# ENVIRONMENTAL SCOPING AND ASSESSMENT REPORT (ESA): FOR THE PROPOSED MINERAL EXPLORATION OF BASE AND RARE MATERIALS, DIMENSION STONE, INDUSTRIAL MINERALS AND PRECIOUS METALS ON EXCLUSIVE PROSPECTING LICENSE NO.9036

AUS DISTRICT, //KARAS REGION – NAMIBIA

ECC APPLICATION NO.: APP No. 241113004946

2024

COMPILED BY

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# LIST OF ACRONYMS

ASL	Above Sea Level
BID	Background Information Document
DEAF	Department of Environmental Affairs and Forestry
EA	Environmental Assessment
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act No. 7 of 2007
EMP	Environmental Management Plan
EPL	Exclusive Prospecting License
ESA	Environmental Scoping Assessment
I&AP	Interested and Affected Parties
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
Μ	Meters
NDP5	National Development Plan
GG & GN	Government Gazette & Government Notice
GDP	Gross Domestic Product
ННР	Harambee Prosperity Plan
RAB	Rotary Air Blast (drilling)
RC	Reverse Circulation (drilling)

# **GLOSSARY OF TERMS**

Alternatives	A possible course of action, in place of another, that would meet the
	same purpose and need but which would avoid or minimize negative
	impacts or enhance project benefits. These can include alternative
	locations/sites, routes, layouts, processes, designs, schedules and/or
	inputs. The "no-go" alternative constitutes the 'without project' option
	and provides a benchmark against which to evaluate changes;
	development should result in net benefit to society and should avoid
	undesirable negative impacts.
Competent	A body or person empowered under the local authorities act or
Authority	Environmental Management Act to enforce the rule of law.
Environmental	The process of assessment of the effects of a development on the
Assessment (EA)	environment.
Environmental	A working document on environmental and socio-economic mitigation
Management	measures, which must be implemented by several responsible parties
Plan (EMP)	during all the phases of the proposed project.
Evaluation	The process of ascertaining the relative importance or significance of
	information, the light of people's values, preference and judgements
	to make a decision.
Hazard	Anything that has the potential to cause damage to life, property
	and/or the environment. The hazard of a particular material or
	installation is constant; that is, it would present the same hazard
	wherever it was present.
Interested and	Any percent group of percent or organization interacted in or affected
Affected Dorty	Any person, group of persons of organisation interested in, or affected
Affected Party	by an activity; and any organ of state that may have jurisdiction over
(IAP)	any aspect of the activity.

Mitigate	The implementation of practical measures to reduce adverse impacts.
Proponent	Any person who has submitted or intends to submit an application for
(Applicant)	an authorisation, as legislated by the Environmental Management Act
(, ipplically)	No. 7 of 2007, to undertake an activity or activities identified as a listed
	activity or listed activities; or in any other notice published by the
	Minister or Ministry of Environment & Tourism.
Public	Citizens who have diverse cultural, educational, political and socio-
	economic characteristics. There are a number of publics, some of
	whom may emerge at any time during the process depending on their
	particular concerns and the issues involved.
Scoping Process	Process of identifying: issues that will be relevant for consideration of
	the application; the potential environmental impacts of the proposed
	activity; and alternatives to the proposed activity that are feasible and
	reasonable.
Significant	An impact that by its magnitude, duration, intensity or probability of
Effect/Impact	occurrence may have a notable effect on one or more aspects of the
	environment.
Stakeholder	The process of engagement between stakeholders (the Proponent,
Engagement	authorities and I&APs) during the planning, assessment,
	implementation and/or management of proposals or activities. The
	level of stakeholder engagement varies depending on the nature of the
	proposal or activity as well as the level of commitment by stakeholders
	to the process.
Stakeholders	A sub-group of the public whose interests may be positively or
	negatively affected by a proposal or activity and/or who are concerned
	with a proposal or activity and its consequences.

# **EXECUTIVE SUMMARY**

SS Consultants CC (herein referred to as the Consultant) has been appointed by the client, Plesati Investment Closed Corporation (herein referred to as *the Proponent*) to apply for and obtain an Environmental Clearance Certificate (ECC) for the proposed base and rare metals, dimension stone, industrial minerals and precious metals exploration activities on EPL No.9036 (EPL-9036 or *the EPL*). The EPL is located about 20km south of Aus Town in the // Karas Region. The EPL covers 29556.49 Hectares (Ha) of land and can be accessed from the can be accessed directly from the C13 road, which runs through the EPL.

In terms of the Environmental Management Act No.7 of 2007, the proposed exploration activities fall under the listed activities that may not be undertaken without an ECC. An application for an environmental clearance will be submitted to the Environmental Commissioner at the Ministry of Environmental, Forestry, and Tourism (MEFT) for evaluation and approval. Once the ECC is issued, the Proponent is expected to submit it to the Ministry of Mines and Energy (MME) for approval of commodity addition prior to commencing with the proposed exploration activities.

The proposed project will entail exploration activities on EPL-9036 which will include different methods (techniques) such as field geological mapping, ground electromagnetic and geophysical surveys, drilling and soil sampling in selected targeted areas. If required, some vegetation may need to be cleared to allow access tracks and working areas to be created and for the installation of project equipment and development of exploration drill holes. The duration of exploration activities is anticipated to be conducted over the license tenure which is valid for a three (3)-year period, once an ECC has been issued for the EPL. The duration of each exploration programme shall be refined when detailed geological information are available through a desktop study report. Once the exploration is successful and feasible, exploration operations can potentially transcend into mining a separate detailed Environmental Impact Assessment is to be undertaken.

It should be noted that Namibia's leading economic sector is mining, that accounts for roughly 10 percent of Namibia's Gross Domestic Product every year. The mining sector has been the backbone of the economy since time-immemorial in view of having a positive impact on the

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economy measured through job creation and income generation, among others. Mining is an important source of government fiscal receipt and source of foreign exchange. Total job creation in the sector has been volatile due to fluctuation in commodity prices and technological advancement. Therefore, this project will bring about employment and development within the area in a sense of creating job opportunities, educational skills and infrastructure development within the surrounding community.

In accordance with the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 Environmental Impact Assessment Regulations (GG No. 4878 GN No. 30), the Environmental Assessment Scoping study is aimed at determining the potential environmental impacts arising from the proposed activities by doing a risk assessment. The findings in the EIA report and EMP will enable the Environmental Commissioner to make informed judgements regarding the exploration activities from an environmental perspective. The identification of potential included impacts that may occur during the planning, construction, operational and decommissioning phases of the project. The assessment of impacts includes direct, indirect as well as cumulative impacts. To identify potential impacts (both positive and negative) it is important that the nature of the proposed project is well understood so that the impacts associated with the project can be assessed and the mitigations as detailed in the Environmental Management Plan (EMP) - are implemented and monitored by the Proponent. The potential impacts identified on the environment during exploration activities were related to dust, noise, health and safety, land use, waste management, impacts on soil and surface, ecological impacts, groundwater and surface water quality, heritage and socioeconomic aspects.

After thorough investigation, it was determined that the proposed exploration activities will be localized (restricted within the EPL boundaries), thus, the potential impacts of EPL-9036 would have minor significance, provided appropriate mitigation measures are implemented. These mitigation measures are outlined in the EMP, encompassing specific actions and procedures to responsibly manage and minimize potential impacts throughout the project's duration.

Based on the conclusions of this ESA Report, it is thus recommended that an Environmental Clearance Certificate be considered and issued for the planned exploration activities. In

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implementing the proposed program, the Proponent shall consider the following critical requirements:

- Obtaining all additional permits and licenses that may be required before commencing with the respective project activities,
- Effectively implement and monitor the specified management and mitigation measures outlined in the EMP and ensure that they are diligently executed and adhered to, and
- Evaluate new and unforeseen potential effects that may arise during project implementation and ensure that they are addressed timely.

# **1** INTRODUCTION

### 1.1 Project Background

Plesati Investment CC (herein referred to as the *Proponent*) applied for the Exclusive Prospecting License (EPL) 9036 on the 6<sup>th</sup> October 2022, and was granted a notice of preparedness by the Ministry of Mines and Energy (MME). The Proponent is required to obtain an Environmental Clearance Certificate (ECC) as stipulated by Section 27 (1) of the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 Environmental Impact Assessment regulations, hence the compilation of the Environmental Scoping Assessment report following an Environmental Impact Assessment (EIA). This process ensures that the potential environmental impacts resulting from the projects' activities are thoroughly assessed, and suitable measures are identified to mitigate them effectively during exploration. The Proponent intends to prospect and explore for for base and rare metals, dimension stone, industrial minerals and precious metals as per Error! Reference source not found. below.



Figure 1-1: Namibia Mines and Energy Cadastre Map Portal with EPL-9036 (source: https://maps.landfolio.com/Namibia/).

### 1.2 Locality

The license (EPL-9036) is located about 50 km southeast of Aus village in the // Karas Region. The EPL covers 29556.49 Hectares of land and can be accessed from the C13 main road from Aus village. The nearest populated towns include Luderitz, Oranjemund, Bethanie and Keetmanshoop in the southern part of Namibia.



Figure 1-2: Locality map indicating the EPL 9036 boundary.

The corner coordinates of the EPL are provided in Table 1-1, while the EPL locality details are provided in **Table 1-2**.

### Table 1-1: Corner coordinates for EPL-9036

Geographic Coordinates			
	Latitude	Longitude	
1	27.6250014	16.7619999	
2	27.625116	16.4989713	
3	27.5317534	16.4438735	
4	27.5321948	6.7615763	

### Table 1-2: Summary of EPL-9036 location details

Location	Approximately 50 km southeast of Aus
	village
Area size	29556.49На
Constituency	!Nami‡Nûs
Regional Administration	//Karas Region
Nearest Town	Oranjemund

## 1.3 Need and Desirability of the Project

The extractive industry is essential to the production of goods, services and infrastructure that improves the quality of daily human lives. The government of Namibia has long recognised the need to enhance the country's economy and continues to strive for economic welfare through amongst others Vision 2030, National Development Plan 5 (NDP 5) and the Harambee Prosperity Plan (HPP). It is further reported that in Namibia, mining has been the backbone of the economy since time-immemorial in view of having a positive impact on the economy measured through job creation and income generation, among others (Mubita & Nambinga, 2021).

Mining is an important source of government fiscal receipt and source of foreign exchange (Walser, 2000). It is further mentioned that historically, precious stone (diamond) mining has been the leading sub-sector of Namibia's mining industry. However, in recent years we have seen an exponential growth in the past year for the mineral deposits exploration and other mineral groups i.e. nuclear fuel (uranium), dimension stone (granites, marbles and dolerite), industrial minerals (lithium, cement), base, rare earth elements (copper, zinc, lead, vanadium, tantalum, niobium, tin), and precious metals (gold, silver).

Granted that mining activities bring negative effects during exploration, the following benefits from the proposed exploration activities are expected:

- Provision of contractual employment opportunities;
- Contribute to the socio-economic development of the local area and region, even more, should viable discoveries be made. Direct capital investment into Karas Region;
- Increase in knowledge on the subsurface which then contributes to development, and geoscience research and innovation at large.
- Contributions to annual license fees to the government through the Ministry of Mines and Energy (MME).

### 1.4 Scope of Work

This scoping study was carried out in accordance with the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 EIA Regulations (GG No. 4878 GN No. 30). The Act defines environmental assessment as the process of identifying, predicting and evaluating the effects of proposed activities on the environment. An environmental assessment should include information about the risks and consequences of activities, possible alternatives, and steps which can be taken to lower any negative impacts on the environment.

To determine the potential environmental impacts arising from the proposed activities by doing a risk assessment, relevant environmental data has been compiled by making use of secondary data from desktop work and fieldwork. The EIA report and EMP will enable stakeholders and relevant Ministries to make informed judgements regarding the exploration activities from an environmental perspective.

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This EA is not for subsequent phases such as mine development and mining, if exploration yields favourable results i.e. a verified economic feasibility. The proponent shall apply for a mining license to MME, and a separate and detailed environmental assessment (full EIA) will be undertaken were a separate ECC will be obtained from the DEAF. This report provides the following chapters in Table 1-3.

Description	Section of the Report
Need and or desirability the proposed project	Chapter 1
The relevant laws and guidelines pertaining to the proposed	Chapter 2
project	
The project description - Overview of the different exploration	Chapter 3
methods to be undertaken	
Alternatives considered for the proposed project in terms of no-	Chapter 4
go option, location, exploration methods and services	
infrastructure	
The public consultation process followed (as described in	Chapter 5
Regulation 7 of the EMA Act) whereby interested and affected	
parties (I&APs) and relevant authorities are identified, informed	
of the proposed activity, and provided with a reasonable	
opportunity to give their concerns and opinions on the project	
Geological understanding of the project area	Chapter 6
Description of the Biophysical and Social Environment	Chapter 7
The identification of potential impacts, impacts description,	Chapter 8
assessment and mitigation measures	
Recommendations and Conclusions to the report	Chapter 9
Reference List (Data Sources)	Chapter 10

The next chapter will focus on the administrative and legal framework of MEFT and associated authorities with project activities falling under exploration.

# 2 LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES

This chapter focuses on reviewing the relevant Namibian legislation, policies and guidelines that should be considered and applied for the proposed development. This review serves to inform the Proponent, Interested and Affected Parties and the competent authority at the Ministry of Environment, Forestry and Tourism (MEFT) about the requirements and expectations, as laid out in terms of these instruments, to be fulfilled to undertake the exploration activities.

## 2.1 Applicable Laws and Legislations

The list of all applicable Namibian and international legislations during the EIA process are presented as below in **Table 2-1** 

Table 2-1: List of applicable legislations, policies and guidelines

LEGISLATION/POLICY/	PROVISIONS	IMPLICATIONS		
GUIDELINE				
	The summer of this Act is to sive offert to	<b>ENAA</b> and its manufations		
Environmental	The purpose of this Act is to give effect to	EMA and its regulations		
Management Act (EMA)	Article 95 (I) and 91 (c) of the Namibian	should inform and guide this		
No. 7 of 2007	Constitution by establishing general	EA process.		
	management principles for the management			
	of the environment and natural resources. The			
	Act necessitate that project with adverse			
	environmental impacts are subject to an			
	environmental assessment process (Section			
	27). It details principles which must guide all			
	environmental assessments.			
Environmental Impact	Details requirements for public consultation			
Assessment (FIA)	within a given environmental assessment			
Assessment (LIA)	process (CN 20 C21)			
Regulations GN 28-30 (GG	process (GN 30 S21).			
4878)	Details requirements for what should be part			
	of the Scoping Report (GN 30 S8) and an			
	Assessment Report (GN 30 S15).			
Minerals (Prospecting and	To provide for the reconnaissance,	The Proponent should		
Mining) Act No. 33 of 1992	prospecting, exploration, and mining for, and	ensure compliance with the		
	disposal of, and the exercise of control over,	conditions set in the Minerals		
	minerals in Namibia; and to provide for	Act regarding exploration		
	matters incidental thereto.	activities.		
The Constitution of	According to Legal Assistance Centre (LAC),	The Proponent should		
Namibia Act No. 1 of 1990	there is no clear right to health in the Namibian	ensure compliance with the		
	Constitution. However, the Namibian	conditions of the Act.		
	Constitution as the supreme law, under article			
	No.95 provides for matters relating to the			
	environment. This article state that the			
	Republic of Namibia shall- "Actively promote			
	and maintain the welfare of the people by			
	adonting inter alia policies aimed at			
	maintenance of ecosystems essential			
	ecological processes and biological diversity of			

