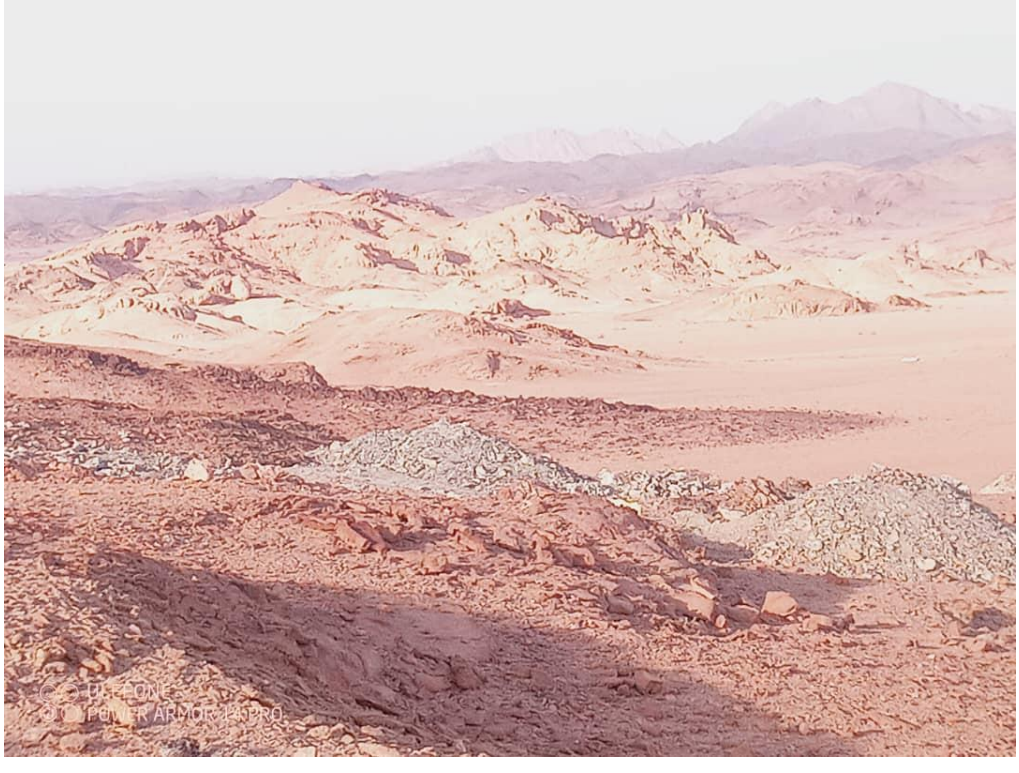
ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT PLAN FOR THE PROPOSED MINING OF INDUSTRIAL MINERALS IN THE LOCALITY OF GOANIKONTES, ARANDIS CONSTITUENCY, ERONGO REGION, NAMIBIA

PREPARED ON BEHALF OF

OSHANA REPAIR CC



P. O. Box 848, Oshakati

This EIA and EMP is prepared to support an application for an environmental clearance certificate in compliance with the Environmental Management Act (EMA, no. 7 of 2007) and EMA's regulations for a proposed mining of industrial minerals in the locality of Goanikontes in Arandis constituency, Erongo region, Namibia.

Prepared

By

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April, 2024

IMPORTANT NOTICE

“Despite any other law to the contrary, a person may not undertake a listed activity, unless the person is a holder of an environmental clearance certificate in relation to that activity” Environmental Management Act, No. of 2007).

PROJECT DETAILS

Title	**Environmental Impact Assessment and Management Plan for the proposed mining of industrial minerals in the locality of Goanikontes in Arandis constituency, Erongo region, Namibia.**
Author	Mr. Tobias Endjambi (Lead EAP) – Portal Research and Engineering CC.
Project Team	Dr. (PhD Environmental Management) Timoteus Kadhila - Freelance
Client	Oshana Repair CC
Report Status	Scoping/Environmental Impact Assessment and Environmental Management Plan for submission to MEFT.

