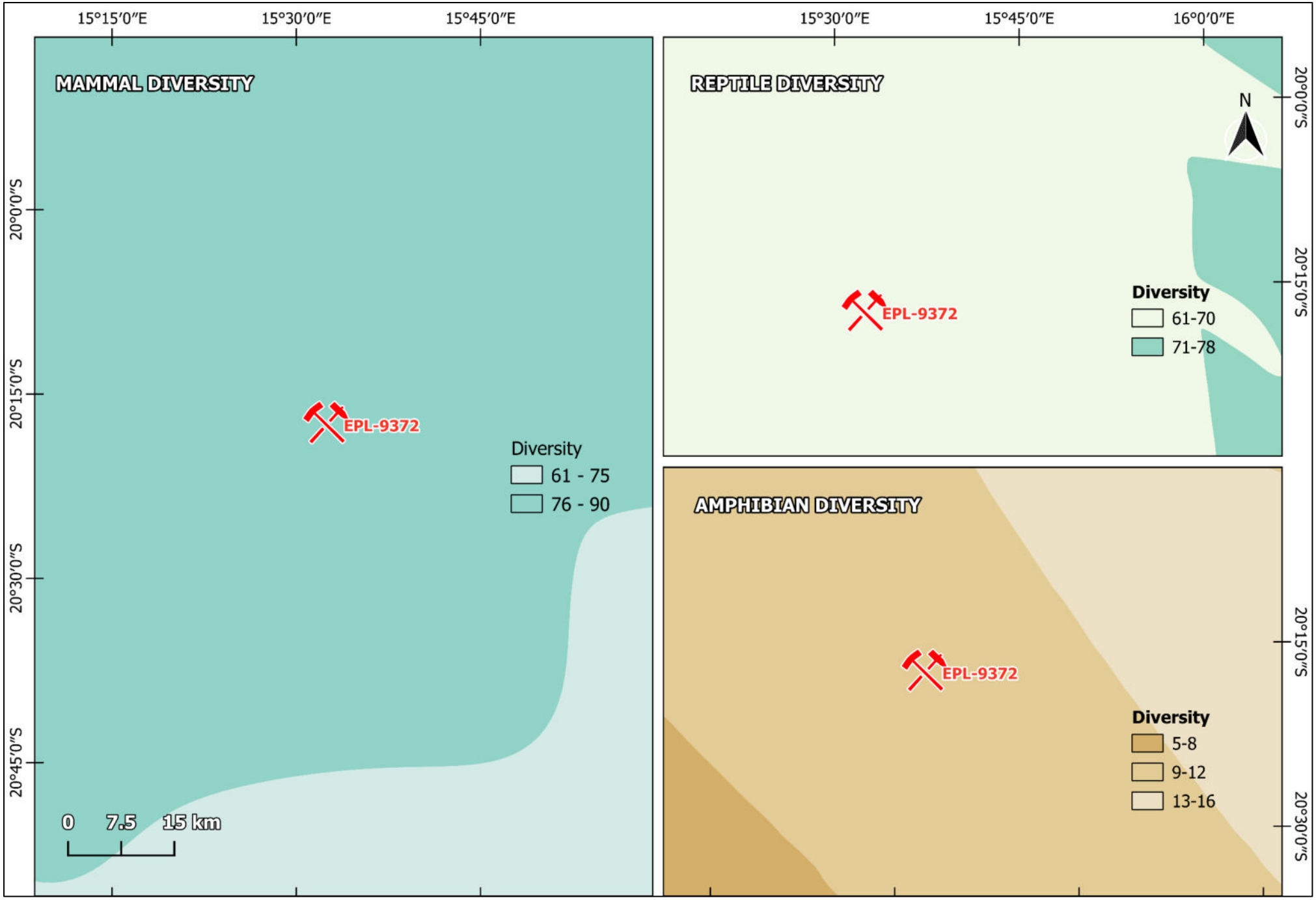



Figure 4.3: Mammal, reptiles and amphibian diversities around the EPL No. 9372 area.

### 4.3.4 Avifauna

At least 213 species of terrestrial ["breeding residents"] birds occur and/or could occur in the general area at any time (Hockey et al. 2006, Maclean 1985, Tarboton 2001). All the migrant and aquatic species have been excluded here.

Eight of the 14 Namibian endemics are expected to occur in the general area (71.4% of all Namibian endemic species or 3.8% of all the species expected to occur in the area) (Fig. 4.4). Seven species are viewed as endangered, 6 species as near threatened and 3 species as vulnerable (Fig. 4.4 and Simmons et al. 2015).

Furthermore, Simmons *et al.* (2015) classifies 2 species as near endemic which were previously seen as endemic (i.e., violet wood-hoopoe and Rűppel's parrot). The IUCN (2015) classifies 2 species as endangered (Ludwig's bustard and white-backed vulture), 1 species as near threatened (kori bustard) and 2 species as vulnerable (martial eagle and secretarybird). Sixty-one (28.6% of all the birds expected) species have a southern African conservation rating with 13 species classified as endemic (21.3% of southern African endemics or 6.1% of all the birds expected) and 48 species classified as near endemic (78.7% of southern African endemics or 22.5% of all the birds expected) (Hockey et al. 2006).

The most important "endemic" species known/expected to occur in the general area are viewed as Hartlaub's Spurfowl (Pternistis hartlaubi), Monteiro's Hornbill (Tockus monteiri), Damara Hornbill (Tockus damarensis), Carp's tit (Parus carpi), Rockrunner (Achaetops pycnopygius), Bare-cheeked babbler (Turdoides gymnogenys) and Poicephalus rueppellii (Rüppell's Parrot – near-endemic). The 7 species listed by Simmons et al. (2015) as endangered (violet wood-hoopoe, Lűdwigs bustard, white-backed vulture, tawny/booted/martial eagles and bateleur) and 2 species listed by the IUCN (2015) as endangered (Ludwig's bustard and white-backed vulture), near threatened (kori bustard) and vulnerable (martial eagle and secretarybird) are viewed as the most important. The larger raptors (e.g., vultures, eagles, etc.) are often persecuted due to actual and perceived livestock mortalities or succumb when feeding on poisoned carcasses set for problem predators.

### 4.3.5 Trees and Shrubs

The EPL 9372 falls within the Kalahari, Thornbush shrubland and Karstveld vegetation zones (Figs. 4.4-4.6). It is estimated that at least 79-110 species of larger trees and shrubs (>1m) – Coats Palgrave 1983 [81 sp.], Curtis and Mannheimer 2005 [79 sp.], Mannheimer and Curtis 2009 [110 sp], Van Wyk and Van Wyk 1997 [60 sp.]), are found in the general area and dominated by Savanh Acacia (Fig. 4.4).

The most important tree/shrub species occurring in the general area are probably Cyphostemma bainesii (endemic, NC), Cyphostemma currorii (NC), Cyphostemma juttae (endemic, NC), Erythrina decora (Forestry*, endemic), Heteromorpha papillosa (endemic) and Manuleopsis dinteri (endemic species) (Craven, 1999. Curtis and Mannheimer, 2005 and Mannheimer and Curtis, 2009).

The protected species are viewed as the most important tree/shrubs occurring in the area include Acacia erioloba and Boscia albitrunca. However, these species are widespread throughout large parts of Namibia and are not exclusively associated with the ongoing / proposed development area, which minimises the overall effect on trees/shrubs.

### 4.3.6 Grass Species

It is estimated that up to 111 grasses – 73 to 88 species – (Müller 2007 [88 sp.], Müller 1984 [73 sp.], Van Oudshoorn 1999 [73 sp.]) occur in the general area. The most important grass expected in the area is the endemic *Setaria finite* associated with ephemeral drainage lines.

Although the season (end of dry and beginning of wet) made the identification of grasses difficult, none off the grasses are exclusively associated with the proposed / ongoing developments area nor protected species, which minimises the overall effect on grasses.

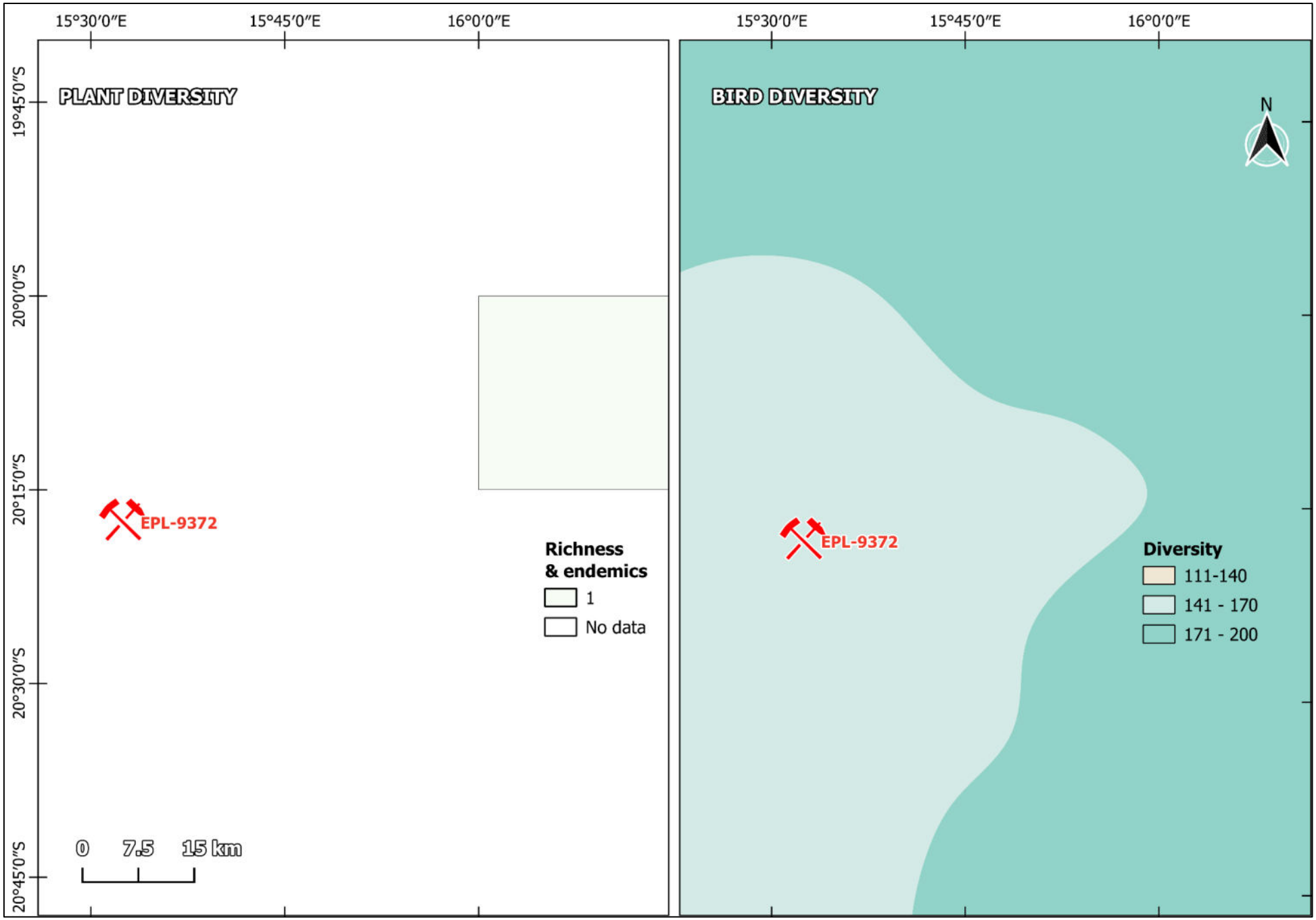



Figure 4.4: Plant and bird diversities around the EPL No. 9372 area.

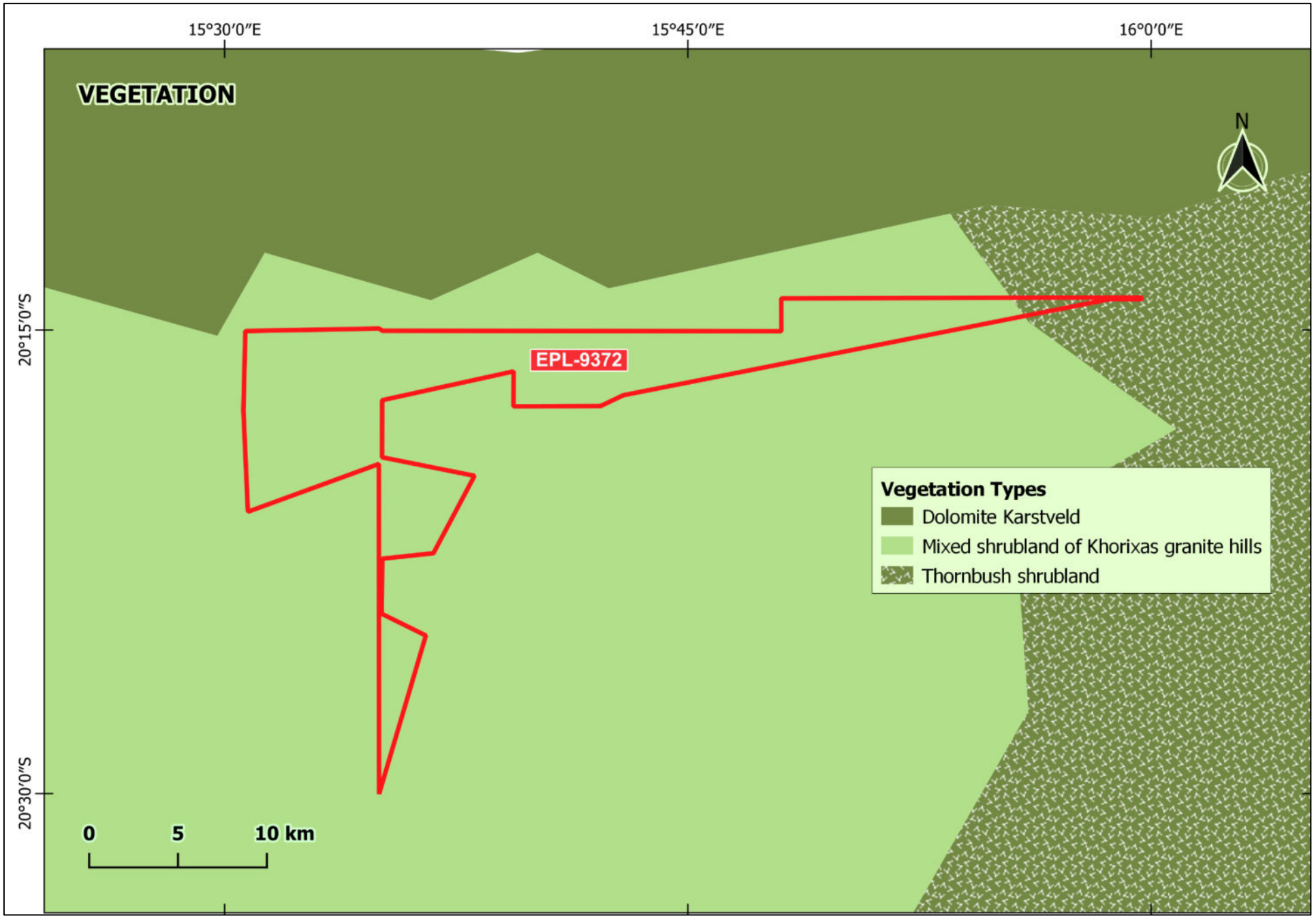



Figure 4.5: Vegetation diversity around the EPL No. 9372 area.

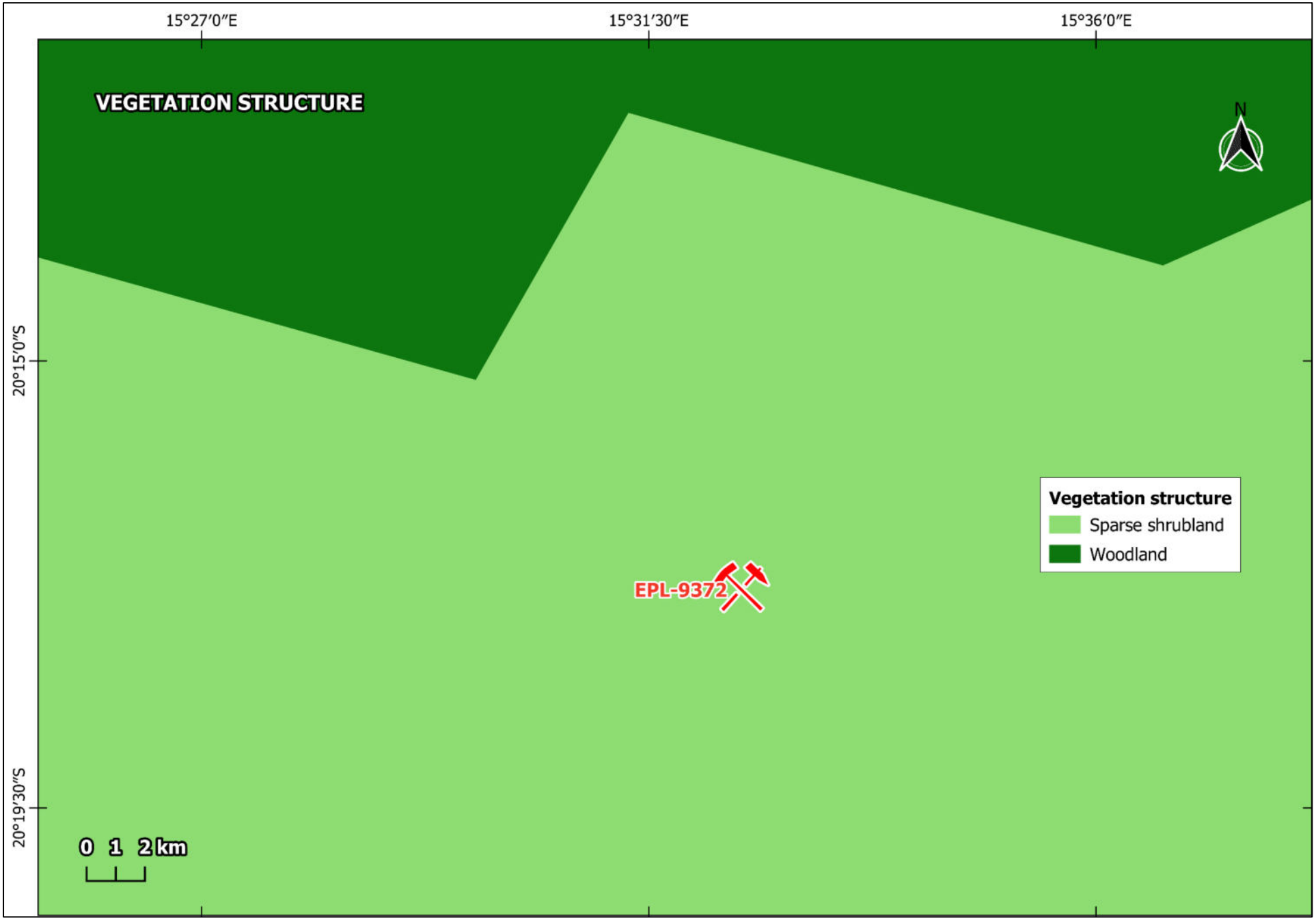



Figure 4.6: Vegetation structure around the EPL No. 9372 area.

### 4.3.7 Other Species

The following is a summary of various other species that maybe found in and around the EPL area depending on season (set or dry): Aloes, Commiphoras, Herbs, Ferns, Lichens, Lithops and other species with commercial potential that could occur in the general area include Harpagophytum procumbens (Devil's claw) exploited and Citrullus lanatus (Tsamma melon).

### 4.3.8 Fauna and Flora Conclusions / Sensitive Areas

Species most likely to be adversely affected by the proposed exploration within the EPL area would be the variety of reptiles and birds specifically associated with the proposed development site(s) as well as the potential effect such development may have on carnivores as well as the protected and unique flora (Fig. 4.3).

As all development have potential negative environmental consequences, identifying the most important fauna and flora species including high risk habitats beforehand, coupled with environmentally acceptable mitigating factors, lessens the overall impact of such development.

The following is the summary of the most important fauna and flora (habitat) areas within the EPL area (Figs. 4.2 and 4.3):

(i) Mountains [botanical richness and endemic vertebrates].

(ii) Granite domes and other rocky outcrops [biotic richness and endemism], and.

(iii) Local Ephemeral Rivers –Biotic richness, large desert-dwelling mammals, high value for human subsistence and tourism.

The following are the key likely protected species / sensitive areas that maybe found within the EPL area (Fig. 4.2-4.6):

(i) Protected species: The protected tree species along the **Ugab Ephemeral River and associated tributaries such as the Omabakan, Erundu and Urundu Ephemeral Rivers:** Drainage lines, albeit ephemeral, are the lifelines in the drier parts of Namibia with a variety of vertebrate fauna attracted and/or associated with such features. Although not as important as perennial rivers, well vegetated ephemeral drainage lines are still viewed as important habitat for a variety of vertebrate fauna in the general area. It is recommended that development attempt to avoid these drainage lines as far as possible, and.

(ii) **Carbonate Terrain / Mountainous and rocky areas**: Maybe biotic richness and endemism.

The following is summary of the key aspect of the proposed exploration programme likely to have some negative impacts on the receiving environment:

(i) Access routes - Localised disruption/destruction of the habitat and thus consequently fauna associated directly with the actual routes. This however, would be a relatively small area with localised implications because the proponent will utilise the already existing extensive access routes.

(ii) Excavation, trenching/ drilling sites - Localised disruption/destruction of the habitat and thus consequently fauna associated directly with the actual sites. This however, would be a relatively small area and will depend on scale of the operations resulting in localised implications, and.

(iii) Supporting Infrastructure including campsite - Localised disruption/destruction of the habitat and thus consequently fauna associated directly with the actual sites. This however, would be a relatively small area – especially if the existing (albeit ruins) infrastructure areas are used rather than affecting new sites – with localised implications.

