

2019

A SCOPING REPORT ON THE
ENVIRONMENTAL IMPACT ASSESSMENT
FOR MINERAL EXPLORATION ON EPL 4663,
CENTRAL NAMIBIA



ENVIRONMENTAL ASSESSMENT FOR MINERAL EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

EXECUTIVE SUMMARY

Table of Contents

1. Introduction.....	3
1.1 Overview.....	3
1.2 Location.....	3
1.3 Environmental Assessment Requirements.....	3
1.4 Project Alternatives.....	3
2. Summary of Applicable acts.....	4
3. Description of the proposed mineral exploration.....	4
3.1 Services.....	5
3.1.1 Electricity requirements.....	5
3.1.2 Water Supply.....	6
4. Description of the current Environment.....	6
4.1 Climate conditions.....	6
4.2 Geology.....	6
4.3 Hydrogeology.....	6
4.4 Flora.....	7
4.5 Fauna.....	7
4.6 Avifauna (birds).....	7
4.7 Heritage Sites.....	8
4.8 Socio-Economic Environment.....	8
5. Conclusion.....	8

1. Introduction

1.1 Overview

The proponent, was granted an exclusive prospecting licence (EPL) by the Ministry of Mines and Energy. The licence holder intends to explore for rare earth elements (tantalite, Niobium etc) and industrial minerals (lithium) within the amphibolite and gneiss rock units that are found within the vicinity of the Karibib Formation Mountains.

Impala Consulting cc was appointed by the proponent to undertake an Environmental Assessment (EA) and Environmental Management Plan (EMP) for the mineral exploration project.

1.2 Location

The exclusive prospecting licence is located 40 km south of Karibib and covers farms Goas, Gamikaub, Anawood-sud, Kamandibmund and Dorsrivier. The coordinates for the centre of the tenement are 15°47'59.859"E and 22°22'1.034"S.

1.3 Environmental Assessment Requirements

The Environmental Regulations procedure (GN 30 of 2012) stipulates that no mining and mineral exploration activities may be undertaken without an environmental clearance certificate. As such, an environmental clearance certificate must be applied for in accordance with regulation 6 of the 2012 environmental regulations. It is imperative that the environmental proponent must conduct a public consultation process in accordance with regulation 21 of the 2012 environmental procedure, produce an environmental scoping report and submit an Environmental Management Plan for the proposed mineral exploration activities.

1.4 Project Alternatives

An alternative to the proposed mineral exploration activity would be to allocate the land-usage to other income generating activities tourism activities. Although the above mentioned activities may generate revenue for the government and provide employment to a few individuals, they may not have a significant impact on the community in comparison to the proposed project. The proposed project will strictly employ locals from nearby towns and settlements.

2. Summary of Applicable acts

All mineral rights, related to mining and mineral exploration activities in Namibia, are regulated by the Ministry of Mines and Energy whereas the environmental regulations are regulated by the Ministry of Environment and Tourism. The acts that affect the implementation, operation and management of mineral exploration activities in Namibia are:

- Environmental Management Act of 2007
- Minerals Prospecting and Mining Act of 1992
- Water Resources Management Act of 2004
- Nature conservation ordinance, ordinance No. 4 of 1995
- National Heritage Act, 2004 (Act No. 27 of 2004)
- Petroleum Products and Energy Act No.13 of 1990
- Forest Act, No. 12 of 2001
- Atmospheric Pollution Prevention Ordinance (1976)
- Hazardous Substance Ordinance No. 14 of 1974
- Namibian Water Corporation (Act 12 of 1997)

3. Description of the proposed mineral exploration project

Lithium is an alkali metal, has a high specific heat capacity and is the lightest metal. Lithium is produced from a variety of geological sources, e.g., minerals such as spodumene, clays such as hectorite, salt lakes, and underground brine reservoirs etc. There are two broad categories of lithium sources, namely Rock and Brine sources. Rock sources include mineral sources such as spodumene, amblygonite, lepidolite, jadarite, as well as clay sources of lithium such as hectorite (Mohr, et al., 2012).

Typical mineral deposits have a lithium content of around 0.5%–2% Li. Often the lithium from minerals is concentrated to around 2%–4% Li and used in the ceramics and glass industry. The pegmatitic deposits of lithium, beryllium and cesium minerals in Namibia occur mainly in the Karibib - Usakos pegmatite district. The lithium minerals mined in this area, currently and in the past, include petalite, amblygonitemontebrazite, spodumene and lepidolite. Spodumene and eucryptite are associated with some rare metal pegmatites within the Cape Cross - Uis pegmatite

belt. Most beryl has been produced from zoned rare metal pegmatites in the Karibib-Usakos and Karasburg Districts. The cesium aluminosilicate, pollucite, is a rare constituent of highly fractionated lithium pegmatites and has been mined at Helikon and Rubikon (Miller, 1992).

3.1 Services

3.1.1 Electricity requirements

The bulk of the power supply to the site will be sourced from the proponent's own generator. The power requirements for the proposed project will be minimal as power will only be required for the following activities:

- Emergency lighting
- Powering small machinery during the mineral exploration process
- Power supply for office block or container.

3.1.2 Water Supply

For the purpose of the scoping study costing requirements, a separate geo-hydrological study will be undertaken at an advanced stage of the EIA. Water containers will be brought on site and utilised whenever necessary. The water will mostly be used for general consumption and cleaning.

4. Description of the current Environment

This section aims to document the present state of the environment, the likely impact of changes being planned and the regular monitoring to attempt to detect changes in the environment. The project area is positioned at the interface of the Nama Karoo, Desert Biome and Savannah in Namibia (Barnard, 1998). As such, this area represents a high fauna diversity.

4.1 Climate conditions

In the proposed mineral exploration area, January is the warmest month with an average temperature of 32-34°C at noon. July is the coldest month with an average temperature of 8-10°C at night. Karibib, which is in the vicinity of the project area, has distinct temperature seasons, the temperature varies during the year.

In the mineral exploration area, the highest rainfall is usually experienced in February which may reach 70 mm with average rainfall days of 7. In January

months, rain-fall may reach about 40 mm with average rainfall days. The graph below shows the rainfall patterns in the area.

4.2 Geology

The EPL area falls at the boundary of the Okahandja Lineament Zone (“OLZ”) and the Southern Zone (“SZ”) of the Damara Orogen. The Okahandja Lineament zone represents a major suture within the Damara Belt, located on the Congo Craton and the Southern Zone, having formed above the Kalahari Plate. The lineament zone is a long-lived major crustal structure in the Damara Belt that has controlled early sedimentation and volcanism of the Nosib Group and later faulting during Karoo times. The Southern Zone is made up of a several thousand meter thick sequence of metaturbidites and represents the remnants of an accretionary prism, forming above the subduction zone of the Kalahari plate below the Congo Plate (Miller, 2008).

4.3 Hydrogeology

The only notable river that partially runs through the licence area is the Swakop River. There are a number of smaller tributaries that run through the licence area. The project area is underlain by a low-medium permeability aquifer with a low-medium productivity (yield).

4.4 Flora

In form, vegetation is generally sparse, with few trees and a thin variety of grass. Plant cover varies in relation to rainfall and so the eastern parts of Erongo have more grass and trees than the Western, coastal areas (Christian, 2005). The surrounding area is characterised by high botanical diversity. Based on the literature review, all the vegetation that are found within the vicinity of the area are considered to be of “medium” to “high” sensitivity against external conditions. The growing season is very short due to the semi-arid climate.

4.5 Fauna

The proposed mineral exploration area supports numerous faunal species but there are no species that are exclusive to the study area.

Larger types of animals such as zebras, giraffes, lions and elephants are very rare in this area. There are no species which are exclusively endemic to the exploration

area. Based on literature review, development of a mineral exploration project in the area will not have a negative impact on any of the species in the project area.

4.6 Avifauna (birds)

Simmons (2003) recorded 63 species of birds within the vicinity of the project area. 650 bird species are recorded in Namibia, of which 160 species are present in area, especially after good rains fall (Christian, 2005). These birds consist of raptors, chats, larks and karoid species. Christian (2005) recorded the presence of the following bird species in the vicinity of the area.

4.7 Heritage Sites

No rock art sites appear to be protected by National Council. No rock art sites appear to be in the area reserved exclusively for mineral exploration at this stage of the project. Should the proponent find any archaeological/rock art sites during the next project phase, these will be acknowledged and proper guidelines will be followed to have them protected.

4.8 Socio-Economic Environment

Although a few people might be negatively affected by dust and noise, the miner will ensure that these aspects are properly mitigated. With the potential employment of 10 people, this means that 10 families will benefit from the project. The project has great potential to improve livelihoods and make a contribution to sustainable development within the surrounding community. Community meetings will be held from time to time by the proponent wherever possible, with the purpose of effectively communicating with the local community and to avoid any unexpected social impacts.

5. Conclusion

The scoping report is prepared for the Environmental Impact Assessment for mineral exploration on an area which is located 40 km south of Karibib and covers farms Goas, Gamikaub, Anawood-sud, Kamandibmund and Dorsrivier. Environmental scoping is a critical step in the preparation of an EIA for the proposed mineral exploration activities.

Basically, mineral exploration is relatively unsophisticated and rudimentary. The methods that will be employed are mainly target generation, target drilling, resource evaluation and mineral resource definition.

With the potential employment of 10 people, this means that 10 families will benefit from the project during the exploration phase. The project has great potential to improve livelihoods and make a contribution to sustainable development within the surrounding community.

At this stage, electricity requirements for the project are minimal. The bulk of the power supply to the exploration site will be sourced from the proponent's own generator.

The potential negative impacts associated with the proposed mineral exploration project are expected to be low to medium in significance. Provided that the relevant mitigation measures are successfully implemented by the proponent, there are no environmental reasons why the proposed project should not be approved. The project will have significant positive economic impacts that would benefit the local, regional and national economy of Namibia.

Several other potential impacts have been addressed in Section 5 of this EIA, and will be managed through the implementation of the EMP.

The EMP contains a set of Environmental Specifications that will form part of all contracts between the proponent and contractors such as lubrication companies. The requirements of the EMP will be enforced on site by the Management team, and periodic environmental audits will be undertaken and submitted to MET.

ENVIRONMENTAL ASSESSMENT FOR MINERAL EXPLORATION ON EPL 4663, SOUTHERN NAMIBIA

FINAL SCOPING REPORT

Table of Contents

EXECUTIVE SUMMARY	2
1. Introduction	3
1.1 Overview	3
1.2 Location	3
1.3 Environmental Assessment Requirements	3
1.4 Project Alternatives	3
2. Summary of Applicable acts.....	4
3. Description of the proposed mineral exploration project	4
3.1 Services	5
4. Description of the current Environment	5
4.1 Climate conditions	5
4.2 Geology	6
4.3 Hydrogeology.....	6
4.4 Flora	6
4.5 Fauna	6
4.6 Avifauna (birds).....	7
4.7 Heritage Sites	7
4.8 Socio-Economic Environment.....	7
5. Conclusion	7
1. Project Background.....	14
1.1 Introduction	14
1.2 Project Location	17
1.3 Environmental Impact Assessment Requirements	18
1.4 Purpose of the Scoping Report	18
1.5 Project Alternatives	19
2. Summary of applicable legislation	20
2.1 Environmental Management Act of 2007	20

2.2 The Minerals Prospecting and Mining Act of 1992.....	20
2.3 Water Resources Management Act of 2004	20
2.4 Nature conservation ordinance, ordinance No. 4 of 1975	20
2.5 National Heritage Act, 2004 (Act No. 27 of 2004)	21
2.6 Petroleum Products and Energy Act No. 13 of 1990.....	21
2.7 Forest Act, No. 12 of 2001	21
2.8 Atmospheric Pollution Prevention Ordinance (1976)	22
2.9 Hazardous Substance Ordinance, No. 14 of 1974.....	22
2.10 Namibian Water Corporation (Act 12 of 1997)	23
3. Description of Proposed Mineral exploration Project.....	24
3.1 Introduction	24
3.2 Mineral Exploration Method	25
3.2.1 Target Generation.....	25
3.2.2 Target Drilling	27
3.2.3 Resource Evaluation.....	27
3.2.4 Resource Definition	28
3.3 Labour Requirements.....	28
3.4 Waste Dumps	28
3.5 Services	29
3.5.1 Electricity requirements	29
3.5.2 Water Supply	29
3.6 Infrastructure	29
3.6.1 Refuse and waste removal	29
3.6.2 IT Systems and communication	30
3.6.3 Security and Fencing	30
3.6.4 Buildings	30
3.6.5 Roads	30
3.6.6 Mobile Equipment	30
3.6.7 Fuel Distribution, storage and supply.....	31
3.6.8 Storage of Lubrication and consumables.....	31
3.6.9 Fire Fighting Provision	31
4. Description of the Current Environment	32
4.1 Introduction	32

4.2 Climatic Conditions	32
4.2.1 Temperature	32
4.2.2 Precipitation	33
4.2.3 Wind	34
4.2.4 Humidity.....	35
4.3 Geology.....	36
4.3.1 Geological setting	36
4.4 Hydrogeology and Water Resources	39
4.5 Flora.....	39
4.6 Fauna.....	41
4.6.1 Introduction	41
4.6.2 Amphibians	42
4.6.3 Mammals	43
4.6.4 Reptiles.....	44
4.7 Avifauna (Birds)	45
4.8 Archaeology	46
4.9 Socio-Economic Environment	46
4.9.1 Overview of the surrounding settlements.....	46
4.9.2 Social Economic Impact	47
5. Assessment of Impacts	48
5.1. Overall socio-economic benefits and issues	49
5.1.1. Socio-economic benefits.....	49
5.2. Mineral Exploration phases and associated issues.....	51
5.2.1. Mapping and Geochemical Sampling Phase of the Project	51
5.2.2. Drilling Phase of the Project.....	52
6. Environmental Management Plan	57
6.1 Overview	57
6.2 Environmental Management Principles.....	57
6.3 Impacts on the Bio-physical Environment	59
6.3.1 Impacts on Archaeological Sites	59
6.3.2 Impacts on Fauna	60
6.3.3 Impacts on Avifauna	61
6.3.4 Impact on Vegetation.....	61

6.3.5 Impacts of Alien invasive Plants	62
6.3.6 Impacts on Socio-Economic	62
6.3.7 Visual Impacts	63
6.3.8 Use of Natural Resources	63
6.3.9 Generation of Solid Waste	63
6.3.10 Noise	64
6.3.11 Air Quality	64
6.4 Summary of Environmental Management Plan during construction, operation and decommissioning phases	64
6.5 Monitoring, Auditing and Reporting	68
6.5.1 Inspections and Audits	68
6.5.2 Environmental Management System Framework	70
7. Public Participation Process	74
8. Conclusion	75
9. References	77
Appendix A	79
Appendix B	86

List of Figures

Figure 1 A satellite imagery showing the orientation of the mineral exploration licence.	14
Figure 2 A map showing the farms surrounding the mineral exploration licence.	16
Figure 3 Locality map of the exclusive prospecting licence area.....	17
Figure 4 A graph showing the temperature patterns in Karibib, from www.worldweatheronline.com.....	33
Figure 5 A graph showing rainfall patterns in Karibib, from www.worldweatheronline.com.....	34
Figure 6 A geological map of the area.....	38

List of Tables

Table 1 A table showing plant species which are likely to occur in the area	39
Table 2 Table of plant species which are protected under the Forestry Act and likely to occur in the area.....	41
Table 3 A list of amphibian species which may occur in the project area	42
Table 4 Mammal species which are likely to occur within the project area.....	44
Table 5 Protected reptile species in the project area.....	45
Table 6 Bird species which are likely to occur within the site area.	46
Table 7 Assessment methodology used to examine the impacts identified.....	48
Table 8 Impact evaluation for socio-economy	50
Table 9 Impact evaluation for the target generation phase of the project.....	52
Table 10 Impact evaluation for the operational phase of the project	55

1. Project Background

1.1 Introduction

The proponent, was granted an exclusive prospecting licence (EPL) by the Ministry of Mines and Energy. The licence holder intends to explore for rare earth elements (tantalite, Niobium etc) and industrial minerals (lithium) within the amphibolite and gneiss rock units that are found within the vicinity of the Karibib Formation Mountains. An outline of the area is shown in the image below.

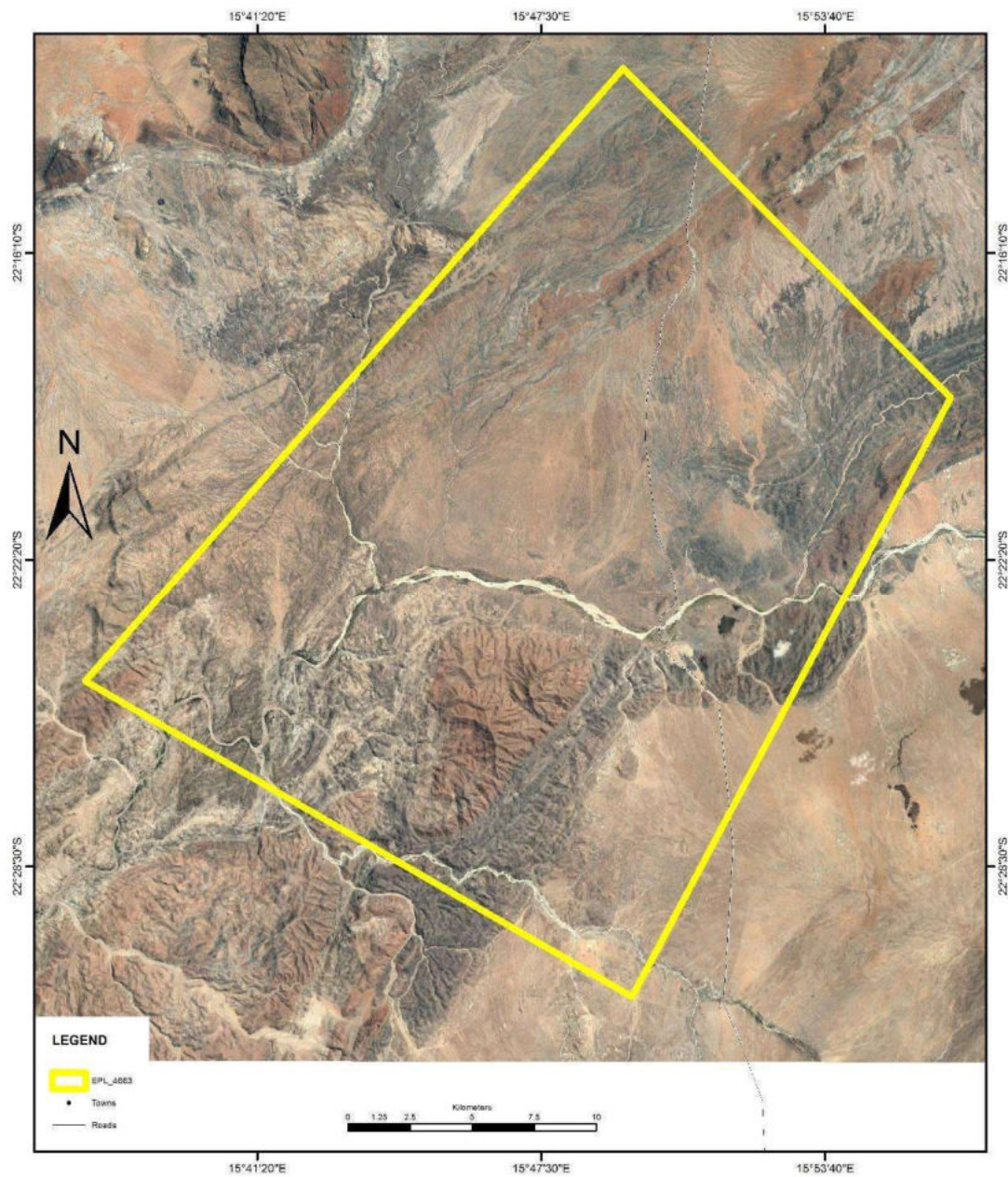


Figure 1 A satellite imagery showing the orientation of the mineral exploration licence.