EXECUTIVE SUMMARY

Oshana Repair CC, proposes to extract (mine) industrial minerals (mica) from a state owned land in the locality of Goanikontes, in the Arandis constituency, in Erongo region, Namibia. The proponent appointed Portal Research and Engineering CC to conduct an Environmental Impact Assessment (EIA) in order to apply for an Environmental Clearance Certificate (EIA) from the Ministry of Environment, Forestry, and Tourism (MEFT), as required by the Environmental Management Act (EMA, No. 7 of 2007) and its regulations of 2012. The proponent appointed consultant to prepare this EIA and Environmental Management Plan (EMP) in accordance with the EMA, No. 7 of 2007. The EIA process included preparation of a Background Information Document (BID), public adverts in local newspapers, and invitation for participation of the interested and affected parties (I & APs), assessment of the impacts and identification of impact mitigation measures.

Project description

The project proposes the extraction of industrial minerals, from a designated area under mining claim license No. 75175 within the Dorob National Park in the Arandis constituency of the Erongo region. The site, covering 18 hectares, is situated about 13 km from Goanikontes Oasis and about 15 km from Moon Landscape Tourists View Points, with other landmarks like the Khan River and the Welwitchia plain within the same radius. To minimize environmental impact, environmentally friendly materials will be used to setup office, accommodation, and storage facilities on-site, powered by solar panels. The extraction process involves open-cast quarrying using heavy machinery like bulldozer, excavator, loaders, and tipper trucks. Environmental management practices will be employed to mitigate identified environmental impacts. Once extracted, mica will be packaged and stored in steel shipping containers for distribution using trucks. After mining operations cease, reclamation efforts will restore the site to an environmentally sustainable condition, potentially involving backfilling and grading.

Methodology

The environmental impact assessment (EIA) methodology employed for the proposed mining of industrial minerals consisted of several key steps. Firstly, baseline information was gathered to establish the existing environmental conditions in and around the project area. Secondly, public participation process was initiated. This was done through newspaper adverts, notice boards adverts and through email invitations. Public participation process was aimed to provide an opportunity for

stakeholders, including local communities, environmental organizations, and governmental bodies, to express their concerns, provide input, and ask questions related to the project's potential environmental impacts. To assess the environmental impact of the project, a Leopold matrix was utilized. The Leopold matrix is a tool that enables the systematic evaluation of the potential impacts of a project on the environment. Based on the findings of the impact assessment, an environmental management plan was developed. This plan aimed to identify mitigation measures to minimize or offset any adverse environmental impacts resulting from mining activities which include the initial phase of setting up infrastructures.

EIA process

EIA Timeline Summary

EIA PROCESS AND TIMELINES

MARCH 2024 (phase I):	
• 1 x advert in the Confidente newspaper:	08 March 2024.
• 1 x advert in the Confidente newspaper:	15 March 2024
• 1 x advert in the Namib Times newspaper:	08 March 2024.
• 1 x advert in the Namib Times newspaper:	15 March 2024
• Release of BID to registered I&APs:	19 March 2024
• Launch application with MEFT and uploaded BID on the EIA portal:	22 March 2024
APRIL 2024 (phase II):	
• Release of draft EIA and EMP Reports and availability to IAPs for review: 16 – 22 April 2024.	
• Feedback from IAPs and finalization of EIA and EMP Reports.	
• Upload of outstanding documents (EIA and EMP reports etc.) on the EIA portal.	
May 2024 (phase III):	
• Waiting period for GRN/MEFT and the EC to issue a Record Decision.	