## 4.4 Socioeconomic Setting

### 4.4.1 Overview

The EPL 9372 falls within the Kunene Region which is geographically located in the Northwestern part of Namibia and encompasses a range of biomass or landscapes neatly arranged parallel to one another. On the western part of the region is dominated by the Skeleton Coast. A region of rocks, fog, shipwrecks, and desolation, washed by the waters of the Benguela current, which brings Antarctic cold to desert heat. The region's administrative capital is Opuwo.

The Kunene River in the northern part of the region forms an international boundary with Angola. The Kunene region boarders Omusati region to the east and southeast of the Etosha National Park. In the south its boarders Erongo and Otjozondjupa region.

The Kunene region covers an area of 115,293km$^2$ of the total Namibian land. Kunene region is the second largest region after //Kharas Region. Kunene Region is home to 120,762 inhabitants (Census 2023) representing 4% of the Namibian population. Total number of males is 60 573 and 60 189 females. Kunene region prides itself on being the most ethically and demographically diversified region and as home to Namibia's indigenous ethnic population called the Ovahimba, whose lifestyle, tradition, values, and culture have never transitioned to modernity even after centuries of colonialism.

Based on the 2023 population Census, the Kunene Region covers an area of 115, 293km$^2$ and it is home to 120,762 inhabitants representing 4% of the Namibian population. The region has a total number of males is 60 573 and 60 189 females.

The EPL area falls in the Kamanjab and Outjo Constituencies. The Kamanjab Constituency has a population of 11349 with 6568 and 4781 being male and females, respectively. The constituency has a total area of 17130.63 km² Area and a population density of 0.7/km².

The Outjo Constituency has a population of 19,743 with 10,229 and 9,514 being male and females, respectively. The constituency has a total area of 7,468 km² Area and a population density of 2.644 /km².

The socioeconomic setting of the region is dependent on commercial and subsistence agriculture cattle and small stock farming, conservation, tourism, and hospitality, and limited minerals exploration and mining operations.

### 4.4.2 Agriculture

As an important cattle, game and small stock (goats and sheep) farming area (and consequently a source of employment) as well as renewed interest from a tourism point of view, the importance of the western central Namibia to the GDP of Namibia is invaluable. The area surrounding EPL 9372 area falls within the long established private commercial farming communities. The carrying capacity for the general area is 10-20kg/ha (Mendelsohn et al. 2002) or 12-15LAU/ha (van der Merwe 1983) and the risk of farming is viewed as relatively high. Small stock farming is the dominant farming activity in the area with between 70-80% of stock farmed with being sheep and 20-30% goats and cattle, respectively (van der Merwe 1983). The stock density is estimated at <3sheep/km² (1.5% of total sheep in Namibia) and <1cattle/km² (1.3% of total cattle in Namibia) (van der Merwe 1983). There are numerous existing tourism ventures in the area with the tourism potential viewed as relatively high (Mendelsohn et al. 2002).

### 4.4.3 Conservation and Tourism

The area does not fall within a proclaimed national park, communal conservancy nor a freehold (i.e., commercial) conservancy. A number of local farms operates local lodges and guest farms, the area is well known for beautiful/breathtaking/spectacular scenery, cultural and adventure tourism products. The area has greater potential for tourism products growth in areas such as unique natural landscapes, cultural resources or adventure.

### 4.4.4 Safety, Security and Obstructions

Current safety issues include steep slopes / gullies / valleys, excavations, and minor scattered scrap metals. Generally, there will be a need to ensure that all employees and the public and visitors to the EPL area are safe. The entire proposed development will not cause any obstruction to human or fauna.

### 4.4.5 Overall Socioeconomic Summary

The proposed exploration activities in the EPL 9372 are likely to coexists with the current and future land uses such as the commercial agriculture. Socioeconomic impacts at the exploration stage are likely to be minimal and tend to be positive in an event of a discovery of economic minerals resources. A clear understanding of these impacts may help communities understand and anticipate the effects of the proposed exploration. One of the major possible impacts of the proposed / ongoing exploration activities include employment and unrealistic expectations about the development of a mine and coexistence opportunity / conflicts associated with the current land uses. It is important for local communities to bear in mind that 99.9% of the exploration projects will not advance to a mine development.

## 4.5 Ground Components

### 4.5.1 Geology

The Kalahari cover over the EPL area consists of thin sand/silt/calcrete deposits and are not a major source of water supply in the area (Fig. 4.7). Some of these deposits, such as the gravels, clays, and calcretes, are also potential local materials that can be used in the various construction activities associated with different infrastructure development at various stages of the mine life cycle. The EPL 9372 falls within the Central Zone of the Damara Sequence which underlies most of Namibia (Figs. 4.8 and 4.9). The oldest rocks within the Central Zone are the pre-Damaran basement that consists of gneiss and granite lithologies found in different parts of the zone (Miller, 1992).

The EPL 9372 Area falls within the metasedimentary rocks of the Damara represented by the Kuiseb and Karibib Formations as well as sounding Damara Granites (Geological Survey of Namibia, 1999 and Miller, 2008, 1992, 1983a and 1983b). Schists and quartzites, together of iron ore lenses form the lower units of the stratigraphy (Figs. 4.8 and 4.9). According to Miller, (1992) it was deposited during successive phases of rifting, spreading, subduction and continental collision. Much of the basal succession (Nosib Group), laid down in or marginal to intracontinental rifts, consists of quartzite, arkose, conglomerate, phyllite, calc-silicate and subordinate limestone and evaporitic rocks. Local alkaline ignimbrite with associated subvolcanic intrusions ranges from 840 to 720 million years in age.

Widespread carbonate deposition followed and overlapped far beyond early rift shoulders (Kudis, Ugab and basal Khomas Subgroups). interbedded mica and graphitic schist, quartzite (some ferruginous), massflow deposits, iron-formation and local within-plate basic lava point to variable depositional conditions south of a stable platform where only carbonates with very minor clastics occur (Otavi Group) (Geological Survey of Namibia, 1999 and Miller, 2008, 1992, 1983a and 1983b). The local regional geology of the EPL 9372 and the surrounding areas comprise schists, and dolomites (Figs. 4.8 and 4.9).

### 4.5.2 Geotechnical Engineering Consideration

Rocks of varying geotechnical characteristics are expected within the pegmatite zones and alternating bands within the banded dolomitic marble and biotite-quartz schist country rock and covered by a variety of sediments in some places. No field and laboratory assessment of rock mass and detailed discontinuities survey were undertaken as part of this study. Table 4.1 outlines an indicative classification of the various discontinuities that are likely to be found in the area. Both low and high order discontinuities are likely to be found around the EPL area. It is highly recommended that a field-based geotechnical engineering assessment followed by laboratory assessments must be undertaken before the implementation deep excavation to have accurate figures of all the key geotechnical parameters.

Table 4.1: General rock structure scheme.

| GEOMETRY | | | | CHARACTERISTIC | | | | |
|---|---|---|---|---|---|---|---|---|
| DISCONTINUITY | LENGTH m | SPACING m | WIDTH m | TRANSMISSIVITY $m^2/s$ | HYDRAULIC CONDUCTIVITY m/s | INFILLING THICKNESS m | EXAMPLE | INFLUENCE INDICATOR |
| LOW ORDER DISCONTINUITIES. ZONES OUTCROPS | | | | | | | | |
| 1ST ORDER | $>10^4$ | $>10^3$ | $>10^2$ | $10^{-5}$ - $10^{-2}$ | $10^{-7}$- $10^{-5}$ AV. [$10^{-6}$] | $10^0$ | Regional major fault systems | 4 V. High |
| 2ND ORDER | $10^3$ - $10^4$ | $10^2$- $10^3$ | $10^1$ – $10^2$ | $10^{-7}$ - $10^{-4}$ | $10^{-8}$ – $10^{-6}$ AV. [$10^{-7}$] | $10^{-1}$ | Local major fault zones | |
| 3RD ORDER | $10^2$ – $10^3$ | $10^1$ – $10^2$ | $10^0$ - $10^1$ | $10^{-9}$ – $10^{-6}$ | $10^{-9}$ – $10^{-7}$ AV. [$10^{-8}$] | ≤$10^{-2}$ | Local minor fault zones | |
| HIGH ORDER DISCONTINUITIES: INDEPENDENT OUTCROPS | | | | | | | | |
| 4TH ORDER | $10^1$ – $10^2$ | $10^0$- $10^1$ | - | - | $10^{-11}$-$10^{-9}$ AV.[$10^{-10}$] | - | Local major joint set or bedding | 3 High |
| 5TH ORDER | $10^0$ - $10^1$ | $10^{-1}$ - $10^0$ | - | - | $10^{-12}$-$10^{-10}$ AV. [$10^{-11}$] | - | Local minor joints/ fractures | |
| 6TH ORDER | $10^{-1}$ - $10^0$ | $10^{-2}$ – $10^{-1}$ | - | - | $10^{-13}$-$10^{-11}$ AV. [$10^{-12}$] | - | Local minor fissures / schistosity | 2 Low |
| 7TH ORDER | <$10^{-1}$ | <$10^{-2}$ | - | - | <$10^{-13}$ | - | Crystalline voids | 1 V. Low |

## 4.5.3 Water

### 4.5.3.1 Surface and Groundwater

According to the Department of Water Affairs and Forestry, (2001) and the regional and local geology, the EPL 9372 falls within an area with very limited economic groundwater water resources (aquifers) (Figs. 4.7-4.9). Water supply in the general area is from local groundwater resources (Department of Water Affairs, 2001). The proposed project activities (exploration programme) will utilise local groundwater resources. No site-specific hydrogeological specialist study, groundwater modelling or water sampling and testing activities have been undertaken for this study.

The source of water supply for the proposed exploration and in particular the proposed drilling of exploration boreholes if need arises to drill, will be from existing groundwater resources. The Proponent must obtain permission from the landowner before using water from any existing local boreholes and infrastructures.

If there is a need to drilling a water borehole to support the proposed exploration programme, the Proponent must obtain permission from the landowner and Department of Water Affairs in the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR).

In an event of discovery of economic minerals resources, the sources of water supply for the mining related operations will be supplied from groundwater resources if proven to be available following a detailed hydrogeological and groundwater modelling study that must be undertaken as part of the EIA supporting the feasibility study.

Currently, potential available groundwater resources in the area will not be sufficient to support any new larger-scale mining related operation within the EPL 9372. However, some parts of the EPL area are covered by local fractured, fissured, karstified and porous rocks that seems to have localised moderate groundwater potential (Figs. 4.7-4.9).

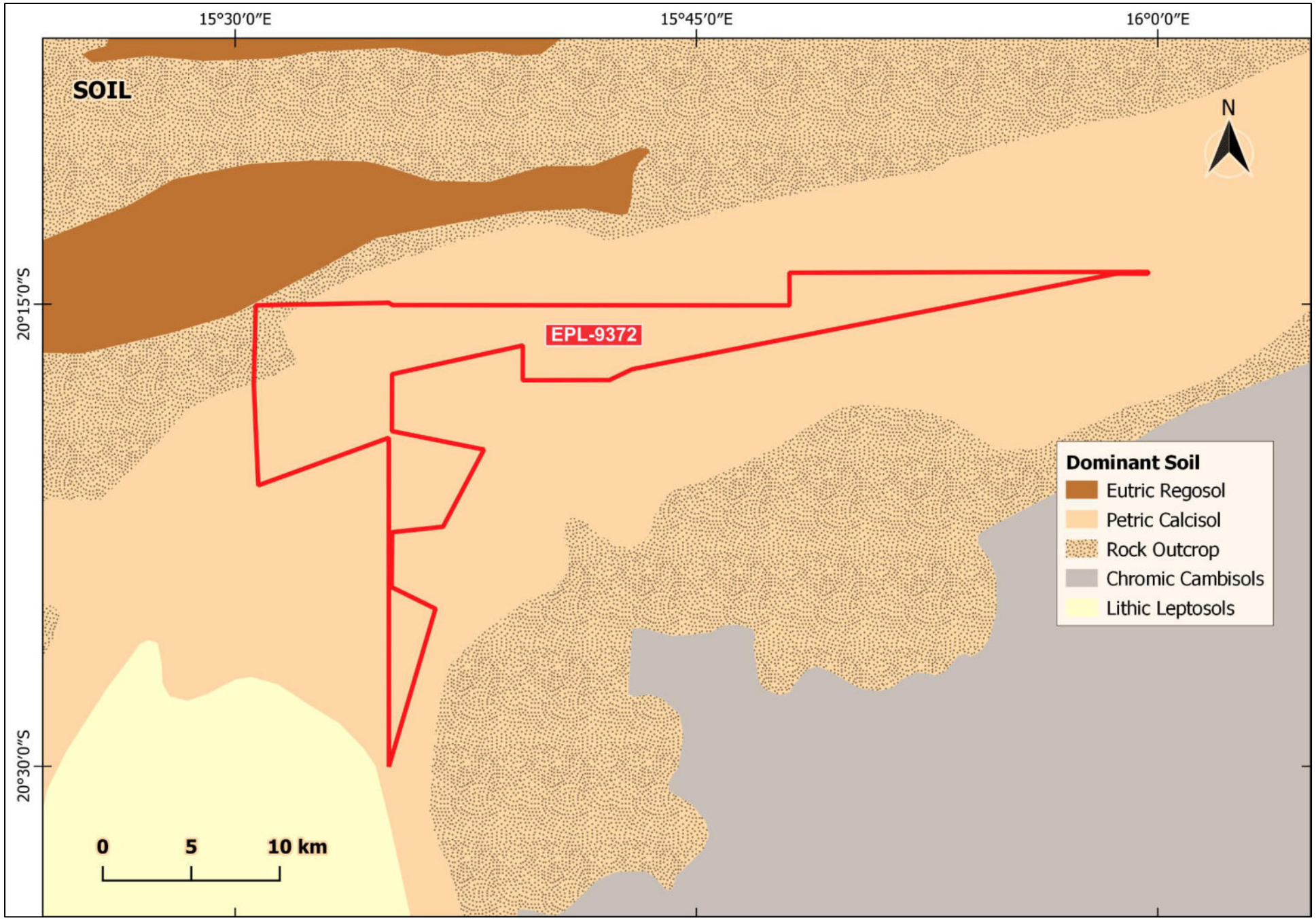



Figure 4.7: Surficial geology around the EPL No. 9372 area.

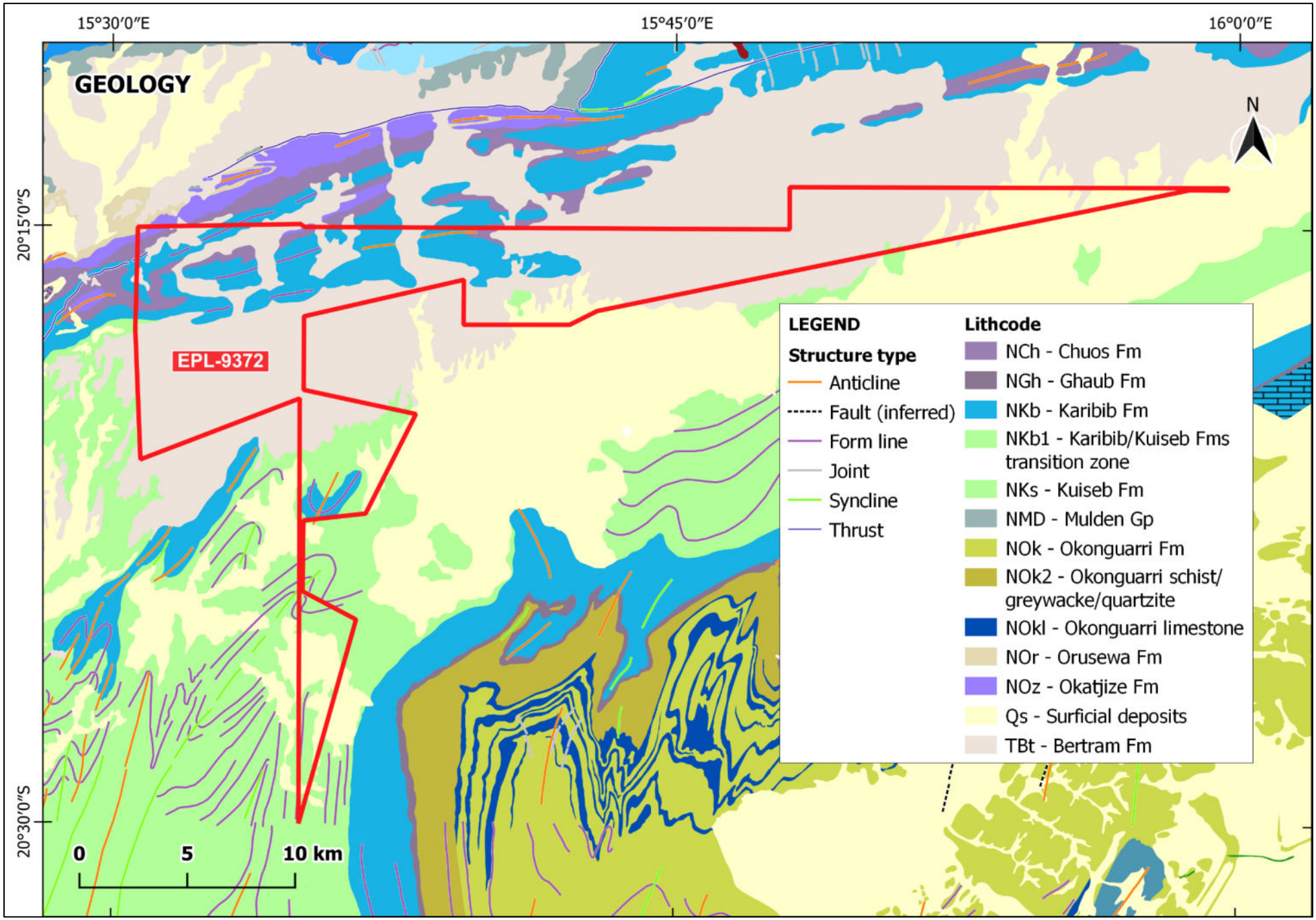



Figure 4.8: Geological structures and main stratigraphic units (Lithcode) around the EPL No. 9372 area.

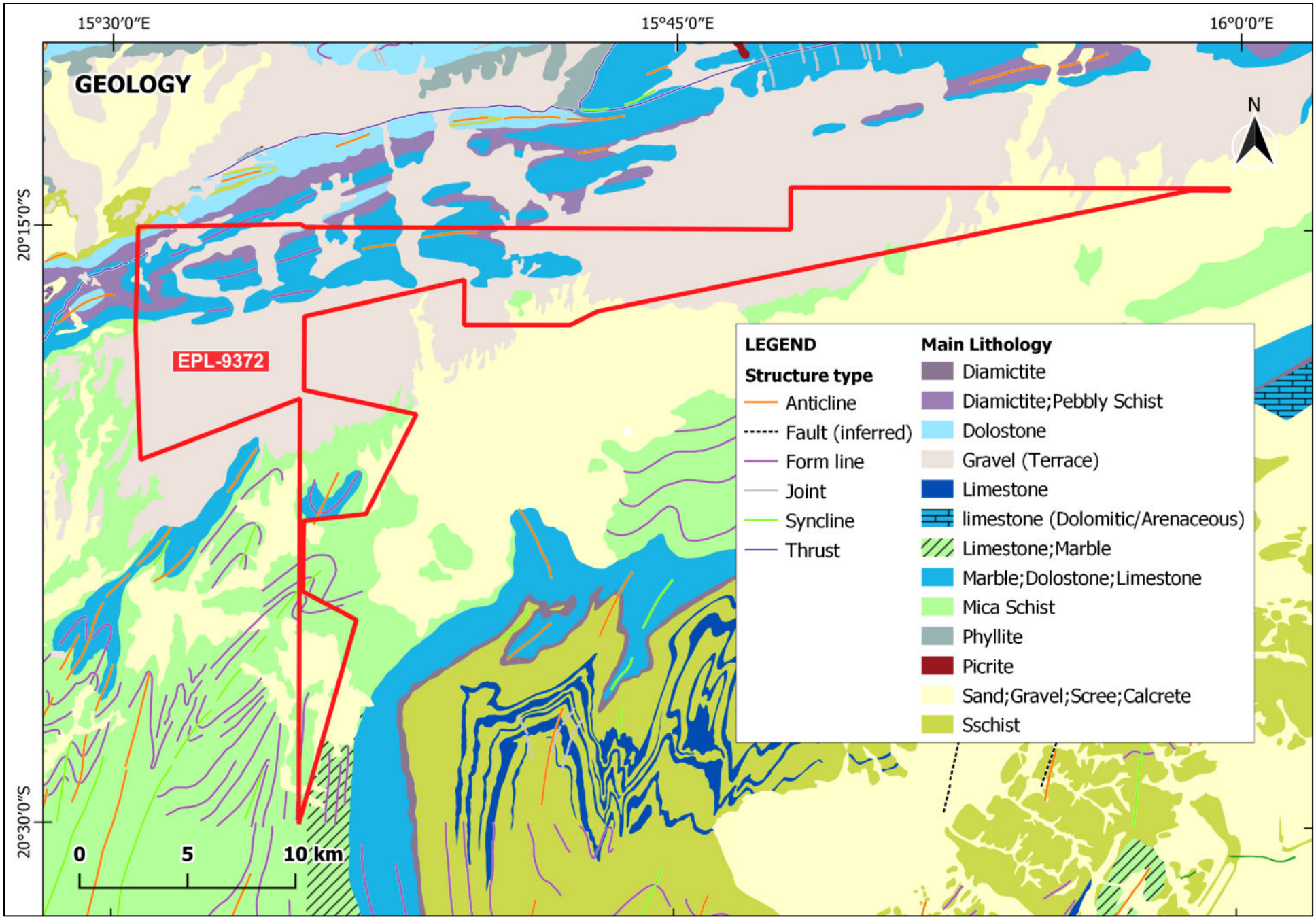



Figure 4.9: Geological structures and rock types / lithological units found within and around the EPL No. 9372 area.