LEGISLATION/POLICY/	PROVISIONS	IMPLICATIONS
GUIDELINE		
	Namibia and utilization of living natural	
	resources on a sustainable basis for all	
	Namibians, both present and future. The	
	Government shall provide measures against	
	the dumping or recycling of foreign nuclear	
	waste on Namibian territory."	
Water Act No. 54 of 1956	The Water Resources Management Act 11 of	The safety of ground and
	2013 is not yet gazetted; hence, the Water Act	surface water resources
	No 54 of 1956 is still in force:	must be a priority
		throughout all exploration
	Interdict the pollution of water and	activities.
	implements the principle that a person	
	disposing of effluent or waste has a duty of	
	care to prevent pollution (S3 (k)).	
	Provides for control and protection of	
	groundwater (S66 (1), (d (ii)).	
	Liability of clean-up costs after	
	closure/abandonment of an activity (S3 (I)).	
Water Resources	The Act caters for the management,	
Management Act No.11 of	protection, development, use and	
2013	conservation of water resources; and provides	
	for the regulation and monitoring of water	
	services and to provide for incidental matters.	
	The objects of this Act are to:	
	Certify that the water resources of Namibia are	
	managed, developed, used, conserved, and	
	protected in a manner accordant with, or	
	conducive to, the fundamental principles set	
	out in Section 66 - protection of aquifers	
	Subsection 1 (d) (iii) provide for preventing the	
	contamination of the aquifer and water	
	containination of the aquilet and water	

LEGISLATION/POLICY/	PROVISIONS	IMPLICATIONS
GUIDELINE		
Soil Conservation Act No.	The Act aims to prevent and control soil	At a time of soil sampling, soil
76 of 1969	erosion and to protect, revamp, and conserve	conservation must be taken
	the soil, vegetation and water supply sources	care of, and management
	and resources, through directives declared by	measures must be part of the
	the Minister.	EMP.
Nature Conservation	To centralise and amend the laws relating to	The Proponent should
Ordinance No.4 of 1975	the conservation of nature; the establishment	ensure that any activities
	of game parks and nature reserves; the control	done in the project area do
	of problem animals; and to provide for matters	not in any way trade-off the
	incidental thereto.	wildlife and the ordinance
		requirements are adhered
		to.
Agricultural (Commercial)	To provide for the acquisition of agricultural	The Proponent should
Land Reform Act No. 6 of	land by the State for the purposes of land	ensure that relevant
1995 (Agricultural	reform and for the allocation of such land to	regulations set under this Act
(Commercial) Land Reform	Namibian citizens who do not own or	are always adhered to.
Amendment Act No. 1 of	otherwise have the use of any or of adequate	
2014 ))	agricultural land, and foremost to those	
	Namibian citizens who have been socially,	
	economically or educationally disadvantaged	
	by past discriminatory laws or practices; to	
	vest in the state a preferred right to purchase	
	agricultural land for the purposes of the Act;	
	To provide for the compulsory acquisition of	
	certain agricultural land by the state, for the	
	purposes of the Act; to regulate the acquisition	
	of agricultural land by foreign nationals; to	
	establish a lands tribunal and determine its	
	jurisdiction; and to provide for matters	
	connected therewith.	
Forestry Act No. 12 of 2001	The Act caters for the management and use of	Before removing any
	forests and related products/resources. It	protected plant species
	provides protection to any living tree, bush or	within the proposed

LEGISLATION/POLICY/	PROVISIONS	IMPLICATIONS
GUIDELINE		
	shrub growing within 100 meters of a river,	exploration site, the
	stream or watercourse on land that is not	Proponent must secure a
	surveyed or even of a local authority area. In	permit from the nearest
	such instances, a license would be required to	MEFT's Directorate Forestry
	cut and remove any such vegetation.	office
	These provisions are only guidelines.	
Atmospheric Pollution	This ordinance sets for the prevention of air	Measures should be set to
Prevention Ordinance No.	pollution.	ensure that dust and fumes
11 of 1976		emanating from exploration
		activities is kept at
		acceptable levels.
Public Health Act No. 36 of	Section 119 states that "no person shall cause	The Proponent and all its
1919	a nuisance or shall suffer to exist on any land	employees/contractors
	or premises owned or occupied by him or of	should adhere to the
	which he is in charge any nuisance or other	provisions of these legal
	condition liable to be injurious or dangerous to	instruments.
	health."	
Health and Safety	Details various requirements regarding health	
Regulations GN 156/1997	and safety of labourers.	
(GG 1617)		
The Regional Councils Act	This Act sets out the conditions under which	The relevant Regional
No. 22 of 1992	Regional Councils must be elected and	Councils are considered to be
	administer each delineated region. From a	I&APs and must be consulted
	land use and project planning point of view,	during the Environmental
	their duties include, as described in section 28	Assessment (EA) process.
	"to undertake the planning of the	The Karas Regional Council is
	development of the region for which it has	the responsible Regional
	been established with a view to physical, social	Authority of the area in
	and economic characteristics, urbanisation	which the proposed activity
	patterns, natural resources, economic	will be undertaken. therefore
	development potential, infrastructure, land	should be consulted for this
		EA.

LEGISLATION/POLICY/	PROVISIONS	IMPLICATIONS
GUIDELINE		
	utilisation pattern and sensitivity of the natural environment." The main objective of this Act is to initiate, supervise, manage, and evaluate development.	
Labour Act No. 6 of 1992	Ministry of Labour (MOL) aim to ensure harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians. This ministry insures effective implementation of the Labour Act no. 6 of 1992.	The Proponent should ensure that the proposed activity does not compromise the safety and welfare of workers.
Best Practice Guide: Environmental Principles for Mining in Namibia- Exploration	Outlines the regulatory and legislative requirements for exploration in Namibia. Serves as a guiding framework for the exploration phase of the mining life cycle.	The Proponent should be guided by this framework for best practice mining and exploration activities in Namibia.
National Heritage Act (27 of 2004)	Part V Section 46 of the Act prohibits removal, damage, alteration, or excavation of heritage sites or remains. Section 48 off sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Section 51 (3) sets out the requirements for impact assessment. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Heritage sites or remains are defined in Part 1, Definitions 1, as "any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface".	The project must ensure that no heritage resources are damaged and/or removed during its operations. All protected heritage resources (e.g., human remains, paintings etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be removed and/or relocated.

LEGISATIONS	PROVISIONS		
Montroal Protocol on	The agreement was designed to step the production and import of even		
substances that deplete the	depleting substances and reduce their concentration in the atmosphere. Its		
Ozone Layer - 1997	objectives are to promote cooperation on the adverse effects of human		
	activities on the ozone layer, including projects that require environmental		
	assessments.		
The Rio de Janeiro	Article 14 of the Convention on Biological Diversity, titled Impact Assessment		
Convention on Biological	and Minimizing Adverse Impacts, establishes that: 1. Each Contracting Party,		
Diversity - 1992	as far as possible and as appropriate, shall:		
	(a) Introduce appropriate procedures requiring environmental impact		
	assessment of its proposed projects that are likely to have significant adverse		
	effects on biological diversity with a view to avoiding or minimizing such		
	effects and, where appropriate, allow for public participation in such		
	procedures;		
	(b) Introduce appropriate arrangements to ensure that the environmental		
	consequences of its programs and policies that are likely to have significant		
	adverse impacts on biological diversity are duly taken into account.		
United Nations Framework	Principle 17 of the Rio Declaration on Environment and Development states		
Convention on Climate	that: "Environmental impact assessment, as a national instrument, shall be		
Change - 1992	undertaken for proposed activities that are likely to have a significant		
	adverse impact on the environment and are subject to a decision of a		
	competent national authority.		

Table 2-2: List of applicable international legislations to which Namibia is a signatory.

## 2.2 Key Regulators/ Competent Authorities

The regulatory authorities responsible for environmental protection and management in relation to the proposed exploration including their role in regulating environmental protection are listed in Table 2-3.

Table 2-3: Regulatory authorities responsible for environmental protection and management.

AGENCY	RESPONSIBILITY	
Ministry of Environment,	Issue of Environmental Clearance Certificate (ECC) based on the review and	
Forestry and Tourism (MEFT	approval of the Environmental Assessments (EA) reports comprising	
	Environmental Scoping and Environmental Management Plan (EMP)	
	prepared in accordance with the Environmental Management Act (2007)	
	and the Environmental Impact Assessment Regulations, 2012	
Ministry of Mines and Energy	Competent authority. The national legislation governing minerals	
(MME)	prospecting and mining activities in Namibia fall within the jurisdiction of	
	the Ministry of Mines and Energy (MME) as the Competent Authority (CA)	
	responsible for granting authorisations. 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 licence	

## 2.3 Required Permits

There are a variety of permits or licenses that will be required and should be obtained by the Proponent prior to conducting certain project activities on the EPL. There are presented in Table 2-4.

It is important to note that these permits and licenses will need to be renewed and or amended as stipulated therein.

Table 2-4: Applicable permits to the proposed project

PERMITS/CERTIFICATES	ACTIVITY	VALIDITY	REGULATING
			AUTHORITY
Environmental Clearance	Regulates prospecting and	Three years and	Ministry of
Certificate	exploration activities from	should be	Environment, Forestry
	the environmental	renewed as long	and Tourism (MEFT):
	management perspective	as the project is	Department of
		continuing.	Environmental Affairs
			(Environmental
			Commissioner)

PERMITS/CERTIFICATES	ACTIVITY	VALIDITY	REGULATING
			AUTHORITY
Exclusive Prospecting License	Mineral rights ownership and authorization	Three years	Ministry of Mines and Energy (MME): Directorate of Mines (Mining Commissioner)
Notification of Intention to drill (groundwater)	Submitted prior to drilling	Permit dependent	Ministry of Agriculture, Water and Land Reform (MAWLR): Department of Water Affairs
Water Abstraction	Regulates ground water abstraction	2-5 years	MAWLR: Department of Water Affairs (Water Law Administration Policy Division)
Wastewater (effluent) handling and discharge	Regulates the handling and disposal of wastewater in the environment	2 years or as stipulated	MAWLR: Department of Water Affairs (Water Environment Division)
Fuel Storage onsite (Consumer installation certificate)	Regulates the storage of fuel onsite in the volume of 600litres or more.		MME: Directorate of Petroleum Affairs (Petroleum Commissioner)

# 3 PROJECT DESCRIPTION: PROPOSED EXPLORATION ACTIVITY

Prior to mobilizing to site and undertaking any groundwork for the proposed activities on EPL-9036, the Proponent is required to follow through measures that ensure environmental protection. Prospecting and exploration of minerals is the first component of any potential mining project (development and eventual mining). The planned exploration activities are aimed at delineating the mineral deposits and determine whether the deposits are economically feasible mining resources.

Successful exploration results could lead to development of a mine for extraction of the target mineral in market rate quantities, and to the eventual closure of mining. The exploration project activities only commence after issuance of the ECC. Due to the iterative, resultsdriven, and phased nature of mineral exploration programmes, it is not possible at an early stage of exploration to earmark the exact areas for future drilling or an exact duration of the exploration activities.

Drilling programmes may initially range from two weeks to a month at a time, depending on the planned programme or based on the results of the programme. Mineral exploration activities can take up to a maximum of seven years, with different projects at various stages of the exploration phase: summarized in three main phases including the Pre-Development Phase, the Exploration Phase, and the Decommissioning and Rehabilitation Phase, (**Figure 3-1**).



Figure 3-1: The Mineral Exploration Cycle, Adapted from the Association of Mineral Exploration, 2013.

### 3.1 Prospecting Works

#### 3.1.1 Timeframe

The planned exploration works are estimated to last for a total of about three (3) years. The project will include a variety of prospecting and exploration techniques. The early phase, regional exploration, normally comprises a mixture of non-invasive techniques such as soil sampling and ground geophysics and invasive drilling techniques.

### 3.1.2 Consultation and Land access permission

Consultations with all the landowners, users and community and government stakeholders will commence to introduce the Proponent, to explain the purpose and stage of the proposed exploration. Regarding land use and permitting, the Proponent is required to secure a signed agreement from the affected landowners or occupiers of land to gain access to the areas of interest for prospecting and exploration investigations as per the Section 52 of the Minerals

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(Prospecting and Mining) Act No. 33 of 1992 and Section 2.2.3 of the Minerals Policy of Namibia.

### 3.2 Non-Invasive

The Proponent intends to adopt a systematic prospecting approach starting with desktop study, field evaluation and mapping, then drilling in selected areas where activities may then proceed to mining where outcomes are positive. The proposed activities are summarized as follows:

- **Desktop study:** the exploration program will commence with a review of geological maps and historical drilling and/ or quarrying data for the area, if any.
- Field Evaluation: the field evaluation is to be carried out by a qualified geologist, aimed at locating suitable host rock outcrops in the field from where the: i) general soundness (intactness), ii) appearance (patterns and colour) and iii) joint and vein spacing can be evaluated. Collectively, field evaluation and detailed geological mapping will result in the production of a refined and detailed geological map for the targeted sites.
- Rock chip Sampling: during the mapping phase, rock chip samples will be collected using a hand-held hummer to provide insights on hardness, tensile strength and compression strength outcrop. Additionally, test to be conducted can be whether the stone can be polished to an acceptable finish, as well as to give an indication of the stone from a sawing and finishing point of view.

![](_page_32_Picture_8.jpeg)

![](_page_32_Picture_9.jpeg)

Figure 3-2: Rock chip sample collected from the Marbel outcrop.

 Where field evaluation indicates a potentially economical viable deposit, detailed geological mapping will be conducted by means of mapping transversely across exposed/ cleaned segments of the rock unit.

### 3.3 Invasive: Drilling, Sampling and Analysis Phase

The proposed activities will involve detailed exploration for dimension stone and industrial minerals, alternatively base, rare and precious metals mineral group of commodities on EPL-9036. These methods include and are not limited to:

- Drilling (Core Drilling): The refined geological map would then assist in target generation for subsequent detailed exploration such as drilling. This will entail a vertical and inclined core drilling with a down-the hole (DTH) drill rig in selected areas to provide information on the: i) Vertical extent of the host formation, ii) Colour and texture, iii) Joint spacing or, possible defects at depth. It is anticipated that drilling activities will require a small (6m wide) tracked access roads to gain access to the actual drilling sites for the air compressor and water truck.
- Butterfly cuts: also known as split-face sampling or systematic halving, is a sampling technique often used in dimension exploration to evaluate the internal quality and variability of mineral specimens, particularly in gemstones or decorative stones such as marble and granite.
- Where cleaning of the rock unit is required to aid geological mapping, air compressors will be used to expose the rock. The mapping is aimed at delineating major geological structures such as fault and shear zones (zones of weakness), the extent of veins, as well as further delineation of fracture/ discontinuity frequencies. In-fill drilling: The results of in-fill drilling are intended to support an update to a higher classification of the Mineral Resource estimate. The metallurgical test-work results will improve understanding of blending designs in the exploration schedules for the product offtake specifications (Canyon Resources, 2021).

This phase will take up to two years, and will give insightful information based on the results as to whether there is mineral potential within the area or not, and whether to continue with phase three (3) and the last phase of exploration or not. By the end of this phase, if the Proponent desires to continue with the project, they may launch a renewal application for the ECC and once renewed, they may proceed to conduct exploration on the license area.

### 3.4 Infrastructure and Services

The required infrastructure services are water, electricity, roads network, accommodation and transportation needed for this project are vital and were considered during this Environmental Assessment. It should be noted that phase 1 and 2 will use very limited infrastructures and services, and this means only phase 3 (exploration drilling) will require most of these services on a daily basis.

### 3.4.1 Water

Water supply for exploration works such as drilling and associated activities are best augmented with carted water from elsewhere outside the project area to ensure that less pressure is put on local supplies. The required water from the suppliers will be stored on site in trailer-mounted industry standard water reservoirs. The estimated monthly water consumption amounts for exploration and associated activities are at  $\pm 13$ , 000 litres.

### 3.4.2 **Power**

With an increase on the usage of the renewable energy resources (solar), the power supply required for drilling will be supplied by a diesel-powered generator or/and electric drive.

On the other hand, various machinery and equipment required for drilling have their own power supplies and or generators attached. Fuel (diesel) will be stored in a small mobile bowser where needed. The drill rigs will be refuelled either with Jerry cans or directly from the bowser.

### 3.4.3 Road Access

The EPL is located about 45 km southeast of Aus Settlement. It can be accessed from Aus via the C13 road. Access to the exploration site will be organised along the existing roads as far as possible. The creation of new tracks will need to be approved and consented by the MEFT: Wildlife & National Parks Directorate.

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![](_page_35_Picture_2.jpeg)

Figure 3-3: C13 gravel road that leads to the EPL area.