Although mineral exploration is very costly and risky, environmentally friendly exploration is a cornerstone, yet the mineral exploration process must never be at the expense of people or the environment. Goas Pegmatite Exploration (Pty) Ltd believes that social and environmental responsibility is a prerequisite for providing a conducive environment for mineral exploration and future mining activities.

Impala Consulting cc was appointed by the proponent to undertake an Environmental Assessment (EA) and Environmental Management Plan (EMP) for the mineral exploration project. Figure 2 below shows the surrounding farms of the project area.

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

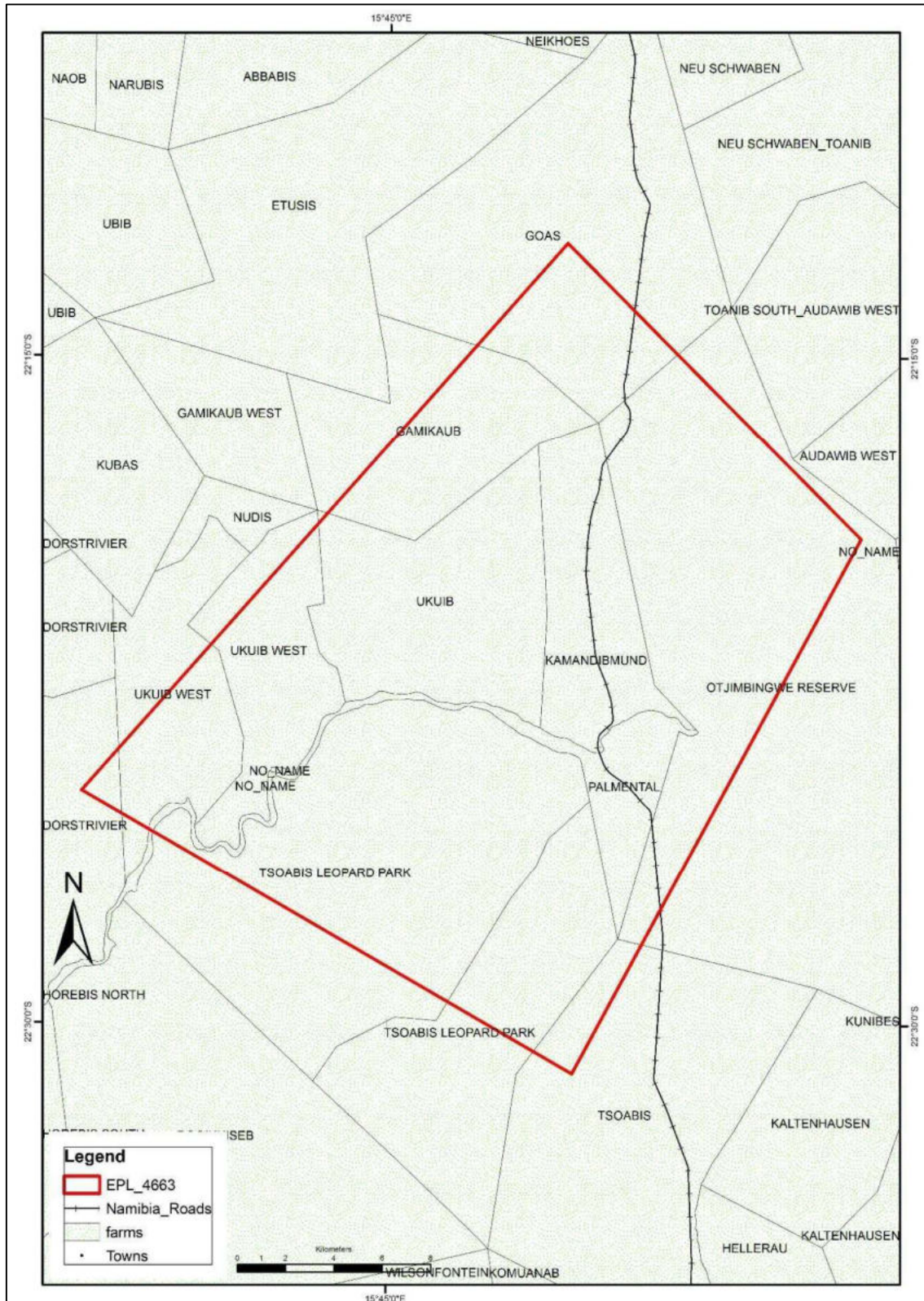


Figure 2 A map showing the farms surrounding the mineral exploration licence.

1.2 Project Location

The exclusive prospecting licence is located 40 km south of Karibib and covers farms Goas, Gamikaub, Anawood-sud, Kamandibmund and Dorsrivier. The coordinates for the centre of the tenement are 15°47'59.859"E and 22°22'1.034"S.

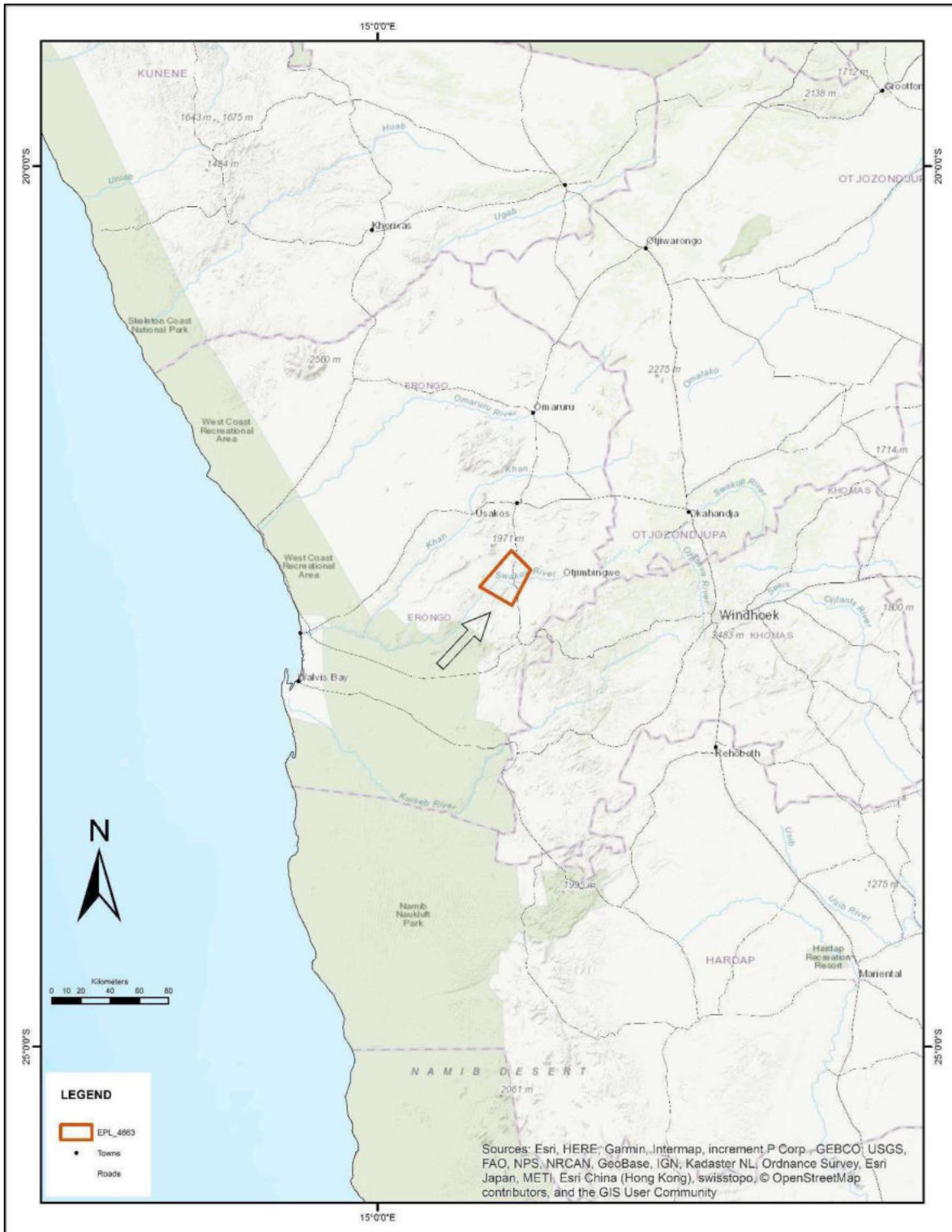


Figure 3 Locality map of the exclusive prospecting licence area

1.3 Environmental Impact Assessment Requirements

The Environmental Regulations procedure (GN 30 of 2012) stipulates that no mineral exploration activities may be undertaken without an environmental clearance certificate. As such, an environmental clearance certificate must be applied for in accordance with regulation 6 of the 2012 environmental regulations. It is imperative that the environmental proponent must conduct a public consultation process in accordance with regulation 21 of the 2012 environmental procedure, produce an environmental scoping report and submit an Environmental Management Plan for the proposed mineral exploration activities.

1.4 Purpose of the Scoping Report

The scoping report is prepared for the Environmental Impact Assessment for mineral exploration on an area which is located 40 km south of Karibib and covers farms Goas, Gamikaub, Anawood-sud, Kamandibmund and Dorsrivier. Environmental scoping is a critical step in the preparation of an EIA for the proposed mineral exploration activities. The scoping process identifies the issues that are likely to be most important during the EIA and eliminates those that are of little concern. The scoping process shall be concluded with the establishment of terms of reference for the preparation of an EIA, as set out by the Ministry of Environment and tourism. The purpose of this scoping report is to:

- Identify any important environmental issues to be considered before commencing with mineral exploration activities on the proposed mineral exploration sites.
- To identify appropriate time and space boundaries of the EIA study.
- To identify information required for decision-making.

As such, the key objectives of this scoping study are to:

- Inform the public about the proposed mineral exploration activities.
- Identify the main stakeholders, their comments and concerns.
- Define reasonable and practical alternatives to the proposal.
- To establish the terms of reference for an EIA study.

1.5 Project Alternatives

An alternative to the proposed mineral exploration activities would be to allocate the land-usage to other income generating activities such as tourism activities. Although the above mentioned activities may generate revenue for the government and provide employment to a few individuals, they may not have a significant impact on the surrounding community in comparison to the proposed mineral exploration project and potential mine. The proposed project will strictly employ locals from nearby towns and settlements.

2. Summary of applicable legislation

All mineral rights, related to mineral exploration activities in Namibia, are regulated by the Ministry of Mines and Energy whereas the environmental regulations are regulated by the Ministry of Environment and Tourism. The acts that affect the implementation, operation and management of mineral exploration activities in Namibia are shown below.

2.1 Environmental Management Act of 2007

Line Ministry: Ministry of Environment and Tourism

The regulations that accompany this act lists a number of activities that may not be undertaken without an environmental clearance certificate issued in terms of the Act. The act further states that any clearance certificate issued before the commencement of the act (6 February 2012) remains in force for one year. If a person wishes to continue with activities covered by the act, he or she must apply for a new certificate in terms of the Environmental Management Act.

2.2 The Minerals Prospecting and Mining Act of 1992

Line Ministry: Ministry of Mines and Energy

The Minerals Prospecting and Mining Act No.33 of 1992 approves and regulates mineral rights in relation to exploration, reconnaissance, prospecting, small scale mining, mineral exploration, large-scale mining and transfers of mineral licences.

2.3 Water Resources Management Act of 2004

Line Ministry: Ministry of Agriculture, Water and Forestry

The act provides for the management, protection, development, usage and conservation of water resources; to provide for the regulation and monitoring of water resources and to provide for incidental matters.

2.4 Nature conservation ordinance, ordinance No. 4 of 1975

Line Ministry: Ministry of Environment and Tourism

The Nature Ordinance 4 of 1975 covers game parks and nature reserves, the hunting and protection of wild animals (including reptiles and wild birds), problem animals, fish, and the protection of indigenous plants. It also establishes a nature

conservation board. The basic set of regulations under the ordinance is contained in GN 240/1976 (OG 3556). The topics covered in the regulations include tariffs (game parks), regulations relating to game parks, swimming baths, use of boats in game parks, inland fisheries, keeping game and other wild animals in capturing. In addition, the ordinance also regulates game dealers, game skins, protected plants, birds kept in cages, trophy hunting of hunt-able game, hunting at night, export of game and game meat, sea birds, private game parks, nature reserves, regulations of wildlife associations and registers for coyote getters.

2.5 National Heritage Act, 2004 (Act No. 27 of 2004)

Line Ministry/Body: National Heritage Council

The National Heritage Act provides for the protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish a National Heritage Council; to establish a National Heritage Register; and to provide for incidental matters.

2.6 Petroleum Products and Energy Act No. 13 of 1990

Line Ministry/Body: Ministry of Mines and Energy

The act regulates the importation and usage of petroleum products. The act reads as “To provide measures for the saving of petroleum products and an economy in the cost of the distribution thereof, and for the maintenance of a price thereof; for control of the furnishing of certain information regarding petroleum products; and for the rendering of services of a particular kind, or services of a particular standard; in connection with motor vehicles; for the establishment of the National Energy Fund and for the utilization thereof; for the establishment of the National Energy Council and the functions thereof; for the imposition of levies on fuel; and to provide for matters incidental thereof”.

2.7 Forest Act, No. 12 of 2001

Line Ministry/Body: Ministry of Agriculture, Water and Forestry

The act regulates the cutting down of trees and reads as follows “To 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 control and management of forest trees; to repeal the preservation of Bees and Honey proclamation 1923, preservation of Trees and Forests Ordinance, 1952 and the Forest Act, 1968; and to deal with incidental matters”.

The constitution defines the function of the Ombudsman and commits the government to sustainable utilization of Namibia’s natural resources for the benefit of all Namibians and describes the duty to investigate complaints concerning the over-utilization of living natural resources for the benefit of all Namibians and describes the duties to investigate complaints concerning the over-utilization of living natural resources, the irrational exploitation of non-renewable resources, the degradation and the destruction of ecosystem and failure to protect the beauty and character of Namibia. Article 95 states that “*the state 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 utilization of natural resources on a sustainable basis for the benefit of all Namibians both present and future*”.

2.8 Atmospheric Pollution Prevention Ordinance (1976)

Line Ministry/Body: Ministry of Health and Social Services

This ordinance provides for the prevention of air pollution and is affected by the Health Act 21 of 1988. Under this ordinance, the entire area of Namibia, with the exception of East Caprivi, is proclaimed as a controlled area for the purposes of section 4(1) (a) of the ordinance.

2.9 Hazardous Substance Ordinance, No. 14 of 1974

Line Ministry/Body: Ministry of Safety and Security

The ordinance provides for the control of toxic substances. It covers manufacture,

sale, use, disposal and dumping as well as import and export. Although the environmental aspects are not explicitly stated, the ordinance provides for the importing, storage and handling.

2.10 Namibian Water Corporation (Act 12 of 1997)

Line Ministry/Body: Namibian Water Corporation

The act caters for water rehabilitation of prospecting and mineral exploration areas, environmental impact assessments and for minimising or preventing pollution.

3. Description of Proposed Mineral exploration Project

3.1 Introduction

Lithium is an alkali metal, has a high specific heat capacity and is the lightest metal. Lithium is produced from a variety of geological sources, e.g., minerals such as spodumene, clays such as hectorite, salt lakes, and underground brine reservoirs etc. There are two broad categories of lithium sources, namely Rock and Brine sources. Rock sources include mineral sources such as spodumene, amblygonite, lepidolite, jadarite, as well as clay sources of lithium such as hectorite (Mohr, et al., 2012).

Typical mineral deposits have a lithium content of around 0.5%–2% Li. Often the lithium from minerals is concentrated to around 2%–4% Li and used in the ceramics and glass industry. The pegmatitic deposits of lithium, beryllium and cesium minerals in Namibia occur mainly in the Karibib - Usakos pegmatite district. The lithium minerals mined in this area, currently and in the past, include petalite, amblygonitemontebrazite, spodumene and lepidolite. Spodumene and eucryptite are associated with some rare metal pegmatites within the Cape Cross - Uis pegmatite belt. Most beryl has been produced from zoned rare metal pegmatites in the Karibib-Usakos and Karasburg Districts. The cesium aluminosilicate, pollucite, is a rare constituent of highly fractionated lithium pegmatites and has been mined at Helikon and Rubikon (Miller, 1992).

Brine sources, includes lithium found in salt water deposits, and include lakes, salars, oilfield brines, and geothermal brines. Due to uncertainty surrounding the viability of extraction lithium from seawater, seawater is currently excluded from brines. Typically, the brines are concentrated via evaporation ponds before the lithium is precipitated in the form of lithium chloride or lithium carbonate. Oilfield brines are underground brine reservoirs that are located with oil. Geothermal brines are underground brines naturally heated. Hectorite is a lithium bearing clay. Finally, jadarite is a newly discovered lithium-boron containing mineral. In determining the amount of lithium that can be produced from these sources, the terms Resource, Recoverable Resources and Ultimately Recoverable Resources will be used. First, the term Resource is the amount of lithium that is physically in a geologic deposit,

and the deposit is either currently commercially feasible for extraction or is likely to be in the future. The Recoverable Resources is the amount of the resource that is assumed to be extracted in the future (accounting for mining losses, and resources left in the deposit due to issues such as depth, grade, etc.). The Ultimately Recoverable Resources is the Recoverable resources plus all historic cumulative production. There are formal guidelines for calculating reserve and resource estimates in some countries, such as the JORC Code in Australia, NI 43-101 in Canada and SAMREC in South Africa, which all use the terms of ore reserves and mineral resources in distinct ways. In strict terms, ore reserves are profitably mineable at present, based on consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Mineral resources are similar to ore reserves but have had less assessment of the above factors and are hence less certain as to profitability. In general, most mineral resources are converted to ore reserves over time once a project is developed, mineral demands grow and so on (Mohr, et al., 2012).

3.2 Mineral Exploration Method

3.2.1 Target Generation

Lithium target generation involves certain stages, such as mapping, geochemical survey, geophysical survey, and remote sensing. Mapping includes development of the geological, topographical (base), geochemical, geophysical, and structural maps. Geological map focuses on identifying and mapping outcrops, describing mineralization and alteration zones, and making geological cross sections. In other words, it relies on the identification of rocks and minerals and the understanding of the environment in which they form. It aims to find what rock types occur at or close to the surface and how these rock types are related to each other, e.g., by defining their boundaries, ages, and structure. Topographical map, which is a base map, depicts the topographical features (contour, hill, stream, etc.). Geochemical map includes surface sample locations and results, including analyses of rock, silt, and soil samples. Geophysical map depicts the geology and results obtained from geophysical survey. Structural map shows the orientation data (strike, dip, type, etc.) of bedding planes, faults, folds, joints and other structural features. They are all

gathered to be used for the interpretation in lithium mineral exploration (Mentes, 2012).

3.2.1.1 Geochemical Survey

Geochemical survey is a kind of sampling method in mineral exploration and results in 'Assay' after laboratory works. Exploration geochemistry has evolved from its early origins using the chemistry of the environment surrounding a deposit in order to locate it. A wide variety of lithium bearing pegmatites can be chemically analyzed in laboratory for this survey. In mineral exploration studies, geochemical methods involve the geochemical analysis of geological materials, including rock, soil, and stream sediment or silt sediment. In addition to these surface samples, any materials obtained from drilling can be analyzed for the evaluation. The results of sampling may reveal patterns that point to the location of a potential lithium deposit, which may be present either underground or at the surface. This survey provides physical results to be worked on for the further interpretation and is used for identifying geochemical anomalies, which are used for geochemical mapping (Mentes, 2012). During the first phase, the type of sampling methods that will be applied are soil sampling, stream sediment sampling, and bulk sampling.

3.2.1.2 Geophysical Survey

Geophysical survey focuses on measuring physical characteristics (e.g., magnetism, density, conductivity) of rocks at or near the Earth's surface and uses surface methods to measure these properties to designate a potential lithium ore body. The measured values are then used to compare with the values and models of known lithium deposits. The results obtained from this survey are gathered together to make a geophysical anomaly maps, which is a good way for evaluation.