#### 4.5.3.2 Water Vulnerability Assessments

Vulnerability assessment of surface water covered possible runoff, the presence of source factors and major flow routes such as major high order discontinuities (Table 4.1), ephemeral river channels, valleys and gullies as pathways and the presence of surface water body as a target.

The groundwater assessments covered hydraulic properties and thickness of the unsaturated and saturated zones derived from geological and hydrogeological data (Figs. 4.7-4.10).

The assessment of the unsaturated characteristics was based on the ability for source factors to influence the system through known pathway factors such as discontinuities. The combined effects of unsaturated and saturated flow probabilities were used as indicator for groundwater vulnerability.

However, groundwater or surface water will only be vulnerable to contamination if the following three (3) component are all present at the same time and at a site-specific area within the EPL (Fig. 4.10):

(i) Contaminant sources resulting from proposed exploration programme.

(ii) Potential pathways for contaminant migration such as major high order discontinuities (Table 4.1), ephemeral river channels, valleys and gullies, and.

(iii) Targets (economic water resources) present within the project area.

Overall, the limited local groundwater resources found in the area form part of the poorly developed metamorphic rocks based confined and unconfined aquifer system that is moderately vulnerable to any sources of pollution.

During the rainy season, surface water bodies can be found along the local ephemeral river system. Surface water often recharges the local groundwater resources along the faults, solutions holes, and other discontinuities along the ephemeral rivers in the general surrounding EPL area.

Therefore, surface water in the local EPL area is more vulnerable to pollution sources associated with some of the proposed local field-based detailed prospecting / exploration activities such as drilling and trenching as well as supporting activities such as campsite and discharge of liquid and solid waste.

It is important that all polluting activities must not be placed or undertaken in areas with high order discontinuities, valleys, or gullies systems in the area. Discharge of solid or liquid waste into a public stream is prohibited.

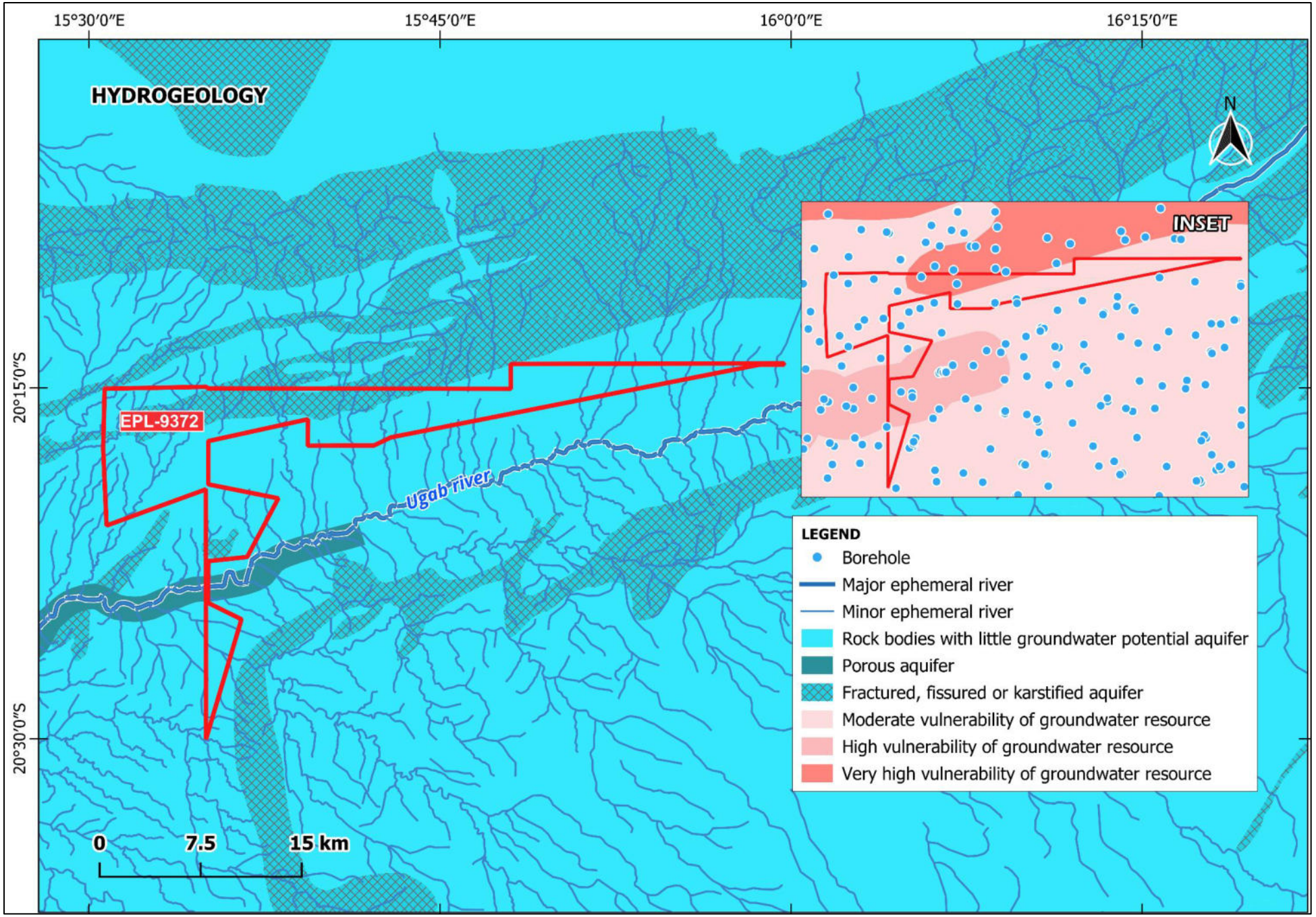



Figure 4.10: Groundwater, water vulnerability to pollution, water supply schemes found within and around the EPL No. 9372 area.

## 4.6 Archaeology

### 4.6.1 Regional Archaeological Setting

Modern humans and their ancestors have lived in Namibia for more than one million years, and there are fossil remains of lineal hominin ancestors as early as the Miocene Epoch (Kinahan, 2017).

Namibia has a relatively complete sequence covering the mid-Pleistocene to Recent Holocene period, represented by thousands of archaeological sites mainly concentrated in the central highlands, escarpment, and Namib Desert.

According to Kinahan, (2017), the Recent Holocene archaeological sequence in Namibia, i.e., the last 5 000 years, is of particular importance because it provides the background evidence for the development and recent history of the indigenous peoples of Namibia before the advent of written historical records during the colonial era.

Many archaeological sites from this period are of great significance to the understanding of Namibian history, and some are of global importance.

### 4.6.2 Local Archaeological Setting and Recommendation

The EPL area is likely to have evidence from the early colonial period relates to iron and manganese mining in the general area and a combination of trade, missionary activity, and indigenous tribes use of iron for various applications.

The Proponent must not disturb major natural shelters or cavities that may be unearthed because they could hold some highly significant historical or cultural sites that would require detailed documentation and possibly mitigation measures to be adopted in the event of encroachment by the proposed exploration activities.

The EPL area does not have a known heritage site (https://maps.landfolio.com/Namibia).

In the absence of field-based assessment being undertaken, it is likely that the general area around the EPL area may have archaeological resources that are protected by the National Heritage Act, 2004 (Act No. 27 of 2004) under the National Heritage Council of Namibia.

The EPL area is likely to have evidence from the early colonial period related to a combination of mining, trade, missionary and indigenous tribes' activities. The expectation is therefore:

(i) A high likelihood of Holocene age archaeological sites, including rock art, associated with outcropping granite in the EPL area, and.

(ii) A high likelihood of late precolonial and colonial settlement sites.

The following are the key recommended actions related to archaeology in the EPL Area:

(i) The exploration team 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 the prospecting process should be reported to the National Heritage Council.

(ii) The chance finds procedure as outlined in the EMP must be implemented at all times, and.

(iii) Detailed field survey should be carried out if suspected archaeological resources or major natural cavities / shelters have been unearthed during the prospecting process.

## 4.7 Public Consultations and Engagement

Public consultation and engagement process was part of the environmental assessment process for this project.

According to the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 and the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007), a person conducting a public consultation process must give notice to all Interested and Affected Patties (I&APs) of the application which is subjected to public consultation.

The EIA Regulations clearly state that potential interested and affected parties must be provided with a reasonable opportunity (21 days) to comment on the application under Section 21(6) of the EIA Regulations.

During the consultation process that was conducted from Thursday, 27th February 2025 to Thursday, 20th March 2025, the public and I&APs were invited to register and submit written comments / inputs / objections with respect to the proposed the proposed minerals exploration activities in the EPL No. 9372 (Figs. 4.11-4.16).

In line with the provisions of the regulations, the 1st advertisement was published in the New Era Newspaper dated Thursday, 27th February 2025 followed by five (5) publications in the Windhoek Observer Newspaper from Wednesday, 12th, Thursday, 13th and Friday 14th March 2025 and Monday, 17th and Tuesday, 18th March 2025 (Figs. 4.11-4.16).

A Stakeholder Register as required by Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 and the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007), was opened on Thursday, 27th February 2025. The closing date for registration and submission of written objections, comments, inputs to the environmental assessment process was **Thursday 20th March 2025** (Figs. 4.11-4.16).

No written comments / inputs / objections with respect to the proposed the proposed minerals exploration activities in the EPL No. 9372 were received from the public, I&APs or key stakeholders during the public and stakeholder consultation period that ran from the from Thursday, 27th February 2025 to Thursday, 20th March 2025.

# CITY POLICE TRAFFIC TIPS

## A cautionary advisory for learner drivers

■ Community Policing Officer

Driving is a privilege that comes with great responsibility. Many new car owners mistakenly believe that simply owning a vehicle gives them the right to drive it immediately. However, the law is clear: No person may operate a motor vehicle on a public road without the necessary authorisation and certification. It is important for learner drivers to take cognisance of the legal provisions, risks, and the importance of voluntary compliance in this respect.

According to the Road Traffic and Transport Act, 1999 (Act No. 22 of 1999) and the Road Traffic and Transport Regulations, no person is permitted to drive a motor vehicle on a public road unless they hold a valid learner's licence or driver's licence. A learner's licence is granted only after successfully passing a theory test that assesses knowledge of road signs, rules and regulations.

*Great responsibility... A learner driver must always be accompanied by a fully licensed driver in the vehicle while operating it.* Photo: Contributed

Furthermore, under Regulation 102 of the Road Traffic and Transport Regulations, a learner driver must always be accompanied by a fully licensed driver in the vehicle while operating it. Failure to adhere to these regulations constitutes an offence and may result in a fine of N$1000 or disqualification from obtaining a full driver's licence.

It is key to allude to the fact that not adhering to road safety laws poses serious risks, not only to the learner driver but also to other road users. Inexperienced and untrained drivers are more likely to make errors that could lead to crashes, injuries, or fatalities.

In the same vein, driving without a valid learner's or driver's licence is an offence that may result in prosecution, fines, or even imprisonment. Most insurance policies do not cover crashes caused by unlicensed drivers, leaving individuals financially liable for damages.

A driver who is not properly trained may not know how to react in emergency situations, increasing risks for pedestrians and other motorists.

The Windhoek City Police Service urges all aspiring drivers and vehicle owners to comply with the law voluntarily.

Road safety is a collective responsibility, and responsible driving begins with proper training, legal certification, and adherence to traffic regulations. Before getting behind the wheel, ensure you have obtained a valid learner's licence, enrol in a reputable driving school to enhance your driving skills and road knowledge and always be accompanied by a fully licensed driver when practising. One may only drive independently once they have successfully obtained a driver's licence.

Ultimately, road safety is not just about compliance with the law; it's about protecting lives, including your own. Therefore, it is important for drivers to comply with the law and assist law enforcement in their quest to make our roads safer.

# PUBLIC NOTICE

**APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATES (ECCs) FOR PROPOSED MINERALS EXPLORATION ACTIVITIES BY**

1. **MITTEN MINERALS EXPLORATION (Pty) Ltd EXCLUSIVE PROSPECTING LICENSES (EPLs) Nos. 9039, OKAHANDJA DISTRICT OTJOZONDJUPA REGION, 9372 OUTJO DISTRICT KUNENE REGION, AND 9516 OTJIWARONGO DISTRICT OTJOSONDJUPA REGION**
2. **OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd EPL No. 9926, KARIBIB DISTRICT, ERONGO REGION**

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9039 with respect to Dimension Stone, Base and Rare Metals, and Industrial Minerals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9039 is located in the Okahandja District Otjozondjupa Region and has a total area of 65354.4918 Ha covering the following farmlands: Agagia Noord 307, Groot Alarona 304, Haemonie 225, Hartland 334, Emmabrun 222, Alfa 226, Marwil 221, Paloma 229, Wilton 220, Rema 219, Kalkloch 230, Omuramba 341, Otjikuara 151, Elsie 87, Groot Martinsveld 326, Elisenore 85, Okaharui 81, Mareenwill 84, Otjikuoko Ost 82 and Otjikuoko West 83.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9372 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and Precious Metals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9372 is located in the Outjo District Kunene Region and has a total area of 22570.2970 Ha covering the following commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans 100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9516 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and, Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate by the Environmental Commissioner in MEFT. The EPL 9516 is located in the Otjiwarongo District Otjosondjupa Region and has a total area of 54560.3592 Ha covering the following farmlands: Farm 582, La Mont 405, Vlakplaats 325, Ozondjache 316, Ozondjache 152, Epsom 155, New Market 156, Okateitei 157, Ohakaua 154, Hohenfels 153, Ozondjache 315, Okahua 418, Graslaagte 313, Tweekoppies 486, Klipkop 314, Etekero 518, Ohakaua 143, Tottenham 487 and Laconia 141.

**OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9926 with respect to Base and Rare Metals, Industrial Minerals, and Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in Ministry of Environment, Forestry and Tourism (MEFT). The EPL 9926 area is located in the Karibib District, Erongo Region and has a total area of 1303.8373 Ha covering the following land uses: Karibib Townlands Remainder of Portion A of the Farm Karibib No. 54, Portion 22 (a Portion of Portion A) of the Farm Karibib Town and Townlands No. 54, and Portion 11 of Farm Kranzberg No. 59.


If the ECCs are granted for the EPLs Nos. 9039, 9372, 9516 and 9926, the Proponents (Mitten Minerals Exploration (Pty) Ltd and Osino Namibia Minerals Exploration (Pty) Ltd) intend to conduct prospecting activities starting with desktop studies including the processing and interpretation of the existing geophysical and other historical minerals exploration data sets, followed by regional field-based reconnaissance activities. If the initial exploration results prove positive, the Proponents will implement detailed site-specific field-based activities using field-based and site-specific techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests. The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without Environmental Clearance Certificates (ECCs). In fulfilment of these environmental requirements, the Proponents have appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Assessment and Management Reports to support the application for ECCs for the EPLs Nos. 9039, 9372, 9516 and 9926. Interested and Affected Parties (I&APS) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting / exploration activities. A Background Information Document (BID) is available on request upon registration. In terms of the provisions of the EIA Regulation 23 (1), an interested and / or affected party is required to disclose any direct business, financial, personal, or other interest which that party may have in the approval or refusal of the ECC application. Please note that the proposed activities are not mining operations which requires Mining Licenses (MLs), but prospecting / exploration operations aimed at searching for potential economic minerals resources in each of the listed four (4) EPLs.

**REGISTER BY EMAIL, SMS OR WHATSAPP: frontdesk@rbs.com.na/ +264812772546 AND CONTACT PERSON: Dr Sindila Mwiya (EAP/Technical Permitting Advisor/ Consultant**
**CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS: THURSDAY 20th MARCH 2025**

Risk-Based Solutions (RBS) CC- (URL: www.rbs.com.na) *Your Technical Specialist Consultants, Permitting & De-Risking Advisors in Natural Resources in Petroleum Exploration & Production/ Minerals Exploration & Mining / Energy / Water / Environmental Assessments & Management (ESG, SEA, EIA, EMP, EMS)*

Figure 4.11: Copy of the 1st Public Notice published in the New Ear Newspaper dated Thursday, 27th February 2025.

# 'This is just incompetence': Neil Coleman slams Treasury over budget shortfalls

**As South Africa's budget presentation approaches, Finance Minister Enoch Godongwana has drawn criticism over his claim that the government lacks the funds to sustain the Social Relief of Distress (SRD) grant.**

In an interview on Newzroom Afrika, Senior Policy Specialist and co-founder of the Institute for Economic Justice Neil Coleman refuted this claim, arguing that the SRD grant was already accounted for in the 2025 budget baseline and accusing the Treasury of misinformation.

"He actually, I'm afraid to say, is misleading the country deliberately, misinforming the country," Coleman said. He pointed out that in Parliament on October 31, 2023, the director-general of the Treasury confirmed that the SRD grant was included in the medium-term budget policy statement under a provisional item.

"So there's no trade-off," Coleman insisted, rejecting Godongwana's suggestion that increased VAT might be necessary to sustain the grant.

Coleman further dismissed claims that financial shocks, such as the United States (US) government's decision to cut the President's Emergency Plan for Aids Relief (Pepfar) funding, contributed to budget shortfalls.

"It's not fair to say that. This is just incompetence on the part of the minister and Treasury. They failed to budget for items that were easily anticipated."

He argued that revenue had exceeded projections in 2024 and that social spending had already been cut significantly in recent years.

The discussion also touched on broader fiscal management, with Coleman emphasising that alternatives exist for raising revenue and reducing wasteful spending.

"Trade-offs, as you call them, are being made in ways which disadvantage the poorest and most vulnerable in society," he asserted, highlighting that policymakers are protecting wealthier interests at the expense of the poor.

The upcoming budget presentation is expected to be contentious. "I anticipate that when the budget is presented on Wednesday by the Minister, it is going to be a robust debate, and it's not going to be smooth sailing," Coleman said.

The conversation also raised the potential for zero-based budgeting, which Coleman acknowledged could be valuable if conducted transparently and based on expert analysis.

"It must be based on objective scientific evidence. And what you will find is that once you do that exercise, there are certain areas where a very significant increase in spending is required, particularly in critical public services," he argued.

While wasteful expenditure should be cut, Coleman stressed that austerity measures have already harmed essential services. "There has to be a recognition that there is a serious impact that austerity over the number of years and the cutbacks have had on services for the majority," he said.

Godongwana is expected to table the budget on Wednesday, March 12.

*hope.ntanzi@iol.co.za*
*IOL Politics*

**Finance Minister Enoch Godongwana faces criticism over statements on the sustainability of the Social Relief of Distress (SRD) grant.**

## PUBLIC NOTICE

### APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATES (ECCs) FOR PROPOSED MINERALS EXPLORATION ACTIVITIES BY

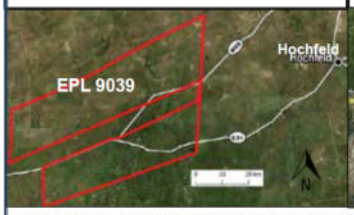
1. **MITTEN MINERALS EXPLORATION (Pty) Ltd EXCLUSIVE PROSPECTING LICENSES (EPLs) Nos. 9039, OKAHANDJA DISTRICT OTJOZONDJUPA REGION, 9372 OUTJO DISTRICT KUNENE REGION, AND 9516 OTJIWARONGO DISTRICT OTJOSONDJUPA REGION**
2. **OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd EPL No. 9926, KARIBIB DISTRICT, ERONGO REGION**

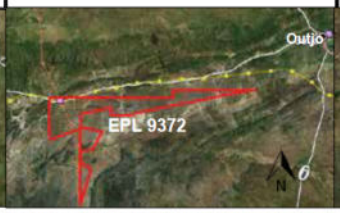
**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9039 with respect to Dimension Stone, Base and Rare Metals, and Industrial Minerals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9039 is located in the Okahandja District Otjozondjupa Region and has a total area of 65354.4918 Ha covering the following farmlands: Agagia Noord 307, Groot Alarona 304, Haemonie 225, Hartland 334, Emmabrun 222, Alfa 226, Marwil 221, Paloma 229, Wilton 220, Rema 219, Kalkloch 230, Omuramba 341, Otjikuara 151, Elsie 87, Groot Martinsveld 326, Elisenore 85, Okaharui 81, Mareenwill 84, Otjikuoko Ost 82 and Otjikuoko West 83.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9372 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and Precious Metals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9372 is located in the Outjo District Kunene Region and has a total area of 22570.2970 Ha covering the following commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans 100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88.

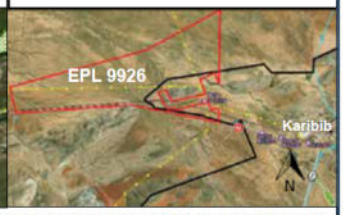
**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9516 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and, Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate by the Environmental Commissioner in MEFT. The EPL 9516 is located in the Otjiwarongo District Otjosondjupa Region and has a total area of 54560.3592 Ha covering the following farmlands: Farm 582, La Mont 405, Vlakplaats 325, Ozondjache 316, Ozondjache 152, Epsom 155, New Market 156, Okateitei 157, Ohakaua 154, Hohenfels 153, Ozondjache 315, Okahua 418, Graslaagte 313, Tweekoppies 486, Klipkop 314, Etekero 518, Ohakaua 143, Tottenham 487 and Laconia 141.

**OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9926 with respect to Base and Rare Metals, Industrial Minerals, and Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in Ministry of Environment, Forestry and Tourism (MEFT). The EPL 9926 area is located in the Karibib District, Erongo Region and has a total area of 1303.8373 Ha covering the following land uses: Karibib Townlands Remainder of Portion A of the Farm Karibib No. 54, Portion 22 (a Portion of Portion A) of the Farm Karibib Town and Townlands No. 54, and Portion 11 of Farm Kranzberg No. 59.