EIA Key Findings

The assessment identified several impacts of significant importance emanating from the infrastructures establishment and mining operations. This include dust and gaseous emissions, noise pollution, human health and accident risks, habitat and land modification, loss of topsoil, as well as potential loss of diversity for small animals such as reptiles. However, these impacts are expected be of low to medium magnitude and most of them are expected to temporal. However, the assessment found that the project will result in alteration of the natural landscape. It is expected that impact on

fauna will be minimal due to low abundance and diversity at the focus area while no flora is present on site, due to arid climatic conditions of the Namib Desert. The assessment also found that the project will have positive socio-economic impact on the residents of the Namibian central Coastal towns particularly in terms of employment creations, entrepreneurship opportunities as well as improved social wellbeing of the surrounding communities.

Conclusion

The environmental impacts assessment and development of the Environmental Management Plan have demonstrated a proactive approach to environmental stewardship and sustainable development. By adhering to the EMP while constantly reviewing it, the proposed mining of industrial minerals on the claim licence No. 75175 has the potential to contribute positively to the well-being of communities in the region while ensuring the preservation of the natural environment in and around the mining area. Therefore, it is recommended that an Environmental Clearance Certificate (ECC) be granted to the Proponent to mine the industrial minerals on the claim licence No. 75175 in tandem with the implementation of the EMP.

ACKNOWLEDGMENT

We would like to thank the registered I&APs for their contribution to this assessment.

DISCLAIMER

Duties of proponent

The proponent must designate an environmental assessment practitioner (EAP), to manage the assessment process, provide the EAP with access to information at the disposal of the proponent regarding the application whether or not the information is favourable to the proponent, and ensure that the environmental assessment procedures, specified in the Act, these regulations and guidelines, for the proposed activity are followed (Environmental Impact Assessment Regulations: Environmental Management Act, 2007).

Duties of Environmental Assessment Practitioner (EAP)

An EAP designated in terms of regulation 3, must perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant, comply with the Act, these regulations, guidelines and other applicable laws and disclose to the proponent, competent authority and the Environmental Commissioner all material information in the possession of the EAP that reasonably has or may have the potential of influencing -

(i) Any decision to be taken with respect to the application in terms of the Act and these regulations; or

(ii) The objectivity of any report, plan or document to be prepared by the EAP in terms of the Act and these regulations" (Environmental Management Act, 2007); regulations of 2012).

Therefore, The EAP has completed this work to the best knowledge and information provided for by the Proponent, available information in literature and field observations, to provide the best advice possible.

DECLARATION

I …**Tobias Endjambi**... hereby declare that I am the lead EAP (Environmental Assessment Practitioner) for this project and consulting under Portal Research and Engineering CC. I further, declare that I have no business, financial, personal or other interests in the proposed project, application or appeal in respect of which I was appointed other than fair remuneration for work performed. Therefore, there are no circumstances that compromise the objectivity of this assessment and recommendations, thereof.

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LIST OF ABBREVEAITON/ ACRONYMS

BID	Background information document
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
EC	Environmental Commissioner
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
I&APs	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
TORs	Terms of References
VECs	Valued Ecosystem Components

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1 INTRODUCTION, BACKGROUND AND SCOPE OF THE PROJECT

1.1 Project Overview

Oshana Repair CC (or the proponent), intends to extract (mine) industrial minerals (mica) from a state land in the locality of Goanikontes in the Arandis Constituency of the Erongo Region in Namibia. The mining area falls within the boundaries of Dorob National Park, in the locality of Goanikontes under the mining claim No 75175 which cover an area of approximately 18 hectares (see ***Table 1*** for geographical coordinates and ***Figure 1*** for the locality map).

In terms of the Environmental Management Act (EMA) No 7 of 2007, the proposed mining activities may not be undertaken without an environmental clearance certificate. For this reason, the proponent appointed the consultant to facilitate the EIA scoping process and compile required reports to support application of the ECC.