### 3.4.4 Contractors' Accommodation

Exploration staff will be accommodated in or within the vicinity of Aus village. A temporary campsite may be set up for the exploration crew. If the accommodation camp is to be set up on a farm, necessary arrangements will be made with the farm/land owner/s. The temporary site camps will only be set up upon reaching signed agreement with and signed by the landowners/local authority and or occupiers of land. Therefore, agreements will need to be reached between the two parties (Proponent and affected landowners/occupiers of land or authorities) prior to the setting up of accommodation structures. Exploration activity will take place during daytime only and the exploration team will be commuting to the work site from their place of accommodation.

#### 3.4.5 Transportation

Transportation will range from trucks to 4 by 4 pickups for daily exploration activities and mini buses (for personnel transport). The trucks will be used to transport the exploration services, materials and goods. To avoid major road damages, water trucking will be done once or twice a month. In cases where the project progresses to phase 3, there will be drilling machines within the project area.
#### 3.4.6 Domestic and Hazardous waste

Drip trays and spill control kits will be available on site to ensure that oil/fuel spills and leaks from vehicles and equipment are captured on time and contained correctly before polluting the site. Any hazardous waste handled and produced on site will be transported for disposal to the nearest appropriate and authorized hazardous waste management facilities.

## 3.4.7 Resources and Working Team

The project will employ various geological consultants and contractors will be appointed during different exploration phases, a geophysics expert will potentially be contracted during exploration to conduct geophysical surveys whether it is on the ground or air. In addition, drilling will be executed by an appointed drilling contractor, and it is expected that they will have their own workforce (drilling crew). Furthermore, temporary employment will potentially be available for graduate geologists (2 positions) and geotechnical technicians (2 positions) for the purpose of geological mapping and geochemical surveys.

## 3.4.8 Site Access

The EPL is located about 50 km southeast of Aus Settlement. It can be accessed from Aus via the C13 road. Access to the exploration site will be organised along the existing roads as far as possible. Any tracks for new access routes that may be required during the exploration stage are to be assessed for any environmental sensitivity.

#### 3.4.9 Decommissioning and Rehabilitation Phase

The Proponent must implement site restoration measures after the exploration activities on EPL 9036 are completed. The scheduled exploration efforts on the EPL are concluded after they are finished, though they may be stopped earlier if poor economic conditions or unconvincing exploratory results arise. A decommissioning and rehabilitation plan that addresses safety, health, the environment, and contingencies is the main tool used to support decommissioning and rehabilitation. Therefore, it is best practice for the Proponent to make sure that the sites are restored and that the project is completed in an environmentally sustainable way.

# 4 PROJECT ALTERNATIVES CONSIDERED

By definition, alternatives are "different means of meeting the general purpose and requirements of the activity" (Environmental Management Act (2007) of Namibia and its regulations (2012)). This chapter will mainly point out the different ways in which the project can be undertaken, as well as identify the alternatives that, in a practical way, can be employed while ensuring minimal damage to the environment.

There have been diverse alternatives that are identified for proposed exploration activities. The most common and pivotal alternatives considered are the no-go option, location, services infrastructure, and exploration drilling methods. These alternatives are discussed as follows:

## 4.1 No-Go Option

The "No-Go" alternative refers to the option of discontinuing with the project. This implies that no activities will take place on the EPL area, and none of the potential impacts (positive and negative) identified would occur. Moreover, exploration work will not be done on the EPL and the potential mineral ores present within the EPL will remain unidentified and with further exploration findings unmined. With the No-Go option, the key losses that may never be realized if the proposed project does not go ahead include:

- Loss of in-depth geological understanding of the site area regarding the targeted commodities.
- Loss of potential income to the local and national government through land lease fees, license lease fees, and various tax structures.
- Loss of foreign direct investment;
- Loss of potential employment opportunity is curtailed; hence, there will be no local, regional and national economic contribution from the project.
- Socio-economic benefits such as skills acquisition to local community members would be not realized.

Therefore, this alternative was not considered for the project considering the above losses. In the case where parts of the project site are considered environmentally sensitive and/or protected, one or severally sections of the site may be identified sensitive, thus, can be excluded from the exploration.

## 4.2 Exploration Location

The EPL area is located in the southern parts of Namibia, in the //Karas region. Several minerals of economic potential deposits are known to exist in the general area and linked to the regional geology of the EPL area. As a result, it is impossible to identify a different site for the intended exploration activities. The geology (host rocks) and the tectonic environment of the site (ore forming mechanism) are the main factors influencing the exploration targets since this indicates that the mineralisation of the commodities targeted for the project is area specific. The Proponent intends to explore / prospect for all the licensed minerals groups likely to be associated with the regional and local geology.

Since the license lies near historical mine sites and close to the mining towns, access to infrastructure electricity, communication and water supply will relatively be accessible. It will be crucial to minimise project footprints within the EPL's actual active sites because the EPL or its future exploration targets cannot be moved.

# **5 PUBLIC CONSULTATION**

## 5.1 Objective

One of the major components of the EIA process is public consultation. It can be described by a spectrum or continuum of increasing levels of engagement in the decision-making process regarding the exploration (Chikova and Chilunjika, 2021). This is because, in the extractive industry, the engagement provides an opportunity for all the I&APs to comment on and raise any concerns they may have regarding the project.

Regarding public engagement, the principles set out in subsection (2) of as the EMA and its 2012 EIA regulations is that; (i) community involvement in natural resources management and the sharing of benefits arising from the use of the resources, must be promoted and facilitated and (ii) the participation of all interested and affected parties must be promoted and decisions must take into account the interest, needs and values of interested and affected parties. Thus, the proposed exploration activity intends to recognize the public as to accumulate information that aids the process of identifying possible ways of impacts monitoring and mitigations measures.

## 5.2 Approach to Stakeholder Engagement

The approach taken for public participation is guided by the public consultation definitions and guidance given by the MEFT as per the regulation. Communication with I&APs about the proposed development was facilitated through the following means and in this order:

a) Interested and Affected Parties (I&APs)

I&APs are the people who are affected in one way or another by the project development, directly and indirectly. SS Consultants CC identified specific I&APs, who were considered interested in and/or affected by the proposed exploration activities. In addition, notices regarding the project were placed in widely circulated national newspapers for two consecutive weeks inviting members of the public to register as I&APs.

Interested and / Affected Parties	Needs and Expectations
Owners/Proponent	Sustained profitability
	Good work environment
National (Ministries and State-Ow	ned Enterprises)
Ministry of Environment, Forestry and Tourism Ministry of Mines and Energy Ministry of Health and Social Services Ministry of Agriculture, Water and Forestry Ministry of Urban and Rural Development	<ul> <li>Compliance with statutory and regulatory requirements</li> <li>Ethical behaviour</li> <li>Environmental protection</li> <li>Transparency</li> <li>Risk management</li> <li>On time tax payments and other</li> </ul>
Roads Authority	fees
Regional, Local and Traditic	onal Authorities
//Karas Regional Council !Nami-Nus & Aus Rural Constituency	<ul> <li>Ethical behaviour</li> <li>Transparency</li> <li>Mutual benefits and continuity</li> <li>Significant development of local environment and communities.</li> </ul>
Ger	eral Public
Farm and or Land owners /Interested members of the public	<ul> <li>Ethical behaviour</li> <li>Transparency</li> <li>Job security</li> <li>No excess noise and emissions</li> </ul>

Table 5-1: Interested and Affected Parties (I & APs) in the region and immediate towns

- b) A Background Information Document (BID) containing descriptive information about the proposed exploration activities was compiled (Appendix H) and shared to the identified and registered interested and affected (I&APs).
- c) Project Environmental Assessment notices were placed in the Republiklein newspapers under the Market Watch dated (25<sup>th</sup> November 2024 and 2<sup>nd</sup> December 2024), and in the Confidante newspaper dated (24<sup>th</sup> November 2024 and 2<sup>nd</sup> December 2024), briefly explaining the activity and its locality, and inviting members

of the public to register as I&APs and to register their concerns as well. The newspaper adverts are included in Appendix C.

d) No public consultation was conducted as no I&APs registered to participate after the due date on the 23rdn of December 2024.

The next chapter of the environmental scoping report discusses the naturally occurring geological features of the project area and the surrounding areas. Under this chapter, the description of the land surfaces in the EPL is given.

# 6 ENVIRONMENTAL AND SOCIAL BASELINE

The proposed exploration activities will be undertaken in an environment with specific conditions, the environment will be affected in one way or another. It is therefore vital that prior to the project development, there is a thorough understanding of the pre-project conditions. It is equally important to form a baseline understanding of the area and make sound conclusions on certain issues that may arise during or after the projects; operations. The environmental and social baseline for the project area is presented under the subchapters below.

## 6.1 Geology

#### 6.1.1 Regional geology

The Meso- and Palaeoproterozoic metamorphic rocks are overlain by the sedimentary cover sequences of the Neoproterozoic to Cambrian Nama Group and the Palaeozoic Karoo Supergroup. Consisting of the basal Kuibis, the middle Schwarzrand and the upper Fish River Subgroups, the shales, sandstones and limestones of the Nama Group occupy extensive areas in and between the Great and Klein Karas Mountains. Local geology surrounding EPL 9036

The EPL 9036 is dominantly represent the lower part of the Kuibis Group, an early foreland basin succession comprising of shallow-water fine siliciclastic and carbonates. Two sequences (K1 and K2) exist in the Kuibis Subgroup. Sequence K1 mainly comprises the lower part of Dabis Formation, which non-conformably overlies crystalline basement. K1 consists of a basal unit of course, tabular-bedded sandstones (Kanies Member) overlain by fine-grained, irregularly laminated dolostone and limestone.



Figure 6-1: Stratigraphy of the area surrounding EPL-9036.





## 6.2 Topography and Drainage

## 6.2.1 Topography

The topography of the Namib Plains and the Nama-karoo Basin in Namibia is characterized by a variety of landscapes, including highlands, mountains, and basins. The //Karas Region also hosts Namibia's several mountains; Great Karasburg Mountains ((2,579m), Tiras Mountains and escarpment, and Brukkararos Mountain lies in the far southern part (Geological Survey of Namibia, 2012). Furthermore, although mountainous, the EPL area is occasionally covered by the Fish, Konkiep, and Löwen rivers flow southwards across the Nama-karoo Basin towards the Orange River. The topographic view of some parts of the EPL are shown in Error! Reference source not found.



Figure 6-3: showing EPL-9036 landscape and topography.

## 6.2.2 Water Resources: Surface and Groundwater

The EPL is located in a region with extremely poor and constrained groundwater potential hydrologically. The EPL is traversed by the ephemeral river Nuab. Since there are very little groundwater resources in this area of Namibia and minimal groundwater recharge is provided

by the low average annual rainfall, extraction would readily outweigh recharging if the groundwater resources were used (Christelis et al, 2011).

The quantity and quality of surface and groundwater may be impacted by exploration activities. Consequently, during the project phase, careful monitoring would be necessary for any possible contamination and alteration of surface and groundwater, in accordance with the existence of surface and underground in the EPLs. This can entail the early installation of monitoring stations to identify potential contamination sources and potential river flow charges.

#### 6.2.3 Soils

The Eutric Regosols and Lithic Leptosols are the two main soil types found at EPL No. 9036. The thin layers that lie directly above the rock surfaces from which the Eutric Regosols developed are medium- to fine-textured soils of actively eroding landscapes. The depth of these soils is never greater than 50 cm. Particularly in the somewhat mountainous or undulating regions on the boundary of the EPL area, lithic leptosols usually occur in actively eroding landscapes. The existence of a continuous hard rock, with a highly calcareous or cemented layer within 30 cm of the surface, limits the depth of these coarse-textured soils. Low-lying regions of the landscape or depressions are home to petric calcisols, which usually contain accumulations of calcium carbonate, often in a cemented form called Calcrete. Large white blocks of Calcrete are often visible on the surface.

#### 6.3 Biophysical Environment

#### 6.3.1 Climate

The Exploration activities proposed within an EPL are significantly influenced by the climatic conditions of the area. Understanding climatic conditions is crucial as it helps determine the suitable and unsuitable times for conducting exploration activities and to avoid unfavourable or hazardous times. The climate of the project area is generally known as cold desert climate. The Aus area, receives relatively low, highly variable, and unreliable rainfall throughout the year.

#### 6.3.1.1 Rainfall

The Aus area experiences rainfall mainly during the summer months of December to April experienced as short-lived sporadic thunderstorms. All the streams within the area are

ephemeral, but can flow very strongly after summer rainfall (Domptail et al, 2010). However, about 29% of rainfall in the Aus area occurs between May and August. The average monthly rainfall for Aus is 57mm, and average annual rainfall is 86mm (SASSCAL, 2021).

#### 6.3.1.2 Temperature

At Aus, the mean daily maximum temperature is 30°C in summer and a low 4°C in winter. The lowest average monthly temperatures of 2020 were recorded in the Aus area August at 14.8 °C, while highest average monthly temperatures were recorded in January at 28.6 °C.

#### 6.3.1.3 Wind

According to 2020 data from SASSCAL, the strongest wind speeds in the Aus area are experienced in July, at an average wind speed of 2.8 km/h. These fluctuations in wind speed are typical of arid climates, where seasonal variations and local influences contribute to atmospheric conditions.

#### 6.3.1.4 Humidity

The most humid month of the year at the project area is usually February, with an average relative humidity of 38.3 % due to the rains, while the least humid month is usually October, with an average relative humidity of 17%.

## 6.3.2 Fauna and Flora

#### 6.3.2.1 Fauna

The diversity of mammals within and surrounding EPL 9036 ranges from 16 to 30 species, carnivores exhibit a diversity of 10 to 13 species, bird diversity is less than 51, reptile diversity falls between 41 to 50, and amphibians are observed in the range of 1 to 4 species. Common mammals expected in the area include gemsboks, steenboks, springboks, baboons, and porcupines. The region is also habitat to various reptiles, including snakes such as puff adders, cobras, dwarf adder, and whip snakes, as well as a variety of lizards and geckoes.

## 6.3.2.2 Flora

The project area is largely dominated by *Brownanthus arenosus* and extremely diverse vegetation cover. The extremely diverse vegetation cover consists mainly of desert/dwarf shrub transitions, which belong to the Nama-Karoo, with heights ranging from 2-5 m. Some few parts of the project areas are covered by the *Acacia hereroensis* vegetation types. *Brownanthus Arenosus* cover is made up of by Southern Desert vegetation types, which

belong to the desert biome. *Acacia hereroensis* is dominated by the Dwarf shrub savannah vegetation types and it belongs to the Nama-karoo biome.

#### 6.3.3 Archaeology and Heritage Resources

The //Karas Region archaeological record is reported to have evidence of human occupation dating to the Pleistocene and Holocene periods, roughly in the last 800 000 years to 2000 BP (Kinahan, 2012). Such evidence is reflected in materials records such as surface scatters of stone artefacts, rock shelters with evidence of occupation, including rock art, graves, stone features such as hunting blinds and huts.

The regions in the EPL that will be impacted by planned mining and exploration operations do not have delicate archaeological and historical sites that are situated right inside the regions. Thus, it is currently fair to infer that Namibia's heritage resource base will not suffer from a cumulative negative impact from the projected dimension stone prospecting. Furthermore, no landforms were deemed noteworthy for their potential as a habitat for the discovery of ancient objects, and as a result, unique coping mechanisms are needed. The EMP should therefore adopt the Chance-Find Procedure devised for exploration and mining projects in these areas.

## 6.4 Social Baseline

#### 6.4.1 Social Demographics

According to the 2023 census, the population of the // Karas Region in Namibia is 109,893, with a population density of 0.68 people per square kilometre. The !Nami-Nus Constituency where the EPL is situated records a population of 8, 431 for male and 8, 812 female, (Population Census 2023, NSA)).

#### 6.4.2 Economy

#### 6.4.2.1 Mining Industry

Mining activities include diamond areas along the coast, both on and off-shore, the Kudu Gas field in the Atlantic Ocean near Luderitz, and small-scale industries in Luderitz and Keetmanshoop.