3.2.1.3 Remote Sensing

Remote Sensing, which is also useful for lithium exploration, is the collection of information about an object or area without being in physical contact with it. Data gathering systems used in remote sensing are photographs obtained from manned space flights or airborne cameras, and electronic scanner or sensors such as

multispectral scanners in satellites or airplanes and TV cameras, all of which record data digitally. Aerial photography and satellites allow people to work with modern techniques. Aerial photography is used to sense the amount (quantity) of mineral in a particular area. The mineral exploration team collects information such as tracks, roads, fences, and habitation, as well as maps of outcrops, regolith, and vegetation cover across a region. Landsat image (satellite imagery) is used both for the visible light spectrum over mineral exploration (Mentes, 2012).

3.2.2 Target Drilling

Target drilling is the process whereby rigs or some operated tools are used to make boreholes to intercept a lithium ore body. It can be done by contractors with more experienced operators. This method is used to obtain very detailed information about rock types, mineral content, and rock fabric, and the relationships between rock layers close to the surface and those at depth. Then, subsurface geology in a particular area is evaluated after the results are obtained. That indicates if the potentially economic resources are present or not. In general, the purpose of drilling is to: determine the absence or presence of lithium ore bodies, define the volume of and depth to the ore body; estimate reserve of ore body reservoir. Then, ore deposit is discovered before it is decided to be mined (Mentes, 2012). During the first exploration phase, RC Drilling and Diamond Drilling methods will likely be employed.

3.2.3 Resource Evaluation

It is an evaluation of tonnage (volume) and grade (concentration or weight percent) of the ore body. The volume is determined by using drill data to outline the deposit in the subsurface, and by using geometric models to calculate the volume. The grade is the average concentration determined from numerous assays of drill samples. The purpose of the resource evaluation is to understand the possibility to expand the known size of the deposit and mineralization. In this way, the economic standards of an ore body are obtained, which is needed for the next step. This step should give an information or idea about proceeding of mineral exploration activities. Resources at this work are determined during exploration and do not provide certain results of grade and tonnage. In order to get an exact size, quality of the commercial mineral,

‘reserve definition’, which is next step of mineral exploration studies, is used (Mentes, 2012).

3.2.4 Resource Definition

Reserve definition is important to transform a lithium mineral resource into economic asset, which is an ore reserve and find the answer if it is valuable or not. ‘Reserve’ is more intensive, technical, and well characterized term with its exact quality and size relative to ‘Resource’. Also, reserve estimation may be changed over time because of the assessments during and after the mining. The main purpose of this stage is the making decision on the techniques just before extraction as a result of the results. It includes technical, economic evaluation, geotechnical assessment, and engineering studies of the rocks surrounding the deposit to determine the potential parameters of proposed open pit or underground mining methods. At the end of this process, a feasibility study is published, and the ore deposit is supposed either uneconomic or economic. At this stage, a decision is made whether to mine the mineral deposit from the surface, called as ‘open-pit mining’, or by tunneling, called as underground mining (Mentes, 2012).

3.3 Labour Requirements

The proponent intends to employ more than 5-15 personnel, including 3 management staff for the first phase of the project. The employees will be sourced from the local community including people from Karibib. All employees will undergo a safety induction, first aid training course and wildlife awareness program. The Labour Act of 2007 will be adhered to at all times.

3.4 Waste Dumps

In choosing a waste dumpsite, the following aspects will be strongly considered by the explorer:

- Topography
- Land-use in the area
- The presence of any hazardous geological structures

- Groundwater considerations
- The prevailing wind direction in the area
- Visual impacts that the waste dump might have
- Presence of surface water in the vicinity of the area
- Presence of sensitive ecological areas

Since the area covers privately owned farms, all waste will be transported and disposed out of the area.

3.5 Services

3.5.1 Electricity requirements

At this stage, electricity requirements for the project are minimal. The bulk of the power supply to the exploration site will be sourced from the proponent's own generator. The power requirements for the proposed project will be minimal as power will only be required for the following activities:

- Emergency lighting
- Powering small machinery during the mineral exploration process
- Power supply for temporary office block or container if necessary.

3.5.2 Water Supply

For the purpose of the scoping study costing requirements, a separate geo-hydrological study will be undertaken at an advanced stage of the EIA. The water requirements for the project are minimal. Water containers will be brought on site and utilised whenever necessary. The water will mostly be used for general consumption and cleaning. The water used for diamond drilling or RC drilling will be recycled.

3.6 Infrastructure

3.6.1 Refuse and waste removal

The proponent will negotiate directly with all suppliers of consumables such as grease, oil etc. to remove these materials for disposal once they have been used

and need to be discarded. The proponent will provide adequate temporary sanitary facilities and such facilities must be maintained in a hygienic condition. Sewerage must be disposed off in a manner not polluting the environment. The proponent will remove all refuse pertaining to the proponent's activities, domestic or otherwise, from the property. The Miner will undertake environmental rehabilitation, both during and at the conclusion of the mineral exploration operations.

3.6.2 IT Systems and communication

Provision will be made for two-way radios to enable the drill rig operators and the on-site staff to communicate effectively.

3.6.3 Security and Fencing

No provision has been made for fencing although strict access to and from the drilling site will be facilitated by personnel.

3.6.4 Buildings

At this stage, no exploration camp will be set up and so provision will be made for pre-fabricated buildings and containers.

3.6.5 Roads

Access to the mineral exploration sites is limited as there are currently no convenient roads, except for 4x4 tracks. From Windhoek, the mineral exploration site will be accessed via the C32 road from the B2 main road. Thereafter, a separate gravel road will be constructed by the proponent during the drilling phase and will be 6m wide with a 150mm selected fill (G5) gravel wearing course.

3.6.6 Mobile Equipment

The proponent's vehicle fleet will be optimised during the next project phase. Provision will be made for:

- 4x4 Vehicles

3.6.7 Fuel Distribution, storage and supply

During the drilling phase, diesel will be delivered to a small temporary on-site fuel storage facility by road transport and offloaded into the storage tanks by offloading pumps.

3.6.8 Storage of Lubrication and consumables

During the drilling phase, consumables and lubricants will be stored in a designated area within a container. These substances will only be used for mechanical purposes and are assumed to be non-hazardous.

3.6.9 Fire Fighting Provision

Portable fire-extinguishers will be fitted, as required, in vehicles and, as well as in the mobile containers where possible.

4. Description of the Current Environment

4.1 Introduction

This section aims to document the present state of the environment, the likely impact of changes being planned and the regular monitoring to attempt to detect changes in the environment. The project area is positioned at the interface of the Nama Karoo, Desert Biome and Savannah in Namibia (Barnard, 1998). As such, this area represents a high fauna diversity.

Namibia has four very large and arid regions which set them apart in various ways from the rest of the country; Kunene and Erongo region in the west and Karas and Erongo in the south (Mendelsohn, et al., 2002). Rainfall in Erongo is usually both low and variable which implies that years of abundant rain are often followed by extreme dry conditions (Mendelsohn, et al., 2002). Mammals, birds, reptiles and amphibians are generally spaced out within the region due to low rainfall. The eastern parts of the Erongo region have more trees and grass than the Western, coastal areas (Mendelsohn, et al., 2002). As such, farming ventures are challenging with low livestock densities in most parts of the Erongo Region.

There is generally an absence of fences in most parts of the Erongo Region. This makes livestock farming easier which means that both wild and domestic animals can move widely in many places, migrating from areas of poor grazing to other places with more abundant pastures.

4.2 Climatic Conditions

4.2.1 Temperature

In the proposed mineral exploration area, January is the warmest month with an average temperature of 32-34°C at noon. July is the coldest month with an average temperature of 8-10°C at night. Karibib, which is in the vicinity of the project area, has distinct temperature seasons, the temperature varies during the year.

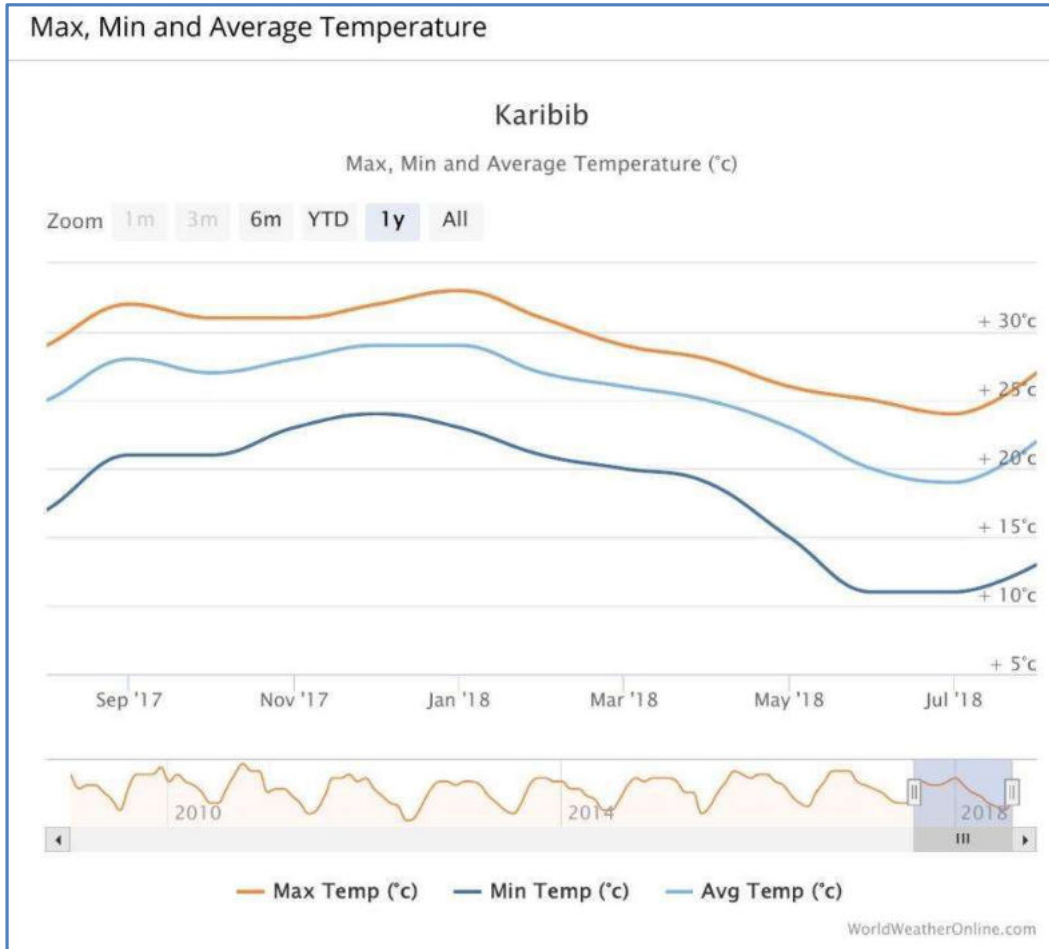


Figure 4 A graph showing the temperature patterns in Karibib, from www.worldweatheronline.com

In winter, temperatures can get to below degrees centigrade. Overall, winters are mild in temperature, with coldest month most often being July.

4.2.2 Precipitation

In the mineral exploration area, the highest rainfall is usually experienced in February which may reach 70 mm with average rainfall days of 7. In January months, rain-fall may reach about 40 mm with average rainfall days. The graph below shows the rainfall patterns in the area.

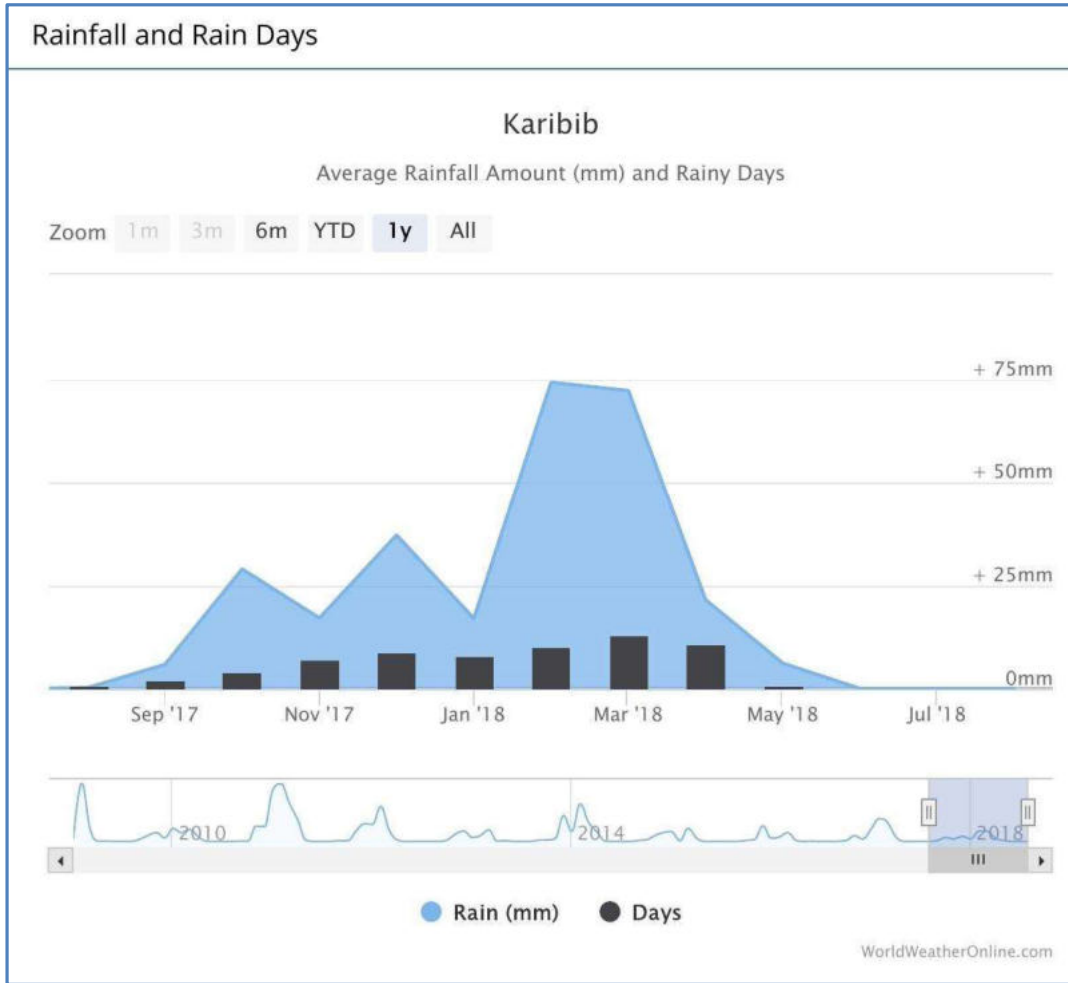
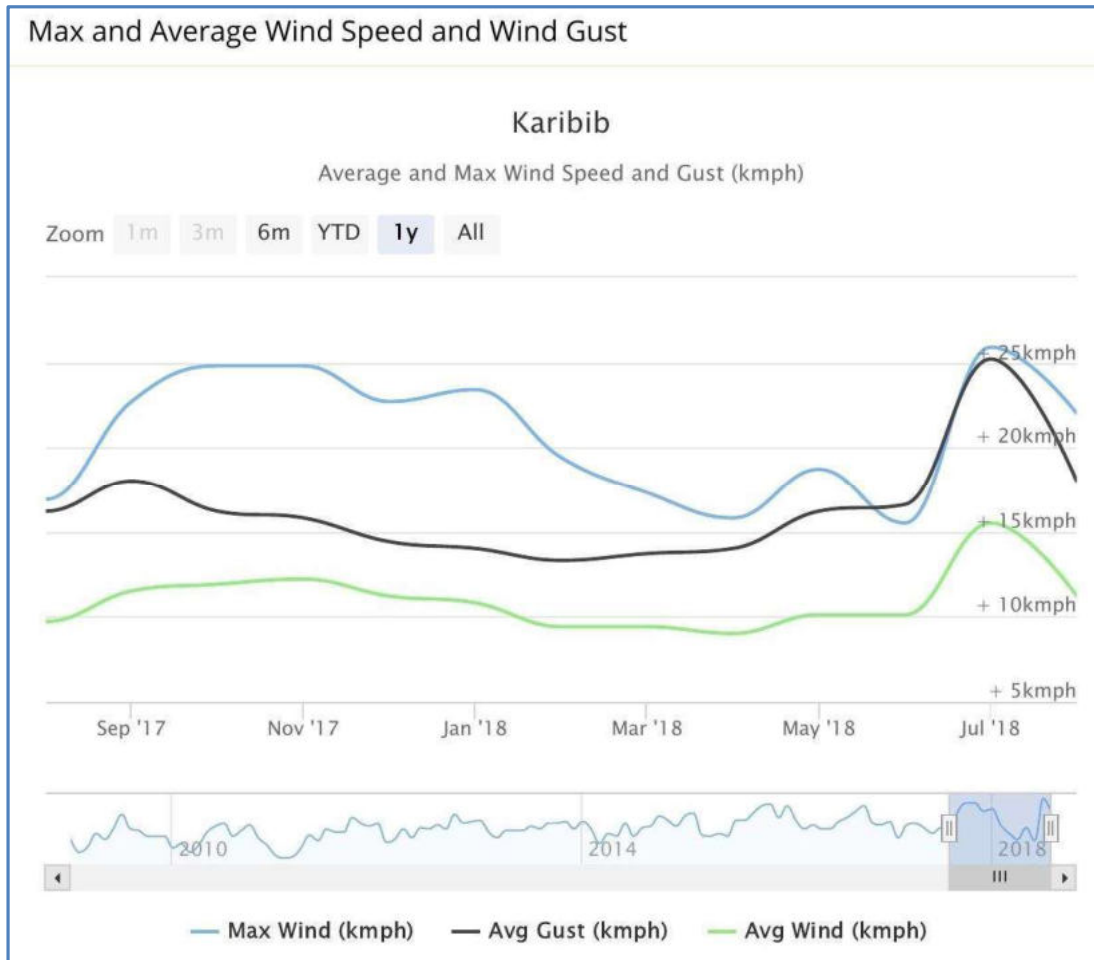


Figure 5 A graph showing rainfall patterns in Karibib, from www.worldweatheronline.com

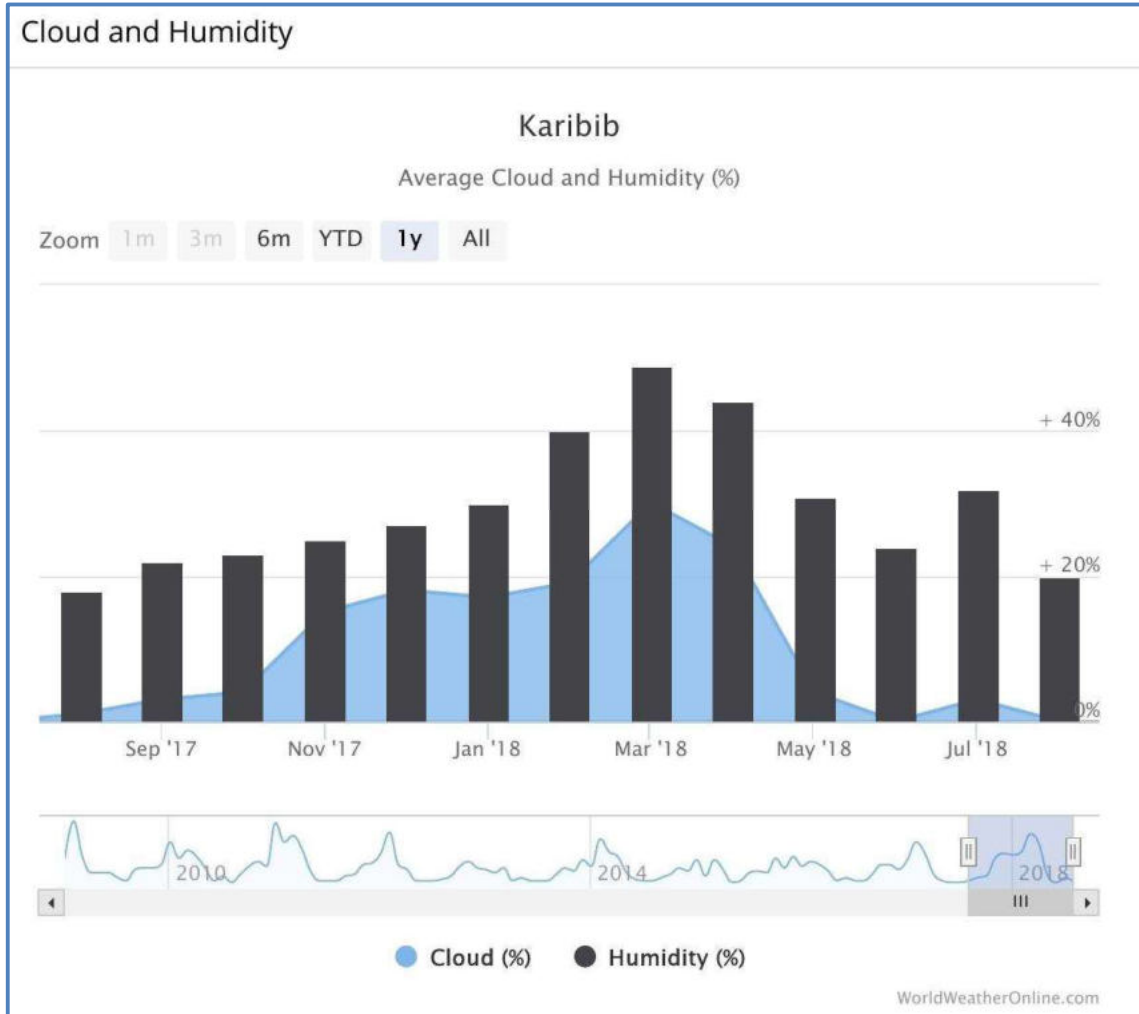
4.2.3 Wind

Predominantly south easterly. Southerly, easterly and northerly airflow is common. The karibib area is subject to erratic winds and considerable discrepancies in spite of short distances, due to the hilly terrain. The graph below depicts the wind patterns in the area. The highest wind speeds are attained in July as shown by the graph below.