If the ECCs are granted for the EPLs Nos. 9039, 9372, 9516 and 9926, the Proponents (Mitten Minerals Exploration (Pty) Ltd and Osino Namibia Minerals Exploration (Pty) Ltd) intend to conduct prospecting activities starting with desktop studies including the processing and interpretation of the existing geophysical and other historical minerals exploration data sets, followed by regional field-based reconnaissance activities. If the initial exploration results prove positive, the Proponents will implement detailed site-specific field-based activities using field-based and site-specific techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests. The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without Environmental Clearance Certificates (ECCs). In fulfilment of these environmental requirements, the Proponents have appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Assessment and Management Reports to support the application for ECCs for the EPLs Nos. 9039, 9372, 9516 and 9926. Interested and Affected Parties (I&APS) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting / exploration activities. A Background Information Document (BID) is available on request upon registration. In terms of the provisions of the EIA Regulation 23 (1), an interested and / or affected party is required to disclose any direct business, financial, personal, or other interest which that party may have in the approval or refusal of the ECC application. Please note that the proposed activities are not mining operations which requires Mining Licenses (MLs), but prospecting / exploration operations aimed at searching for potential economic minerals resources in each of the listed four (4) EPLs.

**REGISTER BY EMAIL, SMS OR WHATSAPP: frontdesk@rbs.com.na/ +264812772546 AND CONTACT PERSON: Dr Sindila Mwiya (EAP/Technical Permitting Advisor/ Consultant**
**CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS: THURSDAY 20th MARCH 2025**

*Risk-Based Solutions (RBS) CC- (URL: www.rbs.com.na) Your Technical Specialist Consultants, Permitting & De-Risking Advisors in Natural Resources in Petroleum Exploration & Production/ Minerals Exploration & Mining / Energy / Water / Environmental Assessments & Management (ESG, SEA, EIA, EMP, EMS)*

Figure 4.12: Copy of the 2nd Public Notice published in the Windhoek Observer Newspaper dated Wednesday, 12th March 2025.

# Bushiri and his wife ordered to be extradited to SA for rape and financial crimes

**The Chief Resident Magistrate Court in Malawi has ordered that self-proclaimed prophet, Shepherd Bushiri and his wife, Mary Bushiri, be extradited to South Africa.**

Minister of Justice and Constitutional Development Mmamoloko Kabuyi, said the South African government welcomed the ruling on Wednesday.

The Bushiris had appeared before two South African courts in 2020, facing criminal charges.

The two were granted bail pending trial but failed to comply with their bail conditions and fled the country under unknown circumstances. They were later located in Malawi.

In response, South Africa submitted an extradition request to Malawi, seeking the Bushiri's return to face charges, including, rape, violating bail conditions, contraventions of the Contraventions of the Financial Advisory and Intermediary Services Act, Banking Act, Civil Aviation Act, and Immigration Act

"This decision reaffirms judicial independence, international cooperation, and public trust in the South African and Malawian legal institutions," Kabuyi said in a statement.

**Prophet Shepherd Bushiri and his Mary have ordered to be extradited to South Africa to face charges, including rape among others.** *Picture: Contributed*

"It reinforces the principle that no one is above the law and underscores the importance of accountability, transparency, and adherence to legal frameworks in both South Africa and Malawi."

The case has drawn significant public and media attention, highlighting broader issues of corruption and accountability.

Kabuyi underscores the critical role of legal agreements and treaties in combating transnational crime.

South Africa remains committed to strengthening legal and diplomatic partnerships to ensure that fugitives are brought to justice and that legal systems remain fair, credible, and effective, she added.

The Department of Justice and Constitutional Development works with the Malawi Central Authority, INTERPOL, the National Prosecuting Authority (NPA), and the South African Police Service (SAPS).

Kabuyi added that she had been informed that the Bushiris intended to appeal the ruling.

"The South African government will oppose the appeal. The Department will await the outcome of the appeal process if they proceed."

She said if they do not appeal, the Department of Justice will await formal notification from Malawi's Central Authority.

"Once received, INTERPOL, in collaboration with the South African Police Service (SAPS), will coordinate the transfer arrangements and logistics. The State will cover all associated costs," Kabuyi added.

simon.majadibodu@iol.co.za
*IOL News*

## PUBLIC NOTICE

**APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATES (ECCs) FOR PROPOSED MINERALS EXPLORATION ACTIVITIES BY**

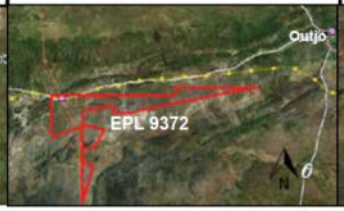
1. **MITTEN MINERALS EXPLORATION (Pty) Ltd EXCLUSIVE PROSPECTING LICENSES (EPLs) Nos. 9039, OKAHANDJA DISTRICT OTJOZONDJUPA REGION, 9372 OUTJO DISTRICT KUNENE REGION, AND 9516 OTJIWARONGO DISTRICT OTJOSONDJUPA REGION**
2. **OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd EPL No. 9926, KARIBIB DISTRICT, ERONGO REGION**

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9039 with respect to Dimension Stone, Base and Rare Metals, and Industrial Minerals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9039 is located in the Okahandja District Otjozondjupa Region and has a total area of 65354.4918 Ha covering the following farmlands: Agagia Noord 307, Groot Alarona 304, Haemonie 225, Hartland 334, Emmabrun 222, Alfa 226, Marwil 221, Paloma 229, Wilton 220, Rema 219, Kalkloch 230, Omuramba 341, Otjikuara 151, Elsie 87, Groot Martinsveld 326, Elisenore 85, Okaharui 81, Mareenwill 84, Otjikuoko Ost 82 and Otjikuoko West 83.

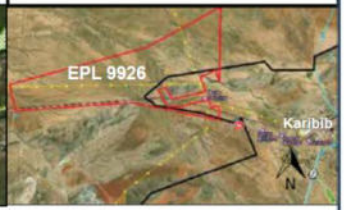
**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9372 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and Precious Metals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9372 is located in the Outjo District Kunene Region and has a total area of 22570.2970 Ha covering the following commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans 100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9516 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and, Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate by the Environmental Commissioner in MEFT. The EPL 9516 is located in the Otjiwarongo District Otjosondjupa Region and has a total area of 54560.3592 Ha covering the following farmlands: Farm 582, La Mont 405, Vlakplaats 325, Ozondjache 316, Ozondjache 152, Epsom 155, New Market 156, Okateitei 157, Ohakaua 154, Hohenfels 153, Ozondjache 315, Okahua 418, Grasiaagte 313, Tweekoppies 486, Klipkop 314, Etekero 518, Ohakaua 143, Tottenham 487 and Laconia 141.

**OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9926 with respect to Base and Rare Metals, Industrial Minerals, and Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in Ministry of Environment, Forestry and Tourism (MEFT). The EPL 9926 area is located in the Karibib District, Erongo Region and has a total area of 1303.8373 Ha covering the following land uses: Karibib Townlands Remainder of Portion A of the Farm Karibib No. 54, Portion 22 (a Portion of Portion A) of the Farm Karibib Town and Townlands No. 54, and Portion 11 of Farm Kranzberg No. 59.






If the ECCs are granted for the EPLs Nos. 9039, 9372, 9516 and 9926, the Proponents (Mitten Minerals Exploration (Pty) Ltd and Osino Namibia Minerals Exploration (Pty) Ltd) intend to conduct prospecting activities starting with desktop studies including the processing and interpretation of the existing geophysical and other historical minerals exploration data sets, followed by regional field-based reconnaissance activities. If the initial exploration results prove positive, the Proponents will implement detailed site-specific field-based activities using field-based and site-specific techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests. The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without Environmental Clearance Certificates (ECCs). In fulfilment of these environmental requirements, the Proponents have appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Assessment and Management Reports to support the application for ECCs for the EPLs Nos. 9039, 9372, 9516 and 9926. Interested and Affected Parties (I&APS) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting / exploration activities. A Background Information Document (BID) is available on request upon registration. In terms of the provisions of the EIA Regulation 23 (1), an interested and / or affected party is required to disclose any direct business, financial, personal, or other interest which that party may have in the approval or refusal of the ECC application. Please note that the proposed activities are not mining operations which requires Mining Licenses (MLs), but prospecting / exploration operations aimed at searching for potential economic minerals resources in each of the listed four (4) EPLs.

**REGISTER BY EMAIL, SMS OR WHATSAPP: frontdesk@rbs.com.na/ +264812772546 AND CONTACT PERSON: Dr Sindila Mwiya (EAP/Technical Permitting Advisor/ Consultant**
**CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS: THURSDAY 20th MARCH 2025**

*Risk-Based Solutions (RBS) CC- (URL: www.rbs.com.na) Your Technical Specialist Consultants, Permitting & De-Risking Advisors in Natural Resources in Petroleum Exploration & Production/ Minerals Exploration & Mining / Energy / Water / Environmental Assessments & Management (ESG, SEA, EIA, EMP, EMS)*

Figure 4.13: Copy of the 3rd Public Notice published in the Windhoek Observer Newspaper dated Thursday, 13th March 2025.

# 'We have ignored lessons': how Covid continues to affect lives five years later

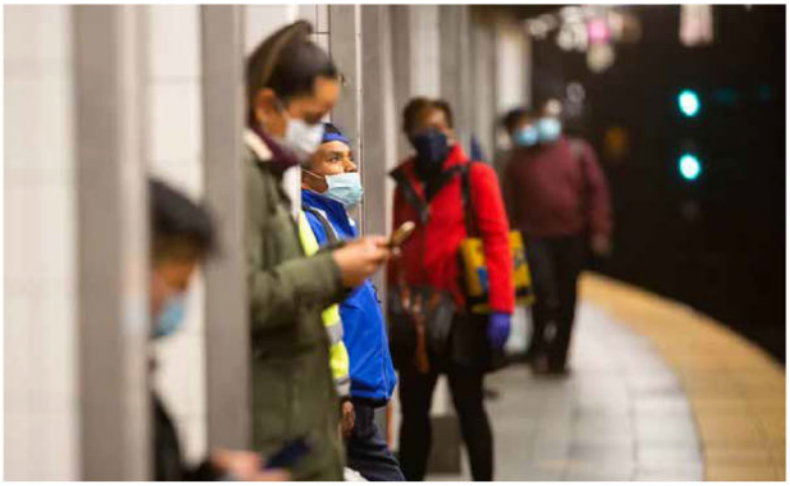
**It's been five years since the Trump administration declared a nationwide emergency across the US on 13 March 2020, The announcement came days after the World Health Organization (WHO) designated Covid-19 a global pandemic.**

Since then, there have been 1,222,603 deaths from Covid in the US. Much of the country, along with the rest of the world, has moved on from the pandemic, with fewer people wearing masks and life returning to the way it was before the outbreak started.

Among the dozens of people who shared with the Guardian how their lives have changed since, many talked about embracing remote working and the greater work-life balance they have achieved. Others mentioned feeling encouraged to change jobs or start their own business, as well as how their relationships were strengthened by the shared experience.

Many reported being diagnosed with long Covid and the permanent impact this had had on them. Some still said they experience loneliness and find it difficult to socialise, while others feel trust between people has eroded and that differing views highlighted by the pandemic has made society more divisive.

Here, six people in the US tell us how their lives have changed since the start of the Covid outbreak.



People wearing protective masks wait on a subway platform at Grand Central in New York, U.S., on Monday, Sept. 21, 2020. *Michael Nagle/Bloomberg via Getty Images*

**'It's like everyone is moving on without us'**

In February 2020 I was living a vibrant, full life. I hiked, backpacked and rock climbed. I had a strong community. I was planning to go to med school. Lockdown was hard but we were all in it together. Then, in 2022, I got Covid despite taking extreme precautions. Now, I am bed-bound with long Covid while everyone thinks the pandemic is over. My partner and I are so lonely, seeing everyone believe Covid is over and moving on without us.

I used to be whip-smart and witty, and now I labor to process basic sentences. I used to be a risk-taker and spontaneous, and now I have to plan out my walks to the bathroom. I used to love six-hour talks with friends; now I can barely handle a short phone call. I had traveled to 20 countries and 30 states; now I leave the house once or twice a year for medical appointments.

I lie in bed and think of how my life used to be. I miss the sky. I miss my old life so much it's unbearable. I feel like a ghost. Some days, I feel everything is behind me except suffering and oppression. Others, I am able to listen to a good book and text a friend, and I feel hopeful I could improve someday, though most likely never recover. Nash, 25, unemployed, Washington DC

**'I harvested dead trees and left behind tables and benches'**

a man with a beard in a selfie

Thomas Locatell. Photograph: Thomas Locatell/Guardian Community

In March 2020, I began frequenting Gilbrook nature area, a local woodland I had become fond of near my apartment. As a carpenter, my love of all things tree-related had caused me to notice the unusual nature of this little patch of woods.

Every day I would walk there and wonder why more people weren't doing the same. That's when the gravity of the situation of the pandemic really sank in. People were scared. I wasn't. That was freeing. With a few hand tools and a wagon, my trips became not walks in a lovely park, but a mission to harvest dead trees on the ground. Once I made my first cut, I was hooked.

I hardly missed a day up there for over a year and left behind tables and benches – one of my largest pieces was a 16ft table. I even replaced a rotten set of steps down to a pond where beavers lived. It was an experience like no other.

People started to notice and I was on the local news and featured in a YouTube video about different characters in Vermont. The city became aware of my activity and actually approved of it. To my great surprise, they provided me with a place to work where I am engaged to this day. Five years on, I never expected for any of this to come out of the pandemic – it's been fun. Thomas Locatell, 67, retired carpenter, Winooski, Vermont

**'We've become closer as a family'**

Prior to the pandemic, I had a good relationship with my parents overall. My father's chronic condition started accelerating and I think it brought my mother and I closer together. When the pandemic started getting serious, I started talking to talk to my sister more often and I think that brought us closer to one another.

Just before the pandemic, my father was

TO NEXT PAGE

## PUBLIC NOTICE

**APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATES (ECCs) FOR PROPOSED MINERALS EXPLORATION ACTIVITIES BY**

**1. MITTEN MINERALS EXPLORATION (Pty) Ltd EXCLUSIVE PROSPECTING LICENSES (EPLs) Nos. 9039, OKAHANDJA DISTRICT OTJOZONDJUPA REGION, 9372 OUTJO DISTRICT KUNENE REGION, AND 9516 OTJIWARONGO DISTRICT OTJOSONDJUPA REGION**

**2. OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd EPL No. 9926, KARIBIB DISTRICT, ERONGO REGION**

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9039 with respect to Dimension Stone, Base and Rare Metals, and Industrial Minerals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9039 is located in the Okahandja District Otjozondjupa Region and has a total area of 65354.4918 Ha covering the following farmlands: Agagia Noord 307, Groot Alarona 304, Haemonie 225, Hartland 334, Emmabrun 222, Alfa 226, Marwil 221, Paloma 229, Wilton 220, Rema 219, Kalkloch 230, Omuramba 341, Otjikuara 151, Elsie 87, Groot Martinsveld 326, Elisenore 85, Okaharui 81, Mareenwill 84, Otjikuoko Ost 82 and Otjikuoko West 83.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9372 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and Precious Metals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9372 is located in the Outjo District Kunene Region and has a total area of 22570.2970 Ha covering the following commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans 100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9516 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and, Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate by the Environmental Commissioner in MEFT. The EPL 9516 is located in the Otjiwarongo District Otjosondjupa Region and has a total area of 54560.3592 Ha covering the following farmlands: Farm 582, La Mont 405, Vlakplaats 325, Ozondjache 316, Ozondjache 152, Epsom 155, New Market 156, Okateitei 157, Ohakaua 154, Hohenfels 153, Ozondjache 315, Okahua 418, Graslaagte 313, Tweekoppies 486, Klipkop 314, Etekero 518, Ohakaua 143, Tottenham 487 and Laconia 141.

**OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9926 with respect to Base and Rare Metals, Industrial Minerals, and Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in Ministry of Environment, Forestry and Tourism (MEFT). The EPL 9926 area is located in the Karibib District, Erongo Region and has a total area of 1303.8373 Ha covering the following land uses: Karibib Townlands Remainder of Portion A of the Farm Karibib No. 54, Portion 22 (a Portion of Portion A) of the Farm Karibib Town and Townlands No. 54, and Portion 11 of Farm Kranzberg No. 59.


If the ECCs are granted for the EPLs Nos. 9039, 9372, 9516 and 9926, the Proponents (Mitten Minerals Exploration (Pty) Ltd and Osino Namibia Minerals Exploration (Pty) Ltd) intend to conduct prospecting activities starting with desktop studies including the processing and interpretation of the existing geophysical and other historical minerals exploration data sets, followed by regional field-based reconnaissance activities. If the initial exploration results prove positive, the Proponents will implement detailed site-specific field-based activities using field-based and site-specific techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests. The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without Environmental Clearance Certificates (ECCs). In fulfilment of these environmental requirements, the Proponents have appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Assessment and Management Reports to support the application for ECCs for the EPLs Nos. 9039, 9372, 9516 and 9926. Interested and Affected Parties (I&APS) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting / exploration activities. A Background Information Document (BID) is available on request upon registration. In terms of the provisions of the EIA Regulation 23 (1), an interested and / or affected party is required to disclose any direct business, financial, personal, or other interest which that party may have in the approval or refusal of the ECC application. Please note that the proposed activities are not mining operations which requires Mining Licenses (MLs), but prospecting / exploration operations aimed at searching for potential economic minerals resources in each of the listed four (4) EPLs.

**REGISTER BY EMAIL, SMS OR WHATSAPP: frontdesk@rbs.com.na/ +264812772546 AND CONTACT PERSON: Dr Sindila Mwiya (EAP/Technical Permitting Advisor/ Consultant**
**CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS: THURSDAY 20th MARCH 2025**

*Risk-Based Solutions (RBS) CC- (URL: www.rbs.com.na) Your Technical Specialist Consultants, Permitting & De-Risking Advisors in Natural Resources in Petroleum Exploration & Production/ Minerals Exploration & Mining / Energy / Water / Environmental Assessments & Management (ESG, SEA, EIA, EMP, EMS)*

Figure 4.14: Copy of the 4th Public Notice published in the Windhoek Observer Newspaper dated Friday, 14th March 2025.

# Angola refuses entry to opposition leaders from across Africa

**Angola is under fire after it denied entry to several senior African political figures set to attend a conference hosted by the country's main opposition party.**

Unita said it had invited the politicians, including Tanzanian opposition leader Tundu Lissu, Mozambique's Venancio Mondlane and Botswana's former President Ian Khama, to a summit on democracy.

"The action of the Angolan government to prevent us from entering Angola is inexplicable and unacceptable," Lissu said on X.

The BBC has asked the Angolan government to comment.

But according to a source from the Migration and Aliens Service (SME), "the expulsion was due to irregularities in the visa procedure, which prevented Mondlane and 13 other members of his entourage from entering Angolan territory".

Mondlane, who has called for nationwide protests over what he says were rigged elections last year, was this week subjected to travel restrictions in his home country.

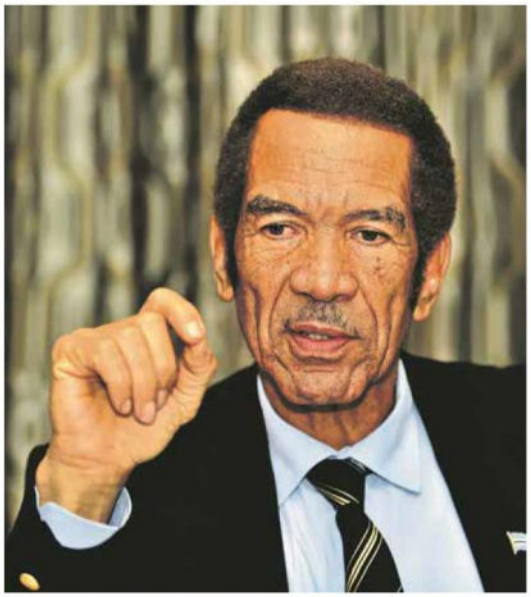
At least 20 leaders and representatives from various political parties across Africa were denied entry, said Lissu.

"The government of this country is ruling a dictatorship while pretending that Angola is a democratic country," he said.

Lissu is a vocal critic of the Tanzanian government and head of the main opposition party, Chadema. He survived an assassination attempt in 2017 and has spent several years in exile.

Kenyan senator Edwin Sifuna, from the opposition Orange Democratic Movement, said on X he was among those denied entry into Angola.

Delegates from Kenya, Ethiopia, Uganda, Tanzania, Mozambique and South Sudan who had visas or were eligible for visa on arrival were deported, the Platform for African Democrats (Pad), a group of opposition parties across Africa, said in a statement.



Botswana's former President Ian Khama -*Picture: Contributed*

> "The expulsion was due to irregularities in the visa procedure, which prevented Mondlane and 13 other members of his entourage from entering Angolan territory -Migration and Aliens Service (SME)

Khama, Colombia's former President Andres Pastrana, Zanzibar's first Vice-President Othman Masoud Othman and 24 others were detained at the airport for nine hours with no explanation. They were released but missed their connecting flights, according to Pad.

The Angolan government promised to make up for these actions by providing a plane, but it never materialised, the opposition grouping said.

Zanzibar's main opposition party, ACT Wazalendo, urged the Tanzanian government to immediately summon the Angolan ambassador to provide a formal explanation of why the party's vice-president was denied entry to the country.

Tomas Viera Mario, a Mozambican political analyst, told the BBC the move was "strange" as Angola's President Joao Lourenco has positioned himself as a kind of mediator on the continent.

Lourenco is currently the chair of the African Union (AU), and is hosting peace talks over the DR Congo conflict next week.

Mr Mario added that barring these figures showed "total contempt and "little respect" for the pan-African spirit of the AU.