Table 1: *Geographical positions of the mining claim number 75175.*

Latitude (South)	***Longitude (East)***
22.6050	14.9209
22.6022	14.9199
22.6002	14.9253
22.6026	14.9261

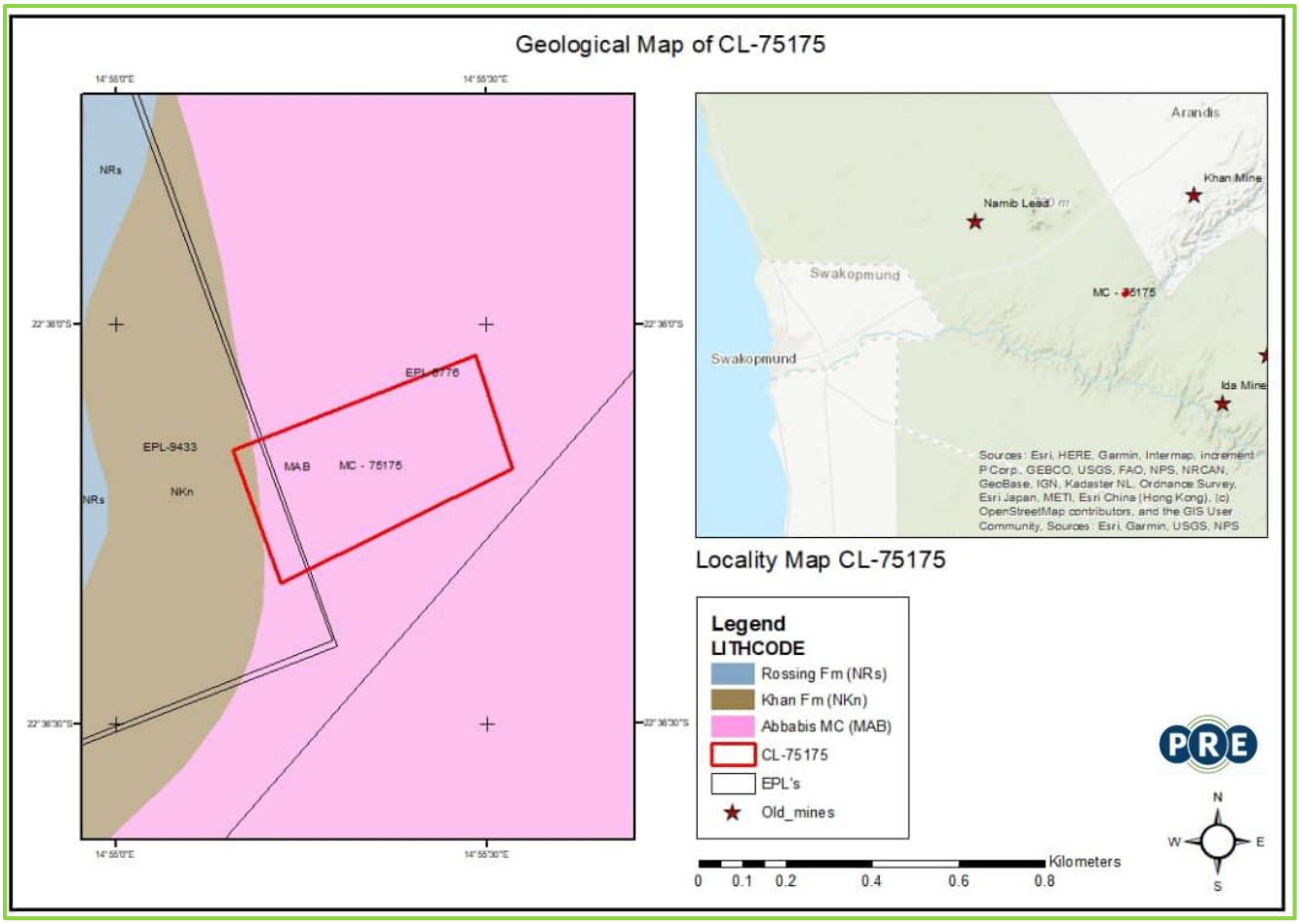

Figure 1: *Geological locality map of the proposed mining activities (CL 75175).*

1.2 Description of the Location

The proposed mining site falls under mining claim license No 75175 which is located in the Dorob National Park in the locality of Goantikontes Oasis Resort and Camping Site. The mining claim is also located in the Arandis constituency of Namibia's Erongo region between Rossing and Husab Uranium mines (***Figure 2***).