#### 6.4.2.2 Farming

The Karas Region is primarily characterized as a small stock-farming area, where sheep and goats are predominant. Noteworthy economic activities in the region include game farming and irrigation along the Naute Dam and the Orange River. The town of Lüderitz, a harbour town situated within the region, is renowned for its thriving fishing and boat-building industry.

## 6.4.2.3 Tourism

Tourist attractions encompass the Hot Water Springs at Ai-Ais, Warmbad, and the Fish River Canyon, which is the second-largest canyon in the world. In terms of education, the Karas Region hosts 49 schools with a total of 20,110 pupils.

#### 6.4.2.4 Transportation

The transportation infrastructure is well-established, with the Karasburg Railway station serving as a crossing loop on the Trans-Namib Railway between Karasburg and Luderitz, and Karasburg and Ariamsvlei. The main B3 road at Karasburg provides access to South Africa. The town of Keetmanshoop, considered the capital of the south and located 215.8 km northwest of Karasburg by road, boasts direct air, road, and rail links.

# 7 IMPACTS IDENTIFICATION, DESCRIPTION AND ASSESSMENT

## 7.1 Impact Identification

The purpose of this section is to assess and identify the most permanent environmental impacts by listing and addressing certain quantifiable aspects of these impacts. To provide possible mitigation measures to minimize the magnitude of the impacts that would be expected from the various activities that constitute the proposed mineral exploration on EPL-9036.

In addition to the environmental impacts, the proposed activities are also usually associated with different potential positive and/or negative impacts. For an environmental assessment, the focus is placed mainly on the negative impacts. This is done to ensure that these impacts are addressed by providing adequate mitigation measures such that an impact's significance is brought under control, while maximizing the positive impacts during exploration. The potential positive and negative impacts that have been identified from the exploration activities are listed as follow:

## **Positive impacts:**

- Identification of potential mineable mineral resource.
- Creation of jobs to the locals (primary, secondary and tertiary employment).
- Benefits of potential Corporate Social Responsibility (CSR) where possible, by the Proponent and his partners while operating in the area.
- Boosting of the local economic growth and regional economic development.

## Negative impacts:

- Land degradation and biodiversity loss.
- Generation of dust
- Water resources use
- Soil and water resources pollution
- Waste generation
- Occupational and community health and safety risks
- Vehicular Traffic use and safety
- Noise and Vibrations

- Disturbance to archaeological and heritage resources
- Impact on aesthetics (visual impact) and tourism
- Social Nuisance: job seeking and differing norms, culture and values
- Impacts associate with closure and decommissioning of exploration works.

The identified impacts were evaluated in terms of probability (likelihood of occurrence), scale/extent (spatial scale), magnitude (severity), and duration (temporal scale). Certain biophysical and social features will be impacted by the proposed exploration activities. As presented in **Table 7-1**, **Table 7-2**, **Table 7-3**, **Table 7-4** and **Table 7-5**. Each rating scale is assigned a numerical value to facilitate a scientific approach to determining environmental significance. This methodology ensures consistency and that potential impacts are addressed in a consistent manner, allowing a wide range of impacts to be compared.

It is assumed that determining the significance of a potential impact is a good predictor of the risk associated with that impact. Each potential impact will be subjected to the following process:

- a) Provision of a brief explanation of the impact.
- b) Assessment of the pre-mitigation significance of the impact and
- c) Description of recommended mitigation measures.

The recommended mitigation measures prescribed for each of the potential impacts contribute to the project's achievement of environmentally sustainable operational conditions for various biophysical and social Environment.

The following criteria were applied in this impact assessment:

## 7.1.1 Extent (spatial scale)

Extent is an indication of the physical and spatial scale of the impact. **Table** 7-1 shows rating of impact in terms of extent of spatial scale.

Table 7-1: Extent or spatial impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Impact is localised within	Impact is beyond the	Impacts felt within	Impact widespread	Impact extend
the site boundary: Site	site boundary: Local	adjacent biophysical	far beyond site	National or over
only		and social	boundary: Regional	international
		environments:		boundaries
		Regional		

## 7.1.2 **Duration**

Duration refers to the timeframe over which the impact is expected to occur, measured in relation to the lifetime of the project. **Table 7-2** shows the rating of impact in terms of duration.

Table 7-2: Duration impact rating

Low (1)		Low/N	lediur	n (2)	Medium (3)		Medium/High (4)	High (5)		
Immediate	mitigating	Impact	is	quickly	Reversible	over	Impact is long-term	Long te	rm;	beyond
measures, progress	immediate	revers	ble,	short	time; medium	term		closure;	peri	manent;
		term	impao	cts (0-5	(5-15 years)			irreplacea	ble	or
		years)						irretrievat	ole	
								commitm	ent	of
								resources		

## 7.1.3 Intensity, Magnitude / severity

Intensity refers to the degree or magnitude to which the impact alters the functioning of an element of the environment. The magnitude of alteration can either be positive or negative. These were also taken into consideration during the assessment of severity. **Table 7-3** shows the rating of impact in terms of intensity, magnitude or severity.

Type of	Negative						
Cillena	Н-	M/H-	M-	M/L-	L-		
	(10)	(8)	(6)	(4)	(2)		
Qualitative	Very high	Substantial	Moderate	Low	Minor		
	deterioration,	deterioration,	deterioration,	deterioration,	deterioration,		
	high quantity of	death, illness or	discomfort,	slight noticeable	nuisance or		
	deaths, injury of	injury, loss of	partial loss of	alteration in	irritation, minor		
	illness / total loss	habitat / diversity	habitat /	habitat and	change in species		
	of habitat, total	or resource,	biodiversity or	biodiversity. Little	/ habitat /		
	alteration of	severe alteration	resource,	loss in species	diversity or		
	ecological	or disturbance of	moderate	numbers	resource, no or		
	processes,	important	alteration		very little quality		
	extinction of rare	processes			deterioration.		
	species						

Table 7-3: Intensity, magnitude or severity impact rating

## 7.1.4 *Probability of occurrence*

Probability refers to the likelihood of the impacts occurring. This determination is based on previous experience with similar projects and/or based on professional judgment. **Table 7-4** below shows the criteria for impact rating in terms of probability of occurrence.

Table 7-4: Probability of occurrence impact rating

Low (1)	Medium/Low (2)	Medium (3)	Medium/High (4)	High (5)
Improbable; low			Probable if mitigating	Definite (regardless of
likelihood; seldom.	LIKELY to occur from	Possible, distinct	measures are not	preventative
No known risk or	time to time. Low risk	possibility, frequent.	implemented Medium	measures) highly likely
	or vulnerability to	Low to medium risk or		
vulnerability to	natural or induced	vulnerability to natural	risk of vulnerability to	continuous. High risk or
natural or induced	hazarde	or induced bazards	natural or induced	vulnerability to natural
hazards.	118281 03		hazards.	or induced hazards.

## 7.1.5 Significance

Impact significance is determined through a synthesis of the above impact characteristics. The significance of the impact "without mitigation" is the main determinant of the nature and degree of mitigation required. As stated in the introduction to this chapter, for this assessment, the significance of the impact without prescribed mitigation actions was measured.

Once the above factors (in the Tables above) have been ranked for each potential impact, the impact significance of each is assessed using the following formula:

## Significance (SP) = (magnitude + duration + scale) x probability

The maximum value per potential impact is 100 significance points (SP). Potential impacts were rated as high, moderate or low significance, based on the following significance rating scale (Table 7-5).

SIGNIFICANCE	ENVIRONMENTAL SIGNIFICANCE POINTS	COLOUR CODE
High (positive)	>60	н
Medium (positive)	30 to 60	Μ
Low (positive)	<30	L

Table 7-5: Significance rating scale

SIGNIFICANCE	ENVIRONMENTAL SIGNIFICANCE POINTS	COLOUR CODE
Neutral	0	Ν
Low (negative)	>-30	L
Medium (negative)	-30 to -60	Μ
High (negative)	>-60	Н

Mitigation measures are recommended for an impact with a high significance rating to reduce the impact to a low or medium significance rating, provided that the impact with a medium significance rating can be sufficiently controlled with the recommended mitigation measures. Monitoring for a period of time is recommended to confirm the significance of the impact as low or medium and under control to maintain a low or medium significance rating.

The impact assessment for the proposed exploration activities is given in following subchapters.

## 7.2 Description of Positive Impacts

The following key positive impacts are anticipated from the propose project activities:

- <u>Temporary employment</u>: there will be a creation of job opportunities to some locals from sampling throughout to drilling. This will include casual labourers, technical assistants, cleaners, etc.
- Land access use fees to the affected farmer and land custodian for socio-economic development: Payment of land use fees to the farmer in accordance with the Mining Act and possibly to MEFT would generate an income for the farm and government during exploration duration, respectively.
- <u>Empowerment of local businesses</u>: Procurement of local goods and services (such as site clearing, cleaning, etc.) by local business will promote local entrepreneurship empowerment and local economic development (income generation).
- <u>Potential Corporate Social Responsibility (CSR)</u>: Benefits where possible, by the Proponent and partners while operating in the area to fund existing or new projects that can be sponsored through the exploration project.

## 7.3 Description and Assessment of Adverse (Negative) Impacts

This section focuses on the description and assessment of potential adverse (negative) impacts noted during the ESA (including inputs from the public consultations) to be stemming from exploration activities. The potential impacts are described and assessed include impacts on wildlife (biodiversity), dust (air quality issue), soil and groundwater pollution, waste, social, archaeological resources, noise, visual and health and safety. The management and mitigation of impacts have also been provided under each impact as well as in the EMP.

#### 7.3.1 Impact Assessment of Biodiversity Loss

The presence and movement of the exploration personnel and operation of project equipment and heavy vehicles would disturb wildlife present near the EPL area. There is also a potential of illegal hunting (poaching) of local wildlife by project related workers. This could lead to loss or number reduction of specific faunal species which also impacts tourism in the community.

In terms of site vegetation (flora), these would be impacted through clearing to create exploration access roads, setting up project equipment and infrastructures, and actual exploration activities such as sampling, drilling, and trenching. Drilling activities may potentially impact vegetation through the fallout dust settling on the leaves of the plants, hindering, or preventing photosynthesis. The clearing of vegetation, where deem necessary will be limited to the specific route and minimal, therefore, the impact will be localized, site-specific, therefore manageable.

Whilst the mining industry plays a vital role in the growth and development of Namibia, it must be noted that protected areas are essential for biodiversity and ecosystem services conservation. Therefore, prospecting activities within biodiversity priority areas must be guided by frameworks that ensure prohibition on related impacts. The existing exploration and mining activities can be considered sustainable under the conditions that mitigation measures and action plans are effectively implemented during operational phases.

A few areas of the site may need to be cleared in preparation for the proposed exploration activities. This may have an impact on the existing biodiversity in the area such as destruction of faunal habitats and floral communities in an already sensitive environment. The creation of tracks to access specific areas of the EPL may have an additional impact on the area's

biodiversity. To ensure minimal disturbance in the area, care should be taken during the necessary removal of vegetation for site preparation. The anticipated impact on biodiversity at the project site is not expected to be of such magnitude and/or significance that it will have irreversible effects on the biodiversity and endemism of the area and Namibia as a whole. The assessment of this impact is presented in **Table 7-6**.

Table 7-6: Assessment	of the impacts	of the exploration	activities on	biodiversity loss
105107 0.76550551110110	or the impuets	of the exploration		biodiversity 1055

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -3	M: -3	M: -6	M / H: 4	M: -48
Post-mitigation	L - 1	L- 1	M/L- 4	M/L – 2	L – 16

#### Mitigations and recommendations to biodiversity loss

- Vegetation should only be cleared when absolutely necessary, and the number of protected, endemic, and near-endemic species removed should be documented.
- Identify protected areas and ensure no harmful exposure to the biodiversity.
- Trees with trunk diameters of 150 mm or greater should be surveyed, marked with paint (that is easily visible), and protected.
- Trees and plants protected by the Forest Act No. 12 of 2001 may not be removed unless accompanied by a valid permit from the local Department of Forestry.
- Poaching of wildlife is strictly prohibited and is punishable by law.
- Avoid off-road driving as it leads to the destruction of site vegetation. Therefore, rather stick to provided and approved access tracks.
- Working hours should be limited to during the day, thus enabling the wildlife to roam freely at night.
- No snaring, hunting, or capturing of wildlife shall be permitted.
- There should be a no-theft policy in place for the duration of the exploration activities to be strictly adhered to by exploration workers.

## 7.3.2 Impact Assessment of Soil, Surface and Groundwater

Improper handling, storage and disposal of hydrocarbon products and hazardous materials at the site may lead to soil, surface, and groundwater contamination, in case of spills and leakages. The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in Table 7-7.

Table 7-7: Assessment of the impacts of the exploration activities on soil, surface and groundwater

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M-3	M-3	M- 6	M - 4	M - 48
Post-mitigation	L/M - 3	L/M- 2	L/M-4	L/M - 2	L - 16

## Mitigations and recommendations to soil, surface and groundwater impacts

- Employees must be trained on the correct hydrocarbon storage and handling techniques.
- Vehicles and machinery must be stored in bounded areas when not in use or a drip tray should be placed beneath potential leakage points.
- Spill control preventative measures should be put in place to manage soil contamination, employees must be trained in spill management.
- All contaminants (e.g. hydrocarbons) which might potentially be carried in run-off should be contained on-site in the appropriate manner (e.g. temporary storage in designated containers, installation of oil-water separators etc.) and disposed of as hazardous waste, so that they do not contaminate soil or groundwater.
- Appropriate storage and handling of hydrocarbons on site are essential.
- Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of in accordance with municipal wastewater discharge standards so that they do not contaminate surrounding soils and groundwater.
- An emergency plan should be available for major / minor spills at the site during operation activities (with consideration of air, groundwater, soil and surface water) and during the transportation of the product(s) to the site.

## 7.3.3 Impact Assessment of Physical land (soil) disturbance resulting in erosion

The excavations and land clearing to enable siting of project structures and equipment will potentially result in soil disturbance which will leave the site soils exposed to erosion. This impact would be probable at site areas with no to little vegetation cover to the soils in place. Exploration activities may also result in erosion from the removal of vegetation which could impact water run-off and loss of topsoil, especially for the desert soils that are prone to erosion and tracks may take up to 100 years to disappear. The movement of heavy vehicles and equipment may lead to compaction of the soils during exploration. This will, however, be a short-term and localized impact.

The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in **Table 7-8.** 

Table 7-8: Assessment of the impacts of the exploration activities on soil erosion

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M/H - 4	M/H - 4	M/H - 8	M - 3	M - 48
Post-mitigation	M - 3	L/M- 2	M- 6	L/M - 2	L - 22

#### Mitigations and recommendations to erosion

- Where possible, avoid the unnecessary destruction of habitat (e.g. large trees or bushes) and/or degradation of the environment, including the sensitive drainage lines and other vegetated areas.
- Ensure erosion control and prevention measures are in place when vegetation is removed.
- Avoid drainage lines when planning for access routes/tracks.

## 7.3.4 Impact Assessment of Waste

Improper handling and poor management of waste such as solid, wastewater and possibly hazardous onsite during exploration may result in land pollution on the EPL or around the site. If solid waste such as papers and plastics are not properly stored or just thrown into the environment (littering), these may be consumed by animals in the area which could be detrimental to their health. The poor handling, storage and disposal of fuels and oils may lead to soil and groundwater contamination, in case of spills and leakages. The pre-mitigation impact is assessed to be "low" in significance and after mitigation, the impact is assessed to have a "low" significance. The assessment of this impact is presented in **Table 7-9**. Table 7-9: Assessment of the impacts of the exploration activities on waste

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M: -3	M: -3	M / L: -4	M / H: 4	M: -40

Post-mitigation	L - 1	L- 1	L- 2	M/L - 2	L - 12

#### Mitigations and recommendations to waste management

- Waste generated on site is to be collected and disposed of daily at the nearest licenced solid waste management facility such as Aus Town Council site.
- Separate waste bins for domestic and hazardous waste should be available on site.
- No waste may be buried or burned on site or anywhere else.