All the deported leaders were part of a delegation invited by Unita to attend its 59th anniversary celebrations in Benguela province.

Unita lawmaker Nelito da Costa Ekwiki also condemned the decision not to allow them entry to the country.

The Angolan government has long been accused of shutting down dissent in order to maintain its hold on power.

Additional reporting by Jorge Nsimba in Luanda-BBC

## PUBLIC NOTICE

**APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATES (ECCs) FOR PROPOSED MINERALS EXPLORATION ACTIVITIES BY**

1. **MITTEN MINERALS EXPLORATION (Pty) Ltd EXCLUSIVE PROSPECTING LICENSES (EPLs) Nos. 9039, OKAHANDJA DISTRICT OTJOZONDJUPA REGION, 9372 OUTJO DISTRICT KUNENE REGION, AND 9516 OTJIWARONGO DISTRICT OTJOSONDJUPA REGION**
2. **OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd EPL No. 9926, KARIBIB DISTRICT, ERONGO REGION**

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9039 with respect to Dimension Stone, Base and Rare Metals, and Industrial Minerals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9039 is located in the Okahandja District Otjozondjupa Region and has a total area of 65354.4918 Ha covering the following farmlands: Agagia Noord 307, Groot Alarona 304, Haemonie 225, Hartland 334, Emmabrun 222, Alfa 226, Marwil 221, Paloma 229, Wilton 220, Rema 219, Kalkloch 230, Omuramba 341, Otjikuara 151, Elsie 87, Groot Martinsveld 326, Elisenore 85, Okaharui 81, Mareenwill 84, Otjikuoko Ost 82 and Otjikuoko West 83.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9372 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and Precious Metals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9372 is located in the Outjo District Kunene Region and has a total area of 22570.2970 Ha covering the following commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans 100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9516 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and, Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate by the Environmental Commissioner in MEFT. The EPL 9516 is located in the Otjiwarongo District Otjosondjupa Region and has a total area of 54560.3592 Ha covering the following farmlands: Farm 582, La Mont 405, Vlakplaats 325, Ozondjache 316, Ozondjache 152, Epsom 155, New Market 156, Okateitei 157, Ohakaua 154, Hohenfels 153, Ozondjache 315, Okahua 418, Graslaagte 313, Tweekoppies 486, Klipkop 314, Etekero 518, Ohakaua 143, Tottenham 487 and Laconia 141.

**OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9926 with respect to Base and Rare Metals, Industrial Minerals, and Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in Ministry of Environment, Forestry and Tourism (MEFT). The EPL 9926 area is located in the Karibib District, Erongo Region and has a total area of 1303.8373 Ha covering the following land uses: Karibib Townlands Remainder of Portion A of the Farm Karibib No. 54, Portion 22 (a Portion of Portion A) of the Farm Karibib Town and Townlands No. 54, and Portion 11 of Farm Kranzberg No. 59.


If the ECCs are granted for the EPLs Nos. 9039, 9372, 9516 and 9926, the Proponents (Mitten Minerals Exploration (Pty) Ltd and Osino Namibia Minerals Exploration (Pty) Ltd) intend to conduct prospecting activities starting with desktop studies including the processing and interpretation of the existing geophysical and other historical minerals exploration data sets, followed by regional field-based reconnaissance activities. If the initial exploration results prove positive, the Proponents will implement detailed site-specific field-based activities using field-based and site-specific techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests. The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without Environmental Clearance Certificates (ECCs). In fulfilment of these environmental requirements, the Proponents have appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Assessment and Management Reports to support the application for ECCs for the EPLs Nos. 9039, 9372, 9516 and 9926. Interested and Affected Parties (I&APS) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting / exploration activities. A Background Information Document (BID) is available on request upon registration. In terms of the provisions of the EIA Regulation 23 (1), an interested and / or affected party is required to disclose any direct business, financial, personal, or other interest which that party may have in the approval or refusal of the ECC application. Please note that the proposed activities are not mining operations which requires Mining Licenses (MLs), but prospecting / exploration operations aimed at searching for potential economic minerals resources in each of the listed four (4) EPLs.

**REGISTER BY EMAIL, SMS OR WHATSAPP: frontdesk@rbs.com.na/ +264812772546 AND CONTACT PERSON: Dr Sindila Mwiya (EAP/Technical Permitting Advisor/ Consultant**
**CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS: THURSDAY 20th MARCH 2025**

*Risk-Based Solutions (RBS) CC- (URL: www.rbs.com.na) Your Technical Specialist Consultants, Permitting & De-Risking Advisors in Natural Resources in Petroleum Exploration & Production/ Minerals Exploration & Mining / Energy / Water / Environmental Assessments & Management (ESG, SEA, EIA, EMP, EMS)*

Figure 4.15: Copy of the 5th Public Notice published in the Windhoek Observer Newspaper dated Monday, 17th March 2025.

WORLD & AFRICA

# Rwanda severs ties with Belgium over 'neo-colonial delusions'

**Rwanda has cut diplomatic ties with Belgium, saying it has been "consistently undermined" by the European nation during the ongoing conflict in the Democratic Republic of Congo.**

Brussels has been leading calls for European nations to sanction Rwanda over its support for the M23, a rebel group at the centre of DR Congo's crisis.

The authorities in Kigali, Rwanda's capital, have given Belgian diplomats 48 hours to leave the country.

Belgium, which is the former colonial power, has said it will respond to these measures and labelled Rwanda's decision "disproportionate".

Despite assertions from the UN and US, Rwanda has denied backing the M23.

In its statement on Monday, Kigali accused Brussels of attempting to "sustain its neo-colonial delusions".

"Belgium has clearly taken sides in a regional conflict and continues to systematically mobilise against Rwanda in different forums, using lies and manipulation to secure an unjustified hostile opinion of Rwanda, in an attempt to destabilise both Rwanda and the region," the statement said.

Belgian Foreign Minister Maxime Prevot responded to Rwanda's measures on social media, saying: "This is disproportionate and shows that when we disagree with Rwanda they prefer not to engage in dialogue."

The evidence that shows Rwanda is backing rebels in DR Congo

What's the fighting in DR Congo all about?

Prevot said Rwandan diplomats in Belgium will be declared "persona non grata".

This declaration can lead to the removal of diplomatic status and often results in the expulsion or the withdrawal of recognition of envoys.

Before Kigali cut ties with Brussels, Rwandan President Paul Kagame vowed that his country would "stand up" to Belgium.

"We would ask [Belgium]: 'Who are you by the way? Who put you in charge of us?' Rwandans believe in God, but did God really put these people in charge of Rwanda?" Kagame asked in an address on Sunday.

Since the beginning of the year, around 7,000 people have been killed in fighting between the M23 and DR Congo's armed forces in the east of the country, the Congolese authorities have said.

More than 850,000 people have been forced to flee their homes since the conflict increased in intensity in January, the UN children's agency, Unicef, said.

The M23 has taken control of two key cities - Goma and Bukavu - in the past two months. On Monday, the EU sanctioned three of Rwanda's military commanders, citing connections to the M23.The sanctions, which include the freezing of assets, were also applied to the head of Rwanda's state mining agency. The EU has accused the agency of exploiting DR Congo's conflict in order to extract valuable resources from the mineral-rich east.

Britain and Germany have also taken measures against Rwanda - over the past month both countries cut some of their aid to Kigali.

President Paul Kagame -*Picture:Contributed*

And in February, the UN Security Council demanded that the M23 end hostilities and that Rwanda should pull its troops out of DR Congo.

Rwanda's diplomatic spat with Belgium comes a day before the Congolese government and M23 rebels are set to meet for peace talks.

The talks, due to be held in the Angolan capital, Luanda, overturn the government's long-standing policy of not negotiating with the M23.

However, since the M23 began capturing larges swathes of territory, Congolese President Félix Tshisekedi has been under pressure to meet with the rebels, news agency *Reuters* reports.

## PUBLIC NOTICE

**APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATES (ECCs) FOR PROPOSED MINERALS EXPLORATION ACTIVITIES BY**

**1. MITTEN MINERALS EXPLORATION (Pty) Ltd EXCLUSIVE PROSPECTING LICENSES (EPLs) Nos. 9039, OKAHANDJA DISTRICT OTJOZONDJUPA REGION, 9372 OUTJO DISTRICT KUNENE REGION, AND 9516 OTJIWARONGO DISTRICT OTJOSONDJUPA REGION**

**2. OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd EPL No. 9926, KARIBIB DISTRICT, ERONGO REGION**

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9039 with respect to Dimension Stone, Base and Rare Metals, and Industrial Minerals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9039 is located in the Okahandja District Otjozondjupa Region and has a total area of 65354.4918 Ha covering the following farmlands: Agagia Noord 307, Groot Alarona 304, Haemonie 225, Hartland 334, Emmabrun 222, Alfa 226, Marwil 221, Paloma 229, Wilton 220, Rema 219, Kalkloch 230, Omuramba 341, Otjikuara 151, Elsie 87, Groot Martinsveld 326, Elisenore 85, Okaharui 81, Mareenwill 84, Otjikuoko Ost 82 and Otjikuoko West 83.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9372 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and Precious Metals, group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in MEFT. The EPL 9372 is located in the Outjo District Kunene Region and has a total area of 22570.2970 Ha covering the following commercial farmlands: Deurslag 1154, Rasputin 137, Munsterland 113, Steineck 109, Verdeel 319, Zuwitsaub 1151, Okaua 99, Tsuwandes 107, Volunteer 106, Aasvoelkrans 100, Uranius 105, Gaseneirob 104, Saturn 103, Libertas 101, Moselle 102, Harmonie 97, Okay 97 and Nuremberg 88.

**MITTEN MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9516 with respect to Dimension Stone, Base and Rare Metals, Industrial Minerals and, Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate by the Environmental Commissioner in MEFT. The EPL 9516 is located in the Otjiwarongo District Otjosondjupa Region and has a total area of 54560.3592 Ha covering the following farmlands: Farm 582, La Mont 405, Vlakplaats 325, Ozondjache 316, Ozondjache 152, Epsom 155, New Market 156, Okateitei 157, Ohakaua 154, Hohenfels 153, Ozondjache 315, Okahua 418, Graslaagte 313, Tweekoppies 486, Klipkop 314, Etekero 518, Ohakaua 143, Tottenham 487 and Laconia 141.

**OSINO NAMIBIA MINERALS EXPLORATION (Pty) Ltd** (the "**PROPONENT**") has been granted the preparedness to grant the application for Exclusive Prospecting License (EPL) No. 9926 with respect to Base and Rare Metals, Industrial Minerals, and Precious Metals group of minerals. The physical license will only be granted by the Mining Commissioner if the Proponent is issued with an Environmental Clearance Certificate (ECC) by the Environmental Commissioner in Ministry of Environment, Forestry and Tourism (MEFT). The EPL 9926 area is located in the Karibib District, Erongo Region and has a total area of 1303.8373 Ha covering the following land uses: Karibib Townlands Remainder of Portion A of the Farm Karibib No. 54, Portion 22 (a Portion of Portion A) of the Farm Karibib Town and Townlands No. 54, and Portion 11 of Farm Kranzberg No. 59.


If the ECCs are granted for the EPLs Nos. 9039, 9372, 9516 and 9926, the Proponents (Mitten Minerals Exploration (Pty) Ltd and Osino Namibia Minerals Exploration (Pty) Ltd) intend to conduct prospecting activities starting with desktop studies including the processing and interpretation of the existing geophysical and other historical minerals exploration data sets, followed by regional field-based reconnaissance activities. If the initial exploration results prove positive, the Proponents will implement detailed site-specific field-based activities using field-based and site-specific techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests. The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without Environmental Clearance Certificates (ECCs). In fulfilment of these environmental requirements, the Proponents have appointed Risk-Based Solutions (RBS) CC as the Environmental Consultant, led by Dr Sindila Mwiya as the Environmental Assessment Practitioner (EAP) to prepare the Environmental Assessment and Management Reports to support the application for ECCs for the EPLs Nos. 9039, 9372, 9516 and 9926. Interested and Affected Parties (I&APS) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting / exploration activities. A Background Information Document (BID) is available on request upon registration. In terms of the provisions of the EIA Regulation 23 (1), an interested and / or affected party is required to disclose any direct business, financial, personal, or other interest which that party may have in the approval or refusal of the ECC application. Please note that the proposed activities are not mining operations which requires Mining Licenses (MLs), but prospecting / exploration operations aimed at searching for potential economic minerals resources in each of the listed four (4) EPLs.

**REGISTER BY EMAIL, SMS OR WHATSAPP: frontdesk@rbs.com.na/ +264812772546 AND CONTACT PERSON: Dr Sindila Mwiya (EAP/Technical Permitting Advisor/ Consultant**
**CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS: THURSDAY 20th MARCH 2025**

*Risk-Based Solutions (RBS) CC- (URL: www.rbs.com.na) Your Technical Specialist Consultants, Permitting & De-Risking Advisors in Natural Resources in Petroleum Exploration & Production/ Minerals Exploration & Mining / Energy / Water / Environmental Assessments & Management (ESG, SEA, EIA, EMP, EMS)*

Figure 4.16: Copy of the 6th Public Notice published in the Windhoek Observer Newspaper dated Tuesday, 18th March 2025.

# 5. IMPACT ASSESSMENT AND RESULTS

## 5.1 Impact Assessment Procedure

The Environmental Assessment process that has been undertaken with respect to the proposed exploration programme for the EPL No. 9372 has been conducted in accordance with the provisions of the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazetted under the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007).

## 5.2 Alternatives and Ecosystem Assessments

The following alternatives have been considered:

(i) **EPL Location:** Several potential economic minerals deposits are known to exist in the general area and linked to the regional geology of the EPL area. The Proponent intend to explore / prospect for all the licensed minerals groups likely to be associated with the regional and local geology. The minerals occurrences are site-specific and related to the regional and local geology of a specific area to which there are no alternatives sites to consider with respect to the license location. The only other alternative is the no-action option (no exploration activities are implemented in a specific area).

(ii) **The No-Action Alternative** - A comparative assessment of the environmental impacts of the 'no-action' alternative (a future in which the proposed exploration activities do not take place) has been undertake. An assessment of the environmental impacts of a future, in which the proposed exploration and possible discovery of economic minerals resources does not take place, may be good for the receiving environment because there will be no negative environmental impacts due to the proposed minerals exploration or possible mining operation that may take place in the EPL area.

The environmental benefits will include:

- ❖ No negative impacts because of no mineral exploration taking place, and.
- ❖ Potential future mining related negative environmental impact on the receiving environment.

However, it is important to understand that even if the proposed exploration activities do not take place, to which the likely negative environmental impacts are likely to be low and localised, the other current and future land uses such as agriculture and tourism will still have some negative impacts on the receiving environment. The likely negative environmental impacts of the other current and future land use that may still happen in the absence of the proposed minerals exploration activities includes:

- ❖ Land degradation due to drought and Climate Change.
- ❖ Overgrazing / over stocking beyond the land carrying capacity.
- ❖ Poor land management practices,
- ❖ Wildfires, and.
- ❖ Erosion and overgrazing.

Furthermore, it is important to understand what benefits might be lost if the proposed exploration activities do not take place. Key loses that may never be realised if the proposed project activities do not go-ahead include Loss of potential added value to the unknown underground minerals resources that maybe found within the EPL No. 9372, socioeconomic benefits derived from current and future exploration, direct and indirect contracts and

employment opportunities, export earnings, foreign direct investments, license rental fees, royalties, and various other taxes payable to the Government.

(iii) **Other Alternative Land Uses:** The EPL area fall within the well-known commercial agricultural land uses area dominated by cattle, game, and small stock farming activities. The growing game farming is also making tourism a vital socioeconomic opportunity in the general area. Minerals exploration and mining activities are well known land use options in Namibia and the surrounding EPL area. Due to the limited scope of the proposed exploration and the implementation of the EMP, it is likely that the proposed exploration can coexist with the current and potential future land uses within the general area.

(iv) **Potential Land Use Conflicts:** Considering the current land use practices (agriculture and tourism) as well as potential other land uses including minerals exploration, it is likely that potential economic derivatives from any positive exploration outcomes leading to the development of a mine in the general area can still co-exist with the existing and potential future land use options of the general area. However, much more detailed assessments of any likely visual and other socioeconomic impacts will need to be included in the EIA that must be undertaken as part of the prefeasibility and feasibility studies if economic minerals resources are discovered. The use of thematic mapping and delineation of various land use zones for specific uses such as agriculture, conservation, mining, or tourism etc, within the EPL area will greatly improve the multiple land use practices and promote coexistence for all the possible land use options.

(v) **Ecosystem Function** (**What the Ecosystem Does**)**:** Ecosystem functions such as wildlife habitats, carbon cycling or the trapping of nutrients and characterised by the physical, chemical, and biological processes or attributes that contribute to the self-maintenance of an ecosystem in this area are vital components of the receiving environment. However, the proposed exploration activities will not affect the ecosystem function due to the limited scope of the proposed activities because the ecosystem of this EPL area is part of the larger local and regional ecosystems which are all interlinked.

(vi) **Ecosystem Services:** Food chain, harvesting of animals or plants, and the provision of clean water or scenic views are some of the local ecosystem services associated with the EPL area. However, the proposed exploration activities will not affect the ecosystem services due to the limited scope and area of coverage of the proposed activities because the ecosystem of this EPL area is part of the larger local and regional ecosystems which are all interlinked.

(vii) **Use Values**: The EPL area has direct values for other land uses such as agriculture, conservation, and tourism as well as indirect values which includes Watching a television show about the general area and its wildlife, food chain linkages that sustains the complex life within this area and bequest value for future generations to enjoy. The proposed exploration activities will not destroy the current use values due to the limited scope of the proposed activities as well as the adherence to the provisions of the EMP as detailed in the EMP report, and.

(viii) **Non-Use or Passive Use**: The EPL area has an existence value that is not linked to the direct use / benefits to current or future generations. The proposed exploration activities will not affect the ecosystem current or future none or passive uses due to the limited scope of the proposed activities that will leave much of the EPL area untouched because the ecosystem of this EPL area is part of the larger local and regional ecosystems which are all interlinked.

## 5.3 Key Issues Considered in the Assessment Process

### 5.3.1 Sources of Impacts (Proposed Project Activities)

The proposed exploration activities covering initial desktop exploration activities (no fieldwork undertaken, regional reconnaissance, initial local field-based activities, detailed local field-based

activities, prefeasibility and feasibility studies related activities are the key sources both negative and positive impacts on the receiving environment.

### 5.3.2 Summary of Receptors Likely to be Negative Impacted

Based on the findings of this report, the following is the summary of the key environmental receptors that are may be negatively impacted by the proposed activities:

- **Physical environment:** Water quality, physical infrastructure and resources, air quality, noise and dust, landscape and topography, soil quality and, Climate change influences.

- **Biological environment:** Habitat, protected areas and resources, flora, fauna, and ecosystem functions, services, use values and non-use or passive use, and.

- **Socioeconomic, cultural and archaeological environment:** Local, regional and national socioeconomic settings, commercial and subsistence agriculture, community protection areas tourism and recreation cultural, biological and archaeological resources.

## 5.4 Impact Assessment Methodology

### 5.4.1 Impact Definition

In this report, a natural and/or human environmental impact is defined as: “Change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation’s environmental aspects.” (ISO 14001).

All proposed project activities (routine and non-routine) were considered during the Scoping, EIA and EMP Phases in terms of their potential to:

- Interact with the existing environment (physical, biological, and social elements), and.

- Breach relevant national legislation, relevant international legislation, standards and guidelines, and corporate environmental policy and management systems.

Where a project activity and receptor were considered to have the potential to interact, the impact has been defined and ranked according to its significance. Table 5.1 provides the definition of different categories of impacts identified and used in this report.

This report has assessed the potential impacts resulting from routine Project activities, if the Project activities that may cause an impact that will occur but the impact itself will be dependent on the likelihood (Probability) (Table 5.1).

Correct control measures through the implementation of the EMP and monitoring thereof, often reduce any negative significant impacts on the receiving environment as the results of the project activities. The assessment, therefore, has focussed on the measures aimed at preventing the occurrence of an impact as well as mitigation measures that may be employed.

Table 5.1: Definition of impact categories used in this report.

| | | |
|---|---|---|
| **Nature of Impact** | Adverse | Considered to represent an adverse change from the baseline, or to introduce a new undesirable factor. |
| | Beneficial | Considered to represent an improvement to the baseline or to introduce a new desirable factor. |
| **Type of Impact** | Direct | Results from a direct interaction between a planned or unplanned Project activity and the receiving environment. |
| | Indirect | Results from the Project but at a later time or at a removed distance or which may occur as a secondary effect of a direct impact. |
| | Cumulative | Results from (i) interactions between separate Project-related residual impacts. and (ii) interactions between Project-related residual impacts in combination with impacts from other projects and their associated activities. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. |
| **Duration of Impact** | Short-term | Predicted to last only for a limited period but will cease on completion of the activity, or as a result of mitigation/reinstatement measures and natural recovery typically within a year of the project completion. |
| | Medium- | Predicted to last only for a medium period after the Project finishing, typically one to five years. |
| | Long-term | Continues over an extended period, typically more than five years after the Project's completion. |
| | Permanent | Occurs during the development of the Project and causes a permanent change in the affected receptor or resource that endures substantially beyond the Project lifetime. |
| **Scale of Impact** | Local | Affects locally important environmental resources or is restricted to a single habitat/biotope, a single community. |
| | Regional | Affects nationally important environmental resources, or an area that is nationally important/protected or has macro-economic consequences. |
| | National | Affects nationally important environmental resources, or an area that is nationally important/protected or has macro-economic consequences. |
| | International | Affects internationally important resources such as areas protected by international Conventions |
| | Transboundary | Impacts experienced in one country as a result of activities in another. |
| **Probability** | Negligible | Possibility negligible |
| | Improbable | Possibility very low |
| | Probable | Distinct possibility |
| | Highly Probable | Most likely |
| | Definite | Impact will occur regardless of preventive measures |

## 5.4.2 Knowledge-Based Impact Assessment Process

### 5.4.2.1 Characterisation of the Impact Assessment Inputs Variables

The impact assessment process for the proposed minerals exploration took into consideration the interactions of the proposed activities with respect to the Knowledge-Based System Model Methodology (KBSMM) characterised climatic, environmental, and ground model datasets of the receiving environment (physical, biological, socioeconomic and ecosystem services and functions).