Arandis Constituency has a human population of about 10 200 (Erongo Regional Council, 2024) that represents a number of ethnic groups, residing mostly in coastal towns of Arandis and Henties Bay. Parts of the constituency is located within Dorob National Park, a major natural reserve and the Namib-Naukluft National Park, home to iconic attractions like the towering dunes of Sossusvlei and the ancient desert-adapted wildlife. In addition, the constituency is a mining hub which is dominated by uranium mining that include in mining

area at Rossing, Husab and Langer Heinrich. Tourism activities within the two National Parks in the Namib Desert and uranium mining are the major contributor to socio economic gains of the constituency. Notwithstanding the financial gains, the Arandis constituency may face issues including mining-related environmental impacts and sustainable development. Hence there is a need to strike a balance between community development, environmental preservation, and economic progress in order to create a prosperous and equitable future of the Arandis constituency' populace and that of its surrounding constituencies, ultimately benefitting the Namibian nation at large.

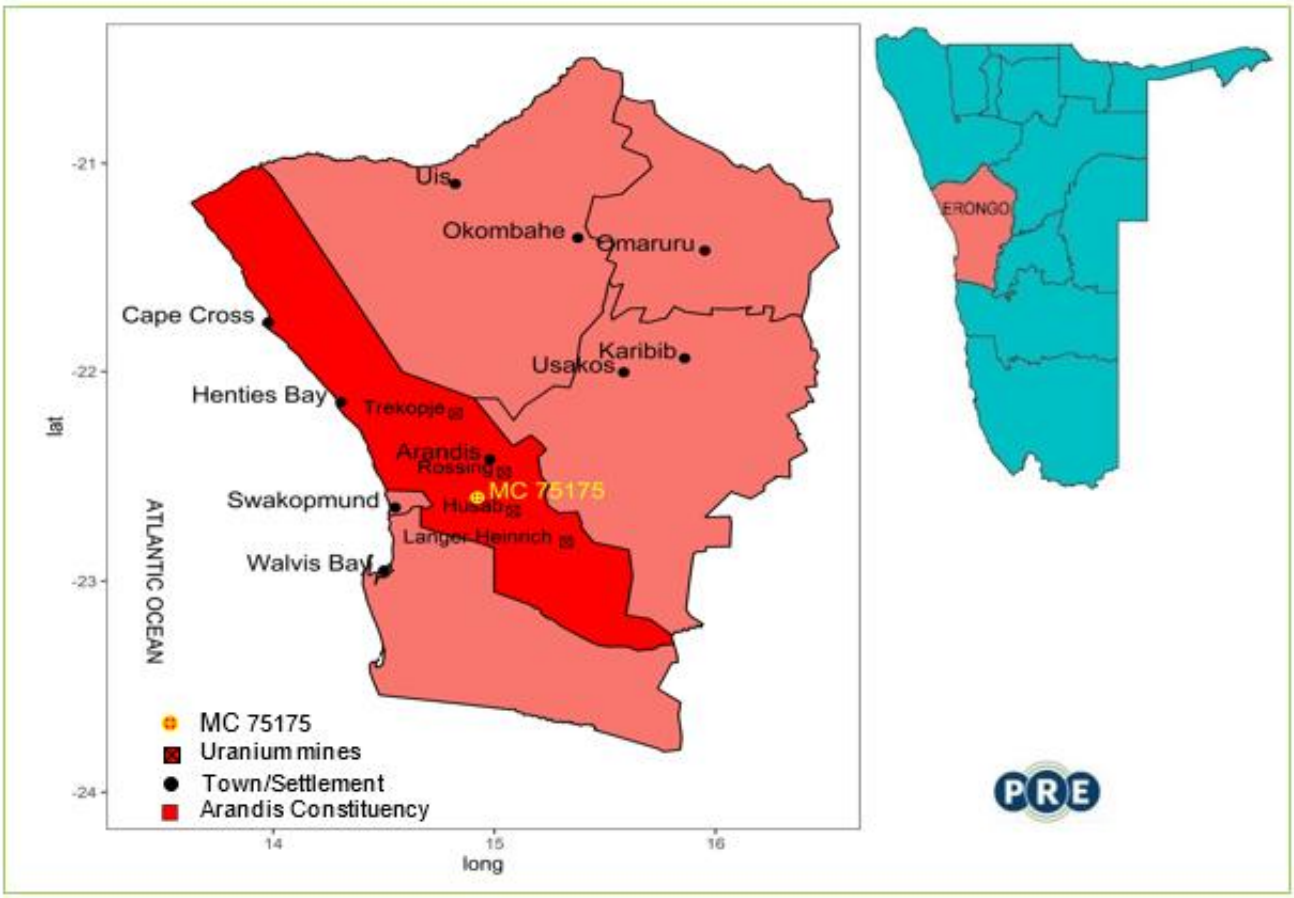

Figure 2: *Namibian map depicting the location of Daures Constituency and Study Area (mining claim license No 75175).*

There is a lot of potential for resource extraction in the potential mining area (mining claim license No 75175). The mining claim area is made up of rocks dating back to the Cambrian Age, predominantly composed of highly deformed and metamorphosed Damara Sequence

sediments and the Abbabis Complex. These geological features hold valuable insights into the potential mineral resources present in the area. Given that mining operations must be carried out with careful respect for environmental conservation and sustainable development, the location presents both opportunities and challenges. The prospective mining of industrial minerals (mica) has the potential to enhance the economic prosperity of the region and preserve the ecological integrity and natural beauty of Dorob National Park in harmony, provided that appropriate planning and acceptable mining methods are followed.