4.2.4 Humidity

The relative humidity during the least humid months of the year, i.e. August and September, is around 20% and the most humid month is March with 40-50% humidity. Namibia has a low humidity in general, and the lack of moisture in the air has a major impact on its climate by reducing cloud cover and rain and increases the rate of evaporation.

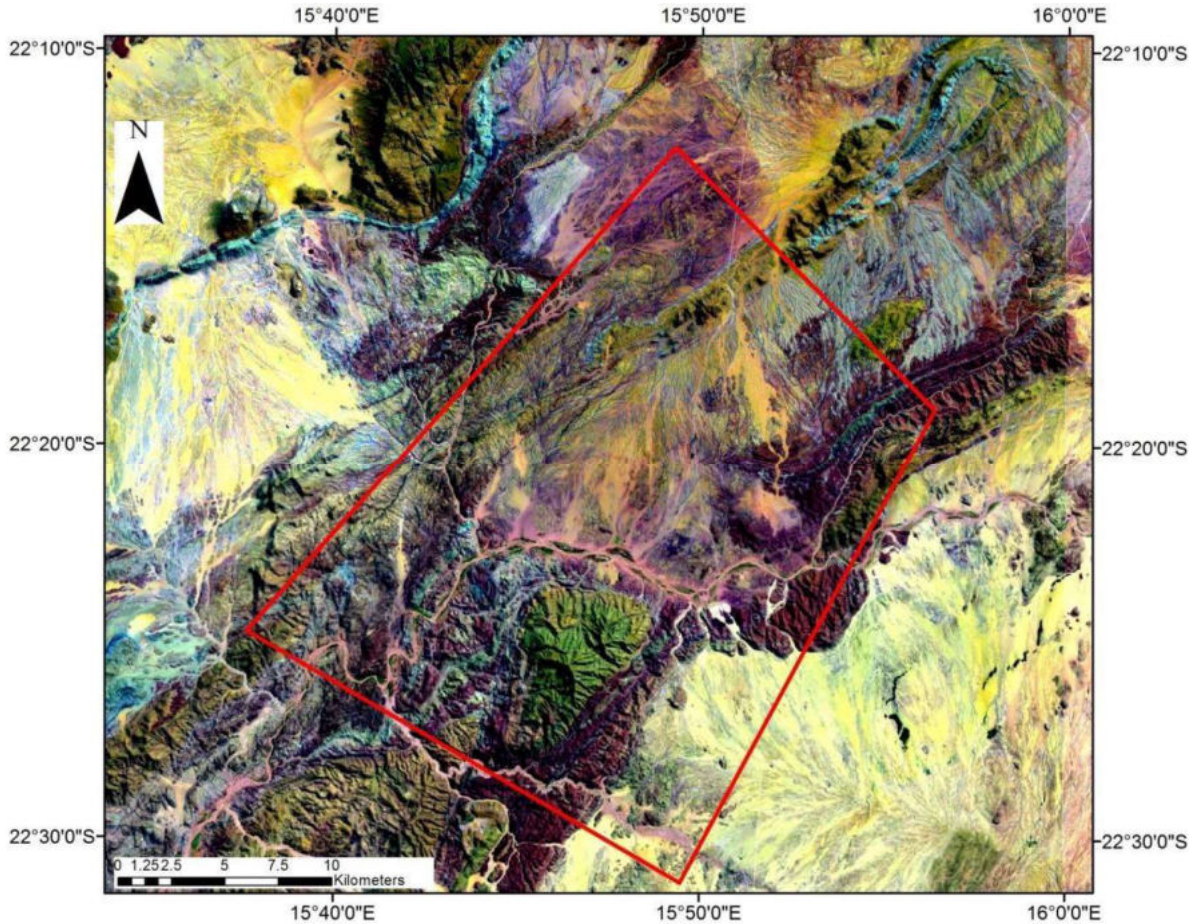


4.3 Geology

4.3.1 Geological setting

The EPL area falls at the boundary of the Okahandja Lineament Zone (“OLZ”) and the Southern Zone (“SZ”) of the Damara Orogen. The Okahandja Lineament zone represents a major suture within the Damara Belt, located on the Congo Craton and the Southern Zone, having formed above the Kalahari Plate. The lineament zone is a long-lived major crustal structure in the Damara Belt that has controlled early sedimentation and volcanism of the Nosib Group and later faulting during Karoo times. The Southern Zone is made up of a several thousand meter thick sequence of metaturbidites and represents the remnants of an accretionary prism, forming above the subduction zone of the Kalahari plate below the Congo Plate (Miller, 2008).

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL EXPLORATION ON EPL 4663, CENTRAL NAMIBIA



Units or lithologies that underlie the EPL area include predominantly various granodiorite or diorite gneiss rocks with subordinate reddish salem granites that flank the north-south trending Karibib-Otjimbingwe road. Contact schists flank the low lying granites before being crapped by more resistant quartzites and metasediments. Some parts of the exploration area are covered by more resistant quartzites and metasediments. Some parts of the exploration area are covered with a thin pavement of loose gravel and partial sand debris.

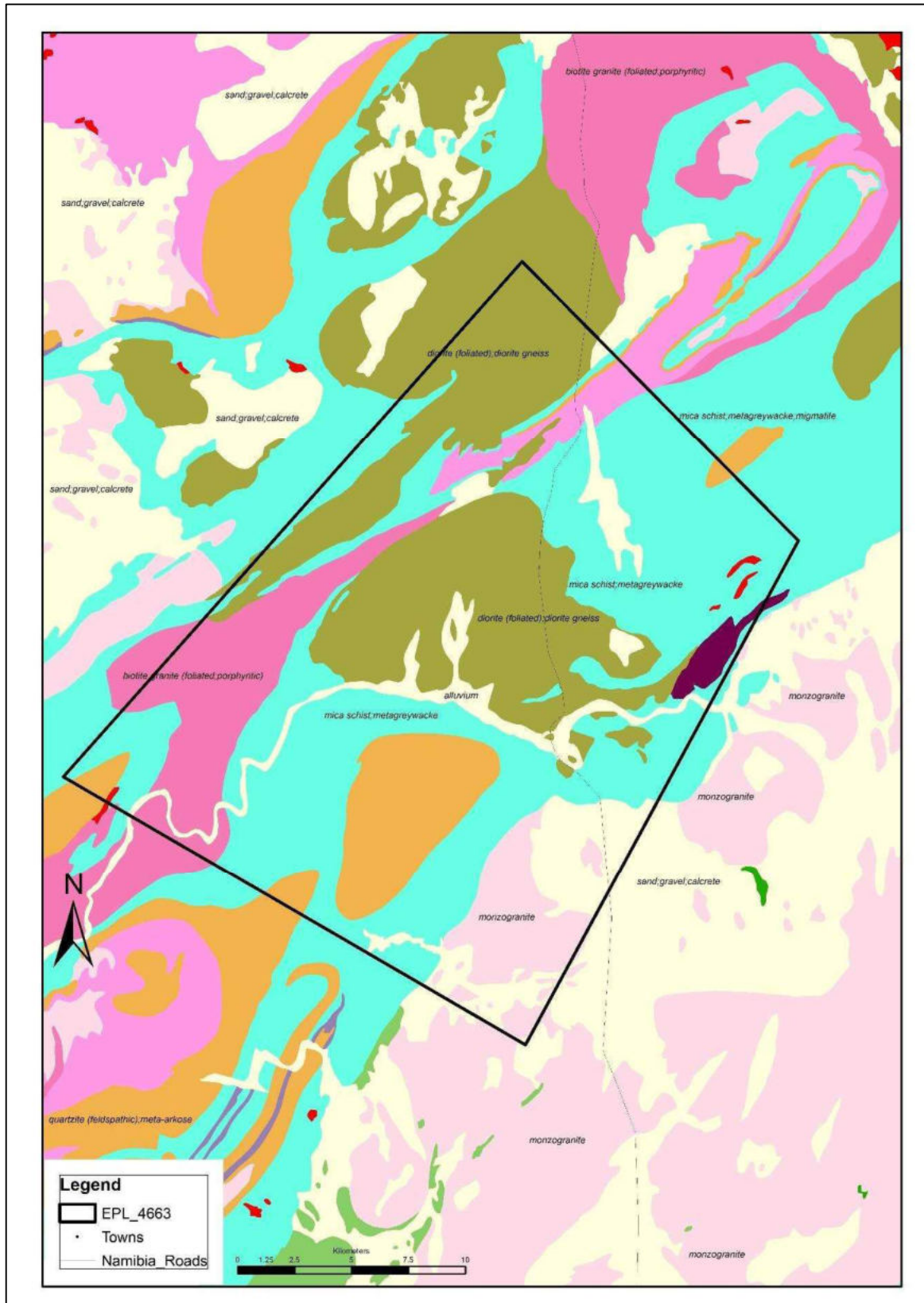


Figure 6 A geological map of the area

4.4 Hydrogeology and Water Resources

The only notable river that partially runs through the licence area is the Swakop River. There are a number of smaller tributaries that run through the licence area. The project area is underlain by a low-medium permeability aquifer with a low-medium productivity (yield).

4.5 Flora

Rainfall in the Erongo Region is usually both low and extremely variable which means that years of abundant rain often followed by extreme dry conditions (Mendelsohn, et al., 2002). In form, vegetation is generally sparse, with few trees and a thin variety of grass. Plant cover varies in relation to rainfall and so the eastern parts of Erongo have more grass and trees than the Western, coastal areas (Christian, 2005). The surrounding area is characterised by high botanical diversity. Based on the literature review, all the vegetation that are found within the vicinity of the area are considered to be of “medium” to “high” sensitivity against external conditions. The growing season is very short due to the semi-arid climate.

Grass is dependable on rainfall, which in-turn causes livestock and other animals to suffer during periods of minimal rainfall (Burke, 2003). The mineral exploration area, which is semi-arid, contains diverse vegetation species which include a number of species endemic to Namibia. Table 1 below lists the different plant species which are most likely to occur within the project area.

Table 1 A table showing plant species which are likely to occur in the area

SCIENTIFIC NAME	COMMON NAME	STATUS IN NAMIBIA
<i>Acacia erioloba</i>	Camel thorn	Protected
<i>Acacia mellifera</i>	Black thorn	Secure
<i>Acacia reficiens</i>	False umbrella thorn	Secure
<i>Acacia haematoxylon</i>	Grey camel thorn	Protected
<i>Acacia erubescens</i>	Blue thorn	Secure
<i>Acacia karroo</i>	Sweet thorn	Secure
<i>Acacia tortolis</i>	Umbrella thorn	Secure
<i>Acacia hereroensis</i>	False hook-thorn	Secure
<i>Commiphora tenuipetiolata</i>	White-stem corkwood	Secure
<i>Aloe littoralis</i>		Protected
<i>Ozoroa crassinervia</i>	Namibian resin tree	Near endemic, protected

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

<i>Boscia albitrunca</i>	Shepherd's tree	Protected
<i>Albizia anthelmintica</i>	Worm-bark false-thorn	Protected
<i>Ziziphus mucronata</i>	Buffalo-thorn	Protected
<i>Catophractes alexandri</i>	Trumpet thorn	Secure
<i>Combretum apiculatum</i>	Red bush willow	Secure
<i>Commiphora dinteri</i>		Endemic
<i>Commiphora glandulosa</i>	Tall common corkwood	Secure
<i>Commiphora glaucescens</i>	Blue-leaved corkwood	Near endemic
<i>Croton gratissimus</i>	Lavender fever-berry	Secure
<i>Cyphostemma bainesii</i>		Endemic, protected
<i>Dichrostachys cinerea</i>	Sickle bush	Secure
<i>Diospyros lycioides</i>	Blue bush	Secure
<i>Dombeya rotundifolia</i>	Common wild pear	Endemic
<i>Ehretia alba</i>		Secure
<i>Elephantorrhiza suffruticosa</i>		Secure
<i>Euclea pseudebenus</i>	Ebony tree	Protected
<i>Euclea undulata</i>	Common guarri	Secure
<i>Euphorbia guerichiana</i>	Western woody milk bush	Secure
<i>Euphorbia virosa</i>		Secure
<i>Ficus cordata</i>	Namaqua fig	Protected
<i>Ficus ilicina</i>	Laurel fig	Secure
<i>Ficus sycomorus</i>	Common cluster fig	Protected
<i>Grewia bicolor</i>	White raisin	Secure
<i>Grewia flava</i>	Velvet raisin	Secure
<i>Grewia flavescens</i>	Sand paper raisin	Secure
<i>Gymnosporia senegalensis</i>	Red spike-thorn	Secure
<i>Ipomoea adenioides</i>		Secure
<i>Lycium bosciifolium</i>		Secure
<i>Lycium cinereum</i>		Secure
<i>Lycium eenii</i>		Secure
<i>Lycium hirsutum</i>		Secure
<i>Lycium villosum</i>		Secure
<i>Maerua juncea</i>		Secure
<i>Maerua schinzii</i>	Ringwood tree	Protected
<i>Manuleopsis dinteri</i>		Endemic
<i>Melianthus comosus</i>		Secure
<i>Obetia carruthersiana</i>		Near endemic
<i>Pechuel-Loeschea leubnitziae</i>		Secure
<i>Sterculia africana</i>	African star-chestnut	Protected
<i>Tarchonanthus camphoratus</i>		Secure
<i>Tetragonia schenckii</i>		Secure
<i>Vernonia cinerascens</i>		Secure
<i>Searsia (Rhus) ciliata</i>		Secure

<i>Searsia (Rhus) lancea</i>	Karree	Protected
<i>Searsia (Rhus) marlothii</i>		Secure

The density of vegetation in the vicinity of the mineral exploration site is fairly sparse. Every effort will be made to protect the existing trees and shrubs, as these are very important to the ambience and visual appeal of the mineral exploration site. A vegetation expert will be consulted throughout the lifecycle of the mineral exploration program. The protected plant species in the project area are shown in the table below.

Table 2 Table of plant species which are protected under the Forestry Act and likely to occur in the area.

SCIENTIFIC NAME	COMMON NAME
<i>Acacia erioloba</i>	Camel thorn
<i>Acacia haematoxylon</i>	Grey camel thorn
<i>Albizia anthelmintica</i>	Worm-bark false-thorn
<i>Boscia albitrunca</i>	Shepherd's tree
<i>Euclea pseudebenus</i>	Ebony tree
<i>Ficus cordata</i>	Namaqua fig
<i>Ficus sycomorus</i>	Common cluster fig
<i>Maerua schinzii</i>	Ringwood tree
<i>Ozoroa crassinervia</i>	Namibian resin tree
<i>Searsia (Rhus lancea)</i>	Karree
<i>Sterculia Africana</i>	African star-chestnut

4.6 Fauna

4.6.1 Introduction

The information is based on a detailed literature review and a site visit which was carried out on the 15th to 16th of September 2018. The purpose of the Fauna literature review is to identify all potential amphibians, reptiles, and mammals expected on the project area and the surrounding farms in the vicinity of the mineral exploration area. The proposed mineral exploration area supports numerous faunal species but there are no species that are exclusive to the study area.

Larger types of animals such as zebras, giraffes, lions and elephants are very rare in this area. There are no species which are exclusively endemic to the exploration area. Based on literature review, development of a mineral exploration project in the area will not have a negative impact on any of the species in the project area.

4.6.2 Amphibians

Based on the literature review, there are generally 14 types of amphibian species that occur in project area. Nine of these amphibian species occur abundantly, two occur rarely and six of them occur uncommonly. Griffin (1998) highlighted that amphibian species are declining throughout the world due to various factors such as climate change and habitat destruction. There are approximately 4000 species of amphibians worldwide of which over 200 species are present in Southern Africa and 57 in Namibia (Griffin, 1998). However, this low figure may be due to the lack of detailed studies carried out on amphibians. The table below shows the different amphibian species that are likely to occur within the study area.

Table 3 A list of amphibian species which may occur in the project area

SCIENTIFIC NAME	COMMON NAME	STATUS	OCCURRENCE	REFERENCE
PLATANNAS				
<i>Xenopus laevis</i>	COMMON PLATANNA	SECURE	ABUNDANTLY	(Daudin, 1802)
TOADS				
<i>Breviceps adspersus</i>	BUSHVELD RAIN FROG	SECURE	ABUNDANTLY	Peters, 1882
<i>Bufo dombensis</i>	DOMBE DWARF TOAD	ENDEMIC & INADEQUETLY KNOWN	ABUNDANTLY	Bocage, 1895
<i>Bufo poweri</i>	MOTTLED TOAD	SECURE	ABUNDANTLY	Hewitt, 1935
FOSSORIAL FROGS				
<i>Phrynomantis affinis</i>	SPOTTED RUBBER FROG	AMBIGUOUS (RARE?)	RARELY	(Boulenger, 1901)
<i>Phrynomantis bifasciatus</i>	BANDED RUBBER FROG	SECURE	ABUNDANTLY	(Smith, 1848)

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

SAND FROGS, BULLFROGS, RIDGED FROGS, CACOS, PUDDLE FROGS etc.				
<i>Cacosternum boettgeri</i>	COMMON CACO	SECURE	ABUNDANTLY	(Boulenger, 1882)
<i>Hildebrandtia ornata</i>	ORNATE FROG	SECURE	UNCOMMONLY	(Peters, 1878)
<i>Phrynobatrachus mababiensis</i>	MABABE PUDDLE FROG	SECURE	UNCOMMONLY	FitzSimons, 1932
<i>Phrynobatrachus natalensis</i>	SNORING PUDDLE FROG	SECURE	UNCOMMONLY	(A. Smith, 1849)
<i>Pyxicephalus adspersus</i>	GIANT BULLFROG	SECURE	ABUNDANTLY	Tschudi, 1838
<i>Tomopterna krugerensis</i>	KNOCKING SAND FROG	SECURE	RARELY	Passmore et al, 1975
<i>Tomopterna tandyi</i>	TANDY'S SAND FROG-	SECURE	ABUNDANTLY	Channing et al, 1996
TREE FROGS, REED FROGS & KASSINAS				
<i>Kassina senegalensis</i>	BUBBLING KASSINA	SECURE	ABUNDANTLY	(Dumèril et al, 1841)

4.6.3 Mammals

Based on the literature review, there are generally about 68 species of mammals expected to occur within the immediate area. There are generally 25 species which rarely occur, 2 species that occur seasonally, 4 that occur occasionally, and 33 that occur abundantly within the project area. Considering the relative size of the mineral exploration area, the mammal fauna will not be affected by the mineral exploration activities of the proponent. Namibia is seemingly well endowed with mammal diversity with around 250 species known to be present within the country (Griffin, 1998). There are currently 14 mammal species which are considered to be endemic to Namibia, including 11 species of rodents and small carnivores which are not well known. Griffin (1998), points out that most of these endemic mammals are associated with the Namib and Escarpment with 60% of these appearing to be rock-dwelling species. The author, Griffin (1998) further highlights that the endemic mammal fauna is best characterized by the endemic rodent family *Petromuridae* (Dassie rat) and the rodent genera *Gerbillurus* and *Petromyscus*. The table below shows the mammal species which are likely to occur within the study area. A full list, of mammal species that are likely to occur within the area, is in the appendix section at the end.