The influence assessment of the characterised components of the environment has been based on a Knowledge-Based System Model Methodology (KBSMM), a PhD research-based and industry tested / validated Artificial Intelligent (AI) framework developed by Dr Sindila Mwiya.

The KBSMM model inputs variables covered characterised climatic, environmental, and ground model datasets. Source-Pathway-Receptor risk assessment approach was used to determine or validate the influence (impact assessment), and ultimate likely harm that may be linked to the various phased activities of each of the various stages of the proposed minerals exploration implementation process (Fig. 5.1).

#### 5.4.2.2 Climatic Data Sets / Components Inputs

The climatic data sets that have been used in the regional and local site-specific assessment process comprised precipitation, temperature, evapotranspiration and wind data sets. The following is summary explanation of the roles that climatic data sets may have on the proposed minerals exploration implementation process (Fig. 5.1):

- Temperature: Temperature had a direct influence on the fluids that may influence the operation of the site by supporting evapotranspiration. It also has an influence on the planning, operation and implementation of the various project activities.

- Rainfall: Rainfall is one of the data sets used in the water balance assessments with respect to potential fluid production and flash flood occurrences. The data sets had some influence on mobilisation pollutants that may be associated with the proposed project activities.

- Evapotranspiration: This combined effect of evaporation and transpiration is important in water balance assessments with direct influences on the implementation of the various project activities, and.

- Wind Direction and Speed: The direction and speed of the prevailing winds may be critical to the site operations and determination of the optimum operational requirements. The data had a direct influence on the site operations including dust and noise management.

#### 5.4.2.3 Environmental Data Sets/Components Inputs

The regional or local environmental data sets used in this project comprise:

- Economic activities (Proposed minerals exploration) and coordination support available in the area or area.

- Types and amounts of waste likely to be generated.

- Likely contaminants from the activities.

- Ecological, habitats and ecosystems including fauna and flora.

- Community considerations such, land ownership, social, health and safety, and.

- Archaeological, cultural and political issues.

The following is summary explanation of the role of the environmental data sets may have on the proposed minerals exploration implementation process (Fig. 5.2):

- Economic activities and logistic support: The types of economic activities and logistical support services and infrastructure for the proposed activities are a key source of impact component of the environmental data sets in the determination of the likely impacts on the receptors, and.

- The likely Types and amount of waste: Understanding the characteristics of the liquid and solid waste streams be handled is vital in the evaluation of the hazard exposure in terms of the overall risk assessment to the receptors.

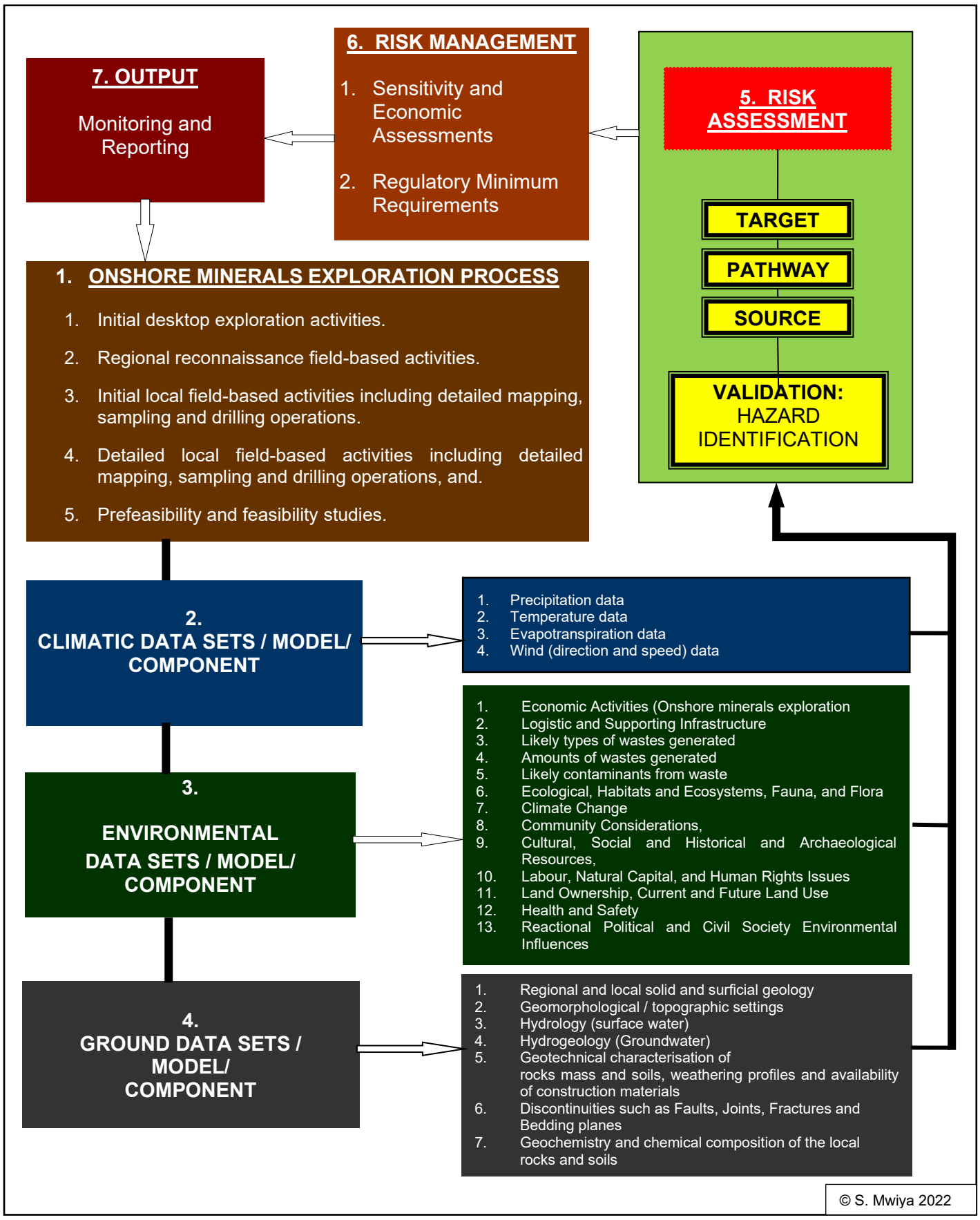



Figure 5.1: Detailed outline of the technical methodology based on a complete looped Knowledge-Based System Model Methodology (KBSMM) used in the impact assessment, risk assessment and determination of the monitoring and reporting strategy. The system model methodology has a built-in looping that allows for the evaluation of a phased onshore minerals exploration process project lifecycle.

- ❖ Likely contaminants: The state (solid, gas, liquid, or vapour) of any likely contaminants that may associated with the proposed phased onshore minerals exploration activities play a major role in the determination of the likely harm, mitigation, monitoring and reporting strategies.

- ❖ Ecological, habitats, ecosystems, fauna, flora, and local, regional or global Climate Change influences: At national, regional and local levels, there are a number of unique and protected habitats, ecosystems, fauna and flora and highly vital as they support other sectors of the national economy such as tourism, agriculture, food security and services. Understanding the likely level of sensitivity of the regional or local areas is highly important to the successful determination of the likely impacts and harm, development mitigation measures, monitoring and reporting strategy to be implemented for the proposed phased onshore minerals exploration process, and.

- ❖ Community considerations: Local community issues and acceptability of the proposed activities by the local community is of vital importance. Other key components of the community considerations include land ownership (State land / Communal or Private), land use, local social settings, labour, natural capital, human rights, public and workers health and safety, archaeological, cultural, political, and civil society influences.

As part of the data collection, evaluation, influence and risk assessment process of the proposed phased onshore minerals exploration, determination of the mitigation measures, monitoring and reporting strategies, specialist assessments conducted as part of the EIA process provided vital recommendations incorporated in this report.

#### 5.4.2.4 Ground Data Sets/Components Inputs

The ground data sets covered regional/local solid and surficial geology, geomorphological / topographic settings, hydrology (surface water), hydrogeology groundwater), geotechnical and geochemical characterisation of rocks and soils, weathering profiles and availability of construction materials, and discontinuities such as faults, joints, fractures, and bedding planes of the drilled sites (Fig. 5.1). The geology (solid and superficial) and water (surface and groundwater resources are all targets that may be influenced (impacted) by the various activities of the proposed phased minerals exploration process implementation. Other ground components which include the local terrain (geomorphology and topographic features), discontinuities, geotechnical as well as geochemical /mineralogy will aid the influence of sources in causing or minimising the impacts to be controlled through mitigations (Fig. 5.1). Regional/local solid and surficial geology, geomorphological and topographic settings also linked directly to the availability of local construction and operational materials in support of the proposed phased minerals exploration process project implementation lifecycle (Fig. 5.1).

#### 5.4.2.5 Source-Pathway-Receptor Risk Assessment, Harm and Monitoring

To evaluate the level of influence (impact), risk, and harm that the proposed onshore phased minerals exploration process implementation, the assessment process was focused on the sources, pathways, and targets / receptor chains (Fig. 5.2). It is important to note that in the absence of any of the interlinked three (3) components (sources, pathways, or targets/ receptor) there is no harm or risk to mitigate, monitor or manage (Figs. 5.2 and 5.3).

The risk source/s refers to knowledge - based identified potential hazards that may be present and can cause harm to the exposed target/s / receptors (Fig. 5.3). The risk pathway refers to the route direct or indirect though which the risk source/s may be transferred and exposed to a target/s of concern.

The risk target/s or receptor/s refers to the destination (area point of exposure) at which the source/s may cause harm. The characterisation of source/s, pathway/s and target/s chain has been undertaken for climatic, environmental and ground model data components with respect to the proposed phased onshore minerals exploration process.

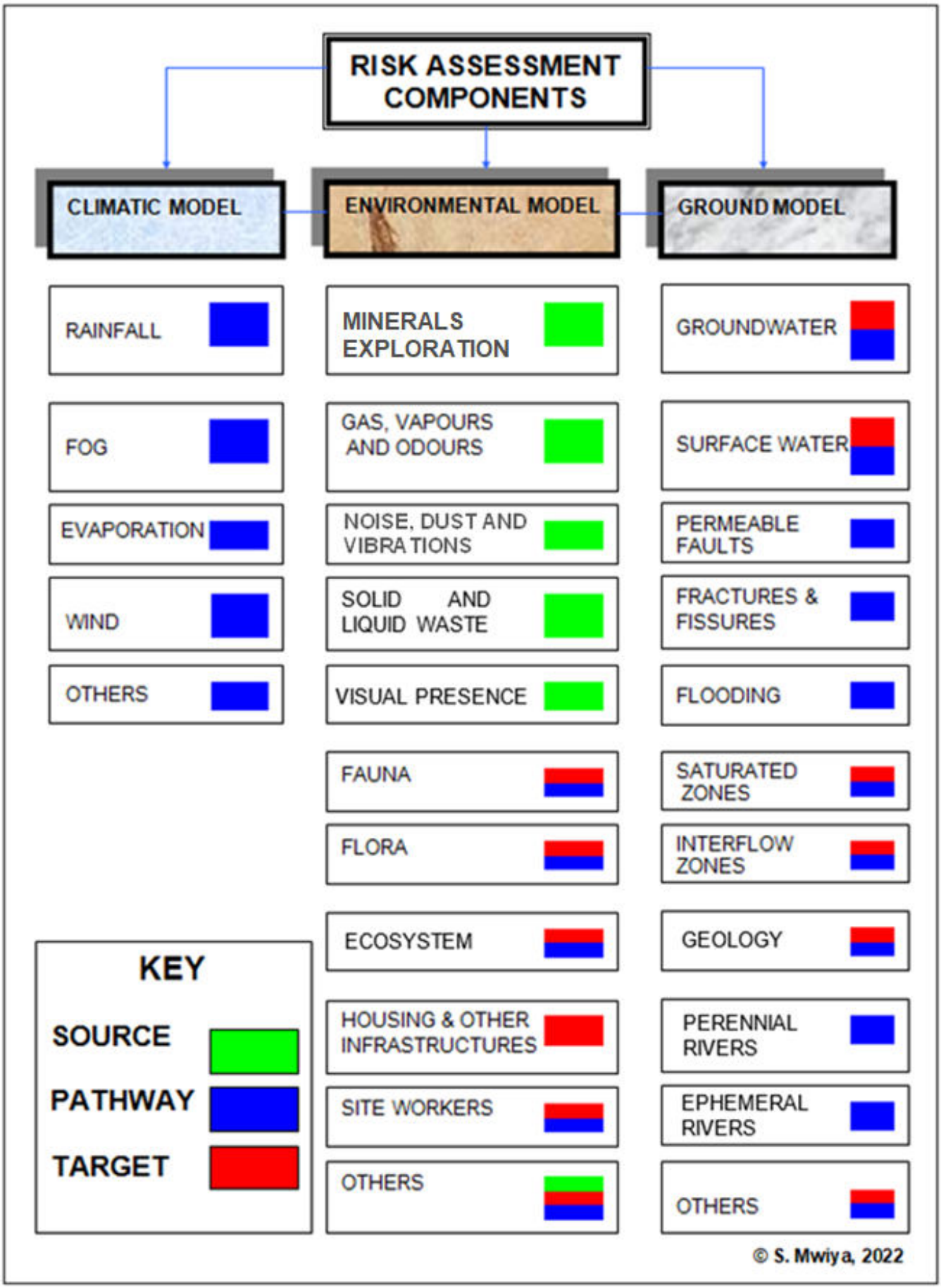



Figure 5.2: A Knowledge-Based System Model Methodology (KBSMM) characterised interactive risk assessment system output field-based and tested / validated Artificial Intelligent (AI) framework windows for onshore phased minerals exploration process implementation project lifecycle.

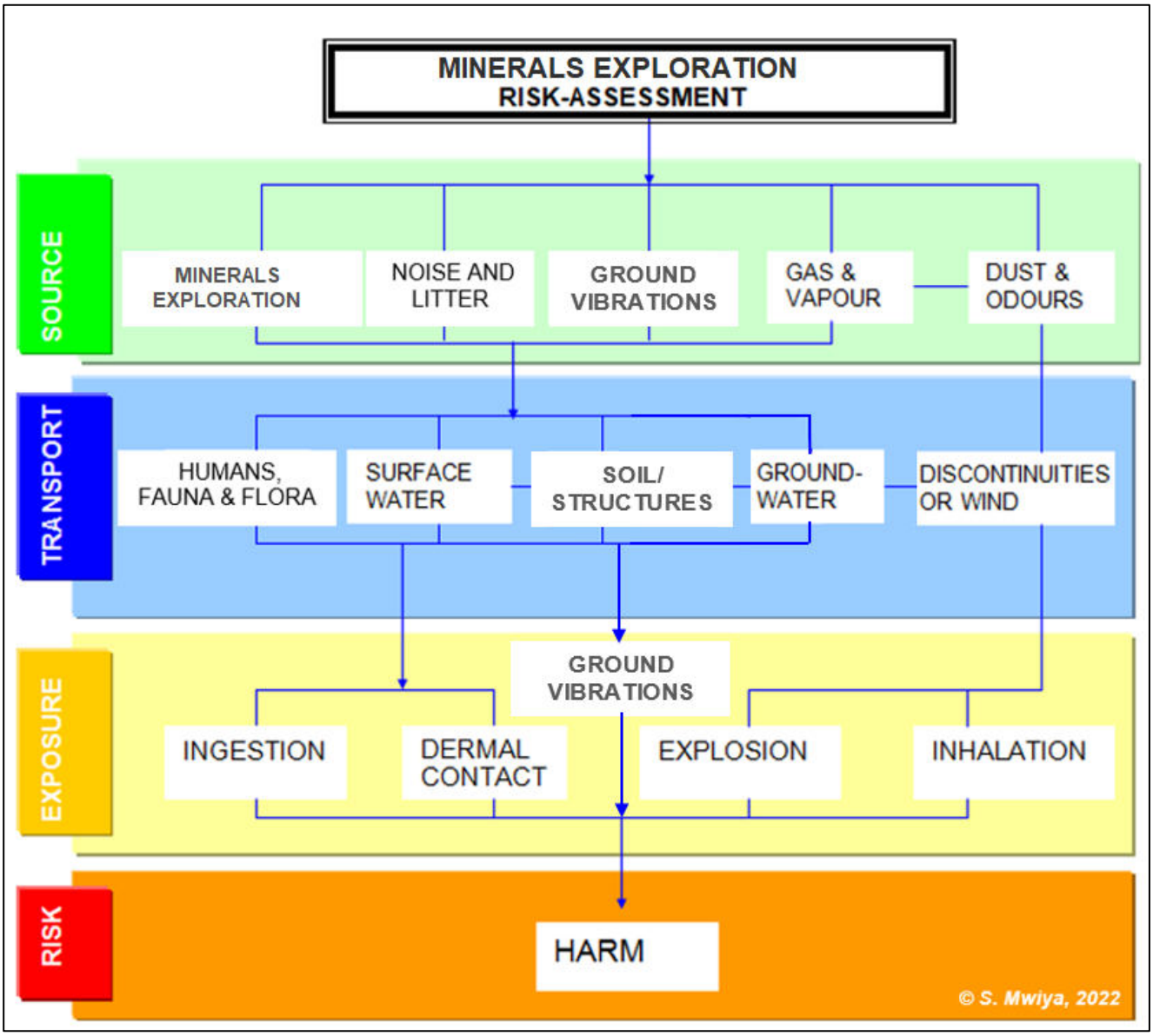



Figure 5.3: A Knowledge-Based System Model Methodology (KBSMM) characterised system output research-based and tested / validated Artificial Intelligent (AI) framework risk consequences (harm) pathways to the receiving target/receptors windows for onshore phased minerals exploration process project implementation lifecycle.

#### 5.4.2.6 Individual Components Impact Assessment Criteria

Based on the Terms of Reference and individual components impact assessment outputs of the KBSMM for the proposed phased minerals exploration process and the lessons learned (created knowledge-base) from the previous phased minerals exploration processes operations undertaken and tested since 1999 when the KBSMM was developed, all key components of the receiving environment were identified and assessed with respect to the overall proposed activities and likely significant impacts on the receiving environment with the aim of developing appropriate mitigation measures as detailed in the EMP Report.

### 5.4.3 Overall Component and Significant Impact Assessment

#### 5.4.3.1 Overall Component Impact Assessment

The overall component impact assessment and evaluation process has been undertaken by considering the activities of the proposed phased minerals exploration process operations as the overall source of impact (Figs. 5.1-5.3). As illustrated in Figs. 5.1-5.3, the receiving environment has

been considered as the receptor / target that may be impacted positively or negatively by the activities of the proposed phased minerals exploration process.

The characterised components of the receiving environment encompassed the following:

- Physical Conditions / Natural Environment – Air, noise, water, green space, climate change, built environment – houses, roads, transport systems, buildings, infrastructure, etc.
- Biological Conditions: fauna, flora, habitats, and ecosystem - services, function, use values and non-use etc., and.
- Socioeconomic Conditions: Social, economic, labour, gender, human rights, natural and social capital, archaeological, cultural resources, and cultural issues

In evaluating the individual degree of potential negative impacts, the following factors have been taken into consideration:

- Impact Severity: The severity of an impact is a function of a range of consideration, and.
- Likelihood of Occurrence (Probability): How likely is the impact to occur?

In evaluating the severity of potential negative environmental impacts, the following factors have been taken into consideration:

- Receptor/ Resource Characteristics: The nature, importance, and sensitivity to change of the receptors / target or resources that could be affected.
- Impact Magnitude: The magnitude of the change that is induced.
- Impact Duration: The time over which the impact is expected to last.
- Impact Extent: The geographical extent of the induced change, and.
- Regulations, Standards and Guidelines: The status of the impact in relation to regulations (eg. discharge limits), standards (eg. environmental quality criteria) and guidelines.

The overall impact severity has been categorised using a subjective scale as shown in Table 5.2 for magnitude, Table 5.3 for duration and Table 5.4 for extent.

Table 5.2: Scored on a scale from 0 to 5 for impact magnitude.

| SCALE (-) or (+) | | DESCRIPTION |
|---|---|---|
| 0 | | no observable effect |
| 1 | | low effect |
| 2 | | tolerable effect |
| 3 | | medium high effect |
| 4 | | high effect |
| 5 | | very high effect (devastation) |

Table 5.3: Scored time over which the impact is expected to last.

| SCALE (-) or (+) | | DESCRIPTION |
|---|---|---|
| **T** | | Temporary |
| **P** | | Permanent |

Table 5.4: Scored geographical extent of the induced change.

| SCALE (-) or (+) | | DESCRIPTION |
|---|---|---|
| L | | limited impact on location |
| O | | impact of importance for municipality. |
| R | | impact of regional character |
| N | | impact of national character |
| M | | impact of cross-border character |

The likelihood (probability) of the pre-identified events occurring has been ascribed using a qualitative scale of probability categories (in increasing order of likelihood) as shown in Table 5.5. Likelihood of an impact occurring is estimated based on experience (existing knowledgebase) and/ or evidence that such an outcome has previously occurred. Impacts resulting from routine/planned events are classified under category (E).