1.2.1 Climate

The climate in the larger part of Arandis Constituency is characterized by arid conditions, with limited rainfall throughout the year. The region experiences hot temperatures during the day and cooler nights, typical of desert climates. These climatic conditions influence various aspects of life in the constituency, including agriculture, water management, and tourism activities.

1.2.2 Tourism

Within the Arandis constituency lies the renowned Dorob National Park, a treasure of natural diversity, displaying a wide variety of ecosystems from dry desert landscapes to coastal dunes. This ecological wealth serves as a magnet for tourists drawn to engaging in activities like desert safaris and exploring life in the desert. Recognized for its pristine beauty and historical significance, the park offers an unrivalled blend of outdoor adventures and immersive cultural interactions, catering to adventurous travelers seeking to uncover the hidden treasures of Namibia's lesser-explored areas.

1.2.3 Mining

Arandis Constituency is home to mining activities that are dominated by uranium mining. Rossing Uranium Mine is one of the world's largest open-pit uranium mines, contributing significantly to the local economy. Its operations have been critical in fostering economic growth and creating job opportunities for the region's residents. Similarly, the Husab and Langer Heinrich mines contribute significantly to the constituency's economic optimism, cementing its position as a key players in Namibia's uranium mining industry. In addition, small-scale quarrying and sand and gravel extractions are present, typically for local

construction purposes. Similarly, gemstone mining sees small-scale miners extracting precious stones, offering potential value for local consumption or sale on a commercial scale. However, in addition to the economic rewards, the mining industry has environmental challenges. Responsible approaches to mining and strict mitigation measures are required to reduce environmental damage and assure long-term sustainability.