## 7.3.5 Impact Assessment of occupational and community Health and Safety

Exploration activities may cause health and safety risks to people operating onsite and surrounding areas. Project personnel (workers) involved in the exploration activities may be exposed to health and safety risks. These are in terms of accidental injury involving heavy machinery or vehicles accidents. The careless storage and handling of heavy vehicle, equipment and fuel may result in harm or injury to the personnel, residents and animals. Another potential risks to both people and animals within the EPL are unfenced exploration trenches or trenches that are not backfilled after completing the sampling works. Unsecured exploration trenches and even uncapped holes could pose a risk of people or animals falling into the open trenches leading to injuries.

The use of heavy equipment, especially during drilling and the presence of hydrocarbons (fuel residue) on sites may result in accidental fire outbreaks. This could pose a safety risk to the project personnel and locals too.

Furthermore, the influx of people into the project area may also lead to sexual relations between these out-of-area workers and the locals. This would lead to the spreading of sexual transmitted diseases (i.e., HIV/AIDS) when engaging in unprotected sexual intercourse.

The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in **Table 7-10**.

Table 7-10: Assessment of the impacts of the exploration activities on occupational and communityhealth and safety

Mitigation Status	Extent	Duration	Intensity	Probability	Significance

Pre-mitigation	M/L - 2	M/L - 2	M - 6	M/H - 4	M - 40
Post-mitigation	L-1	L- 1	M/L- 4	M - 3	L - 18

#### Mitigations and recommendations to occupational and community health and safety

- Exploration workers should be provided with awareness training about the risks associated with hydrocarbon handling and storage.
- During the works conducted, workers should be properly equipped with the appropriate personal protective equipment (PPE) such as coveralls, gloves, safety boots, safety glasses etc.
- Regular health and safety training should be carried out to remind workers of the risks and the need to be vigilant.
- Loads should be securely fastened on vehicles or places they are stored.
- Site areas that pose as a risk to people and animals should be temporary fenced off until the hazard is removed.
- Exploration holes and trenches should be capped, backfilled and secured until they can be completely backfilled and rehabilitated upon completion of exploration sampling.

## 7.3.6 Impact Assessment of Dust

Dust generation may occur during exploration activities emanating from site access roads when transporting exploration equipment and supply to and from site as well as actual excavations and drilling. This may compromise the air quality in the area.

The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in Table 7-11.

Table 7-11: Assessment of the impacts of the exploration activities on dust generation

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M - 2	L/M - 2	M/H - 8	M - 3	M - 36
Post-mitigation	L/M-2	L/M-2	L - 2	L / M - 2	L - 12

#### Mitigations and recommendations to dust generation

- Dust abatement techniques should be implemented e.g. spraying of water as needed to supress dust. However, caution should be taken during times of low water availability then waterless dust suppression means should be considered.
- Exploration workers should be provided with and wear dust masks during exploration works if needed.
- Vehicles should be driven at a speed less than 40km/hour to reduce the generation of excess dust in the area.

## 7.3.7 Impact Assessment of Noise

Exploration equipment, heavy vehicles (trucks) and machinery may produce high levels of noise during operations. Similarly, the use of aircrafts for remote sensing techniques during exploration over large areas may disrupt animals and human activity due to excessive noise. The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in **Table 7-12.** 

Table 7-12: Assessment of the impacts of the exploration activities on noise

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M - 2	L/M - 2	M/H - 8	M - 3	M - 36
Post-mitigation	L - 1	L- 1	M- 6	L/M - 2	L - 16

#### Mitigations and recommendations to noise

- Exploration activities should only be undertaken between 07h30 and 17h00 only and not in the night or morning hours before 07h30.
- Avoid flying aircrafts directly over human settlements.
- Consult with the relevant stakeholders when would be the best suited time to fly prior to commencing with the flights.
- Noise levels should adhere to the South African National Standards (SANS) regulations 10103.

#### 7.3.8 Impact Assessment of Archaeological and Heritage Resources

The proposed exploration activities may impact areas that could potentially house archaeological and heritage resources.

The excavation on the EPLs may result in inadvertent destruction of subsurface heritage resources such as artefacts and unknown graves. The EPL lies in an area of inferred archaeological sensitivity, with a high likelihood that it will contain archaeological sites.

The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in **Table 7-13.** 

Table 7-13: Assessment of the impacts of the exploration activities on archaeological and heritage resources

Mitigation Status	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L/M - 2	L/M - 2	M - 6	H – 5	M - 50
Post-mitigation	L - 1	L- 1	M- 6	L/M - 2	L - 16

#### Mitigations and recommendation to archaeological and heritage resources

- An archaeological expert must be appointed to undertake a detailed archaeological survey once targets have been identified for drilling and/or other mechanicallyassisted exploration, and prior to the commencement of any such activities.
- All works are to be immediately ceased should an archaeological or heritage resource be discovered during activities on site.
- The project should adopt an Archaeological Chance Finds Procedure as outlined in the Environmental Management Plan, to cater for unexpected discoveries of archaeological remains in the course of exploration.
- The National Heritage Council of Namibia (NHCN) should advise with regards to the removal, packaging and transfer of the potential resource.

#### 7.3.9 Impact on aesthetics (visual impact) and tourism

The exploration works are associated with visual impacts due to land scars owing to dimension stone exploration activities, resulting in the impact on tourism. Visual impact from unrehabilitated explored areas on the EPL may pose as an eyesore to travellers (including tourists) using local access roads. Mining related activities such as exploration, particularly dimension stone leave scars on the local landscape. If the explored sites are close to or along roads or frequented areas, these scars in many cases contrasts the surrounding landscape and thus may potentially become a visual nuisance, especially in tourist-prone areas such as the EPL site area.

The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in **Table 7-14.** 

Table 7-14: Assessment of the impacts of the exploration activities on visual aesthetics and tourism

	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M/L - 2	M/L - 2	M - 6	M/H - 4	M - 40
Post-mitigation	L - 1	L- 1	M/L- 4	M - 3	L - 18

#### Mitigations and recommendations to visual impact

- The EPL portions or areas close to the roads should be progressively rehabilitated during exploration over the shortest timescale possible to ensure that there are no prolonged visible and excessive land disturbances.
- All access roads leading to the EPL should have speed limits of no more than 30km/h to minimise the amount of dust generated by the vehicles. This in turn will also minimise any potential air quality concerns in the vicinity of the project.
- Utilize stockpiled topsoil to partially back fill explored sites, thus, minimizing visual impacts.
- Consider a phased exploration and direct placement of overburden (topsoil and waste rocks) and other site-derived materials to allow progressive restoration around the margins of the explored site areas.

## 7.3.10 Impact Assessment of Social Environment

The proposed activity may provide employment opportunities for local people within proximity of the exploration site. Additional benefits may arise depending on the agreements reached between the communities and the Proponent. The assessment of this impact is presented in **Table 7-15**.

Table 7-15: Assessment of the impacts of the exploration activities on social environment

	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	L - 1	L/M - 2	L - 2	M - 3	L - 15
Post-mitigation	L - 2	M- 3	M- 6	M/H - 4	M - 44

#### Mitigations and recommendations to the social environment

 Should any job opportunities result, it should be made available to the local people in the area.

## 7.4 Decommissioning Phase

Once the exploration activities are decommissioned, the main potential impacts are groundwater pollution and loss of jobs to the people employed by the activities.

## 7.4.1 Impact on Groundwater

Should the exploration activities be decommissioned, and the exploration area be rehabilitated groundwater pollution may occur if contaminated soils are utilized during rehabilitation. The pre-mitigation impact is assessed to be "medium" in significance and after mitigation, the impact is assessed to have a "low" significance. The assessment of this impact is presented in **Table 7-16.** 

	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M/H - 4	M/H - 4	M/H - 8	M - 3	M - 48
Post-mitigation	M - 3	L/ML- 2	M- 6	M/L - 2	L - 22

Table 7-16: Assessment of the impacts of decommissioning of exploration activity on groundwater

#### Mitigations and recommendations on groundwater impacts

- Rehabilitation of the site to acceptable standards should be commenced once exploration works cease.
- Landowners should be consulted to indicate acceptance of the rehabilitation.
- Ensure that the integrity of all aquifers remains consistent with the existing natural and operational conditions

## 7.4.2 Impact on Employment

Once the exploration activities are decommissioned those employed on contract basis may lose their jobs. The pre-mitigation impact is assessed to be "medium" in significance and after mitigation the impact is assessed to have a "low" significance. The assessment of this impact is presented in Table 7-17.

Table 7-17: Assessment of the impacts of decommissioning of exploration activity on employment

	Extent	Duration	Intensity	Probability	Significance
Pre-mitigation	M/HL/M - 4	M/H - 4	M/H - 8	M - 3	M - 48
Post-mitigation	L/M - 3	L/M- 2	M- 6	L/M - 2	L - 22

## Mitigations and recommendations on loss of employment

- The Proponent should inform the employees, of its intentions to end the exploration activities, and the expected date well in advance.
- The Proponent should raise awareness of the possibilities for work in other related sectors if possible.

## 8 CONCLUSION AND RECOMMENDATIONS

## 8.1 Conclusion

The aim of this environmental scoping assessment was to identify the potential impacts associated with the proposed exploration activities on the EPL area, to assess their significance and recommend practical mitigation measures. The public and all directly affected stakeholders were consulted as required by the EMA and its 2012 EIA Regulations (Section 21 to 24). The central potential biophysical impact related to the pre-operational, operational and maintenance and decommissioning phases of the proposed project activities have been identified and assessed. The overall severity of potential environmental impacts of the proposed project activities on the receiving environment will be of medium magnitude. In an effort to uphold environmental management principles, appropriate mitigation measures (where required and possible) were recommended. The deduction from the scoping study is that, the proposed exploration for the commodities holds the potential to contribute to Namibia's economy through the creation of employment, transformation of existing technology and uplifting of living standards in general.

## 8.2 Recommendation

Based on the information provided in this environmental assessment report, SS Consultant CC is confident the identified risks associated with the proposed development can be reduced to acceptable levels and ensure minimal damage to the environment, should the measures recommended in the EMP be implemented and monitored effectively.

It is therefore recommended that the Proponent is awarded an Environmental Clearance Certificate, grounded on the following conditions:

- That the EMP be implemented by the Proponent and all appointed consultants;
- That once a target area has been identified, all invasive work should be conducted in accordance with the EMP.
- In cases where baseline information, guidelines, or mitigation measures have not been supplied or do not adequately address the site-specific project effect, the Proponent must use the precautionary approach.

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# **10 APPENDIX A: ENVIRONMENTAL MANAGEMENT PLAN**



#### ENVIRONMENTAL MANAGEMENT PLAN

# FOR THE PROPOSED MINERAL EXPLORATION OF BASE AND RARE MATERIALS, DIMENSION STONE, INDUSTRIAL MINERALS AND PRECIOUS METALS ON EXCLUSIVE PROSPECTING LICENSE NO.9036

AUS DISTRICT, //KARAS REGION – NAMIBIA

ECC APPLICATION NO.: APP No. 241113004946



PLESATI INVESTMENT CC | EPL No. 9036

ENVIRONMENTAL MANAGEMENT PLAN

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## LIST OF ABBREVIATIONS

Department of Environmental Affairs and Forestry	
Department of Water Affairs	
Environmental Clearance Certificate	
Environmental Control Officer	
Environmental Assessment	
Environmental Impact Assessment	
Environmental Management Act	
Environmental Management Plan	
Exclusive Prospecting License	
Government Gazette & Government Notice	
Ministry of Agriculture, Water and Land Reform	
Ministry of Environment, Forestry & Tourism	
Personal Protection Equipment	
	Department of Environmental Affairs and Forestry Department of Water Affairs Environmental Clearance Certificate Environmental Control Officer Environmental Assessment Environmental Impact Assessment Environmental Management Act Environmental Management Plan Exclusive Prospecting License Government Gazette & Government Notice Ministry of Agriculture, Water and Land Reform Ministry of Environment, Forestry & Tourism Personal Protection Equipment

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#### ENVIRONMENTAL MANAGEMENT PLAN

## INTRODUCTION

#### 1.1 Project Overview

Plesati Investment CC (herein referred to as the Proponent) and intends to prospect and explore for base and rare metals, dimension stone, industrial minerals and precious metals as per **Figure 1-1** below. The EPL No.9036 is located south of Aus town within a circa 120 km. The project area covers an area of 29556.49 hectares (Ha) and is demarcated by 4 (four) corner coordinates and sits on state land as shown below. The proposed exploration includes both non-invasive and invasive exploration methods. The EPL is relatively flat with small undulating hills and is therefore easily accessible via minor car tracks within the areaNoteworthy, the duration of exploration activities will be over the license tenure, which is valid for three (3) years, once an ECC has been issued for EPL-9036.



Figure 1-1: Locality map for EPL-9036 indicating the project area location in the southern part of Namibia.

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Figure 1-2: Map showing bounding coordinates for EPL-9036.

## 1.2 Purpose of the Environmental Management Plan

This document is prepared as part of the Environmental Scoping and Impact Assessment for the proposed exploration as per the Environmental Management Act, 2007 (EMA) (Act No. 7 of 2007). This EMP serves as a vital tool for ensuring sustainable development and the protection of natural resources. Its sole purpose is to guide and regulate human activities to minimize negative environmental impacts and promote the conservation of Namibia's unique ecosystems. It provides a link between the impacts identified in the EA process and the required mitigation measures to be implemented during exploration.

The EMP aims to safeguard the diverse ecosystems, including its rich wildlife, sensitive habitats, and environment. It identifies potential environmental risks associated with development projects and outlines measures to mitigate these risks, ensuring the long-term health and resilience of the environment. It provides management measures to address the environmental effects that have been

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identified in the Environmental Scoping Assessment report and to provide possible mitigation measures/recommendations to address these impacts.

1.3 Phases of the proposed exploration activities

The core purpose of the Environmental Management Plan is to guide environmental management throughout the phases of the proposed exploration activities namely; planning, prospecting & exploration, and decommissioning & rehabilitation phase:

<u>Planning phase</u>: In this stage, the Proponent prepares all the administrative and technical requirements needed for the actual works on the ground. The planning includes obtaining the necessary permitting and authorization from relevant national and local stakeholders and facilitating the recruitment and procurement processes in preparation for the exploration activities (and site maintenance).

<u>Prospecting and Exploration phase</u>: This is the stage where the proponent carries out prospecting and exploration activities for the target commodities. A detailed search for and assessment of mineral resources including data gathering over smaller, more specific areas to test if the resource in prospect is commercially viable. The exploration approach is such that non-invasive methods are used before more invasive methods can be employed, this is done so in respect of the environment. It is also in this phase where maintenance of the area, equipment and machinery is done by the Proponent.

<u>Decommissioning phase</u>: This is the stage in which the exploration activities on the EPL area cease. The decommissioning of the EPL exploration activities may be considered due to poor results or declines in the focus commodity market price. Before the decommissioning phase, the Proponent would need to put site rehabilitation measures in place.

The next chapter summarises the proposed project activities, entailing the systematic approach of the exploration techniques.

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## PROJECT ACTIVITIES

The Proponent plans to conduct an exploration program on EPL-9036, focusing on dimension stones and nuclear fuel minerals (commodity addition). The program includes both non-invasive and invasive exploration techniques. Non-invasive techniques involve geological desktop studies, interpretation of aeromagnetic and remote sensing images, field mapping, ground geophysical surveys, and sampling of surface rock and soil. These methods aim to gather geological information without significant disturbance. The primary goal of non-invasive methods is to assess the need for more invasive exploration.

The exploration program will follow a systematic approach, starting with non-invasive methods to determine if invasive techniques are necessary. If non-invasive exploration yields positive results, indicating promising mineralization, detailed site-specific drilling, trenching, and sampling will be conducted. Throughout the program, environmental impacts will be minimized by using non-invasive techniques initially and following safety protocols for drilling and excavation activities. The exploration program aims to identify economically viable mineral deposits while ensuring responsible environmental management and adherence to regulations.