Table 4 Mammal species which are likely to occur within the project area.

SCIENTIFIC NAME	COMMON NAME
<i>Acinonyx jubatus</i>	Cheetah
<i>Antidorcas marsupialis</i>	Springbok
<i>Atelerix frontalis angolae</i>	Southern African Hedgehog
<i>Canis mesomelas</i>	Black-backed Jackal
<i>Caracal caracal</i>	Caracal
<i>Crocuta crocuta</i>	Spotted Hyena
<i>Cynictis penicillata</i>	Yellow Mongoose
<i>Equus zebra hartmannae</i>	Hartmann's Mountain Zebra
<i>Felis nigripes</i>	Black-footed Cat
<i>Felis silvestris/lybica</i>	African Wild Cat
<i>Galerella sanguinea</i>	Slender Mongoose
<i>Genetta genetta</i>	Small Spotted Genet
<i>Ictonyx striatus</i>	Striped Polecat
<i>Lepus capensis</i>	Cape Hare Secure
<i>Lepus saxatilis</i>	Scrub Hare
<i>Manis temminckii</i>	Ground Pangolin
<i>Mellivora capensis</i>	Honey Badger/Ratel
<i>Oreotragus oreotragus</i>	Klipspringer
<i>Oryx gazella</i>	Gemsbok
<i>Otocyon megalotis</i>	Bat-eared Fox
<i>Panthera pardus</i>	Leopard
<i>Parahyaena (Hyaena) brunnea</i>	Brown Hyena
<i>Phacochoerus africanus</i>	Common Warthog
<i>Proteles cristatus</i>	Aardwolf
<i>Raphicerus campestris</i>	Steenbok
<i>Suricata suricatta marjoriae</i>	Suricate
<i>Sylvicapra grimmia</i>	Common Duiker
<i>Tragelaphus strepsiceros</i>	Greater Kudu
<i>Vulpes chama</i>	Cape Fox

4.6.4 Reptiles

The literature review showed that there are approximately 60 reptile species that are

expected to occur in the site area. According to the Namibia Conservation Ordinance of 1975, there are four reptile species protected, namely:

Table 5 Protected reptile species in the project area

SCIENTIFIC NAME	COMMON NAME	STATUS
Psammobates Oculiferus	Kalahari Tent Tortoise	Protected
Python Natalis	Southern African Python	Protected
Geochelone Pardalis	Leopard Tortoise	Protected
Varanus Albigularis	Veld Leguaan	Protected

Griffin (1998) highlighted the presence of 261 species of reptiles which are present in Namibia. These reptiles make up 30% of the reptile species found on the continent. 55 species of Namibian Lizards are classified as endemic (Griffin, 1998). The author, Griffin (1998), describes that more than 60% of the reptiles found in Namibia are protected by the conservation Ordinance. Although mineral exploration activities do affect reptile habitat, the small scale project will not have any significant impact on the reptile species within the proposed mineral exploration area. Namibia, with 129 species of lizards, has one of the continent's richest lizard Fauna. The table in the appendix shows the reptile species which are likely to occur within the vicinity of the mineral exploration area.

4.7 Avifauna (Birds)

Simmons et al (2003) points that although Namibia's Avifauna is comparatively sparse compared to the high rainfall equatorial areas elsewhere in Africa, approximately 658 species have already been recorded with a diverse unique group of arid endemics. There are approximately 650 species of birds that have been recorded in Namibia, although the country's avifauna is comparatively sparse compared to the high rainfall equatorial areas in Africa (Brown & Lawson, 1989). Brown et al (1989) mentions that 14 species of birds are endemic or near endemic to Namibia with the majority of Namibian endemics occurring in the Savannah of which ten species occur in a north-south belt of dry Savannah in Central Namibia. Simmons (2003) recorded 63 species of birds within the vicinity of the project area. 650 bird species are recorded in Namibia, of which 160 species are present in area,

especially after good rains fall (Christian, 2005). These birds consist of raptors, chats, larks and karoid species. Christian (2005) recorded the presence of the following bird species in the vicinity of the area, which include:

Table 6 Bird species which are likely to occur within the site area.

SCIENTIFIC NAME	COMMON NAME
Agapornis roseicollis	Rosy-faced Lovebird
Eupodotis rueppellii	Rüppell's Korhaan
Lanioturdus torquatus	White-tailed Shrike
Parus carpi	Carp's Tit
Phoeniculus damarensis	Violet Wood-Hoopoe
Poicephalus rueppellii	Rüppell's Parrot
Pternistis hartlaubi	Hartlaub's Spurfowl
Tockus damarensis	Damara Hornbil
Tockus monteiri	Monteiro's Hornbill

A full list of bird species within the area is shown in the appendix.

4.8 Archaeology

No rock art sites appear to be in the area reserved exclusively for mineral exploration at this stage of the project. Should the proponent find any archaeological/rock art sites during the next project phase, these will be acknowledged and proper guidelines will be followed to have them protected.

4.9 Socio-Economic Environment

4.9.1 Overview of the surrounding settlements

The closest town to the project is Karibib. It has 3,800 inhabitants and owns 97 square kilometres of town land. Karibib is the district capital of the Karibib electoral constituency. It is situated on the Khan River, halfway between Windhoek and Swakopmund on the B2 (Trans-Kalahari Highway), the main road between the

Walvis Bay and Johannesburg. The town is known for its aragonite marble quarries and the Navachab Gold Mine.

Karibib is connected to the TransNamib railway network; Karibib Railway Station is situated downtown. The next station to the west is Kranzberg, the junction for the branch railways to Tsumeb and Grootfontein from the line to the capital Windhoek.

North of the town is the location of the headquarters of the Namibian Air Force at the Karibib Air Base, housing the Command of the Air Force. The air base has an 2,600 metres asphalt runway, parallel paved taxiways and apron. Karibib was downgraded from municipal to town status in 2010. It is now governed by a town council that has seven seats.

4.9.2 Social Economic Impact

Although a few people (including farmers) and animals might be negatively affected by dust and noise, the explorer will ensure that these aspects are properly mitigated. With the potential employment of 10 people, this means that 10 families will benefit from the project during the exploration phase. The project has great potential to improve livelihoods and make a contribution to sustainable development within the surrounding community. Community meetings will be held from time to time by the proponent wherever possible, with the purpose of effectively communicating with the local community and to avoid any unexpected social impacts.

5. Assessment of Impacts

The purpose of this assessments of impacts section is to identify and consider the most pertinent environmental impacts and to provide possible mitigation measures that are expected from the mineral exploration activities on EPL 4663. Two different phases are associated with the proposed development. Firstly, the target generation (mapping and sampling) phase, and secondly the drilling phase are being covered by this assessment. Should the mineral exploration activities cease in the future, an EIA will need to be conducted to deal with the associated changes to environment. Mitigation measures for the identified impacts are also provided in this Section.

The following assessment methodology was used to examine each impacts identified:

Table 7 Assessment methodology used to examine the impacts identified

Evaluation Criteria	Symbol	Significance of Rating
Nature of impact:	P or N	Effect the proposed activity would have on the affected environment which is positive (P) or negative (N)
Extent of impact:	O	On-Site (the site and it's immediate surrounds)
	L	Local (Mineral exploration Area)
	R	Regional (Erongo Region)
	N	National (Namibia)
	I	International
Duration of impact:	SD	Short Duration (0 to 5 years)
	MD	Medium Duration (5 to 15 years)
	LD	Long Duration (lifetime of the development)
Intensity of impact:	L	Low intensity where the natural, cultural and social functions and processes are not affected.
	M	Medium intensity where the affected environment is altered but natural, cultural and social functions and processes can continue.
	H	High intensity where the affected environment is altered to the extent that natural, cultural and social functions and processes will temporarily or permanently cease.
Probability of impact:	LP	Low probability is when the possibility of the impact occurring is low.
	P	Probable is when there is a distinct possibility that it will occur.
	HP	Highly probable is when the impact is most likely to occur.
	D	Definite where the impact will occur.

Significance of Impact: Further subdivided into impacts with mitigation (MM) measures and impacts with no mitigation measures (NMM).	L	Low Significance is when natural, cultural, social and economic functions and processes are not affected. If the impacts are adverse, mitigation is either easily achieved or little will be required, or both. If impacts are beneficial, alternative means of achieving this benefit are likely to be easier, cheaper, more effective and less time-consuming
	M	Medium Significance is when the affected environment is altered but natural, cultural, social and economic functions and processes can continue. An impact exists but is not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of beneficial impacts, other means of achieving this benefit are about equal in time, cost and effort.
	H	High Significance is when the affected environment is altered to the extent that natural, cultural, social and economic functions and processes will temporarily or permanently cease. If impacts are adverse, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time consuming or a combination of these. In the case of beneficial impacts, the impact is of a Substantial order within the bounds of impacts that could occur.

5.1. Overall socio-economic benefits and issues

5.1.1. Socio-economic benefits

With the potential employment of 10 people, this means that 10 families will benefit from the project during the exploration phase. The project has great potential to improve livelihoods and make a contribution to sustainable development within the surrounding community. Community meetings will be held from time to time by the proponent wherever possible, with the purpose of effectively communicating with the local community and to avoid any unexpected social impacts.

5.1.1.1. Potential Direct Benefits

Direct capital investment: The mineral exploration project will require a significant capital investment of at least N\$ 10 million. This will be used for mapping, sampling and drilling.

Stimulation of skills transfer: Due to the nature of mineral exploration operations, the proponent will implement ad-hoc training programme for some of its staff members. Training programmes will be well structured and staff members will permanently benefit from these training programmes.

Job creation: With the potential employment of 10 people, this means that 10 families will benefit from the project during the on-going phase. The project has a great potential to improve livelihoods and make a contribution to sustainable development within the surrounding community.

5.1.1.2. Potential Indirect Benefits

- The data generated from the exploration programme will be made available to the Ministry of Mines and Energy for future research purposes.
- General enhancement of the health conditions and quality of life for a few people in the surrounding settlements.
- Of significance is the prospect of diversification of the surrounding economy, which is presently mainly focussed on small-scale farming and small-scale mining of semi-precious stones.

5.1.1.3. General socio-economic concerns

Notwithstanding the above benefits there are a few concerns that could reduce or counteract the above benefits related to the project, as follows:

- As the movement of staff and contractors to and from the area increases, the risk of spread of HIV/AIDS increases.
- Increased influx of people to the area as people come in search of job opportunities during the target generation and drilling phase of the mineral exploration project; and
- Increased informal settlement and associated problems.

Table 8 Impact evaluation for socio-economy

Identified Impact	Significance		Duration	Extent	Intensity	Probability
	NMM	MM				
Increased spread of HIV/AIDS	M	L	LD	N	M	LP
Increased influx of people to the area	L	L	SD	L	L	P
Increased informal settlement in the area	M	L	MD	L	L	LP

5.2. Mineral Exploration phases and associated issues

5.2.1. Mapping and Geochemical Sampling Phase of the Project

The following potential effects on the environment during the target generation phase of the mineral exploration project have been identified:

5.2.1.1. Dust

Dust may be generated during this phase and might be aggravated during the winter months when strong winds occur. Dust will be generated by the vehicles moving in the area. Fall out dust settling on vegetation is likely to cause local disruptions in herbivorous and predatory complexes, and should be minimised as far as possible.

5.2.1.2. Noise

Noise will most likely be generated by vehicles during the target generation phase. It is recommended that vehicle movement be limited to normal daytime hours to allow nocturnal animals to roam freely at night.

5.2.1.3. Safety and Security

During mapping and sampling, small tools and equipment will be used on site. This increases the possibility of injuries and the responsible manager must ensure that all staff members are briefed about the potential risks of injuries on site. The manager is further advised to ensure that adequate emergency facilities, including first aid kits, are available on site. All Health and Safety standards specified in the Labour Act should be complied with.

Should a camp be necessary at a later stage, it should be located in such a way that it does not pose a risk to the community members and wildlife that roam the area.

5.2.1.4. Visual

The proposed exploration area is situated more than 1 km from any main road. As such, any visual impact that might be caused by the exploration team are minimal. In some parts of the area, the topography of the mineral exploration site is slightly elevated.

Table 9 Impact evaluation for the target generation phase of the project

Identified	Significance		Duration	Extent	Intensity	Probability
	NMM	MM				
Impact						
Dust	L	L	SD	L	L	P
Noise	M	L	SD	L	M	D
Safety & Security	L	L	SD	O	L	P
Visual	L	L	MD	O	L	LP

5.2.2. Drilling Phase of the Project

During the operation phase of the project, a few holes will be drilled into the orebody. For the purpose of conveniently refuelling company vehicles without driving long distances, a small fuel storage tank will be kept on site.

5.2.2.1. Air Quality

In terms of air quality, emissions will be given off by 4x4 vehicles and the drill rig but not to an extent that warrants concern. Dust will also be produced by the drill rig and the movement of vehicles in the area.

5.2.2.2. Fire and Explosion Hazard

Hydrocarbons are volatile under certain conditions and their vapours in specific concentrations are flammable. If precautions are not taken to prevent their ignition, fire and subsequent safety risks may arise.

All fuel storage and handling facilities in Namibia must however comply with strict safety distances as prescribed by SANS 10089. SANS 10089 is adopted by the Ministry of Mines and Energy as the national standard.

It must further be assured that sufficient water is available for fire fighting purposes. In addition to this, all personnel have to be sensitised about responsible fire protection measures and good housekeeping such as the removal of flammable materials including rubbish, dry vegetation, and hydrocarbon-soaked soil from the vicinity of the exploration area. Regular inspections should be carried out to inspect and test fire fighting equipment and pollution control materials at the drilling site.

All fire precautions and fire control at the site must be in accordance with SANS 10089-1:1999, or better. A holistic fire protection and prevention plan is needed.

Experience has shown that the best chance to rapidly put out a major fire, is in the first 5 minutes. It is important to recognise that a responsive fire prevention plan does not solely include the availability of fire fighting equipment, but more importantly, it involves premeditated measures and activities to timeously prevent, curb and avoid conditions that may result in fires. An integrated fire prevention plan should be drafted before drilling.

5.2.2.3. Generation of Waste

Waste in the form of contaminated soil due to minor spillage might occur, but should be prevented through the use of containment areas as provided. Solid waste will also be generated from contractors, staff members and other visitors to the area. Care should be taken when handling waste material.

5.2.2.4. Health and Safety

The drilling programme operations can cause serious health and safety risks to workers on site. Occupational exposures are normally related to the dermal contact with fuels and inhalation of fuel vapours during handling of such products. For this reason adequate measures must be brought in place to ensure safety of staff on site, and includes:

- Proper training of operators;
- First aid treatment;
- Medical assistance;
- Emergency treatment;
- Prevention of inhalation of fumes;
- Protective clothing, footwear, gloves and belts; safety goggles and shields;
- Manuals and training regarding the correct handling of materials and packages should be in place and updated as new or updated material safety data sheets becomes available;

- And Monitoring should be carried out on a regular basis, including accident reports.

5.2.2.5. Fauna

Mineral exploration activities may have minor disturbances on the habitat of a few species but no significant impacts on the animals are expected. The proponent shall ensure that no animal shall be captured, killed or harmed by any of the employees in any way. Wildlife poaching will strongly be avoided as this is an offence and anyone caught infringing in this regard will face suspension from the project, and will be liable for prosecution.

5.2.2.6. Vegetation

The natural vegetation is seemingly undisturbed in the project area except for grasses, which have been grazed by livestock and wild animals. Some vegetation species in the area may be adversely impacted by the project. The type of vegetation that might be affected by the project are:

- Bushes
- Ephemeral grasses
- Small trees

Some of the sensitive vegetation types in the area include:

- Shallow drainage line vegetation
- Scrublands surrounding the mineral exploration area

Certain species regarded as particularly important for conservation may yet be identified and made known via an Addendum to this report. If particularly important species are found, they will be located by GPS and their locations communicated to the Ministry of Environment and Tourism. Such locations will then be demarcated and completely avoided.

5.2.2.7. Avifauna

Birds or Nest sites will not be disturbed by any employee, tourist or contractor.

Should the employees observe any bird nesting sites for vultures, they will be reported to the Ministry of Environment and Tourism and the site will be avoided.

5.2.2.8. Alien Invasive Plants

Disturbance to the natural environment often encourages the establishment of alien invasive weed species. Some of the plant species that could become invasive in the area are listed below:

- *Prosopis glandulosa*
- *Lantana camara*
- *Cyperus esculentus*
- *Opuntia imbricate*
- *Cereus jamacara*
- *Melia azedarach*
- *Harissia martini*

There are numerous ways in which invasive species can be introduced deliberately or unintentionally.

5.2.2.9 Heritage Impacts

Although no archaeological sites have been identified yet in the project area, appropriate measures will be undertaken upon discovering any new archaeological sites. All archaeological remains are protected under the National Heritage Act (2004) and will not be destroyed, disturbed or removed. The Act also requires that any archaeological finds be reported to the Heritage Council Windhoek.

Table 10 Impact evaluation for the operational phase of the project

Identified Impact	Significance		Duration	Extent	Intensity	Probability
	NMM	MM				
Air Quality	M	L	LD	L	M	HP
Fire & Explosion Hazard	H	M	SD	O	M	LP
Generation of waste	M	L	LD	O	L	D
Health and Safety	H	M	MD	N	L	P
Fauna	M	L	MD	L	M	D
Vegetation	M	L	MD	L	M	D
Avifauna	M	L	MD	L	M	LP
Alien Invasive Plants	M	L	MD	L	M	P

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

Heritage	M	L	LD	O	H	LP
-----------------	---	---	----	---	---	----

6. Environmental Management Plan

6.1 Overview

This Environmental Management Plan is intended to give effect to the recommendations of the Environmental Impact Assessment. To achieve this goal, it is essential that all personnel involved on the mineral exploration are fully aware of the environmental issues and the means to avoid or minimize the potential impacts of activities on site. The proposed mineral exploration activities are summarized in Section 3 of the scoping report above. Legal and policy requirements are well known and understood by the proponent, its employees and contractors and will be strictly enforced by its management team. A general description of the environment is contained in Section 4, and more site specific information on particularly sensitive areas is contained in Section 4 as well. Issues and concerns identified in the EIA will form a set of environmental specifications that will be implemented on site. It is the intention that these environmental specifications should form the basis for an agreement between the proponent and the Ministry of Environment and Tourism. By virtue of that agreement, these specifications will become binding on the proponent.

Environmental management requires a joint effort on the part of all parties involved. The proponent has assigned certain roles to ensure that all players fulfil their responsibilities in this regard.

6.2 Environmental Management Principles

The proponent will ensure that all parties involved in the project uphold the following broad aims:

1. All persons will be required to conduct all their activities in a manner that is environmentally and socially responsible. This includes all consultants, contractors, and sub-contractors, transport drivers, guests and anyone entering the exploration areas in connection with the mineral exploration project.
2. Health, Safety and Social Well Being

- Safeguard the health and safety of project personnel and the public against potential impacts of the project. This includes issues of road safety, precautions against natural dangers on site, and radiation hazards; and,
- Promote good relationships with the local authorities and their staff.

3. Biophysical Environment

- Wise use and conservation of environmental resources, giving due consideration to the use of resources by present and future generations;
- Prevent or minimise environmental impacts;
- Prevent air, water, and soil pollution, Biodiversity conservation and Due respect for the purpose and sanctity of the area.