1.3 Environmental impacts

The process of commissioning mining operations, which involves building offices, storage spaces, accommodation, as well as amenities like ablution facilities and septic tanks, could potentially pose negative effects on the natural environment and its inhabitants. Therefore, the possible environmental impacts of such activities can emanate from construction to operational activities. These potential consequences may include, but are not limited to, a rise in; traffic, land use, dust, noise and gaseous emissions, loss of biodiversity, socio-economic loss, habitat destruction or alterations, water use, solid waste and waste water generation. The solid waste and waste water generation may include:

- Material removed to access the mica deposit, which may contain soil, rocks, and other non-valuable materials.
- Residues or waste material left after the mica has been extracted, which may contain fine particles of mica mixed with other minerals and materials.
- Alteration of the landscape due to quarrying activities, including the creation of pits, roads, and other infrastructure.
- Construction and renovation waste.
- Sewage and wastewater.
- Groundwater contamination.

As a result, an Environmental Impact Assessment (EIA) is requisite to determine the extent and significance of possible environmental impacts associated with the planned construction and mining operations.

1.4 Purpose of Environmental Impact Assessment

The proponent intends to extract industrial minerals (mica) from a state land in the locality of Goanikontes in the Arandis Constituency of the Erongo Region in Namibia. According to the

Environmental Management Act No. 7 of 2007, an EIA must be conducted for development activities linked to *resource removal, including natural living resources, transportation, industrial process as well as land use* and transformation which is relevant to this study. Consequently, this study was carried out to investigate the potential impact of the proposed development on the environment as well as the socioeconomic elements of the impacted populations. The EIA was conducted in compliance with the Environmental Management Act No. 7 of 207 and its 2012 regulations to inform the Environmental Commissioner on the findings of the EIA study.

The EIA process comprised an assessment of potential impacts identified by the Environmental Assessment Practitioner (EAP) as well as the completion of the statutorily mandated participation with interested and affected parties. Furthermore, the assessment took into account both the ecological and socioeconomic components of the environment in and around the claim area, as well as to a greater extent in the Arandis, Swakopmund and Walvis Bay Constituencies. In addition to the EIA findings, this report also presents the Environmental Management Programme (EMP) which provide mitigation measures to the identified impacts of the proposed mining activities.

1.5 Terms of References

The proponent has appointed Portal Research and Engineering CC to facilitate the EIA process in accordance with environmental management regulations, with the following terms of reference (TORs):

- Prepare adverts for placement in local newspapers;
- Visit the proposed site and prepare BID;
- Carry out the public consultation process;
- Conduct an EIA/Scoping study for the planned fuel retail facility in accordance with the EMA (no. 7 of 2007) and its Regulations of 2012;
- Compile the EIA/scoping and EMP reports for submission to relevant authority, and assist the proponent to apply for ECC.

1.6 Deliverables

Deliverable of this project are:

- Background information document (BID);
- EIA/screening Report;
- Draft EIA/scoping and EMP Reports;
- Final EIA/scoping and EMP Reports, and
- Application for Environmental Clearance Certificate.

1.7 Objectives

The objectives of this project were to conduct an Environmental Impact Assessment (EIA) of the mining of industrial minerals in the locality of Goantikontes in the Dorob National Park, provide EIA and Environmental Management Plan (EMP) reports, and file an application for an environmental clearance license with the Environmental Commissioner in the Ministry of Environment and Tourism.

2 DECRIPTION OF THE MINING PROSPECT

2.1 Licensed mining claim site and surrounding land use

It is proposed that industrial minerals (mica) will be extracted from a state land indicated in ***Figure 3***. The mining area is located in the Arandis constituency of Erongo region. The area falls within the boundaries of Dorob National Park, in the locality of Goanikontes under the mining claim license No. 75175 which cover an area of approximately 18 hectares.

Figure 3: *Proposed development site.*

The prospect mining site is located about 13 km from Goantikontes Oasis and hospitality establishments as well as15 km from Moon Landscape View Point four and six (***Figure 4-5***). Furthermore, the site is located about 3 km from the Khan River, about 10 km from the main (b2) road and Khan mine, as well as about 13 km from the Welwitichia plain (***Figure 6***) Other land use in the surrounding area is uranium mining that include in mining area at Rossing, Husab and Langer Heinrich as well as small scale farming.