The proposed exploration activities will be implemented through the following sequential phases:

Phase	Exploration technique	Description
Phase 1 Desktop study		is a preliminary investigation conducted using existing data and information to evaluate the potential of a project or area. It involves reviewing geological maps, satellite imagery, historical exploration reports, geophysical data, and environmental records. Desktop studies are cost-effective and help identify target areas, assess risks, and plan fieldwork for exploration projects.
Phase 2	Geological mapping	Geological mapping is the process of systematically documenting and interpreting the geology of an area. It involves observing and recording rock types, structures (e.g., faults, folds), mineral occurrences, and surface features in the field. The data is

Table 2-1: Exploration activities phases

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		compiled onto a map to show the distribution and relationships of geological units. Geological mapping is essential for understanding the area's geology, guiding exploration activities, and identifying potential mineral resources.
Phase 3	Geophysical Surveys	Are non-invasive exploration techniques used to measure the physical properties of the Earth's subsurface, such as magnetic, gravitational, electrical, or seismic properties. These surveys help identify anomalies or structures that may indicate the presence of mineral deposits. Common methods include magnetic surveys, resistivity, induced polarization (IP), and seismic surveys. Geophysical surveys are valuable for mapping geology, locating targets, and reducing the need for extensive drilling.
Phase 4	Geochemical Sampling	involves collecting soil, rock, water, or sediment samples to analyze their chemical composition. This method helps identify anomalies or patterns indicating the presence of valuable minerals or elements. In exploration, geochemical sampling is used to pinpoint target areas for further investigation, such as drilling or trenching, and to understand the dispersion of minerals within a given area.
Phase 5	Trenching and Pitting	Involves excavating shallow trenches or pits to expose and assess the quality, size, and continuity of stone deposits, such as granite, marble, or sandstone. These methods allow geologists to evaluate the color, texture, structure, and potential flaws of the stone directly from the exposed material, helping determine its suitability for commercial use.
	In-fill Drilling	Exploration drilling is a process used in mining and geology to extract samples of subsurface materials to assess the presence, quantity, and quality of mineral deposits. It involves drilling boreholes into the ground to collect core or rock chip samples, which are analyzed for geological, geochemical, and structural

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information. This helps determine the feasibility of mining and
 guides further exploration and resource estimation.

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## LEGAL AND REGULATORY FRAMEWORK: PERMITS AND LICENSES

This chapter outlines all the relevant Namibian legislation, policies and guidelines that need to be adhered to for an effective EIA process. The review of the legal framework helps to inform the Proponent, affected, and interested communities, and the decision makers at the MEFT: DEAF about the requirements and expectations, as laid out in terms of these instruments, to be met so that the exploration activities could be conducted. This EMP was carried out based on the EMA No. 7 of 2007 and its EIA Regulations of 2021 (GG No. 4878 GN No. 30), and following the conditions set by EMA for obtaining an ECC for permission to conduct certain listed activities. The Proponent must equally ensure adherence to the regulations put in place by the Minerals (Prospecting and Mining) Act No. 33 of 1992 with regards to the exploration activities. The list of legal and regulatory requirements governing the project activities is provided in the Scoping Report. Thus, the legal section in the EMP as stipulated by Section 8 (e) of the EIA Regulations, primarily on specific approvals and permits that may be required for the activities required on the EPL. These are provided in Table 3-1.

Table 3-1 Legal and Regulatory Frameworks in terms of permits and licenses for the project activities.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project	
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs.	The EMA and its regulations should inform and guide this EA process. Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue. For ECC amendment or cancelation, the MEFT should be notified.	
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21).		

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Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	Contact details at the Department of Environmental Affairs and Forestry (DEAF), Ministry of Environment, Forestry and Tourism (MEFT), Office of the Environmental Commissioner: Mr. Timoteus Mufeti Tel: +264 61 284 2701
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	Section 48 (3): To enable the Minister to consider any application referred to in section 47 the Minister may (b) require the person concerned by notice in writing to (i) carry out or cause to be carried out such environmental impact studies as may be specified in the notice.	The Proponent should ensure that all necessary permits/authorizations, including the certificate for the EPL are obtained from the Ministry of Mines and Energy (MME). Contact person and details at the MME (Mining Commissioner): Mrs. Isabella Chirchir Tel: +264 61 284 8251.
	Section 52 (1) (a) requires mineral license holders to enter into a written agreement with affected landowners before exercising rights conferred upon the license holder.	The Proponent should timely enter into and sign access and land use agreement (consent) with the land user (custodian) MEFT's Wildlife & National Parks and affected farmer prior to undertaking any activities on the EPL (including mobilization).

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Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project		
Water Resources Management Act (No 11 of 2013)	Ensure that the water resources of Namibia are managed, developed, used, conserved, and protected in a manner. Therefore, a Groundwater Abstraction & Use Permit should be applied for, The Permit is required for all commercial and industrial water uses. Although, exploration is not entirely commercial, the associated activities such as drilling fall under industrial activities, thus, the need to apply for an abstraction permit (this would apply if the Proponent abstracts water outside the EPL area)	The Water Permit should be applied from the Ministry of Agriculture, Water and Land Reform (MAWLR) Department of Water Affairs (DWA): Contact: Mr. Franciskus Witbooi Division: Water Policy and Water Law Administration Division Tel: +264 61 208 7158		
	For any project wastewater planned for discharge into the environment, a discharge permit should be applied for and obtained.	MAWLR, DWA' Water Environment Division Contact: Ms. Elise Mbandeka Tel: +264 61 208 7167		
Nature Conservation Ordinance 4 of 1975	The conservation of nature; given that the exploration activities will be done in a National Park	Adhere to the operational rules and regulation of the Dorob National Park and ensure that consent is obtained from MEFT to carry out exploration in the Park.		

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Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Petroleum Products and	Regulation 3(2)(b) states that	MEFT's Directorate of Wildlife & National Parks MEFT Swakopmund Office Tel: +264 64 404 576 The Proponent should obtain the
Energy Act (No. 13 of 1990) Regulations (2001)	"No person shall possess or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"	necessary authorisation form the MME for the storage of fuel on-site (Consumer Installation Permit). Mr. Carlo Mcleod (Ministry of Mines and Energy: Acting Director – Petroleum Affairs) Tel: +264 61 284 8291
National Heritage Act No. 76 of 1969	Call for the protection and conservation of heritage resources and artefacts.	For any archaeological material, such as bones, unknown graves, old weapons/equipment etc. that may be found on the EPL, work should stop immediately, and the National Heritage Council (NHC) of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material. Contact Details at the NHC of Namibia: Mrs. Erica Ndalikokule – NHC Director Ms. Agnes Shiningayamwe (Heritage Officer)

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Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project	
		Tel: +264 61 301 903	

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## POTENTIAL ENVIRONMENTAL IMPACTS

The key environmental aspects that could be impacted by exploration activities include:

#### 4.1 Impact on Biodiversity (vegetation and wild animals)

The exploration activities, including vegetation removal for geophysical lines, soil sample collection, and drill pad preparation, can significantly impact biodiversity. These activities, along with the creation of access tracks within the project area and the establishment of infrastructure and machinery, may lead to:

Habitat Destruction: The clearing of vegetation disrupts habitats critical for the survival of various species, potentially leading to displacement or loss of flora and fauna. Sensitive or endemic species may be particularly affected.

**Soil Erosion and Degradation:** The removal of vegetation increases soil exposure, making it vulnerable to erosion, which can further degrade the habitat and affect plant regrowth.

**Disturbance to Wildlife:** Noise, vibration, and human activity during exploration can disturb wildlife, causing stress, altered behaviors, and migration from the area.

**Fragmentation of Ecosystems:** Access tracks and cleared areas may fragment ecosystems, reducing habitat connectivity and impacting species that require large, continuous habitats.

**Loss of Biodiversity:** Over time, the combination of habitat destruction, ecosystem fragmentation, and disturbance can lead to a decline in biodiversity in the project area.

Introduction of Invasive Species: Disturbed land and increased human activity may create opportunities for invasive plant or animal species to establish, further threatening native biodiversity.

#### 4.2 Soil erosion and compaction

The project area, characterized by the Namib Plains with sand-drifts, prominent inselbergs, and active sand dunes in the western part, is highly sensitive to soil disturbance. Exploration activities such as vehicle movements, creation of access tracks, and the clearing of vegetation can exacerbate soil erosion and compaction. Specific impacts include:

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**Soil Compaction:** Frequent movement of heavy machinery and vehicles over the project area can compact desert soils, reducing their porosity and water infiltration capacity. This compaction affects soil structure and hinders the growth of vegetation, further destabilizing the fragile ecosystem.

**Increased Erosion Potential:** The removal of already scarce vegetation exposes the topsoil to wind and water erosion. The loose sandy soils, typical of the area, are particularly vulnerable to displacement by strong desert winds and occasional rainfall, leading to the formation of gullies and loss of fertile soil layers.

**Destabilization of Sand Dunes:** Active sand dunes in the western part of the area are sensitive to disturbance. Vehicle movements and vegetation removal may destabilize these dunes, causing shifting sands that can alter the landscape and potentially affect adjacent areas.

Loss of Soil Fertility: Erosion and compaction lead to the loss of topsoil, which is critical for supporting the limited vegetation in the area. This loss diminishes the area's capacity for natural regeneration, further degrading the environment.

Impact on Water Retention: Compacted soils and the removal of vegetation reduce the soil's ability to retain water, exacerbating arid conditions and limiting the availability of moisture for plant life.

#### 4.3 Air Quality

Exploration activities, including drilling, excavations, pitting, trenching, and the movement of heavy vehicles, can significantly impact air quality in the project area. Specific impacts include:

**Dust Generation:** The disturbance of soil and rock during drilling, trenching, and excavation, combined with vehicle movement on unpaved surfaces, generates substantial amounts of dust. In arid environments, where vegetation is sparse, dust can travel over long distances, potentially affecting nearby communities, ecosystems, and wildlife.

Vehicle and Machinery Emissions: The use of heavy machinery and vehicles releases exhaust emissions, including carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>\*</sub>), and particulate matter. These emissions contribute to air pollution and may exacerbate local air quality issues, particularly in calm or stagnant atmospheric conditions.

Impact on Visibility: Elevated dust levels can reduce visibility, posing potential safety risks for project personnel and nearby road users.

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Health Impacts: Dust and emissions may have adverse health effects on workers and nearby residents, particularly individuals with pre-existing respiratory conditions. Prolonged exposure to fine particulate matter can lead to respiratory irritation, reduced lung function, and other health issues.

Impact on Vegetation and Wildlife: Dust deposition on plant surfaces can inhibit photosynthesis, affect growth, and reduce vegetation health. Wildlife may also be impacted by reduced air quality and increased stress from particulate matter.

#### 4.4 Visual

Invasive exploration activities conducted near roads, particularly the C13, can create visual disturbances that contrast sharply with the natural surroundings. These impacts include:

**Unrehabilitated Areas:** Exploration activities, such as trenching, pitting, and clearing of vegetation, can leave scars on the landscape if not promptly rehabilitated. These disturbed areas may appear unnatural and unsightly, detracting from the aesthetic appeal of the environment.

Machinery and Vehicle Presence: The visibility of exploration vehicles, drilling rigs, and other machinery near the road may disrupt the natural and scenic views that travelers on the C13 expect, potentially diminishing their overall experience.

**Dust and Debris:** Dust generated by vehicle movements and exploration activities may create a haze in the area, further impacting the visual quality of the landscape.

**Light Pollution:** If exploration activities extend into the evening, artificial lighting from machinery and campsites may contribute to light pollution, disrupting the natural nighttime environment and affecting both travelers and local wildlife.

#### 4.5 Noise

Noise generated by exploration activities, including drilling, excavation, and the movement of heavy machinery, can have significant impacts on both human and wildlife populations in the surrounding area. Specific impacts include:

Disturbance to Neighbouring Farms: The noise from drilling rigs, vehicles, and other machinery can be disruptive to nearby farms, particularly in quiet rural areas where agricultural activities may require PREPARED BY SS CONSULTANTS CC

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peaceful conditions. Continuous or loud noise can negatively affect the quality of life for farmers and residents.

Impact on Wildlife: The noise created by exploration activities can cause stress to wildlife, particularly species sensitive to sound. Prolonged exposure to noise may result in animals migrating away from their natural habitats within the EPL, potentially disrupting their behaviors, breeding patterns, and feeding habits.

Habitat Avoidance: Noise pollution can lead to habitat avoidance by animals, particularly those that rely on quiet environments for survival. This can create a barrier to movement, alter migration patterns, and reduce access to important resources within the exploration area.

Health Effects on Wildlife: Persistent exposure to loud noise can affect the hearing, communication, and stress levels of animals, further impacting their ability to thrive in the affected ecosystem.

#### 4.6 Soil and Water resources

Exploration activities can pose risks to soil and water resources through the potential contamination of both surface and groundwater sources. Key concerns include:

**Fuel and Chemical Spills:** The use of heavy machinery, drilling rigs, and equipment can result in spills of fuel, lubricants, and other chemicals. These spills can seep into the soil, potentially contaminating it and compromising its quality. If spills occur near water bodies, they can contaminate surface water, threatening aquatic life and the broader ecosystem.

Wastewater Management: Poor management of wastewater (effluent) generated during exploration activities can lead to contamination of both surface and groundwater. Unauthorized or irresponsible discharge of wastewater, such as from drilling operations or vehicle wash stations, can introduce harmful substances like oils, sediments, and chemicals into nearby water sources, degrading water quality.

Impact on Soil Health: Contamination from chemical spills or wastewater can alter the composition of the soil, affecting its ability to support plant life. Long-term contamination can lead to soil degradation, reducing its fertility and capacity to retain moisture.

Impact on Groundwater: Exploration activities that involve drilling or excavation close to groundwater sources could risk the introduction of pollutants into aquifers, which are crucial for local communities and ecosystems.

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Aquatic Life and Ecosystem Health: Contaminated water sources can have direct adverse effects on aquatic organisms, disrupt ecosystems, and reduce biodiversity in nearby rivers, streams, or wetlands.

## 4.7 Cultural heritage

Exploration activities pose a risk to cultural heritage, particularly in areas where archaeological or sacred sites are present, whether marked or unmarked. The potential impacts include:

**Disturbance of Archaeological Sites:** Unmarked or undiscovered archaeological sites may be inadvertently damaged during exploration activities such as drilling, trenching, or excavation. These activities can disturb or destroy important historical artifacts, structures, or evidence of past civilizations, leading to the loss of valuable cultural and historical information.

**Impact on Sacred Sites:** Sacred sites hold significant spiritual, religious, or cultural value for local communities or indigenous groups. Exploration work near these sites could lead to desecration or disruption of their integrity, causing harm to local traditions and cultural practices.

**Subsurface Disturbance:** Some cultural heritage sites may lie below the surface, and excavation activities can unknowingly impact these hidden resources. Subsurface exploration without adequate surveys or investigations may result in the inadvertent discovery of valuable artifacts or sacred objects, which could be damaged or lost in the process.

Loss of Cultural Identity: Damage to or loss of cultural heritage sites can have long-lasting effects on the cultural identity and heritage of local communities. It can lead to the erosion of traditions, stories, and cultural continuity, affecting both present and future generations.

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## ENVIRONMENTAL SPECIFICATIONS AND MANAGEMENT MEASURES

#### 5.1 Compliance with the Environmental Specifications

The activities will be conducted in an environmentally and socially responsible manner. The Proponent and all site personnel (drilling including contractors) will comply with the environmental specifications contained in this section.

- EMP trainings should be provided to all workers on site.
- All site personnel should be aware of necessary health, safety, and environmental considerations
  applicable to their respective work.
- The implementation of this EMP should be monitored bi-annually.
- The site should be inspected, and a compliance audit done throughout the project activities, monthly
  and bi-annually for overall EMP implementation.
- An EMP non-compliance penalty system should be implemented.
- The ECC should be renewed every 3 years. An application should be submitted at least 1 month before expiry date.

#### 5.2 Training and Awareness

 All site personnel and site contractors will receive the training to equip them with the necessary knowledge to comply with the environmental specifications. The Exploration Manager will ensure that an appropriate level of training is provided at all levels of site personnel.