To achieve these aims, the following principles need to be upheld.

A. Commitment and Accountability:

The proponent's senior executives and line managers will be held responsible and accountable for:

Health and safety of site personnel while on duty, including while travelling to and from site in company vehicles and environmental impacts caused by mineral exploration activities or by personnel engaged in the mineral exploration activities, including any recreational activities carried out by personnel in the area

B. Competence

The proponent will ensure a competent work force through appropriate selection, training, and awareness in all safety, health and environmental matters.

C. Risk Assessment, Prevention and Control

Identify, assess and prioritise potential environmental risks. Prevent or minimize priority risks through careful planning and design, allocation of

financial resources, management and workplace procedures. Intervene promptly in the event of adverse impacts arising.

D. Performance and Evaluation

Set appropriate objectives and performance indicators. Comply with all laws, regulations, policies and the environmental specifications. Implement regular monitoring and reporting of compliance with these requirements.

E. Stakeholder Consultation

Create and maintain opportunities for constructive consultations with employees, authorities, other interested or affected parties. Seek to achieve open exchange of information and mutual understanding in matters of common concern.

F. Continual Improvement

Through continual evaluation, feedbacks, and innovation, seek to improve performance with regard to social health and well-being and environmental management throughout the lifespan of the mineral exploration project.

G. Financial Provisions for Mineral exploration

In line with Namibia's environmental rehabilitation policy, the proponent will make the necessary financial provision for compliance with the EMP.

6.3 Impacts on the Bio-physical Environment

6.3.1 Impacts on Archaeological Sites

The **nature of impact** is outlined below:

- Potential damage to archaeological sites as a result of vehicle tracks, footprints and actions of contractors, employees and visitors of the mineral exploration site.
- As the mitigation measures below are fully enforced, any impact will be significantly reduced compared to with present situation.

Mitigation Measures to be enforced:

- Buffer zones will be created around the sites.
- Adhere to practical guidelines provided by an archaeologist to reduce the archaeological impact of mineral exploration activities.
- All archaeological sites to be identified and protected before further exploration commences.
- Notices/information boards will be placed on sites.
- Training employees regarding the protection of these sites.

Methods for monitoring:

- An archaeologist will inspect any identified archaeological sites before commencing with the mineral exploration activities.

6.3.2 Impacts on Fauna

The **nature of impact** is outlined below:

- Movement of vehicles in and out of the site.
- Noise produced by moving earth-moving equipment.

Mitigation Measures to be enforced:

- Some habitat areas such as trees of the riverbeds and tunnels outcrops will be avoided wherever possible.
- A fauna survey will be conducted to determine the effect of fragmented habitat on game species should the need arise.
- No animals shall be killed, captured or harmed in any way.
- No foodstuff will be left lying around as these will attract animals which might result in human-animal conflict.
- Care will be taken to ensure that no litter is lying around as these may end up being ingested by wild animals

- No animals shall be fed. This allows animals to lose their natural fear of humans, which may result in dangerous encounters.

Methods for monitoring:

- Regular monitoring of any unusual signs of animal habitat.

6.3.3 Impacts on Avifauna

Birds or Nest sites will not be disturbed by any employee, visitor or contractor..

6.3.4 Impact on Vegetation

The **nature of impact** is outlined below:

- Negative impacts on plants from trenching, compacting and removal of plants.
- Negative Impact from movement of vehicles and the movement of people around the site.
- Negative impacts from land-clearing and mineral exploration operations.

Mitigation Measures to be enforced:

- Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating.
- Paths and roads will be aligned to avoid root zones. Permeable materials will be used wherever possible.
- The movement of vehicles in river beds, rocky outcrops and vegetation sensitive areas will be avoided.
- The movement of vehicles will be restricted to certain tracks only.
- Areas with species of concern will be avoided.
- Ministry of Environment and Tourism will be informed of any protected species which will be transplanted in consultation with MET.

6.3.5 Impacts of Alien invasive Plants

The **nature of impact** is outlined below:

- Plant or seed material may adhere to car tyres or animals
- Seed or plant material may be imported to site in building materials if the source is contaminated.
- Seeds may blow from debris removed at sites.

Mitigation Measures to be enforced:

- The explorer will ensure that debris is properly disposed off.
- Vehicle tyre inspections can be carried out although this may not be a practical mitigation measure.
- Eradicating alien plants by using an Area Management Plan

Methods for monitoring:

- Regular monitoring of any unusual signs of alien species.

6.3.6 Impacts on Socio-Economic

The **nature of impact** is outlined below:

- Impact from loss of grazing for domestic livestock in “exclusive use zone”
- Impacts on cultural and spiritual values.
- Demographic factors: Attraction of additional population that cannot benefit from the project.
- Perception of Health and Safety risks associated with mineral exploration.

Mitigation Measures to be enforced:

- The population change can be mitigated by employing people from the local community and encouraging the contractors to employ local individuals.

- The perception of risks will be mitigated by putting up safety signs wherever possible and ensuring that all employees and visitors to the site undergo a safety induction course.

Methods for monitoring:

- Public meetings will be held by the proponent whenever necessary.

6.3.7 Visual Impacts

The **nature of impact** is outlined below:

- Tracks and damaged vegetation caused by the mineral exploration vehicles.

Mitigation Measures to be enforced:

- Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating.

Methods for monitoring:

- Employees will be trained on the importance of minimising visual impacts.

6.3.8 Use of Natural Resources

Water and electricity is very scarce in Namibia. During the exploration, best international practices will be considered as a minimum standard for operation. The bulk of the power supply to the exploration site will be sourced from the proponent's own generator. The proponent will maximise water recycling opportunities wherever possible.

6.3.9 Generation of Solid Waste

Correct management of solid waste will involve a commitment to the full waste life cycle by all the employees and contractors of the site. The Proponent's goal is to avoid the generation of solid waste in the first place and if not possible, to minimise the volumes generated by looking at technologies that promote longevity and recycling of products. Ideally, the proponent should transport solid waste to a registered site for disposal. However, it is not certain if such facilities are available in the area or if they have the capacity to handle large increases in volume. Appropriate on site facilities will be designed to store large volumes of waste.

6.3.10 Noise

The **nature of impact** is outlined below:

- Movement of people, and vehicles.
- Noise may be generated from an airborne geophysical survey which may be carried out at a later stage.

Mitigation Measures to be enforced:

- Disturbance to fauna that roam the area will be minimized by training the employees on ways to minimise noise.

6.3.11 Air Quality

The **nature of impact** is outlined below:

- Dust from movement of people, vehicles and earth-moving machinery. Emissions from vehicles and drill rigs as well.

Mitigation Measures to be enforced:

- All staff on should be equipped with dosimeters that measure exposure levels to radiation.
- All staff must be made aware of the health risk and obliged to wear dust masks.

6.4 Summary of Environmental Management Plan during construction, operation and decommissioning phases

Construction/Initial Phase			
Environmental Impact	Proposed mitigation measures	Responsibility	Monitoring plan

**A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA**

Air pollution	<ul style="list-style-type: none"> Control speed and operation of construction vehicles. Prohibit idling of vehicles. Maintenance of vehicles and equipment. Sensitize field exploration workers and contractors. Workers should be provided with dust masks if working in sensitive areas. 	<ul style="list-style-type: none"> Contractor Site Manager 	<ul style="list-style-type: none"> Amount of dust produced. Level of Landscaping carried out.
Noise pollution	<ul style="list-style-type: none"> Maintain equipment and vehicles. Field work should only be carried out only during daytime i.e. 08h00 to 17h00. Workers should wear ear muffs if working in noisy section. Management to ensure that noise is kept within reasonable levels. 	<ul style="list-style-type: none"> Contractor Management 	Amount of noise
Solid waste	<ul style="list-style-type: none"> Any debris should be collected by a waste collection company If trenches are dug, waste should be re-used or backfilled. The site should have waste receptacles with bulk storage facilities at convenient points to prevent littering during exploration. 	<ul style="list-style-type: none"> Management 	Presence of well Maintained receptacles and central collection point.
Oil leaks and spills	<ul style="list-style-type: none"> Vehicles and equipment should be well maintained to prevent oil leaks. Contractor should have a designated area where maintenance is carried out and that is protected from rain water. All oil products should be handled carefully. 	<ul style="list-style-type: none"> Contractor 	No oil spills and leaks on the site
First aid	<ul style="list-style-type: none"> A well-stocked first aid kit shall be maintained by a qualified personnel 	<ul style="list-style-type: none"> Management 	Contents of the first aid kit.
Visual	<ul style="list-style-type: none"> Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating. 	<ul style="list-style-type: none"> Management 	<ul style="list-style-type: none"> Employees will be trained on the importance of minimising visual impacts.
Archaeological Sites	<ul style="list-style-type: none"> Buffer zones will be created around the sites. Adhere to practical guidelines provided by an archaeologist to reduce the archaeological impact of mineral exploration activities. All archaeological sites to be identified and protected before further exploration commences. 	<ul style="list-style-type: none"> Management 	<ul style="list-style-type: none"> Register of all archaeological sites identified.
Occupational Health and Safety	<ul style="list-style-type: none"> Provide Personal Protective Equipment Train workers on personal safety and how to handle equipment and machines. A well-stocked first aid kit shall be maintained by a qualified personnel. Report any accidents / incidences and treat and Compensate affected workers. Provide sufficient and suitable sanitary conveniences which should be kept clean. 	<ul style="list-style-type: none"> Contractor Management 	<ul style="list-style-type: none"> Workers using Protective Equipment. Presence of Well stocked First Aid Box. Clean sanitary facilities.
Fauna	<ul style="list-style-type: none"> Some habitat areas such as trees of the riverbeds and tunnels outcrops will be avoided wherever possible. A fauna survey will be conducted to determine the effect of fragmented habitat on game species should the need arise. No animals shall be killed, captured or harmed in any way. 	<ul style="list-style-type: none"> Management 	<ul style="list-style-type: none"> Regular monitoring of any unusual signs of animal habitat.

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

	<ul style="list-style-type: none"> No foodstuff will be left lying around as these will attract animals which might result in human-animal conflict. 		
Alien Invasive Plants	<ul style="list-style-type: none"> The explorer will ensure that debris is properly disposed off. Vehicle tyre inspections can be carried out although this may not be a practical mitigation measure. Eradicating alien plants by using an Area Management Plan 	<ul style="list-style-type: none"> Management Contractor 	<ul style="list-style-type: none"> Regular monitoring of any unusual signs of alien species.
Loss of vegetation	<ul style="list-style-type: none"> Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating. Paths and roads will be aligned to avoid root zones. Permeable materials will be used wherever possible. The movement of vehicles in river beds, rocky outcrops and vegetation sensitive areas will be avoided. The movement of vehicles will be restricted to certain tracks only. 	<ul style="list-style-type: none"> Contractor Management 	<ul style="list-style-type: none"> Warning signs on site restored vegetation
Operational Phase			
Environmental/ Social Impact	Proposed mitigation measures	Responsibility	Monitoring plan
Noise pollution	<ul style="list-style-type: none"> Maintain vehicles and drilling equipment. Exploration drilling should be carried out only during daytime. Workers to wear ear muffs if working in noisy section Management to ensure that noise is kept within reasonable levels. 	<ul style="list-style-type: none"> Contractor Management 	<ul style="list-style-type: none"> Amount of noise
Visual	<ul style="list-style-type: none"> Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating. 	<ul style="list-style-type: none"> Management 	<ul style="list-style-type: none"> Employees will be trained on the importance of minimising visual impacts.
Fauna	<ul style="list-style-type: none"> Some habitat areas such as trees of the riverbeds and tunnels outcrops will be avoided wherever possible. A fauna survey will be conducted to determine the effect of fragmented habitat on game species should the need arise. No animals shall be killed, captured or harmed in any way. No foodstuff will be left lying around as these will attract animals which might result in human-animal conflict. 	<ul style="list-style-type: none"> Management 	<ul style="list-style-type: none"> Regular monitoring of any unusual signs of animal habitat.
Alien Invasive Plants	<ul style="list-style-type: none"> The explorer will ensure that debris is properly disposed off. Vehicle tyre inspections can be carried out although this may not be a practical mitigation measure. Eradicating alien plants by using an Area Management Plan 	<ul style="list-style-type: none"> Management Contractor 	<ul style="list-style-type: none"> Regular monitoring of any unusual signs of alien species.

**A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA**

Loss of vegetation	<ul style="list-style-type: none"> • Environmental considerations will be adhered to at all times before clearing roads, trenching and excavating. • Paths and roads will be aligned to avoid root zones. Permeable materials will be used wherever possible. • The movement of vehicles in river beds, rocky outcrops and vegetation sensitive areas will be avoided. • The movement of vehicles will be restricted to certain tracks only. 	<ul style="list-style-type: none"> • Contractor • Management 	<ul style="list-style-type: none"> • Warning signs on site • restored vegetation
Solid waste	<ul style="list-style-type: none"> • Minimize solid waste generated on site. • Recycle waste especially waste from trenching. • Debris should be collected by waste collection company. • Excavation waste should be re-used or backfilled. 	<ul style="list-style-type: none"> • Contractor • Management 	<ul style="list-style-type: none"> • Amount of waste on Site • Presence of well Maintained receptacles and central collection point.
Oil leaks and spills	<ul style="list-style-type: none"> • Machinery should be well maintained to prevent oil leaks. • Contractor should have a designated area where maintenance is carried out and that is protected from rain water. • All oil products should be stored in a site store and handled carefully. 	<ul style="list-style-type: none"> • Contractor 	<ul style="list-style-type: none"> • No oil spills and leaks on the site.
Archaeological Sites	<ul style="list-style-type: none"> • Buffer zones will be created around the sites. • Adhere to practical guidelines provided by an archaeologist to reduce the archaeological impact of mineral exploration activities. • All archaeological sites to be identified and protected before further exploration commences. 	<ul style="list-style-type: none"> • Management 	<ul style="list-style-type: none"> • Update Register of all archaeological sites identified.
First aid	<ul style="list-style-type: none"> • A well-stocked first aid kit shall be maintained by a qualified personnel 	<ul style="list-style-type: none"> • Management 	<ul style="list-style-type: none"> • Contents of the first aid kit.
Fire preparedness	<ul style="list-style-type: none"> • Fire fighting drills carried out regularly. • Fire fighting emergency response plan. • Ensure all firefighting equipment are regularly maintained, serviced and inspected. • Fire hazard signs and directions to emergency exit, route to follow and assembly point in case of any fire incidence. 	<ul style="list-style-type: none"> • Management 	<ul style="list-style-type: none"> • Number of fire drills carried. • Proof of inspection on firefighting equipment. • Fire Signs put up in strategic places. • Availability of fire fighting equipment.

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

Environment Health and Safety	<ul style="list-style-type: none"> • Train workers on personal safety and disaster preparedness. • A well-stocked first aid kit shall be maintained by a qualified personnel. • Report any accidents / incidences and treat and compensate affected workers. • Provide sufficient and suitable sanitary conveniences which should be kept clean. • Conduct Annual Health and Safety Audits. 	<ul style="list-style-type: none"> • Management 	<ul style="list-style-type: none"> • Provide sanitary facilities. • Copies of Annual Audit
Decommissioning Phase			
Environmental/ Social Impact	Proposed mitigation measures	Responsibility	Monitoring plan/indicator
Noise & Air pollution	<ul style="list-style-type: none"> • Maintain plant equipment. • Decommissioning works to be carried out only during daytime. • Workers working in noisy section to wear ear muffs. • Workers should be provided with dust masks. 	<ul style="list-style-type: none"> • Contractor • Management 	<ul style="list-style-type: none"> • Amount of noise
Disturbed Physical environment	<ul style="list-style-type: none"> • Undertake a complete environmental restoration programme and introducing appropriate vegetation 	<ul style="list-style-type: none"> • Management 	
Solid waste	<ul style="list-style-type: none"> • Solid waste should be collected by a contracted waste collection company • Excavation waste should be re-used or backfilled. 	<ul style="list-style-type: none"> • Contractor • Management 	<ul style="list-style-type: none"> • Amount of waste on Site. • Presence of well maintained receptacles and central collection point.
Occupational Health and Safety	<ul style="list-style-type: none"> • Provide Personal Protective Equipment. • Train workers on personal safety and how to handle equipment and machines. • A well-stocked first aid kit shall be maintained by a qualified personnel. • Demarcate area under decommissioning. 	<ul style="list-style-type: none"> • Contractor 	<ul style="list-style-type: none"> • Workers using Protective Equipment. • Presence of a First Aid Box.

6.5 Monitoring, Auditing and Reporting

6.5.1 Inspections and Audits

During the life of the project, performance against the EMP commitments will need to be monitored, and corrective action taken where necessary, in order to ensure compliance with the EMP and relevant enviro-legal requirements.

6.5.1.1 Internal Inspections/Audits

The following internal compliance monitoring programme will be implemented:

1. Project kick-off and close-out audits will be conducted on all contractors. This applies to all phases, including drilling contract work during operations:
 - Prior to a contractor beginning work, an audit will be conducted by the applicable phase site manager to ensure that the EMP commitments are included in Contractors' standard operating procedures (SOPs) and method statements.
 - Following completion of a Contractors work, a final close-out audit of the contractor's performance against the EMP commitments will be conducted by the applicable phase site manager.
2. Monthly internal EMP performance audits will be conducted during the construction/initial and decommissioning phases.
3. Ad hoc internal inspections can be implemented by the applicable phase exploration manager at his/her discretion, or in follow-up to recommendations from previous inspection/audit findings.

6.5.1.2 External Audits

- At the close of each project phase, and annually during the operational phase, an independently conducted audit of EMP performance will be conducted.
- Specialist monitoring/auditing may be required where specialist expertise are required or in order to respond to grievances or authorities directives.
- Officials from the DEA may at any time conduct a compliance and/or performance inspection of mineral exploration operations. The proponent will be provided with a written report of the findings of the inspection. These audits assist with the continual improvement of the exploration project and the proponent will use such feedback to help improve its overall operations.

6.5.1.3 Documentation

Records of all inspections/audits and monitoring reports will be kept in line with legislation. Actions will be issued on inspection/audit findings. These will be tracked and closed out.

6.5.1.4 Reporting

Environmental compliance reports will be submitted to the Ministry of Environment and Tourism on a bi-annual basis.

6.5.2 Environmental Management System Framework

In order to implement Environmental Management Practices, an Environmental Management System (EMS) will be established and implemented by the proponent and their Contractors. This subchapter establishes the framework for the compilation of a project EMS. The applicable exploration manager will maintain a paper based and/or electronic system of all environmental management documentation. These will be divided into the following main categories:

6.5.2.1 Policy and Performance Standards

A draft environmental policy and associated objective, goals and commitments has been included in the EMP. The mineral explorer may adapt these as necessary.

6.5.2.2 Enviro-Legal Documentation

A copy of the approved environmental assessment and EMP documentation will be available by the proponent at all times. Copies of the Environment Clearance Certificate and all other associated authorisations and permits will also be kept with the exploration team. In addition, a register of the legislation and regulations applicable to the project will be maintained and updated as necessary.

6.5.2.3 Impact Aspect Register

A register of all project aspects that could impact the environment, including an assessment of these impacts and relevant management measures, is to be maintained. This Draft EMP identifies the foreseeable project aspects and related potential impacts of the proposed project, and as such forms the basis for the Aspect-Impact Register; with the Project Activity. It is however noted that during the life of the project additional project aspects and related impacts may arise which would need to be captured in the Aspect-Impact Register. In this regard, the impact identification principles set forth in the scoping report can be used to update the Register. This method can be modified as required by the applicable exploration manager as necessary during the life of the project.

6.5.2.3 Procedures and Method Statements

In order to effect the commitments contained in this EMP, procedures and method statements will be drafted by the relevant responsible mineral exploration staff and Contractors. These include, but may not be limited:

- Standard operating procedures for environmental action plan and management programme execution.
- Incident and emergency response procedures.
- Auditing, monitoring and reporting procedures, and
- Method statements for EMP compliance for ad hoc activities not directly addressed in the EMP action plans.