Table 5.5: Summary of the qualitative scale of probability categories (in increasing order of likelihood).

| SCALE (-) or (+) | | DESCRIPTION |
|---|---|---|
| **A** | | Extremely unlikely (e.g., never heard of in the industry) |
| **B** | | Unlikely (e.g., heard of in the industry but considered unlikely) |
| **C** | | Low likelihood (e.g., such incidents/impacts have occurred but are uncommon) |
| **D** | | Medium likelihood (e.g., such incidents/impacts occur several times per year within the industry) |
| **E** | | High likelihood (e.g., such incidents/impacts occur several times per year at each location where such works are undertaken) |

The overall individual components impact assessment with respect to the impact duration, geographical extent and probability of occurrence have been categorised using a semi quantitative approach as shown in Table 5.6 and the results are presented under Subsection 5.4.4.

#### 5.4.3.2 Overall Significant Impact Assessment

The determination of the significance of the negative impacts / key issues caused by the proposed phase minerals exploration activities as key sources of such impact has been based on the environmental baseline results such as the intensity and duration of the likely negative impact as assessed under individual components likely to be impacted. The assessment focused on the existence of potential pathways, and the degree to which the proposed project activities are likely to result in unwanted consequences on the receptor, covering the receiving environment (natural, built, socioeconomic, flora, fauna, habitat, and ecosystem).

### 5.4.4 Proposed Project Activities Summary of Impacts Results

The results of the impacts assessment and evaluation has adopted a matrix assessment framework linked to the KBSMM framework. Assessment results of the magnitude, duration, extent, and probability of the potential impacts due to the proposed project activities interacting with the receiving environment are presented in form of a matrix table as shown in Tables 5.6-5.9.

The overall severity of potential environmental impacts of the proposed project activities on the receiving environment will be of low magnitude (Table 5.6), temporally duration (Table 5.7), localised extent (Table 5.8) and low probability of occurrence (Table 5.9) due to the limited scope of the proposed activities and the use of step progression approach in advancing exploration. The step progressional approach will allow the Proponent to evaluate the results of exploration success and the implementation of the next stage of exploration will be subject to the positive outcomes of previous activities as graded (Tables 5.6-5.9). It is important to note that the assessment of the likely impacts as shown in Tables 5.6 - 5.9, have been considered without the implementation of mitigation measures as detailed in EMP Report. The need for implementation of the appropriate mitigation measures as presented in the EMP Report has been determined based on the results of the impact assessment (Tables 5.6 - 5.9) and the significant impacts as detailed in Tables 5.10 and 5.11.

Table 5.6: Results of the sensitivity assessment of the receptors (Physical, Socioeconomic and Biological environments) with respect to the proposed exploration / prospecting activities.

| RECEPTOR SENSITIVITY | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL, AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **1. Initial Desktop Exploration Activities** | (i) General evaluation of satellite, topographic, land tenure, accessibility, supporting infrastructures and socioeconomic environment data | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | (ii) Purchase and analysis of existing Government high resolution magnetics and radiometric geophysical data | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | (iii) Purchase and analysis of existing Government aerial hyperspectral | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | (iv) Data interpretation and delineating of potential targets for future reconnaissance regional field-based activities for delineated targets | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **2. Regional Reconnaissance Field-Based Activities** | (i) Regional geological, geochemical, topographical and remote sensing mapping and data analysis | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |
| | (ii) Regional geochemical sampling aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |
| | (iii) Regional geological mapping aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |
| | (iv) Limited field-based support and logistical activities including exploration camp site lasting between one (1) to two (2) days | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |
| | (v) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets for future detailed site-specific exploration if the results are positive and supports further exploration of the delineated targets | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |

| SENSITIVITY RATING | | CRITERIA |
|---|---|---|
| 1 | Negligible | The receptor or resource is resistant to change or is of little environmental value. |
| 2 | Low | The receptor or resource is tolerant of change without detriment to its character, is of low environmental or social value, or is of local importance. |
| 3 | Medium | The receptor or resource has low capacity to absorb change without fundamentally altering its present character, is of high environmental or social value, or is of national importance |
| 4 | High | The receptor or resource has moderate capacity to absorb change without significantly altering its present character, has some environmental or social value, or is of district/regional importance. |
| 5 | Very High | The receptor or resource has little or no capacity to absorb change without fundamentally altering its present character, is of very high environmental or social value, or is of international importance. |

Table 5.6: Cont.

| RECEPTOR SENSITIVITY | | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SENSITIVITY RATING | | CRITERIA | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| 1 | Negligible | The receptor or resource is resistant to change or is of little environmental value. | | | | | | | | | | | | | | | | |
| 2 | Low | The receptor or resource is tolerant of change without detriment to its character, is of low environmental or social value, or is of local importance. | | | | | | | | | | | | | | | | |
| 3 | Medium | The receptor or resource has low capacity to absorb change without fundamentally altering its present character, is of high environmental or social value, or is of national importance | | | | | | | | | | | | | | | | |
| 4 | High | The receptor or resource has moderate capacity to absorb change without significantly altering its present character, has some environmental or social value, or is of district/regional importance. | | | | | | | | | | | | | | | | |
| 5 | Very High | The receptor or resource has little or no capacity to absorb change without fundamentally altering its present character, is of very high environmental or social value, or is of international importance. | | | | | | | | | | | | | | | | |
| **3. Initial Local Field-Based Activities** | (i) | Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during regional reconnaissance field activities | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | (ii) | Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | (iii) | Ground geophysical survey (Subject to the positive outcomes of i and ii above) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | (iv) | Possible Trenching (Subject to the outcomes of i - iii above) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | (v) | Field-based support and logistical activities will be very limited focus on a site-specific area for a very short time (maximum five (5) days) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | (vi) | Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| **4. Detailed Local Field-Based Activities** | (i) | Access preparation and related logistics to support activities | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| | (ii) | Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during the initial field-based activities | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | (iii) | Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| | (iv) | Ground geophysical survey, trenching, drilling and sampling (Subject to the positive outcomes of i and ii above). | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| **5. Prefeasibility and Feasibility Studies** | (i) | Detailed site-specific field-based support and logistical activities, surveys, detailed geological mapping | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| | (ii) | Detailed drilling and bulk sampling and testing for ore reserve calculations | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| | (iii) | Geotechnical studies for mine design | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 |
| | (iv) | Mine planning and designs including all supporting infrastructures (water, energy and access) and test mining activities | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |
| | (v) | EIA and EMP to support the ECC for mining operations | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |
| | (vi) | Preparation of feasibility report and application for Mining License | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 4 |

Table 5.7: Results of the scored time (duration) over which the impact is expected to last.

| RECEPTOR SENSITIVITY | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCALE / DESCRIPTION: T = Temporary; P = Permanent | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **1. Initial Desktop Exploration Activities** | (i) General evaluation of satellite, topographic, land tenure, accessibility, supporting infrastructures and socioeconomic environment data | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| | (ii) Purchase and analysis of existing Government high resolution magnetics and radiometric geophysical data | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| | (iii) Purchase and analysis of existing Government aerial hyperspectral | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| | (iv) Data interpretation and delineating of potential targets for future reconnaissance regional field-based activities for delineated targets | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| **2. Regional Reconnaissance Field-Based Activities** | (i) Regional geological, geochemical, topographical and remote sensing mapping and data analysis | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (ii) Regional geochemical sampling aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iii) Regional geological mapping aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iv) Limited field-based support and logistical activities including exploration camp site lasting between one (1) to two (2) days | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (v) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets for future detailed site-specific exploration if the results are positive and supports further exploration of the delineated targets | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |

Table 5.7: *Cont.*

| DURATION OF IMPACT | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL, AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCALE / DESCRIPTION: T = Temporary; P = Permanent | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **3. Initial Local Field-Based Activities** | (i) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during regional reconnaissance field activities | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (ii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iii) Ground geophysical survey (Subject to the positive outcomes of i and ii above) | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iv) Possible Trenching (Subject to the outcomes of i - iii above) | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (v) Field-based support and logistical activities will be very limited focus on a site-specific area for a very short time (maximum five (5) days) | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (vi) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| **4. Detailed Local Field-Based Activities** | (i) Access preparation and related logistics to support activities | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (ii) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during the initial field-based activities | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iv) Ground geophysical survey, trenching, drilling and sampling (Subject to the positive outcomes of i and ii above). | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| **5. Prefeasibility and Feasibility Studies** | (i) Detailed site-specific field-based support and logistical activities, surveys, detailed geological mapping | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (ii) Detailed drilling and bulk sampling and testing for ore reserve calculations | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iii) Geotechnical studies for mine design | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (iv) Mine planning and designs including all supporting infrastructures (water, energy and access) and test mining activities | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (v) EIA and EMP to support the ECC for mining operations | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |
| | (vi) Preparation of feasibility report and application for Mining License | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | P |

Table 5.8: Results of the scored geographical extent of the induced change.

| SCALE | | DESCRIPTION |
|---|---|---|
| L | | limited impact on location |
| O | | impact of importance for municipality |
| R | | impact of regional character |
| N | | impact of national character |
| M | | impact of cross-border character |

| GEOGRAPHICAL EXTENT OF IMPACT | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **1. Initial Desktop Exploration Activities** | (i) General evaluation of satellite, topographic, land tenure, accessibility, supporting infrastructures and socioeconomic environment data | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L |
| | (ii) Purchase and analysis of existing Government high resolution magnetics and radiometric geophysical data | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L |
| | (iii) Purchase and analysis of existing Government aerial hyperspectral | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L |
| | (iv) Data interpretation and delineating of potential targets for future reconnaissance regional field-based activities for delineated targets | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L |
| **2. Regional Reconnaissance Field-Based Activities** | (i) Regional geological, geochemical, topographical and remote sensing mapping and data analysis | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | N |
| | (ii) Regional geochemical sampling aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical, and remote sensing mapping and analysis undertaken | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | N |
| | (iii) Regional geological mapping aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical, and remote sensing mapping and analysis undertaken | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | N |
| | (iv) Limited field-based support and logistical activities including exploration camp site lasting between one (1) to two (2) days | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | N |
| | (v) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets for future detailed site-specific exploration if the results are positive and supports further exploration of the delineated targets | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | N |

Table 5.8: *Conti.*

| GEOGRAPHICAL EXTENT OF IMPACT | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **3. Initial Local Field-Based Activities** | (i) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during regional reconnaissance field activities | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (ii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (iii) Ground geophysical survey (Subject to the positive outcomes of i and ii above) | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (iv) Possible Trenching (Subject to the outcomes of i - iii above) | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (v) Field-based support and logistical activities will be very limited focus on a site-specific area for a very short time (maximum five (5) days) | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (vi) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| **4. Detailed Local Field-Based Activities** | (i) Access preparation and related logistics to support activities | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (ii) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during the initial field-based activities | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (iii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (iv) Ground geophysical survey, trenching, drilling and sampling (Subject to the positive outcomes of i and ii above). | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| **5. Prefeasibility and Feasibility Studies** | (i) Detailed site-specific field-based support and logistical activities, surveys, detailed geological mapping | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (ii) Detailed drilling and bulk sampling and testing for ore reserve calculations | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (iii) Geotechnical studies for mine design | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (iv) Mine planning and designs including all supporting infrastructures (water, energy and access) and test mining activities | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (v) EIA and EMP to support the ECC for mining operations | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |
| | (vi) Preparation of feasibility report and application for Mining License | L | L | L | L | L | L | L | L | L | L | L | L | L | O | R | N |

| SCALE | | DESCRIPTION |
|---|---|---|
| L | | limited impact on location |
| O | | impact of importance for municipality |
| R | | impact of regional character |
| N | | impact of national character |
| M | | impact of cross-border character |

Table 5.9: Results of the qualitative scale of probability occurrence.

| IMPACT PROBABILITY OCCURRENCE | | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **1. Initial Desktop Exploration Activities** | (i) | General evaluation of satellite, topographic, land tenure, accessibility, supporting infrastructures and socioeconomic environment data | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | E |
| | (ii) | Purchase and analysis of existing Government high resolution magnetics and radiometric geophysical data | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | E |
| | (iii) | Purchase and analysis of existing Government aerial hyperspectral | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | E |
| | (iv) | Data interpretation and delineating of potential targets for future reconnaissance regional field-based activities for delineated targets | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | E |
| **2. Regional Reconnaissance Field-Based Activities** | (i) | Regional geological, geochemical, topographical and remote sensing mapping and data analysis | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |
| | (ii) | Regional geochemical sampling aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |
| | (iii) | Regional geological mapping aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |
| | (iv) | Limited field-based support and logistical activities including exploration camp site lasting between one (1) to two (2) days | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |
| | (v) | Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets for future detailed site-specific exploration if the results are positive and supports further exploration of the delineated targets | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |

| SCALE | | DESCRIPTION |
|---|---|---|
| A | | Extremely unlikely (e.g. never heard of in the industry) |
| B | | Unlikely (e.g. heard of in the industry but considered unlikely) |
| C | | Low likelihood (egg such incidents/impacts have occurred but are uncommon) |
| D | | Medium likelihood (e.g. such incidents/impacts occur several times per year within the industry) |
| E | | High likelihood (e.g. such incidents/impacts occurs several times per year at each location where such works are undertaken) |

Table 5.9: *Cont.*

| IMPACT PROBABILITY OCCURRENCE | | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **3.** | **Initial Local Field-Based Activities** | (i) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during regional reconnaissance field activities | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |
| | | (ii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | B | B | B | B | B | B | B | B | B | B | B | B | B | D | D | E |
| | | (iii) Ground geophysical survey (Subject to the positive outcomes of i and ii above) | B | B | B | B | B | B | B | B | B | B | B | B | B | D | D | E |
| | | (iv) Possible Trenching (Subject to the outcomes of i - iii above) | B | B | B | B | B | B | B | B | B | B | B | B | B | D | D | E |
| | | (v) Field-based support and logistical activities will be very limited focus on a site-specific area for a very short time (maximum five (5) days) | B | B | B | B | B | B | B | B | B | B | B | B | B | D | D | E |
| | | (vi) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |
| **4.** | **Detailed Local Field-Based Activities** | (i) Access preparation and related logistics to support activities | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| | | (ii) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during the initial field-based activities | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| | | (iii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| | | (iv) Ground geophysical survey, trenching, drilling and sampling (Subject to the positive outcomes of i and ii above). | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| **5.** | **Prefeasibility and Feasibility Studies** | (i) Detailed site-specific field-based support and logistical activities, surveys, detailed geological mapping | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| | | (ii) Detailed drilling and bulk sampling and testing for ore reserve calculations | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| | | (iii) Geotechnical studies for mine design | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| | | (iv) Mine planning and designs including all supporting infrastructures (water, energy and access) and test mining activities | C | C | C | C | C | C | C | C | C | C | C | C | C | D | D | E |
| | | (v) EIA and EMP to support the ECC for mining operations | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |
| | | (vi) Preparation of feasibility report and application for Mining License | A | A | A | A | A | A | A | A | A | A | A | A | A | D | D | E |

| SCALE | | DESCRIPTION |
|---|---|---|
| A | | Extremely unlikely (e.g. never heard of in the industry) |
| B | | Unlikely (e.g. heard of in the industry but considered unlikely) |
| C | | Low likelihood (egg such incidents/impacts have occurred but are uncommon) |
| D | | Medium likelihood (e.g. such incidents/impacts occur several times per year within the industry) |
| E | | High likelihood (e.g. such incidents/impacts occurs several times per year at each location where such works are undertaken) |

## 5.5 Evaluation of Significant Impacts

### 5.5.1 Overview

The significance of each impact has been determined by assessing the impact severity against the likelihood (probability) of the impact occurring as summarised in the impact significance assessment matrix provided in Table 5.10.

### 5.5.2 Significance Criteria

Significance criteria for negative/adverse impacts (i.e., relative ranking of importance) are defined in Table 5.10. It is important to note that impacts have been considered without the implementation of mitigation measures. The need for appropriate mitigation measures as presented in the EMP report has been determined based on the impact assessment presented in this report.

Table 5.10: Scored impact significance criteria.

| **IMPACT SEVERITY** (Magnitude, Duration, Extent, Probability) | **RECEPTOR CHARACTERISTICS (SENSITIVITY)** | | | | |
|---|---|---|---|---|---|
| | **Very High (5)** | **High (4)** | **Medium (3)** | **Low (2)** | **Negligible (1)** |
| **Very High (5)** | Major [5/5] | Major [4/5[ | Moderate [3/5] | Moderate [2 /5] | Minor 1/5 |
| **High (4)** | Major [5/4] | Major [4/4] | Moderate [3/4] | Moderate [2/4] | Minor [1/4] |
| **Medium (3)** | Major [5/3] | Moderate [4/3] | Moderate [3/3] | Minor [2/3] | None [1/3] |
| **Low (2)** | Moderate [5/2] | Moderate [4/2] | Minor [3/2] | None [2/2] | None [1/2] |
| **Negligible (1)** | Minor [5/1] | Minor [4/1] | None [3/1] | None [2/1] | None [1/1] |

### 5.5.3 Assessment Likely Significant Impacts

The assessment of significant impacts depended upon the degree to which the proposed project activities are likely to results in unwanted consequences on the receptor covering physical and biological environments (Table 5.11). Overall, the assessment of significant impacts has focused on the ecosystem-based approach that considers potential impacts to the ecosystem. The main key sources of impacts that have been used in the determination of significant impacts posed by the proposed minerals exploration comprised activities. Each of the main areas of impact have been identified and assessed as follows:

- Positive Impacts are classified under a single category. they are then evaluated qualitatively with a view to their enhancement, if practical.
- Negligible or Low Impacts will require little or no additional management or mitigation measures (on the basis that the magnitude of the impact is sufficiently small, or that the receptor is of low sensitivity).
- Medium or High Impacts require the adoption of management or mitigation measures.
- High Impacts always require further management or mitigation measures to limit or reduce the impact to an acceptable level.

Overall, the results of the significant impact assessment matrix for the proposed minerals exploration activities on the physical and biological environments are shown in Tables 5.11.

Table 5.11: Significant impact assessment matrix for the proposed exploration activities.

| SIGNIFICANT IMPACT NEGATIVE [-] OR POSITIVE [+] | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IMPACT SEVERITY [Magnitude, Duration, Extent, Probability] | RECEPTOR CHARACTERISTICS (SENSITIVITY) | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| Very High (5) | Major [5/5] | Major [4/5[ | Moderate [3/5] | Moderate [2 /5] | Minor 1/5 | | | | | | | | | | | | |
| High (4) | Major [5/4] | Major [4/4] | Moderate [3/4] | Moderate [2/4] | Minor[1/4] | | | | | | | | | | | | |
| Medium (3) | Major [5/3] | Moderate[4/3] | Moderate[3/3] | Minor[2/3] | None[1/3] | | | | | | | | | | | | |
| Low (2) | Moderate [5/2] | Moderate[4/2] | Minor[3/2] | None[2/2] | None[1/2] | | | | | | | | | | | | |
| Negligible (1) | Minor [5/1] | Minor [4/1] | None [3/1] | None [2/1] | None [1/1] | | | | | | | | | | | | |
| **1. Initial Desktop Exploration Activities** | (i) General evaluation of satellite, topographic, land tenure, accessibility, supporting infrastructures and socioeconomic environment data | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 |
| | (ii) Purchase and analysis of existing Government high resolution magnetics and radiometric geophysical data | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 |
| | (iii) Purchase and analysis of existing Government aerial hyperspectral | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 |
| | (iv) Data interpretation and delineating of potential targets for future reconnaissance regional field-based activities for delineated targets | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 |
| **2. Regional Reconnaissance Field-Based Activities** | (i) Regional geological, geochemical, topographical and remote sensing mapping and data analysis | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |
| | (ii) Regional geochemical sampling aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |
| | (iii) Regional geological mapping aimed at identifying possible targeted based on the results of the initial exploration and regional geological, topographical and remote sensing mapping and analysis undertaken | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |
| | (iv) Limited field-based support and logistical activities including exploration camp site lasting between one (1) to two (2) days | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |
| | (v) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets for future detailed site-specific exploration if the results are positive and supports further exploration of the delineated targets | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |

Table 5.11: *Cont.*

| SIGNIFICANT IMPACT NEGATIVE [-] OR POSITIVE [+] | | PHYSICAL ENVIRONMENT | | | | | | BIOLOGICAL ENVIRONMENT | | | | | SOCIOECONOMIC, CULTURAL AND ARCHAEOLOGICAL ENVIRONMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Water Quality | Physical infrastructure and Resources | Air Quality, Noise and Dust | Landscape Topography | Soil Quality | Climate Change Influences | Habitat | Protected Areas | Flora | Fauna | Ecosystem functions, services, use values and non-Use or passive use | Local, regional and national socioeconomic settings | Commercial Agriculture | Community Protected Areas | Tourism and Recreation | Cultural, Biological and Archaeological Resources |
| **3. Initial Local Field-Based Activities** | (i) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during regional reconnaissance field activities | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [+]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |
| | (ii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [+]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |
| | (iii) Ground geophysical survey (Subject to the positive outcomes of i and ii above) | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [+]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]4/4 |
| | (iv) Possible Trenching (Subject to the outcomes of i - iii above) | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [+]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]4/4 |
| | (v) Field-based support and logistical activities will be very limited focus on a site-specific area for a very short time (maximum five (5) days) | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [+]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]4/4 |
| | (vi) Laboratory analysis of the samples collected and interpretation of the results and delineating of potential targets | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [+]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]4/4 |
| **4. Detailed Local Field-Based Activities** | (i) Access preparation and related logistics to support activities | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]3/2 | [-]3/2 | [-]3/2 | [-]3/2 | [-]3/2 | [+]2\2 | [-]2\2 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (ii) Local geochemical sampling aimed at verifying the prospectivity of the target/s delineated during the initial field-based activities | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]3/2 | [-]3/2 | [-]3/2 | [-]3/2 | [-]3/2 | [+]2\2 | [-]2\2 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (iii) Local geological mapping aimed at identifying possible targeted based on the results of the regional geological and analysis undertaken | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [+]2\2 | [-]2\2 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (iv) Ground geophysical survey, trenching, drilling and sampling (Subject to the positive outcomes of i and ii above). | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]3/2 | [-]3/2 | [-]3/2 | [-]3/2 | [-]3/2 | [+]2\2 | [-]2\2 | [-]3/3 | [-]3/3 | [-]4/4 |
| **5. Prefeasibility and Feasibility Studies** | (i) Detailed site-specific field-based support and logistical activities, surveys, detailed geological mapping | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [+]2\2 | [-]2\2 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (ii) Detailed drilling and bulk sampling and testing for ore reserve calculations | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [+]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (iii) Geotechnical studies for mine design | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [-]2\2 | [+]2\2 | [-]2\2 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (iv) Mine planning and designs including all supporting infrastructures (water, energy and access) and test mining activities | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [+]3/3 | [-]3/3 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (v) EIA and EMP to support the ECC for mining operations | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [+]1/1 | [-]1/1 | [-]3/3 | [-]3/3 | [-]4/4 |
| | (vi) Preparation of feasibility report and application for Mining License | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [-]1/1 | [+]1/1 | [-]1/1 | [-]3/3 | [-]3/3 | [-]4/4 |

| IMPACT SEVERITY (Magnitude, Duration, Extent, Probability) | RECEPTOR CHARACTERISTICS (SENSITIVITY) | | | | |
|---|---|---|---|---|---|
| | Very High (5) | High(4) | Medium (3) | Low (2) | Negligible (1) |
| Very High (5) | Major [5/5] | Major [4/5[ | Moderate [3/5] | Moderate [2 /5] | Minor 1/5 |
| High (4) | Major [5/4] | Major [4/4] | Moderate [3/4] | Moderate [2/4] | Minor[1/4] |
| Medium (3) | Major [5/3] | Moderate[4/3] | Moderate[3/3] | Minor[2/3] | None[1/3] |
| Low (2) | Moderate [5/2] | Moderate[4/2] | Minor[3/2] | None[2/2] | None[1/2] |
| Negligible (1) | Minor [5/1] | Minor [4/1] | None [3/1] | None [2/1] | None [1/1] |

## 5.6 Assessment of Overall Impacts

### 5.6.1 Summary of the Results of the Impact Assessment

In accordance with Tables 5.6 - 5.11, the following is the summary of the overall likely negative and significant impacts of the proposed exploration activities on the receiving environment (physical, biological, and socioeconomic environments) without:

(i) Initial desktop exploration activities: Overall likely negative impact on the receiving environment will be negligible with extremely unlikely probability of occurrence without mitigations. Overall significant impacts will be negligible **[1/1]** (Table 5.11). Except for the socioeconomic components which carry a **(+)**, the rest of the likely impacts are negative **(-)**.