#### 5.3 Stakeholder Relations

- All site personnel should maintain good relations with the land custodians and members of the public. Any complaints received by the ECO should be addressed.
- Compile a clear communication procedure / plan which should include a grievance and response mechanism and shared with stakeholders (management of Dorob National Park, nearby farms and other land users).
- Engagement for land use with MEFT's Dorob National Park and where necessary, farm access
  agreements should be done prior to mobilizing to site. This should be communicated at least 2
  months before commencement of exploration activities.
- Stakeholders (land custodian) and neighbouring farmers (land users) should be kept posted on any changes, progress or delays on the project activities communicated or agreed upon.

ENVIRONMENTAL MANAGEMENT PLAN

 The issues or complaints raised by the stakeholders should be effectively attended to timely, and resolved amicably.

## 5.4 Permits

All relevant permits shall be obtained from relevant authorities. These include:

- Environmental Clearance Certificate (ECC) by the Environmental Commissioner at MEFT: DEAF, and should be timely renewed, amended (if changes arise in the project description), if needed, transfer the ECC by submitting the application to the Environmental Commissioner and or cancel it if the project is discontinuing.
- EPL certificate from MME and should be timely renewed as required.
- Wastewater (effluent) handling and discharge permit from the Water Environment Division at MAWLR.
- Fuel Storage onsite (Consumer installation certificate) in excess of 600 litres from the MME.
- The removal or relocation of rare and endangered plants will be conserved, and should it be removed or relocated it shall be done with the required permits from the Directorate of Forestry at MEFT.

#### 5.5 Road Safety

The access roads can be dangerous at times due to dust from passing vehicles, poor camber, patches of loose sand, careless drivers and other external factors.

All drivers must be aware of these hazards and take precautions to avoid them. Such precautions will include, but not be limited to:

- Complying with speed limits onsite (maximum 40km/hour),
- All vehicle drivers should be appropriately licensed to operate such vehicles and operating machinery,
- No driver is allowed to operate a vehicle while under influence of alcohol or narcotic substances,
- Reducing speed considerably when visibility is poor.
- Being wary of other vehicles,
- Travelling with lights on even in daylight,
- Slowing down for animals and birds on the road, and
- Being cautious of other road users- taking into account reduced visibility due to dust.
- Drivers should drive slowly (40km/hour or less) and be on the lookout for wildlife.

#### ENVIRONMENTAL MANAGEMENT PLAN

#### 5.6 Access Tracks and Soil disturbance

- No new tracks should be made unless there are no pre-existing tracks, any new tracks or extensions should be established with the permission of the MEFT's Wildlife & National Parks and where the EPL overlies a farm, the landowner should give consent prior to creating a track.
- The selected access and site roads should be clearly marked. A single road only should be used to
  and from each destination of the EPL site. Turning points for vehicles should also be pre-selected
  and marked. Care to be taken to avoid damage to plants.
- Any elevated sites, or sites away from existing tracks should be accessed on foot instead of driving there (in a vehicle).
- Stockpiled topsoil and drill materials should be used to backfill the excavated and disturbed site areas.
- The topsoil that was stripped from active sites should be returned to where it was taken.
- Avoid soils that are not within the intended footprints of the EPL should be left undisturbed and soil
  conservation implemented as far as possible.

#### 5.7 Conservation of Biodiversity (Fauna and Flora)

- Damage to all plants will be avoided at all costs.
- Vegetation should only be cleared when absolutely necessary, and the number of protected, endemic, and near-endemic species removed should be documented.
- · Identify protected areas and ensure no harmful exposure to the biodiversity
- Animals on and around the site should not be disturbed, trapped nor killed.
- No killing of small soil and rock outcrops' species found on site.
- Ensure that exploration trenches and holes are secured (temporary fenced off) then backfilled after completing exploration works on them to prevent injuries to animals (by falling in trenches or holes).
- The project workers and vehicles should be limited to the actual EPL active sites only but not unnecessarily wander and drive around the Park resulting in unnecessary faunal and floral disturbance.
- Avoid off-road driving as it leads to the destruction of site vegetation. Therefore, rather stick to
  provided and approved access tracks.
- Working hours should be limited to during the day, thus enabling the wildlife to roam freely at night.
   In other words, no exploration to be carried out between 6pm and 07am, in other words no activities

#### ENVIRONMENTAL MANAGEMENT PLAN

to be carried during the night or early morning hours (at least not until 07h00). No food stuff should be left lying around as this will attract animals which may result in human-animal conflict onsite.

- 5.8 Soils and water resources
  - Employees must be trained on the correct hydrocarbon storage and handling techniques.
  - Vehicles and machinery must be stored in bounded areas when not in use or a drip tray should be placed beneath potential leakage points.
  - Spill control preventative measures should be put in place to manage soil contamination.
  - Employees must be trained in spill management.
  - Appropriate storage and handling of hydrocarbons on site are essential.
  - Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of responsibly so that they do not contaminate surrounding soils and groundwater.
  - An emergency plan should be available for major / minor spills at the site during operation activities (with consideration of air, groundwater, soil and surface water) and during the transportation of the product(s) to the site.
  - Polluted soil should be removed immediately and put in a designate waste type container for later disposal.
  - All vehicles should be equipped with drip trays and where generators are used. These fuel consuming vehicles and machinery should be monitored to ensure that accidental fuel spills along are cleaned up immediately.
  - Polluted soil must be collected and transported away from the site to an approved and appropriately
    classified hazardous waste treatment facility (in Walvis Bay).
     No washing of hydrocarbons contaminated equipment onsite. The washing and servicing of vehicles

is prohibited onsite.

## 5.9 Wildlife Poaching

- No animal or bird is to be captured, killed or harmed in any way. Anyone caught violating this law
  will face suspension from the project and could be liable for prosecution. In a likewise manner,
  livestock at nearby farms may also not be harmed.
- Poaching of wildlife is strictly prohibited and is punishable by law. Incorporate a No-tolerance rule for poaching in every employment contract and ensure that the workers understand the seriousness of this.

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5.10 Occupational Health and Safety

- All project personnel should receive a detailed induction upon joining the project and on a regular basis, if necessary, refresher training should be provided.
- Project workers should be inducted with an awareness training of the risks of mishandling equipment and materials on site and health & safety risk associated with their respective jobs.
- Ensure that all project personnel are provided with adequate and appropriate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses. These are crucial to prevent potential injuries and excessive inhalation of dust or harmful gases.
- Eating, drinking, and smoking while working with any materials that are flammable should be forbidden.
- Good personal hygiene is encouraged (e.g., washing hands before eating) to prevent ingestion
  of potentially hazardous or radioactive materials.
- The project site should be equipped with fully first aid kit onsite and two to three people should trained on how to administer first aid on others.
- Marking disturbance areas and buffer zones to avoid unnecessary impacts.
- Installing sediment controls around holes and access roads.
- Implement a spill response plan and providing spill kits at all work sites and ensure that two to three personnel are trained on how to use it.
- · All risk exposes areas should be temporarily fenced off and marked as such.
- All loads should be securely fastened on vehicles when transported or structures where loads are stored.
- Engage workers in sexual health talks and training about the dangers of engaging in unprotected sexual relations which results in contracting HIV/AIDS and other sexual related infections.
- The site should be provided with condoms and sex education through distribution of pamphlets and health trainings. These pamphlets can be obtained from the nearest local health facility.

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## 5.11 Visual impact

- The EPL portions or areas close to the roads (B2 and D1991) should be progressively rehabilitated during exploration over the shortest timescale possible to ensure that there is no prolonged visible and excessive land disturbances.
- All access roads leading to the EPL should have speed limits of no more than 40km/h to minimise the amount of dust generated by the vehicles. This in turn will also minimise any potential air quality concerns in the vicinity of the project, which importantly includes the B2 highway.
- Utilize stockpiled topsoil to partially back fill explored sites, thus, minimizing visual impacts.
- Consider a phased exploration and direct placement of overburden (topsoil and waste rocks) and other site-derived materials to allow progressive restoration around the margins of the explored site areas

#### 5.12 Waste management

- Sensitize workers to dispose of waste in a responsible manner and not to litter.
- No wastes should be left onsite or scattered around.
- All solid waste should be contained onsite until such that time it will be transported to designated waste sites.
- No waste may be buried or burned on site or anywhere else.
- The site should be equipped with separate waste bins for hazardous and general/domestic waste.
- Oil spills should be taken care of by removing and treating soils affected by the spill.
- Implement a penalty system for irresponsible disposal of waste on site and anywhere in the area.
- Ensure careful storage and handling of hydrocarbons onsite.
- · Implement an emergency plan for major/minor spills onsite.
- No open defecation is allowed on and around the site.
- Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest treatment facility
- Provide sufficient portable toilet facilities for workers onsite.

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## 5.13 Air quality

- Vehicles should not be driven at a speed more than 40km/h onsite to avoid dust generation.
- A reasonable amount of water should be used on gravel roads, using regular water sprays on gravel routes and near exploration sites to suppress the dust onsite.
- Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers at drilling sites.

## 5.14 Fire outbreaks

- · Portable and serviced fire extinguishers should be provided onsite.
- No open fires to be created by project personnel onsite or anywhere in the environment.
- Open fires are prohibited onsite.
- Smoking personnel should be provided with a designated for such and ensure that the cigarettes' fire is completely put out to and disposed of in allocated bins and not in the environment.
- Potential flammable structures like fuel storage tanks should be marked as such with clearly visible signage.
- Raise awareness to workers on the impact of careless handing of fires and flammable substances in the fire.

#### 5.15 Noise

- Noise from operations' vehicles and equipment on the sites should be at acceptable levels.
- When operating the drilling machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise.
- Exploration activities should only take place between 07h30 and 17h00 only and not in the night or morning hours before 07h30.
- Avoid flying aircrafts directly over human settlements.
- Consult with the relevant stakeholders when would be the best suited time to fly prior to commencing with the flights.
- Noise levels should adhere to the South African National Standards (SANS) regulations 10103.

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a. Archaeology and heritage resources

- A "No-Go-Area" should be put in place where there is evidence of sub-surface archaeological materials, archaeological sites, gravesites, historical, rock paintings, cave/rock shelters or past human dwellings. It can be a demarcation by fencing off or avoiding the site completely by not working closely or near the known site.
- Avoid intentional damage to or destruction of any outcrop that harbours caves or rock shelters, painting. These should be marked and the sites should be adjusted to avoid them.
- An archaeological expert must be appointed to undertake a detailed archaeological survey once targets have been identified for drilling and/or other mechanically-assisted exploration, and prior to the commencement of any such activities.
- All works are to be immediately ceased should an archaeological or heritage resource be discovered during activities onsite.
- The project should adopt an Archaeological Chance Finds Procedure (Appendix I) to cater for unexpected discoveries of archaeological remains in the course of exploration.
- The National Heritage Council of Namibia (NHCN) should be consulted/engaged to advice on the removal, packaging and transfer of the potential archaeological resource.

#### 5.16 Biodiversity protection and conservation

The region values biodiversity protection and conservation due to its rich ecological diversity and unique wildlife. The town and its surroundings are home to various plant and animal species, making it a significant area for conservation efforts.

Biodiversity protection and conservation in Arandis are primarily carried out through several key initiatives:

- Conservation Areas: Arandis has established protected areas and wildlife reserves to safeguard critical habitats and the species residing within them. These areas are carefully managed to prevent human encroachment and maintain ecological balance.
- Community Involvement: Local communities in Arandis actively participate in biodiversity conservation initiatives. By engaging with residents, conservation organizations foster a sense of responsibility and stewardship towards the environment, ensuring sustainable practices are embraced.

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- Wildlife Monitoring and Research: Ongoing wildlife monitoring and research help understand the region's biodiversity and ecosystem dynamics better. This data-driven approach guides conservation strategies and enables informed decision-making.
- Habitat Restoration: Efforts are made to restore and rehabilitate degraded habitats in Arandis. Replanting native vegetation and removing invasive species support ecosystem health and biodiversity.
- Anti-Poaching Measures: Arandis places a strong emphasis on anti-poaching measures to protect vulnerable and endangered species from illegal hunting and trade.
- Environmental Education: Promoting environmental education in schools and communities' fosters awareness and appreciation for the region's biodiversity. It instils a sense of responsibility for protecting the environment among the younger generations.
- Sustainable Tourism: Arandis promotes responsible and sustainable tourism practices that minimize
  environmental impact while providing opportunities for visitors to experience the area's natural
  beauty and wildlife.
- Partnerships and Collaboration: Collaborating with governmental agencies, NGOs, and international organizations strengthens conservation efforts by combining resources, expertise, and knowledge.

The commitment to biodiversity protection and conservation in Arandis is crucial for maintaining the ecological balance and preserving the unique natural heritage of the region for future generations. By implementing these initiatives and fostering a culture of environmental stewardship, Arandis aims to ensure the sustainability of its rich biodiversity and ecosystems.

## 5.17 Compliance Monitoring

During exploration activities, the company ECO will conduct site compliance inspections at least once a month. After each inspection the ECO will compile an EMP compliance report for regular submission to the Exploration Manager and biannually to the MEFT or as required.

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## 5 ENVIRONMENTAL MANAGEMENT PRINCIPLES

On principle, the EMA provides for the promotion of sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment. In this manner, this section of the EMP presents the principles to be adhered by the Proponent and involved personnel. The participants to the exploration activity will be expected to conduct all their activities in an environmentally and socially responsible manner. This includes all consultants, contractors, and subcontractors, as well as transport drivers, visitors, and individuals involved in the mineral exploration project who enters the exploration regions.

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

- All employees will be obliged to undertake activities in an ecologically and socially responsible way,
- Safeguard the health and safety of project personnel and the public against potential impacts
  of the project. This includes issues of road safety, precautions against dangers on site and
  potential hazards,
- Promote good relationships with the surrounding settlements and other stakeholders,
- Wise use and conservation of environmental resources, giving due consideration to the use of
  resources by present and future generations,
- · Prevent or minimize environmental impacts, and
- Minimize air, water, and soil pollution; and conserve biodiversity.

#### 6.1 Environmental Management Roles and Responsibilities

I. The Operating Company (or the Proponent)

The Proponent is ultimately responsibility for all stages of the project and the impacts resulting from those activities. It is also the Proponent's responsibility to appoint an Environmental Control Officer (ECO) and their responsibility to ensure that:

- The EMP and its environmental specifications are included in contractual documents and it is
  required that contractors, and subcontractors, consultants etc. do meet the EMP requirements,
- The company and all its subcontractors, consultants etc. comply with all Namibian legislation and policies and any relevant International Conventions,
- · Compliance with the environmental specifications is enforced on a day-to-day basis,

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- Environmental audits are conducted periodically by a suitably qualified ECO to confirm that the environmental requirements are properly understood and effectively implemented,
- Sufficient budget is provided to implement those measures that have cost implications,
- The site manager must commission tree surveys well in advance of planned road construction or drill pad preparation so that the necessary site visits by forestry personnel and forestry permits are acquired, and
- Open an effective communication between all parties concerning environmental management on the project.
- II. Exploration (Operations) Manager

The day-to-day responsibility for environmental management will be assigned to the ECO and Exploration Manager for the duration of all operational activities. The responsibilities for the Exploration Manager will be to:

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

A suitably qualified ECO will be appointed and will be responsible for:

- Undertaking environmental audits of overall compliance with the environmental specifications.
   This should be done at least bi-annually.
- Submitting a site inspection report to the Exploration Manager;
- Advising the Exploration Manager on interpretation and implementation of the environmental specifications as required, and

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 Making recommendations for remedial action in cases of non-compliance with the environmental specifications or the EMP requirements in general.

#### 6.2 Environmental Management System Framework

The Proponent and its contractors will create and implement an Environmental Management System (EMS) to apply Environmental Management Practices. The structure for compiling a project EMS is established in this section. All environmental management paperwork will be kept in a paper and/or electronic system by the applicable exploration EMP.

These may include, but are not limited to:

- Standard operating procedures for the implementation of the environmental action plan and management program,
- · Procedures for dealing with incidents and emergencies,
- Procedures for auditing, monitoring, and reporting, and
- EMP compliance method statements for ad hoc actions not explicitly covered in the EMP action plans.

#### 6.3 Register of Roles and Responsibilities

Relevant roles and duties will be identified during project planning and risk assessments. All environmental commitment duties and obligations must be documented in a register. The register must include pertinent contact information and be updated as needed.