All procedures are to be version controlled and signed off by the applicable exploration manager. In addition, knowledge of procedures by relevant staff responsible for the execution thereof must be demonstrable and training records maintained.

6.5.2.4 Register of Roles and Responsibilities

During project planning and risk assessments, relevant roles and responsibilities will be determined. These must be documented in a register of all environmental commitment roles and responsibilities. The register is to include relevant contact details and must be updated as required.

6.5.2.5 Site Map

An up to date map of the exploration site indicating all project activities is to be maintained. In addition to the project layout, the following detail must be depicted:

- Materials handling and storage;
- Waste management areas (collection, storage, transfer, etc.);
- Sensitive areas;
- Incident and emergency equipment locations; and Location of responsible parties.

6.5.2.6 Environmental Management Schedule

A schedule of environmental management actions is to be maintained by the applicable phase site managers and/or relevant Contractors. A master schedule of all such activities is to be kept up to date by the exploration manager. Scheduled environmental actions can include, but are not limited to:

- Environmental risk assessment;
- Environmental management meetings;
- Soil handling, management and rehabilitation;
- Waste collection
- Incident and emergency response equipment evaluations and maintenance
- Environmental training;
- Stakeholder engagement; Environmental inspections; and
- Auditing, monitoring and reporting.

6.5.2.7 Change Management

The EMS must have a procedure in place for change management. In this regard, updating and revision of environmental documentation, of procedures and method statements, actions plants etc. will be conducted as necessary in order to account for the following scenarios:

- Changes to standard operating procedures (SOPs);
- Changes in scope;
- Ad hoc actions;
- Changes in project phase; and
- Changes in responsibilities or roles

All documentation will be version controlled and require sign off by the applicable phase site managers.

7. Public Participation Process

The public participation process commenced with newspaper advertisements in two widely distributed newspapers for two consecutive weeks as shown in Appendix B.

Known interested and affected parties were notified directly via mail and fax. Posters were placed at the office of the Erongo Regional Council office and farm fences as well.

Interested and affected parties that were notified directly include farmers, government departments, regional council, Namwater, Chamber of Mines and individuals that may be affected by the mineral exploration activities. No negative concerns were received at this stage. Should any interested and affected parties raise any concerns during the on-going project phase, the Ministry of Environment and Tourism will be immediately notified. The registered interested and affected are indicated in the table below:

Interested & Affected Party	Organisation	Position	Fax No.	Contact	Email Address
Franz-Peter Wittreich	NAMAGRA (PTY) LTD	CEO	064-214310	064 214306	ceo@namagra.com
	Big Brother Guesthouse			+264 64 530155	desgon@iway.na

8. Conclusion

The scoping report is prepared for the Environmental Impact Assessment for mineral exploration on an area which is located 40 km south of Karibib and covers farms Goas, Gamikaub, Anawood-sud, Kamandibmund and Dorsrivier. Environmental scoping is a critical step in the preparation of an EIA for the proposed mineral exploration activities.

Basically, mineral exploration is relatively unsophisticated and rudimentary. The methods that will be employed are mainly target generation, target drilling, resource evaluation and mineral resource definition.

With the potential employment of 10 people, this means that 10 families will benefit from the project during the exploration phase. The project has great potential to improve livelihoods and make a contribution to sustainable development within the surrounding community.

At this stage, electricity requirements for the project are minimal. The bulk of the power supply to the exploration site will be sourced from the proponent's own generator.

The potential negative impacts associated with the proposed mineral exploration project are expected to be low to medium in significance. Provided that the relevant mitigation measures are successfully implemented by the proponent, there are no environmental reasons why the proposed project should not be approved. The project will have significant positive economic impacts that would benefit the local, regional and national economy of Namibia.

Several other potential impacts have been addressed in Section 5 of this EIA, and will be managed through the implementation of the EMP.

The EMP contains a set of Environmental Specifications that will form part of all contracts between the proponent and contractors such as lubrication companies. The requirements of the EMP will be enforced on site by the Management team, and periodic environmental audits will be undertaken and submitted to MET.

This EIA has been subject to a few limitations, which are explained as follows: -

- the time available in which to secure an environmental contract with the authorities; and,
- The difficulty of locating suitable existing access tracks.

The limited botanical work done to date did not raise any concerns, but will be monitored on an on-going basis. If any “special” species of plants are found, these will be located by GPS. An addendum will then be added to the EMP to indicate localities that should be avoided, or to implement other appropriate measures with regard to any special plants.

9. References

- Barnard, P., 1998. *Biological diversity in Namibia - a country study*, Windhoek: Namibian National Biodiversity Task Force.
- Brown, C. & Lawson, J., 1989. *Birds and electricity transmission lines in South West Africa/Namibia*, Windhoek: Madoqua.
- Burke, A., 2003. *Floristic relationship between inselbergs and mountain habitats in the Central Namib.*, s.l.: Dinteria.
- Christian, C., 2005. *Spitzkoppe Lodge Proposal Final Report*, Windhoek: Eco Plan (Pty) Ltd.
- Green, C., 2012. *The Regulation of Sand Mining in South Africa*, Cape Town: University of Cape Town Thesis.
- Griffin, E., 1998. *Species richness and biogeography of non-acarine arachnids in Namibia*, Windhoek: Biodiversity and Conservation.
- Hoffmann, K., 1989. *New aspects of lithostratigraphic subdivision and correlation of late Proterozoic to early Cambrian rocks of the southern Damara Belt and their correlation with the central and northern Damara Belt and the Gariiep Belt*, Windhoek: Communs geol. Surv. Namibia.
- Kisters, A., 2008. *Introduction to the Damara Orogen*, Windhoek: Isotope Geology of Namibia.
- Levinson, O., 1983. *Diamonds in the Desert*. Cape Town: Tafelberg.
- Marshall, T. & Baxter-Brown, R., 1995. Basic principles of alluvial diamond exploration. *Journal of Geochemical Exploration*, pp. 278-293.
- Mendelsohn, J., Jarvis, A., Roberts, C. & Robertson, T., 2002. *Atlas of Namibia: a portrait of the land and its people*, Cape Town: David Philip.
- Mentes, H., 2012. *Design and Development of a Mineral Exploration Ontology*, Georgia: Georgia State University.
- Meyer, H., 1991. *Marine Diamonds off Southern Africa*, s.l.: Diamond International .
- Miller, R., 1992. *The mineral resources of Namibia*. Windhoek: Geological Survey of Namibia, Ministry of Mines & Energy. p2.3-93-96.
- Mohr, S., Mudd, G. & Guirco, D., 2012. Lithium Resources and Production: Critical Assessment and Global Projections. *minerals*, pp. 65-84.

Miller, R., 2008. *The geology of Namibia*. Windhoek: Geological survey of Namibia, Ministry of Mines & Energy.

Schneider, G. & Seeger, K., 1992. Copper. In: s.l.:The Mineral Resources of Namibia, pp. 2.3, 1-172.

Simmons, R. & Komen, L., 2003. *Pussyfooting Around*, s.l.: Africa Geographic.

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

Appendix A

SCIENTIFIC NAME	COMMON NAME	STATUS	OCCURRENCE
<i>Eidolon helvum</i>	STRAW-COLORED FRUIT BAT	SECURE	SEASONAL
<i>Nycteris thebaica</i>	COMMON SLIT-FACED BAT	SECURE	ABUNDANTLY
<i>Taphozous mauritanus</i>	TOMB BAT	SECURE	SEASONAL
<i>Rhinolophus fumigatus</i>	RÜPPELL'S HORSESHOE BAT	SECURE	OCCASIONALLY
<i>Rhinolophus darlingi</i>	DARLING'S HORSESHOE BAT	SECURE	OCCASIONALLY
<i>Rhinolophus denti</i>	DENT'S HORSESHOE BAT	SECURE	OCCASIONALLY
<i>Hipposideros commersoni</i>	COMMERSON' S LEAF-NOSED BAT	SECURE	ABUNDANTLY
<i>Hipposideros caffer</i>	SUNDEVALL' S LEAF-NOSED BAT	SECURE	ABUNDANTLY
<i>Chaerephon nigeriae</i>	NIGERIAN FREE-TAILED BAT	SECURE	ABUNDANTLY
<i>Mops midas</i>	MIDAS FREE-TAILED BAT	SECURE	ABUNDANTLY
<i>Tadarida aegyptiaca</i>	EGYPTIAN FREE-TAILED BAT	SECURE	ABUNDANTLY
<i>Miniopterus inflatus</i>	GREATER LONG-FINGERED BAT	SECURE	RARELY
<i>Miniopterus schreibersi</i>	SCHREIBERS' LONG-FINGERED BAT	SECURE	ABUNDANTLY
<i>Neoromicia capensis</i>	CAPE SEROTINE BAT	SECURE	ABUNDANTLY
<i>Neoromicia zuluenensis</i>	ALOE SEROTINE BAT	SECURE	RARELY
<i>Nycticeinops schlieffenii</i>	SCHLIEFFEN' S BAT	SECURE	RARELY
<i>Scotophilus dingani</i>	AFRICAN YELLOW BAT	SECURE	ABUNDANTLY
<i>Atelerix frontalis</i>	SOUTHERN AFRICAN HEDGEHOG	UNKNOWN, RARE?	RARELY
<i>Crocidura fuscumurina</i>	TINY MUSK SHREW	SECURE	RARELY
<i>Crocidura hirta</i>	LESSER RED MUSK SHREW	SECURE	ABUNDANTLY
<i>Galago moholi</i>	SOUTHERN AFRICAN BUSHBABY	UNKNOWN, RARE?	ABUNDANTLY
<i>Papio ursinus</i>	CHACMA BABOON	SECURE	ABUNDANTLY
<i>Lepus victoriae</i>		SECURE	ABUNDANTLY
<i>Xerus inaurus</i>	CAPE GROUND SQUIRREL	SECURE	ABUNDANTLY
<i>Funisciurus congicus</i>	STRIPED TREE SQUIRREL	SECURE	RARELY
<i>Saccostomus campestris</i>	POUCHED MOUSE	SECURE	ABUNDANTLY
<i>Tatera leucogaster</i>	BUSHVELD GERBIL	SECURE	ABUNDANTLY
<i>Tatera brantsii</i>	HIGHVELD GERBIL	SECURE	ABUNDANTLY
<i>Desmodillus auricularis</i>	SHORT-TAILED GERBIL	SECURE	RARELY
<i>Gerbillurus pæba</i>	PYGMY GERBIL	SECURE	ABUNDANTLY
<i>Steatomys pratensis</i>	FAT MOUSE	SECURE	ABUNDANTLY
<i>Malacothrix typica</i>	LARGE-EARED MOUSE	SECURE	RARELY
<i>Mus indutus</i>	KALAHARI PYGMY MOUSE	SECURE	ABUNDANTLY
<i>Lemniscomys rosalia</i>	SINGLE-STRIPED MOUSE	SECURE	RARELY
<i>Rhabdomys pumilio</i>	STRIPED MOUSE	SECURE	ABUNDANTLY
<i>Thallomys paedulus</i>	TREE RAT	SECURE	ABUNDANTLY
<i>Thallomys nigricauda</i>	BLACK-TAILED TREE RAT	SECURE	ABUNDANTLY
<i>Aethomys namaquensis</i>	NAMAQUA ROCK RAT	SECURE	RARELY
<i>Aethomys chrysophilus</i>	RED VELD RAT	SECURE	ABUNDANTLY
<i>Zelotomys woosnami</i>	WOOSNAM'S DESERT RAT	RARE	RARELY
<i>Mastomys natalensis</i>	NATAL MULTIMAMMATE MOUSE	SECURE	ABUNDANTLY
<i>Mastomys coucha</i>	MULTIMAMMATE MOUSE	SECURE	ABUNDANTLY
<i>Graphiurus murinus</i>	WOODLAND DORMOUSE	SECURE	ABUNDANTLY
<i>Pedetes capensis</i>	SPRINGHARE	SECURE	ABUNDANTLY
<i>Hystrix africaeaustralis</i>	SOUTHERN AFRICAN PORCUPINE	SECURE	ABUNDANTLY
<i>Cryptomys damarensis</i>	DAMARA MOLE RAT	SECURE	ABUNDANTLY

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

<i>Felis lybica</i>	AFRICAN WILD CAT	ENDANGERED & SUPERFICIAL	RARELY
<i>Felis nigripes</i>	SMALL - SPOTTED CAT	INDETERMINATE; PERIPHERAL; RARE?	RARELY
<i>Leptailurus serval</i>	SERVAL	AMBIGUOUS & SUPERFICIAL	RARELY
<i>Caracal caracal</i>	CARACAL	SECURE	ABUNDANTLY
<i>Panthera pardus</i>	LEOPARD	SECURE? & SUPERFICIAL	RARELY
<i>Panthera leo</i>	LION	AMBIGUOUS(END ANGERED) & SUPERFICIAL	EXTINCT
<i>Acinonyx jubatus</i>	CHEETAH	INADEQUATELY KNOWN (ENDANGERED?) & SUPERFICIAL	ABUNDANTLY
<i>Civettictis civetta</i>	CIVET	AMBIGUOUS, RARE? & SUPERFICIAL	RARELY
<i>Genetta maculata</i>	SMALL-SPOTTED GENET	SECURE – SP (taxonomy)	ABUNDANTLY
<i>Galarella sanguineus</i>	SLENDER MONGOOSE	SECURE	ABUNDANTLY
<i>Helogale parvula</i>	DWARF MONGOOSE	SECURE	ABUNDANTLY
<i>Mungos mungo</i>	BANDED MONGOOSE	SECURE	ABUNDANTLY
<i>Cynictis penicillata</i>	YELLOW MONGOOSE	SECURE	ABUNDANTLY
<i>Crocuta crocuta</i>	SPOTTED HYAENA	SECURE? & SUPERFICIAL	EXTINCT
<i>Parahyaena brunnea</i>	BROWN HYAENA	INADEQUATELY KNOWN (ENDANGERED?) & SUPERFICIAL	OCCASIONALLY
<i>Proteles cristatus</i>	AARDWOLF	INADEQUATELY KNOWN (ENDANGERED?) & SUPERFICIAL	ABUNDANTLY
<i>Canis mesomelas</i>	BLACK-BACKED JACKAL	SECURE	ABUNDANTLY
<i>Lycaon pictus</i>	WILD DOG	ENDANGERED & SUPERFICIAL	EXTINCT
<i>Otocyon megalotis</i>	BAT-EARED FOX	ENDANGERED? & SUPERFICIAL- SP (taxonomy)	RARELY
<i>Vulpes chama</i>	CAPE FOX	ENDANGERED?	RARELY
<i>Ictonyx striatus</i>	STRIPED POLECAT	SECURE	ABUNDANTLY
<i>Mellivora capensis</i>	HONEY BADGER	SECURE	RARELY
<i>Poecilogale albinucha</i>	AFRICAN STRIPED WEASEL	AMBIGUOUS(RARE?)	RARELY
<i>Manis temminckii</i>	SAVANNA PANGOLIN	ENDANGERED & SUPERFICIAL	RARELY
<i>Phacochoerus africanus</i>	SOUTHERN WARTHOG	SECURE	ABUNDANTLY
<i>Giraffa camelopardalis</i>	GIRAFFE	ENDANGERED? & SUPERFICIAL	EXTINCT
<i>Alcelaphus buselaphus</i>	RED HARTEBEEST	SECURE ?	ABUNDANTLY
<i>Antidorcas marsupialis</i>	SPRINGBOK	SECURE	
<i>Connochaetes taurinus</i>	BLUE WILDEBEEST	INADEQUATELY KNOWN (ENDANGERED?) & SUPERFICIAL	ABUNDANTLY
<i>Hippotragus equinus</i>	ROAN	ENDANGERED & SUPERFICIAL	ABUNDANTLY
<i>Madoqua damarensis</i>	DAMARA DIK-DIK	INADEQUATELY KNOWN	RARELY
<i>Oryx gazella</i>	GEMSBOK	SECURE	ABUNDANTLY
<i>Raphicerus campestris</i>	STEENBOK	SECURE	ABUNDANTLY
<i>Sylvicapra grimmia</i>	COMMON DUIKER	SECURE	ABUNDANTLY
<i>Syncerus caffer</i>	BUFFALO	INSUFFICIENTLY KNOWN & SUPERFICIAL	ABUNDANTLY

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

<i>Tragelaphus oryx</i>	ELAND	INADEQUATELY KNOWN & SUPERFICIAL	ABUNDANTLY
<i>Tragelaphus strepsiceros</i>	GREATER KUDU	SECURE	ABUNDANTLY
<i>Equus burchelli</i>	PLAINS ZEBRA	INADEQUATELY KNOWN & SUPERFICIAL	EXTINCT
<i>Ceratotherium simum</i>	WHITE RHINOCEROS	EXTINCT & REINTRODUCED (non topotypical stock)	EXTINCT
<i>Diceros bicornis</i>	BLACK RHINOCEROS	ENDANGERED & SUPERFICIAL	EXTINCT
<i>Loxodonta africana</i>	AFRICAN ELEPHANT	ENDANGERED & SUPERFICIAL	EXTINCT
<i>Orycteropus afer</i>	AARDVARK	SECURE ?	ABUNDANTLY
<i>Elephantulus intufi</i>	BUSHVELD SENGI	ENDEMIC AND SECURE	ABUNDANTLY

Reptile species which are likely to occur within the exploration area:

SCIENTIFIC NAME	COMMON NAME	STATUS	OCCURRENCE
<i>Pelomedusa subrufa</i>	HELMETED TERRAPIN	SECURE	ABUNDANTLY
<i>Geochelone pardalis</i>	LEOPARD TORTOISE	ENDANGERED & SUPERFICIAL	ABUNDANTLY
<i>Psammobates oculiferus</i>	KALAHARI TORTOISE	ENDANGERED	ABUNDANTLY
<i>Lygodactylus bradfieldi</i>	NAMIBIAN DWARF GECKO	ENDEMIC & SECURE	ABUNDANTLY
<i>Colopus wahlbergii</i>	KALAHARI GROUND GECKO	SECURE	RARELY
<i>Pachydactylus turneri</i>	TROPICAL BUTTON-SCALE GECKO	SECURE	ABUNDANTLY
<i>Pachydactylus capensis</i>	CAPE GECKO	SECURE	UNCOMMONLY
<i>Pachydactylus punctatus</i>	SPECKLED GECKO	SECURE	ABUNDANTLY
<i>Ptenopus garrulus</i>	COMMON BARKING GECKO	SECURE	ABUNDANTLY
<i>Agama aculeata</i>	COMMON GROUND AGAMA	SECURE	ABUNDANTLY
<i>Chamaeleo dilepis</i>	FLAP-NECK CHAMELEON	SECURE	ABUNDANTLY
<i>Acontias occidentalis</i>	WESTERN LEGLESS SKINK	SECURE	ABUNDANTLY
<i>Lygosoma sundevalli</i>	COMMON WRITHING SKINK	SECURE	ABUNDANTLY
<i>Trachylepis capensis</i>	CAPE SKINK	SECURE	UNCOMMONLY
<i>Trachylepis punctulata</i>	EASTERN VARIEGATED SKINK	SECURE	ABUNDANTLY
<i>Trachylepis wahlbergii</i>	WAHLBERG'S STRIPED SKINK	SECURE	ABUNDANTLY
<i>Trachylepis varia</i>	COMMON VARIABLE SKINK	SECURE	ABUNDANTLY
<i>Heliobolis lugubris</i>	BUSHVELD LIZARD	SECURE	ABUNDANTLY
<i>Ichnotropis capensis</i>	CAPE ROUGH-SCALED LIZARD	SECURE	ABUNDANTLY
<i>Ichnotropis squamulosa</i>	COMMON ROUGH-SCALED LIZARD	SECURE	ABUNDANTLY
<i>Nucras holubi</i>	HOLUB'S SANDVELD LIZARD	SECURE	UNCOMMONLY
<i>Nucras intertexta</i>	SPOTTED SANDVELD LIZARD	SECURE	UNCOMMONLY
<i>Pedioplanis lineocellata</i>	OCELLATED SAND LIZARD	SECURE	ABUNDANTLY
<i>Pedioplanis namaquensis</i>	NAMAQUA SAND LIZARD	SECURE	ABUNDANTLY
<i>Gerrhosaurus auritus</i>	KALAHARI PLATED LIZARD	SECURE	UNCOMMONLY
<i>Gerrhosaurus nigrolineatus</i>	BLACK-LINED PLATED LIZARD	SECURE	ABUNDANTLY
<i>Varanus albigularis</i>	VELD LEGUAAN (MONITOR)	ENDANGERED & SUPERFICIAL	ABUNDANTLY
<i>Dalophia pistillum</i>	BLUNT-TAILED WORM LIZARD	SECURE ?	MARGINALLY
<i>Monopeltis anchietae</i>	ANGOLAN SPADE-SNOUTED WORM LIZARD	SECURE	ABUNDANTLY
<i>Monopeltis infuscata</i>	DUSKY SPADE-SNOUTED WORM LIZARD	SECURE	ABUNDANTLY
<i>Monopeltis leonhardi</i>	KALAHARI SPADE-SNOUTED WORM LIZARD	SECURE	MARGINALLY