(ii) Regional reconnaissance field-based activities: Overall likely negative impact on the receiving environment will be negligible with extremely unlikely probability of occurrence without mitigations. Overall significant impacts will be negligible **[1/1]**. Some field-based activities will have localised low impacts with low probability of occurrence without mitigations and negligible with mitigations. Overall significant impacts will be negligible **[1/1]** (Table 5.11). Except for the socioeconomic components which carry a **(+)**, all the other likely impacts are negative **(-)**.

(iii) Initial local field-based activities: Initial field-based activities will have localised low impacts with low probability of occurrence without mitigations and negligible with mitigations**.** Overall significant impacts will be negligible **[2/2]**. All desktop related activities and laboratory assessments will have negligible impacts with extremely unlikely probability of occurrence without mitigations. Overall significant impacts will be negligible **[2/2]** (Table 5.11). Except for the socioeconomic components which carry a **(+)**, all the other likely impacts are negative **(-)**. Cultural, biological, and archaeological resources will have high significant negative impacts **[4/4]**.

(iv) Detailed local field-based activities: Overall likely negative impact on the receiving environment will be high and localised impacts without mitigations and localised low impacts with mitigations. Overall significant impacts will be medium **[2/2]** without mitigations and low with mitigations (Table 5.11). Except for the socioeconomic components which carry a **(+)**, all the other likely impacts are negative **(-)**. Tourism and recreation will have medium significant negative impacts **[3\3]**, and cultural, biological, and archaeological resources will have high significant negative impacts **[4/4]**. and.

(v) Prefeasibility and feasibility studies to be implemented on a site-specific area if the local field-based studies prove positive: Overall likely negative impact on the receiving environment will be high and localised impacts without mitigations and localised medium impacts with mitigations. Overall significant impacts will be medium **[3/3]** without mitigations and low with mitigations for bulk sampling, test mining and field logistics (Table 5.11). Except for the socioeconomic components which carry a **(+)**, all the other likely impacts are negative **(-)**. Tourism and recreation will have medium significant negative impacts **[3\3]**, and cultural, biological, and archaeological resources will have high significant negative impacts **[4/4]**.

# 6. CONCLUSION AND RECOMMENDATION

## 6.1 Conclusions

Mitten Minerals Exploration (Pty) Ltd (**the Proponent**) intends to undertake exploration activities in the Exclusive Prospecting Licence (EPL) No. 9372 covering dimension stone, base and rare metals, industrial minerals and precious metals group of minerals. The exploration activities to be undertaken as assessed in this environmental assessment are as follows:

(i) Initial desktop exploration activities.

(ii) Regional reconnaissance field-based activities.

(iii) Initial local field-based activities including detailed mapping, sampling, and drilling operations.

(iv) Detailed local field-based activities including detailed mapping, sampling, and drilling operations, and.

(v) Prefeasibility and feasibility studies including possible test mining.

The overall severity of potential environmental impacts of the proposed project activities on the receiving environment (physical, biological, socioeconomic environments and ecosystem functions, services, use and non-use values or passive uses) will be of low magnitude, temporally duration, localised extent, and low probability of occurrence.

## 6.2 Recommendations

It is hereby recommended that the proposed exploration activities be issued with an Environmental Clearance Certificate (ECC). The Proponent shall take into consideration the following key requirements for implementing the proposed exploration programme:

(i) Based on the findings of this EIA Report, the Proponent shall prepare an EMP Report with key mitigations measures.

(ii) Mitigation measures shall be implemented as detailed in the EMP report.

(iii) The Proponent shall negotiate Access Agreements with the landowner/s as may be applicable.

(iv) The Proponent shall adhere to all the provisions of the EMP and conditions of the Access Agreement to be entered between the Proponent and the landowner/s in line with all applicable national regulations.

(v) Before entering any private or protected property/ area such as a private farm, the Proponent must give advance notices and obtain permission to always access the EPL area, and.

(vi) Where possible, and if water is found during the detailed exploration boreholes drilling operations, the Proponent shall promote access to freshwater supply for both human consumption, wildlife and agricultural support as may be requested by the local community / landowners/s or as may be needed for environmental protection including wildlife management. The abstraction of the groundwater resources shall include water levels monitoring, sampling, and quality testing on a bi-annual basis, and that the affected landowner/s must have access to the results of the water monitoring analyses as part of the ongoing stakeholder disclosure requirements on shared water resources as may be applicable.

## 6.3 Summary ToR for Test Mining and Mining Stages

In an even that economic minerals resources are discovered within the EPL 9372 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 EIA 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 maybe applicable must be prepared 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.

The site-specific EIA and EMP shall cover the area identified to have potential economic minerals resources as well as all areas to be used for infrastructural support areas such as pit / shaft area/s, waste rock, tailings dump, access, office blocks, water, and energy infrastructure support areas (water, energy and road / access). In addition to the Terms of Reference (ToR) to be developed during the Environmental Scoping study phase for the test mining / mining stages, the following field-based and site-specific specialist studies shall be undertaken as part of the EIA and EMP for possible test mining or mining operations in an event of a discovery of economic minerals resources and possible development of a mining project:

(i) Groundwater studies including modelling as maybe applicable.

(ii) Field-based flora and fauna diversity.

(iii) Noise and Sound modelling linked to engineering studies.

(iv) Archaeological assessments.

(v) Socioeconomic assessment, and.

(vi) Others as may be identified / recommended by the stakeholders/ landowners/ Environmental Commissioner or specialists.

The aims and objectives of the Environmental Assessment (EA) covering EIA and EMP to be implemented as part of the feasibility study if a variable resource is discovered are:

(i) To assess all the likely positive and negative short- and long-term impacts on the receiving environment (physical, biological, and socioeconomic environments) at local (EPL Area), regional, national (Namibia) and Global levels using appropriate assessment guidelines, methods and techniques covering the complete project lifecycle. The EIA and EMP to be undertaken shall be performed with reasonable skill, care, and diligence in accordance with professional standards and practices existing at the date of performance of the assessment and that the guidelines, methods and techniques shall conform to the national regulatory requirements, process and specifications in Namibia and in particular as required by the Ministry of Mines, Energy and Industry (MMEI), Ministry of Environment, Forestry and Tourism (MEFT), and Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR), and.

(ii) The development of appropriate mitigation measures that will enhance the positive impacts and reduce the likely negative influences of the negative impacts identified or anticipated. Such mitigation measures shall be contained in a detailed EMP report covering the entire project lifecycle.

# 7. REFERENCES

## 1. GENERAL READING


Department of Water Affairs and Forestry, 2001. Groundwater in Namibia: An explanation to the hydrogeological map. *MAWRD*, Windhoek, 1, 128 pp.

Geological Survey of Namibia, 1999. Regional geological map of Namibia. Ministry of Mines, Energy and Industry, Windhoek, Namibia.

Günzel, A. 2000. Personal communication during the discussion on the geology of Tsumeb area, Tsumeb.

Lombaard, A.F., Günzel, A., Innes, J. and Krüger, T.L. 1986. The Tsumeb-lead-copper-zinc-silver deposits, South West Africa/Namibia. In: Anhaeusser, C.R. and Maske, S. (eds), Mineral deposits of Southern Africa vol. 2, Geol. Soc. S.Afr., Johannesburg, 1761-1787.

Miller, R.McG. 2008. The geology of Namibia. Geological Survey, Ministry of Mines, Energy and Industry, Windhoek, Vol. 3.

Miller, R. McG., 1992. Stratigraphy. *The mineral resource of Namibia*, *Geological Survey of Namibia, MMEI*, Windhoek, 1.2 .1 -1.2.13.

Miller, R. McG., 1983a. The Pan – African Damara Orogen od S.W.A. / Namibia, Special Publication of the Geological Society of South Africa, **11**, 431 - 515.

Miller, R. McG., 1983b. Economic implications of plate tectonic models of the Damara Orogen, Special Publication of the Geological Society of South Africa, **11**, 115 -138.

Ministry of Environment and Tourism, 2002. Atlas of Namibia. Comp. J. Mendelsohn, A. Jarvis, T. Roberts and C. Roberts, David Phillip Publishers, Cape Town.

Müller, M.A.N. 1984. Grasses of South West Africa/Namibia. John Meinert Publishers (Pty) Ltd, Windhoek, Namibia.

Mwiya, S. 2003. Development of a knowledge-based system methodology for design of solid waste disposal sites in arid and semiarid environments. Unpublished PhD thesis, University of Portsmouth, UK, 348 pp.

Mwiya and Giles, 2004. A knowledge-based approach to Municipal Solid Waste Disposal Site Development in the Karstified Dolomitic Terrain around the town of Tsumeb in North-Central Namibia Communications, Geological Survey of Namibia, 13 (2004), 9-22, Windhoek, Namibia.

National Planning Commission (NPC) (2013). Policy Brief: Trends and Impacts of Internal Migration in Namibia. National Planning Commission: Windhoek.

National Statistic Agency (NSA) (2012). Poverty Dynamics in Namibia: A Comparative Study Using the 1993/94, 2003/04 and the 2009/2010 NHIES Surveys. National Statistics Agency: Windhoek.

National Statistics Agency (NSA) (2013). Profile of Namibia: Facts, Figures and other Fundamental Information. National Statistics Agency: Windhoek.

National Statistics Agency (NSA) (2014a). Namibia 2011 Population and Housing Census Main Report. National Statistics Agency: Windhoek.

National Statistics Agency (NSA) (2014b). 2011 Population and Housing Census: Oshikoto Regional Profile. National Statistics Agency: Windhoek.

National Statistics Agency (NSA) (2014c). Namibia 2011 Census Atlas. National Statistics Agency: Windhoek.

National Statistics Agency (NSA) (2014d). The Namibia Labour Force Survey 2013 Report. National Statistics Agency: Windhoek

National Statistics Agency (NSA) (2014e). Gross Domestic Product: First Quarter 2014. National Statistics Agency: Windhoek

Roesener, H., Schneider, G., and Petzel, V., 2004. Okahandja – Otjiwarongo –Tsumeb – Tsumeb: The Roadside Geology of Namibia, (G. Schneider ed.), Gebruder Borntraeger, Berlin, 9.19: 214 – 219.

Schneider, G.I.C. and Seeger, K.G. 1992. Copper, 2.3,118 pp. In: The Mineral Resources of Namibia, Geological Survey of Namibia, Windhoek.

Seeger, K.G. 1990. An evaluation of the groundwater resources of the Grootfontein karst area. Department of Water Affairs, Windhoek, Namibia.

Stankevica, V., 2015. Development of mining settlements in Namibia: an investigation into prospects for Rosh Pinah, Klein Aub and Tsumeb., PhD Thesis, University of Namibia, Windhoek,

Steven, N. M., 1993. A study of epigenetic mineralization in the Central Zone of the Damara Orogen, Namibia, with special reference to gold, tungsten, tin, and rare earth element. *Geological Survey of Namibia, Memoir* 16,166 pp.

Van Wyk, B. and Van Wyk, P. 1997. Field guide to trees of Southern Africa. Cape Town: Struik Publishers.

Van Oudtshoorn, F. 1999. Guide to grasses of southern Africa. Briza Publications, Pretoria, South Africa.

World Travel and Tourism Council, 2013, Travel and Tourism Economic impact 2013, Namibia, London, United Kingdom.

South African National Standards (SANS), 2005**.** South African National Standard, Ambient Air Quality – Limits for Common Pollutants. SANS 1929:2005. Standards South Africa, Pretoria.

## 2. REFERENCES AND FURTHER READING ON FAUNA AND FLORA

Alexander, G. and Marais, J. 2007. A guide to the reptiles of southern Africa. Struik Publishers, Cape Town, RSA.

Barnard, P. 1998. Underprotected habitats. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Bester, B. 1996. Bush encroachment – A thorny problem. *Namibia Environment* 1: 175-177.

Branch, B. 1998. Field guide to snakes and other reptiles of southern Africa. Struik Publishers, Cape Town, RSA.

Branch, B. 2008. Tortoises, terrapins and turtles of Africa. Struik Publishers, Cape Town, RSA.

Boycott, R.C. and Bourquin, O. 2000. The Southern African Tortoise Book. O Bourquin, Hilton, RSA.

Broadley, D.G. 1983. Fitzsimons' Snakes of southern Africa. Jonathan Ball and AD. Donker Publishers, Parklands, RSA.

Brown, C.J., Jarvis, A., Robertson, T. and Simmons, R. 1998. Bird diversity. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Brown, I, Cunningham, P.L. and De Klerk, M. 2006. A comparative study of wetland birds at two dams in central Namibia. *Lanioturdus* 39(1): 2-9.

Buys, P.J. and Buys, P.J.C. 1983. Snakes of Namibia. Gamsberg Macmillan Publishers, Windhoek, Namibia.

Carruthers, V.C. 2001. Frogs and frogging in southern Africa. Struik Publishers, Cape Town, RSA.

Channing, A. 2001. Amphibians of Central and Southern Africa. Protea Bookhouse, Pretoria, RSA.

Channing, A. and Griffin, M. 1993. An annotated checklist of the frogs of Namibia. *Madoqua* 18(2): 101-116.

Coats Palgrave, K. 1983. Trees of Southern Africa. Struik Publishers, Cape Town, RSA.

Cole, D.T. and Cole, N.A. 2005. Lithops Flowering Stones. Cactus and Co. Libri

Craven, P. 1998. Lichen diversity in Namibia. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Craven, P. (ed.). 1999. A checklist of Namibian plant species. Southern African Botanical Diversity Network Report No. 7, SABONET, Windhoek.

Crouch, N.R., Klopper, R.R., Burrows, J.E. and Burrows, S. M. 2011. Ferns of southern Africa – a comprehensive guide. Struik Nature, Cape Town, RSA.

Cunningham, P.L. 1998. Potential wood biomass suitable for charcoal production in Namibia. *Agri-Info* 4(5): 4-8.

Cunningham, P.L. 2006. A guide to the tortoises of Namibia. Polytechnic of Namibia, Windhoek, Namibia.

Curtis, B. and Barnard, P. 1998. Sites and species of biological, economic or archaeological importance. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Curtis, B. and Mannheimer, C. 2005. Tree Atlas of Namibia. National Botanical Research Institute, Windhoek, Namibia.

De Graaff, G. 1981. The rodents of southern Africa. Buterworths, RSA.

Du Preez, L. and Carruthers, V. 2009. A complete guide to the frogs of southern Africa. Struik Publishers, Cape Town, RSA.

Estes, R.D. 1995. The behaviour guide to African mammals. Russel Friedman Books, Halfway House, RSA.

Giess, W. 1971. A preliminary vegetation map of South West Africa. *Dinteria* 4: 1 – 114.

Griffin, M. 1998a. Reptile diversity. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Griffin, M. 1998b. Amphibian diversity. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Griffin, M. 1998c. Mammal diversity. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Griffin, M. 2003. Annotated checklist and provisional national conservation status of Namibian reptiles. Ministry of Environment and Tourism, Windhoek.

Griffin, M. and Coetzee, C.G. 2005. Annotated checklist and provisional national conservation status of Namibian mammals. Ministry of Environment and Tourism, Windhoek.

Hebbard, S. n.d. A close-up view of the Namib and some of its fascinating reptiles. ST Promotions, Swakopmund, Namibia.

Hockey, P.A.R., Dean, W.R.J. and Ryan, P.G. 2006. Roberts Birds of Southern Africa VII Edition. John Voelcker Bird Book Fund.

IUCN, 2015. IUCN red list of threatened animals, IUCN, Gland, Switserland.

Joubert, E. and Mostert, P.M.K. 1975. Distribution patterns and status of some mammals in South West Africa. *Madoqua* 9(1): 5-44.

Komen, L. n.d. The Owls of Namibia – Identification and General Information. NARREC, Windhoek.

Maclean, G.L. 1985. Robert's birds of southern Africa. John Voelcker Bird Book Fund.

Maggs, G. 1998. Plant diversity in Namibia. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Mannheimer, C. and Curtis, B. (eds) 2009. Le Roux and Müller's field guide to the trees and shrubs of N amibia. Macmillan Education Namibia, Windhoek.

Marais, J. 1992. A complete guide to the snakes of southern Africa. Southern Book Publishers, Witwatersrand University Press, Johannesburg, RSA.

Mendelsohn, J., Jarvis, A., Roberts, A. and Robertson, T. 2002. Atlas of Namibia. A portrait of the land and its people. David Philip Publishers, Cape Town, RSA.

Monadjem, A., Taylor, P.J., F.P.D. Cotterill and M.C. Schoeman. 2010. Bats of southern and central Africa. Wits University press, Johannesburg, RSA.

Müller, M.A.N. 1984. Grasses of South West Africa/Namibia. John Meinert Publishers (Pty) Ltd, Windhoek, Namibia.

Müller, M.A.N. 2007. Grasses of Namibia. John Meinert Publishers (Pty) Ltd, Windhoek, Namibia.

NACSO, 2010. Namibia's communal conservancies: a review of progress and challenges in 2009. NACSO, Windhoek.

Passmore, N.I. and Carruthers, V.C. 1995. South African Frogs - A complete guide. Southern Book Publishers, Witwatersrand University Press, Johannesburg, RSA.

Rothmann, S. 2004. Aloes, aristocrats of Namibian flora. ST promotions, Swakopmund.

SARDB, 2004. CBSG Southern Africa. In: Griffin, M. 2005. Annotated checklist and provisional national conservation status of Namibian mammals. Ministry of Environment and Tourism, Windhoek.

Schultz, M. and Rambold, G. 2007. Diversity shifts and ecology of soil lichens in central Namibia. Talk, Ecological Society of Germany, Austria and Switzerland (GfÖ), 37th Annual Meeting, Marburg: 12/9/2007 to 15/9/2007.

Schultz, M., Zedda, L. and Rambold, G. 2009. New records of lichen taxa from Namibia and South Africa. *Bibliotheca Lichenologica* 99: 315-354.

Simmons, R.E. 1998a. Important Bird Areas (IBA's) in Namibia. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Simmons, R.E. 1998b. Areas of high species endemism. In: Barnard, P. (ed.). Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.

Simmons R.E., Brown C.J. and Kemper J. 2015. Birds to watch in Namibia: red, rare and endemic species. Ministry of Environment and Tourism and Namibia Nature Foundation, Windhoek.

Skinner, J.D. and Smithers, R.H.N. 1990. The mammals of the southern African subregion. University of Pretoria, RSA.

Skinner, J.D. and Chimimba, C.T. 2005. The mammals of the southern African subregion. Cambridge University Press, Cape Town, RSA.

Stander, P. and Hanssen, L. 2003. Namibia large carnivore atlas. Unpublished Report, Ministry of Environment and Tourism, Windhoek.

Steyn, M. 2003. Southern African Commiphora. United Litho, Arcadia.

Tarboton, W. 2001. A guide to the nests and eggs of southern African birds. Struik Publishers, Cape Town, RSA.

Taylor, P.J. 2000. Bats of southern Africa. University of Natal Press, RSA.

Tolley, K. and Burger, M. 2007. Chameleons of southern Africa. Struik Nature, Cape Town, RSA.

Van Oudtshoorn, F. 1999. Guide to grasses of southern Africa. Briza Publications, Pretoria, South Africa.

Van Wyk, B. and Van Wyk, P. 1997. Field guide to trees of Southern Africa. Cape Town: Struik Publishers.

# 8. ANNEXES

## 1. BID / Scoping Report

## 2. Proof of Public Consultations