#### 6.4 Communication between Parties

Emphasis will be put towards open communication between all parties to reach a proactive approach towards potential environmental issues deriving from the project. This approach should guarantee that environmental impacts are anticipated and prevented, or minimised, rather than adopting a negative "policing" approach after negative impacts have already occurred. The importance of a proactive approach cannot be overemphasised, particularly in relation to preventing unnecessary tracks, and damage to vegetation (i.e. protected and endemic species) as these impacts cannot easily be remedied.

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## ENVIRONMENTAL MONITORING PLAN

The project monitoring is conducted under the EMP and includes:

#### I. Project readiness monitoring

Monitoring to check progress on project readiness and close gaps through corrective actions.

## II. Operational monitoring

This is required as part of the operations of the subproject and will be undertaken by the relevant government department or a nominated private sector operator.

#### III. EMP and Environmental quality compliance monitoring

To be conducted by the appointed external Environmental Consultants to verify EMP compliance during project implementation. To be conducted by a competent authority or person appointed by the Proponent, involving the collection and analyses of air quality, noise and water quality data at designated monitoring locations for assessing compliance with applicable environmental quality and emission standards.

#### ENVIRONMENTAL MANAGEMENT PLAN

## CONCLUSION

The Environmental Management Plan (EMP) presented in this report outlines the proactive measures that will be implemented to effectively mitigate the potential environmental impacts of the proposed exploration and possible test mining operations within EPL-9036. The EMP details a comprehensive management strategy to address environmental concerns and ensure responsible and sustainable practices throughout the project's lifecycle.

The implementation of the EMP is essential to minimize negative effects on the environment while maximizing positive outcomes. It will focus on employing best practices, innovative technologies, and environmental safeguards to protect the natural surroundings and the well-being of local communities.

By following the EMP guidelines, the project aims to enhance the overall ecosystem services and value of the EPL-9036 and its vicinity. This means conserving and protecting biodiversity, water resources, and cultural heritage, while simultaneously contributing to sustainable economic development. Therefore, this EMP embodies the project Proponent's commitment to responsible and environmentally conscious practices. Through the implementation of the EMP and the rigorous EIA process, the project aims to strike a balance between exploration and environmental conservation, ensuring a harmonious coexistence between human activities and the natural environment.

#### ENVIRONMENTAL MANAGEMENT PLAN

## APPENDIX I: CHANCE FINDS PROCEDURE

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found during development work. The procedure set out here covers the reporting and management of such finds.

Scope: The "chance finds" procedure covers the actions to be taken from the discovery of a heritage site or item, to its investigation and assessment by a trained archaeologist or other appropriately gualified person.

Compliance: The "chance finds" procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): "a person who discovers any archaeological .... object .....must as soon as practicable report the discovery to the Council". The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

#### **Responsibility:**

Operator:	To exercise due caution if archaeological remains are found
Foreman:	To secure site and advise management timeously
Superintendent	To determine safe working boundary and request inspection
Archaeologist	To inspect, identify, advise management, and recover remains

## Procedure:

Action by person identifying archaeological or heritage material

a) If operating machinery or equipment stop work

b) Identify the site with flag tape

- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

#### ENVIRONMENTAL MANAGEMENT PLAN

a) Report findings, site location and actions taken to superintendent

b) Cease any works in immediate vicinity

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary

c) Site location and details to be added to project GIS for field confirmation by archaeologist

- Action by Archaeologist
- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area
- c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police
- d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.

# 11 APPENDIX C: PROOF OF CONSULTATION (NEWSPAPER NOTICES) AND PUBPLIC NOTICES










# 12 APPENDIX D: CONFIRMATION OF SCREENING NOTICE RECEIVED

 1/21/25, 3:30 PM
 Mail - SS Consultants - Outlook

 Outlook
 Your application is verified

 From Ministry of Environment and Tourism <noreply@meft.gov.na>

 Date Thu 11/14/2024 4:56 PM

 To
 S5 Consultants <info@ssconsultants.co>



REPUBLIC OF NAMIBIA Ministry of Environment, Forestry & Tourism

2024-11-14

Dear Silvanus Shigwedha,

This email serves to inform you that your application APP-004946 has been verified

Taking the following into considerations:

- · Location of the project
- · Polution potential
- · Scale of operation of the project

Please upload the following documments:

- · Scoping Report
- · EMP
- · Consent letter or support doc from relevant Authority
- · Proof of Consultation (Minutes, Newspaper adverts, etc)
- Confirmation of screening notice received (through email) in terms of assessment procedures (Section 35 (1)(a)(b) of the Environmental Management Act, No 7 of 2007)
- Preliminary Site Map with coordinates (decimal degrees) and a Legend
- CV of Environmental Assessment Practitioner (EAP)

# **13 APPENDIX E: PRELIMINARY SITE MAP**



# 14 APPENDIX F: CV OF THE RESPONSIBLE EAP\_UAANAO KATJINJAA

## CURRICULUM VITAE

## UAANAO KATJINJAA

Email: ukatjinjaa@gmail.com Mobile: +264 081 4779623 Address: P.O Box 60497, Windhoek

### **Personal Statement**

Committed individual willing to learn from more experienced personnel. Comfortable working in large scale environments and possesses comprehensive understanding of venture management principles. Capable to actively participate in business case study analysis and research projects; skills gained in team and group work at college.

### Academic Background

Candidate for MSc. Integrated Environmental Management and Sustainable Development (2024) (International University of Management)

- Environmental Impact Assessment
- Ecosystem Management and Conservation
- Research Methodology
- Environmental Legislations
- Mini Dissertation: An Assessment of the Factors Affecting Sustainable Entrepreneurship Development in the Renewable Energy Sector in Windhoek, Namibia

Bachelor of Business Administration- Entrepreneurship and Enterprise Development (2018)

(University Of Botswana)

- Strategic Management
- Management Consulting
- Business Plan Development
- Research Report: An Assessment of Trends in Entrepreneurial Behavior of the Youth in Gaborone, Botswana

#### Competencies

- Good Verbal and Written Communication Skills
- Microsoft Office (Word, Excel, PowerPoint)
- Report Preparation
- Data Collection and Analysis

#### Experience Junior Environmental Specialist SS- Consultants CC-2024 • Compilation and review of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) report Compilation of Environmental Clearance Certificate application Conduct public consultation and engagements with stakeholders ٠ Environmental Audit Compliance on various projects • Administration and Accounts Clerk- Chemspec Botswana- 2018-2019 • Receive and process invoices, expense forms Request for payments and handle KYC documents Handle daily banking reconciliation ٠ ٠ Attending emails and customers' enquiries Activities and other Participant in Tertiary Training Education Students Dialogue and Training on the Three Rio Conventions; Network and Learning Workshop (UNDP,2022). Business incubation and implementation through a small enterprise project; Creation of a mobile ٠ application (AccomoMe) with a database that links landlords to suitable tenants. (Global Business Labs, 2018). Article on Women Empowerment through Beauty Pageants (The Ngamitimes Newspaper, 2017). • Documentary on Pursuit of Happiness (Media Studies, University of Botswana, 2016). ٠ References Mr. Sioni Iikela **Ms. Jacqueline Hehir** Mr. Silvanus Shigwedha Faculty Dean Director Managing Member Int. University of Management Chemspec Botswana SS Consultants CC +264 81 225 7526 jackie@chemspec.co.bw +264 81 240 9124

# **15 APPENDIX H: BACKGROUND INFORMATION DOCUMENT**



#### **BACKGROUND INFORMATION DOCUMENT (BID)**

## ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED BASE AND RARE METALS, DIMENSION STONE, INDUSTRIAL MINERALS AND PRECIOUS METALS EXPLORATION ACTIVITIES ON EXCLUSIVE PROSPECTING LICENSE NO.9036

#### AUS DISTRICT, KARAS REGION, NAMIBIA

PUBLIC INVITATION TO REGISTER AND COMMENT

#### INTRODUCTION

SS CONSULTANTS CC (hereafter referred to as the Consultant), an independent mineral resource and environmental consulting company has been appointed by **Plesati Investment CC** (herein referred to as the Proponent) to undertake an environmental assessment process and obtain an environmental clearance certificate from the Environmental Commissioner on behalf of the latter for the proposed mineral exploration activities on **EPL No. 9036**.

The proposed exploration activities fall in the listed activities under the Environmental Management Act 7 of 2007 – activities which may not be undertaken without Environmental Clearance Certificate. Hence the proponent is expected to obtain an Environmental Clearance Certificate from the Environmental Commissioner prior to the commencing of these exploration activities.

The proposed development is therefore related to the specific listed activities as outline by relevant sections in EMA Regulations of 2012:

• Construction of facilities for any process or activities which requires a license, right or other form of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act), 1992 (Section 3.1);

• Other forms of mining or extraction of any natural resources whether regulated by law or not (Section 3.2);

• *Resource extraction, manipulation, conservation, and related activities (Section 3.3);* 

• Abstraction of ground or surface water for industrial or commercial purposes (Section 8.1).

- Manufacturing, storage, handling, or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974 (Section 9.1).
- Any process or activity which requires ...... (Section 9.2).

#### 1. Project Description

The Exclusive Prospecting License (EPL) 9036 was applied for by Plesati Investment CC on the 6<sup>th</sup> October 2022 and a notice of preparedness to grant prospecting license was presented by the Ministry of Mines and Energy (MME). To execute any exploration activities within EPL 9036, it is a requirement under the Environmental Management Act (EMA) (2017) and its 2012 EIA Regulations that the proponent obtains an Environmental Clearance Certificate (ECC) from the Department of Environmental Affairs (DEA) of the Ministry of Environment, Forestry and Tourism (MEFT). The ECC will enable the license owner to conduct exploration activities for base and rare metals, dimension stone, industrial minerals and precious metals. The project area is made up of one EPL license; if commercially viable mineral deposits are found and all necessary licencing requirements are satisfied, the licence may be converted into one or more mining licences. The proposed exploration activities will involve both noninvasive and invasive exploration methods. Non-invasive exploration methods usually include remote sensing, geological field mapping, ground geophysical survey and surface soil and rock sampling whereas invasive exploration methods include techniques such as reverse circulation or diamond drilling and pitting/trenching. During the process, non-invasive exploration activities will be undertaken first to define the need for more invasive activities. Should the results from the non-invasive activities be positive, the detailed site-specific drilling, trenching, and sampling will be undertaken. The project area is situated within welldeveloped infrastructure such as access to water, power line, national roads, and telephonic network. Thus, the applicant will make use of the available water and electrical infrastructure in the area. Utilization of these infrastructure will depend on the agreement reached with other landowners and or community members and all the necessary permits and requirements will be obtained from the relevant authorities. The design of the exploration process is such that, various geological consultants and contractors will be engaged at different stages to allow effective implementation of the proposed exploration activities. Additionally, a geophysics expert may be contracted to conduct geophysical surveys. These surveys will be conducted where necessary to detect and assess different geological features, including mineralization, within the EPL area. Drilling operations will be carried out by a

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registered drilling contractor, and they are expected to provide their own drilling crew. Moreover, the exploration activities on EPL No. 9036 have the potential to establish and operate a mineral exploration program, leading to direct permanent employment opportunities and indirect job creation in supporting services. By virtue, these activities also hold the promise of discovering economically valuable ore deposits, which, through mineral extraction, can contribute to employment, wealth generation, and economic development in the country. The EPL is located in the //Karas region which hosts Namibia's historical mining towns such as Rosh Pinah, Oranjemund and Luderitz thereby holding the potential to contribute to the already exisiting mining workforce. The attractive wages offered by the new project are expected to benefit the local workforce, thereby contributing to the economic growth in the !Nami‡Nûs constituency and and the country at large.

### **Project Location**

The EPL No.9036 is located south of Aus town within a circa 120 km. The project area covers an area of 29556.49 hectares (Ha) and is demarcated by 4 (four) corner coordinates and sits on state land as shown on *Figure 1* below.



Table 18: Map with corner coordinates and shape of EPL.

Label	Latitude	Longitude
1	27.6250014	16.7619999
2	27.625116	16.4989713
3	27.5317534	16.4438735
4	27.5321948	16.7615763

#### 2. Legal Requirements

Apart from the Environmental Management Act, the project will also be guided and comply to the following national regulatory requirements:

- Water Act 54 of 1956 (including Water Resource Management Act 11 of 2013 not yet in force)
- National Heritage Act 27 of 2004
- Mineral (Prospecting and Mining) Act 33 of 1992
- Forest Act 12 of 2001
- Agricultural (Commercial) Land Reform Act 6 of 1995 (including relevant amendments)
- Labour Act 11 of 2007
- Nature Conservation Ordinance 4 of 1975 (including relevant amendments)

#### 4. Environmental Impact Assessment process

The EIA process follows the general guideline as outlined in the EMA Regulations of February 2012. An outline of the EIA steps and the associated and parallel processes is given below:





**N.B:** Once the Environmental Commissioner makes a decision on the application whether in favour of the proponent or not, the Environmental Management Act as guided by its Regulations also provide for the Process of Appeal. Therefore I&APs if not satisfied with the decision made, will still have an opportunity to raise their concern on the decision.

#### 5. Potential Impacts

Below are the potential impacts that have been identified from the proposed exploration activities on the license area:

- Temporary job creation this is the hiring of workers non-skilled to skilled workers from the area to be involved during the clearing of the fauna and flora in order to access target sites, and to also assist during pitting and trenching as well as drilling and associated exploration works.
- Impact on vegetation and fauna some vegetation may need to be removed to create access roads, pitting and trenching, geophysical lines as well as drilling sites. This may also lead to habitat destruction for some fauna.
- **Traffic safety** very slow drilling rigs and associated vehicles may compromise traffic safety in the area.
- Environmental degradation through different types of waste generated on the site.
- Soil and water contamination from chemicals and other substances used in drilling fluids.
- Noise and dust generated by pitting and trenching as well as drilling vehicles and activities.
- Health and safety risks which may result to workers operating on site.

#### 6. Public consultation

Public participation is an essential part of any Environmental Assessment process. Interested and Affected Parties (I&APs) include any person or organization that will be directly or indirectly involved and/or affected by the project.

Registered I&APs will be kept informed of the Public Participation Process throughout the Environmental Assessment process, they will be given the opportunity to review and comment on the EIA reports and documents and, will also receive feedback on how comments have been considered, and will be informed of the outcome of the assessment. All comments will be recorded and presented to the project team and competent authority by

means of the Project Comments and Responses Register (CRR).

Notices for public invitation to participate in the process will still be placed in the local newspaper as well as at strategic public places (notice boards). The date and venue for the public consultation meeting will be communicated.

If you categorize yourself as an I&AP who wishes to receive information regarding the abovementioned project and/or provide input into the Environmental Impact Assessment process, you are hereby invited to register using the form on Page 6. You may also communicate with SS Consultants via email, or telephone to obtain further information or comment on the proposed project.

Further information:

Ms. Uaanao Katjinjaa Environmental Specialist (Environmental Assessment Practitioner) SS Consultant CC Physical Address: Unit 24B, Bougain Villa, Sam Nuuyoma Road, Windhoek, Namibia Email: <u>UKatjinjaa@ssconsultants.co</u> Cell: +264 81 240 9124/0814779623



## **REGISTRATION OF INTERESTED AND AFFECTED PARTIES (I&APs)**

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED EXPLORATION ACTIVITIES FOR BASE AND RARE METALS, DIMENSION STONE, INDUSTRIAL MINERALS AND PRECIOUS METALS ON EPL NO.9036 LOCATED IN AUS DISTRICT, //KARAS REGION, NAMIBIA

Ms. Uaanao Katjinjaa							
Environmental Specialist (Environmental Assessment Practitioner) SS Consultant CC Physical Address: Unit 24B, Bougain Villa, Sam Nuuyoma Road, Windhoek, Namibia Email: <u>UKatjinjaa@ssconsultants.co</u> Cell: +264 81 240 9124/0814779623							
Title (Mr/Ms/Dr/Prof)		Name/Initials					
Surname							
Interested Parties or		Affected Parties?					
Physical Address and or Postal Address							
Tel No:		Cell No:					
Email Address:							
Comments/Issues/Concerns (Please if the space is not enough, use additional separate sheet)							