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

<i>Monopeltis mauricei</i>	SLENDER SPADE-SNOUDED WORM LIZARD	SECURE	MARGINALLY
<i>Zygaspis quadrifrons</i>	KALAHARI ROUND-HEADED WORM LIZARD	SECURE	ABUNDANTLY
<i>Leptotyphlops labialis</i>	DAMARA WORM SNAKE	ENDEMIC & SECURE	MARGINALLY
<i>Leptotyphlops scutifrons</i>	PETERS= WORM SNAKE	SECURE	ABUNDANTLY
<i>Rhinotyphlops schlegelii</i>	SCHLEGEL'S BLIND SNAKE	SECURE	ABUNDANTLY
<i>Rhinotyphlops boylei</i>	KALAHARI BLIND SNAKE	SECURE	RARELY
<i>Python natalensis</i>	SOUTHERN AFRICAN PYTHON	ENDANGERED & SUPERFICIAL	ABUNDANTLY
<i>Amblyodipsas polylepis</i>	COMMON PURPLE-GLOSSED SNAKE	INADEQUETLY KNOWN; RARE?	RARELY
<i>Amblyodipsas ventrimaculata</i>	KALAHARI PURPLE-GLOSSED SNAKE	SECURE	MARGINALLY
<i>Aparallactus capensis</i>	CAPE CENTIPEDE EATER	INADEQUETLY KNOWN ; RARE?	RARELY
<i>Atractaspis bibronii</i>	SOUTHERN STILLETTO SNAKE	SECURE	ABUNDANTLY
<i>Xenocalamus bicolor</i>	VARIABLE QUILL-SNOUDED SNAKE	SECURE	ABUNDANTLY
<i>Xenocalamus mechowii</i>	ELONGATED QUILL-SNOUDED SNAKE	SECURE	MARGINALLY
<i>Crotaphopeltis hotamboeia</i>	WHITE-LIPPED SNAKE	INADEQUETLY KNOWN	RARELY
<i>Dasypeltis scabra</i>	RHOMBIC EGG EATER	SECURE	ABUNDANTLY
<i>Dispholidus typus</i>	BOOMSLANG	SECURE	ABUNDANTLY
<i>Lamprophis fuliginosus</i>	BROWN HOUSE SNAKE	SECURE	ABUNDANTLY
<i>Lycophidion capense</i>	CAPE WOLF SNAKE	SECURE	ABUNDANTLY
<i>Mehelya capensis</i>	CAPE FILE SNAKE	SECURE	UNCOMMONLY
<i>Mehelya nyassae</i>	BLACK FILE SNAKE	INADEQUETLY KNOWN	RARELY
<i>Mehelya vernayi</i>	ANGOLAN FILE SNAKE	INADEQUETLY KNOWN	UNCOMMONLY
<i>Philothamnus angolensis</i>	ANGOLAN GREEN SNAKE	SECURE	UNCOMMONLY
<i>Philothamnus semivariegatus</i>	SPOTTED BUSH SNAKE	SECURE	ABUNDANTLY
<i>Prosymna angolensis</i>	ANGOLA SHOVEL-SNOOUT	SECURE	MARGINALLY
<i>Prosymna bivittata</i>	TWIN-STRIPED SHOVELSNOOUT	SECURE	MARGINALLY
<i>Psammophis angolensis</i>	DWARF WHIP SNAKE	SECURE	ABUNDANTLY
<i>Psammophis jallae</i>	JALLA'S SAND SNAKE	INADEQUETLY KNOWN	RARELY
<i>Psammophis leopardinus</i>	LEOPARD WHIP SNAKE	ENDEMIC & SECURE	UNCOMMONLY
<i>Psammophis mossambicus</i>	OLIVE WHIP SNAKE	SECURE	ABUNDANTLY
<i>Psammophis notostictus</i>	KAROO WHIP SNAKE	SECURE	MARGINALLY
<i>Psammophis subtaeniatus</i>	WESTERN STRIPED-BELLIED SAND SNAKE	SECURE	ABUNDANTLY
<i>Psammophis trigrammus</i>	WESTERN WHIP SNAKE	ENDEMIC & SECURE	ABUNDANTLY
<i>Psammophis trinasalis</i>	KALAHARI SAND SNAKE	SECURE	UNCOMMONLY
<i>Psammophylax tritaeniatus</i>	STRIPED SKAAPSTEKER	SECURE	ABUNDANTLY
<i>Pseudaspis cana</i>	MOLE SNAKE	SECURE	ABUNDANTLY
<i>Telescopus semiannulatus</i>	SOUTHERN TIGER SNAKE	SECURE	ABUNDANTLY
<i>Thelotornis capensis</i>	VINE SNAKE	SECURE	UNCOMMONLY
<i>Aspidelaps lubricus</i>	CORAL SNAKE	SECURE	UNCOMMONLY
<i>Aspidelaps scutatus</i>	SHIELD-NOSE SNAKE	SECURE	ABUNDANTLY
<i>Dendroaspis polylepis</i>	BLACK MAMBA	SECURE	ABUNDANTLY
<i>Elapsoidea semiannulata</i>	ANGOLA GARTER SNAKE	SECURE	UNCOMMONLY
<i>Elapsoidea sundevallii</i>	KALAHARI GARTER SNAKE	SECURE	UNCOMMONLY
<i>Naja anchietae</i>	ANGOLAN COBRA	SECURE	ABUNDANTLY
<i>Naja mossambica</i>	MOZAMBIQUE SPITTING COBRA	SECURE	RARELY
<i>Naja nigricincta</i>	ZEBRA SNAKE	ENDEMIC & SECURE	ABUNDANTLY
<i>Bitis caudalis</i>	HORNED ADDER	SECURE	UNCOMMONLY
<i>Bitis arietans</i>	PUFF ADDER	SECURE	ABUNDANTLY

Bird species which are likely to occur within the project area:

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

SCIENTIFIC NAME	COMMON NAME	STATUS IN NAMIBIA
<i>Accipiter badius</i>	Little Banded Goshawk	Secure
<i>Accipiter ovampensis</i>	Ovambo Sparrowhawk	Secure
<i>Actophilornis africanus</i>	African Jacana	Secure
<i>Agapornis roseicollis</i>	Rosy faced Lovebird	Secure
<i>Anastomus lamelligerus</i>	Openbilled Stork	Secure
<i>Anthus cinnamomeus</i>	Richard's Pipit	Secure
<i>Apus affinis</i>	Little Swift	Secure
<i>Apus apus</i>	European Swift	Secure
<i>Apus caffer</i>	Whiterumped Swift	Secure
<i>Apus melba</i>	Alpine Swift	Secure
<i>Aquila nipalensis</i>	Steppe Eagle	Secure -
<i>Aquila rapax</i>	Tawny Eagle	Endangered
<i>Aquila wahlbergi</i>	Wahlberg's Eagle	Secure
<i>Ardeotis kori</i>	Kori Bustard	Secure
<i>Batis molitor</i>	Chinspot Batis	Secure
<i>Batis pririt</i>	Pirit Batis	Secure
<i>Bubalornis niger</i>	Redbilled Buffalo Weaver	Secure
<i>Burhinus capensis</i>	Spotted Dikkop	Secure
<i>Buteo buteo</i>	Steppe Buzzard	Secure -
<i>Calamonastes fasciolatus</i>	Barred Warbler	Secure
<i>Calendulauda sabota</i>	Sabota Lark	Secure
<i>Camaroptera brevicaudata</i>	Greybacked Camaroptera	Secure
<i>Caprimulgus pectoralis</i>	Fierynnecked Nightjar	Secure
<i>Caprimulgus rufigena</i>	Rufouscheeked Nightjar	Secure
<i>Ceryle rudis</i>	Pied Kingfisher	Secure
<i>Chrysococcyx caprius</i>	Diederik Cuckoo	Secure
<i>Chrysococcyx klaas</i>	Klaas's Cuckoo	Secure
<i>Ciconia abdimii</i>	Abdim's Stork	Secure
<i>Cinnyris mariquensis</i>	Marico Sunbird	Secure
<i>Circaetus pectoralis</i>	Blackbreasted Snake Eagle	Secure
<i>Cisticola chiniana</i>	Rattling Cisticola	Secure
<i>Cisticola rufilatus</i>	Tinkling Cisticola	Secure
<i>Clamator glandarius</i>	Great Spotted Cuckoo	Secure
<i>Coracias caudata</i>	Lilacbreasted Roller	Secure
<i>Coracias garrulus</i>	European Roller	Secure -
<i>Coracias naevia</i>	Purple Roller	Secure
<i>Corvinella melanoleuca</i>	Longtailed Shrike	Secure
<i>Corvus capensis</i>	Black Crow	Secure
<i>Corythaixoides concolor</i>	Grey Lourie	Secure
<i>Creatophora cinerea</i>	Wattled Starling	Secure
<i>Crithagra flaviventris</i>	Yellow Canary	Secure
<i>Cuculus clamosus</i>	Black Cuckoo	Secure
<i>Cuculus gularis</i>	African Cuckoo	Secure
<i>Cursorius temminckii</i>	Temminck's Courser	Secure
<i>Cypsiurus parvus</i>	Palm Swift	Secure
<i>Delichon urbicum</i>	House Martin	Secure -
<i>Dicrurus adsimilis</i>	Forktailed Drongo	Secure
<i>Elanus caeruleus</i>	Blackshouldered Kite	Secure
<i>Emberiza flaviventris</i>	Goldenbreasted Bunting	Secure
<i>Emberiza tahapisis</i>	Rock Bunting	Secure
<i>Eremomela icteropygialis</i>	Yellowbellied Eremomela	Secure
<i>Eremopterix verticalis</i>	Greybacked Finchlark	Secure
<i>Erythropgia leucophrys</i>	Whitebrowed Robin	Secure
<i>Erythropgia paena</i>	Kalahari Robin	Secure
<i>Estrilda erythronotos</i>	Blackcheeked Waxbill	Secure
<i>Eupodotis afroaoides</i>	Whitequilled Korhaan	Secure
<i>Eupodotis ruficrista</i>	Redcrested Korhaan	Secure
<i>Eurocephalus anguitimens</i>	Whitecrowned Shrike	Secure
<i>Falco biarmicus</i>	Lanner Falcon	Secure

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

<i>Falco chicquera</i>	Rednecked Falcon	Secure
<i>Falco subbuteo</i>	Hobby Falcon	Secure -
<i>Falco tinnunculus</i>	Rock Kestrel	Secure
<i>Falco vespertinus</i>	Western Redfooted Kestrel	Secure
<i>Francolinus adspersus</i>	Redbilled Francolin	Secure
<i>Francolinus sephaena</i>	Crested Francolin	Secure
<i>Francolinus swainsonii</i>	Swainson's Francolin	Secure
<i>Gallinago nigripennis</i>	Ethiopian Snipe	Secure
<i>Gyps africanus</i>	Whitebacked Vulture	Near Threatened
<i>Hieraaetus pennatus</i>	Booted Eagle	Endangered
<i>Hirundo abyssinica</i>	Lesser Striped Swallow	Secure
<i>Hirundo cucullata</i>	Greater Striped Swallow	Secure
<i>Hirundo fulgula</i>	Rock Martin	Secure
<i>Hirundo rustica</i>	European Swallow	Secure -
<i>Hirundo semirufa</i>	Redbreasted Swallow	Secure
<i>Lamprotornis australis</i>	Burchell's Starling	Secure
<i>Lamprotornis nitens</i>	Glossy Starling	Secure
<i>Laniarius atrococcineus</i>	Crimsonbreasted Shrike	Secure
<i>Lanius collaris</i>	Fiscal Shrike	Secure
<i>Lanius collurio</i>	Redbacked Shrike	Secure -
<i>Lanius minor</i>	Lesser Grey Shrike	Secure -
<i>Melaenornis infuscatus</i>	Chat Flycatcher	Secure
<i>Melaenornis mariquensis</i>	Marico Flycatcher	Secure
<i>Melierax canorus</i>	Pale Chanting Goshawk	Secure
<i>Merops apiaster</i>	European Bee-Eater	Secure -
<i>Merops hirundineus</i>	Swallowtailed Bee-Eater	Secure
<i>Micronisus gabar</i>	Gabar Goshawk	Secure
<i>Milvus migrans</i>	Black Kite	Secure -
<i>Milvus parasitus</i>	Yellowbilled Kite	Secure
<i>Mirafra passerina</i>	Monotonous Lark	Secure
<i>Monticola brevipes</i>	Shorttoed Rock Thrush	Secure
<i>Muscicapa striata</i>	Spotted Flycatcher	Secure -
<i>Nectarinia fusca</i>	Dusky Sunbird	Secure
<i>Nectarinia talatala</i>	Whitebellied Sunbird	Secure
<i>Numida afer</i>	Brubru	Secure
<i>Numida meleagris</i>	Helmeted Guineafowl	Secure
<i>Oena capensis</i>	Namaqua Dove	Secure
<i>Onychognathus nabouroup</i>	Palewinged Starling	Secure
<i>Parisoma subcaeruleum</i>	Titbabbler	Secure
<i>Parus cinerascens</i>	Ashy Tit	Secure
<i>Passer diffusus</i>	Southern Grey-headed Sparrow	Secure
<i>Passer motitensis</i>	Great Sparrow	Secure
<i>Plocepasser mahali</i>	Whitebrowed Sparrowweaver	Secure
<i>Ploceus velatus</i>	Masked Weaver	Secure
<i>Polemaetus bellicosus</i>	Martial Eagle	Endangered
<i>Polhierax semitorquatus</i>	Pygmy Falcon	Secure
<i>Prinia flavicans</i>	Blackchested Prinia	Secure
<i>Psophocichla litsitsirupa</i>	Groundscraper Thrush	Secure
<i>Pterocles bicinctus</i>	Doublebanded Sandgrouse	Secure
<i>Pterocles namaqua</i>	Namaqua Sandgrouse	Secure
<i>Pycnonotus nigricans</i>	Redeyed Bulbul	Secure
<i>Pytilia melba</i>	Melba Finch	Secure
<i>Quelea quelea</i>	Redbilled Quelea	Secure
<i>Rhinopomastus cyanomelas</i>	Scimitar-billed Woodhoopoe	Secure
<i>Rhinoptilus chalcopterus</i>	Bronzewinged Courser	Secure
<i>Scopus umbretta</i>	Hamerkop	Secure
<i>Serinus atrogularis</i>	Blackthroated Canary	Secure
<i>Smutsornis africanus</i>	Doublebanded Courser	Secure
<i>Sporopipes squamifrons</i>	Scalyfeathered Finch	Secure
<i>Streptopelia capicola</i>	Cape Turtle Dove	Secure

A SCOPING REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT FOR MINERAL
EXPLORATION ON EPL 4663, CENTRAL NAMIBIA

<i>Streptopelia senegalensis</i>	Laughing Dove	Secure
<i>Struthio camelus</i>	Ostrich	Secure
<i>Sylvietta rufescens</i>	Longbilled Crombec	Secure
<i>Tchagra australis</i>	Threestreaked Tchagra	Secure
<i>Terathopius ecaudatus</i>	Bateleur	Endangered
<i>Thripias namaquus</i>	Bearded Woodpecker	Secure
<i>Tockus erythrorhynchus</i>	Redbilled Hornbill	Secure
<i>Tockus leucomelas</i>	Southern Yellowbilled Hornbill	Secure
<i>Tockus nasutus</i>	Grey Hornbill	Secure
<i>Torgos tracheliotus</i>	Lappetfaced Vulture	Vulnerable
<i>Tricholaema leucomelas</i>	Pied Barbet	Secure
<i>Turdoides bicolor</i>	Pied Babbler	Secure
<i>Turtur chalcospilos</i>	Greenspotted Dove	Secure
<i>Upupa epops</i>	Hoopoe	Secure
<i>Uraeginthus angolensis</i>	Blue Waxbill	Secure
<i>Uraeginthus granatinus</i>	Violeteared Waxbill	Secure
<i>Urocolius indicus</i>	Redfaced Mousebird	Secure
<i>Vanellus armatus</i>	Blacksmith Plover	Secure
<i>Vanellus coronatus</i>	Crowned Plover	Secure
<i>Vanellus senegallus</i>	Wattled Plover	Secure
<i>Vidua regia</i>	Shafttailed Whydah	Secure
<i>Zosterops senegalensis</i>	Yellow White-Eye	Secure



National Heritage Council of Namibia

52 Robert Mugabe Avenue, Windhoek
Private Bag 12043, Ausspannplatz, Windhoek, Namibia
Tel: (061) 244 375 • Fax: (061) 246 872 •
E-mail: info@nhc-nam.org

CONSENT

(Section 55(9) of the National Heritage Act, 2004 (Act No. 27 of 2004)) Consent is hereby given to:

09 August 2022

Consent Number No: 130/2022

Name of applicant: Karibib Pegmatite Pty Ltd

(Title and full name of the applicant)

Address of applicant: P.OBox 25365 Windhoek

(Address of the applicant and of the applying institution (if applicable))

For: Exclusive Prospecting License (EPL) 4663, 8130 & 8131 for the exploration of lithium

(Type of Activity applied for)

Of: old fort remains

(Description of Heritage Resources)

From: Located about 40 km south of Karibib in the Erongo region.

(Description of the site, location as in the application)

EN

In accordance with: Archaeological and Cultural Impact Assessment report for mineral exploration on Exclusive Prospecting License 4663, 8130 & 8131, located about 40 km south of Karibib in the Erongo region

(Specify relevant documentation and Permit application date)

The following conditions (imposed in terms of section 55(9) of the Act.) apply to this permit:

- a) That as per section 55 (9) (a) the activity authorised by this consent be supervised by a person with appropriate professional qualifications or experience in the identification and conservation of heritage.
- b) That any archaeological or palaeontological object or meteorite found in the course of the activity authorised by the consent must be recorded, conserved and dealt with as per the manual on Chance Find Procedures of heritage resources; and
- c) that Namibian citizens, especially members of the local community in and around the project area, be engaged in the activity authorised by the consent for the purpose of identification of heritage resources in the project area as well as of receiving professional training;
- d) That the consent holder reports back to the National Heritage Council every six (6) months on compliance with the conditions of this consent.
- e) This Consent does not exempt the holder from any conditions that may be imposed by owners, hosts or any other relevant authorities in consultation with NHC who have a stake in the project area.
- f) NHC shall not be liable for any losses, damages or injuries to persons or properties as a result of any activities related to this permit.
- g) This Consent is subject to the provisions of the National Heritage Act (Act 27 of 2004). Should any of the conditions contained herein conflict with the Act; the provisions of the Act as per section 55 (10) shall prevail.
- h) Adopt the Chance Find Procedures.
- i) This consent is renewable, upon submission of an application at least two months before the current permit lapses,

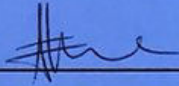
EU

j) A 500 buffer zone to all heritage resources as indicated in the HIA.

(List any conditions that the Council may see fit to impose in terms of section 55 (9) of the act.

This Consent will be valid from 09th August 2022 to 10th August 2023

Director: National Heritage Council



National Heritage Council of Namibia