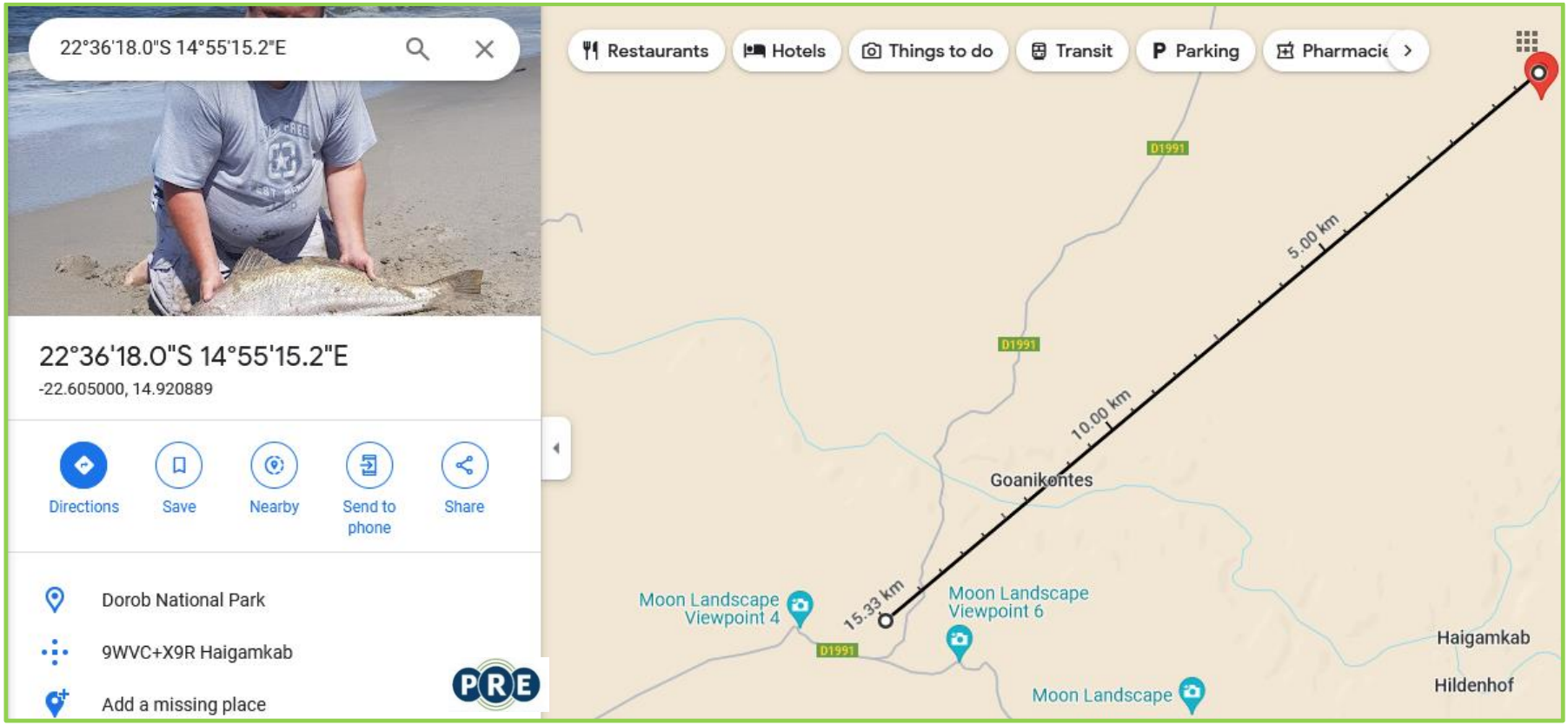

***Figure 4**: Terrain view of distance from the mining claim No75175 to surrounding land use (Goggle Maps, 2024).*

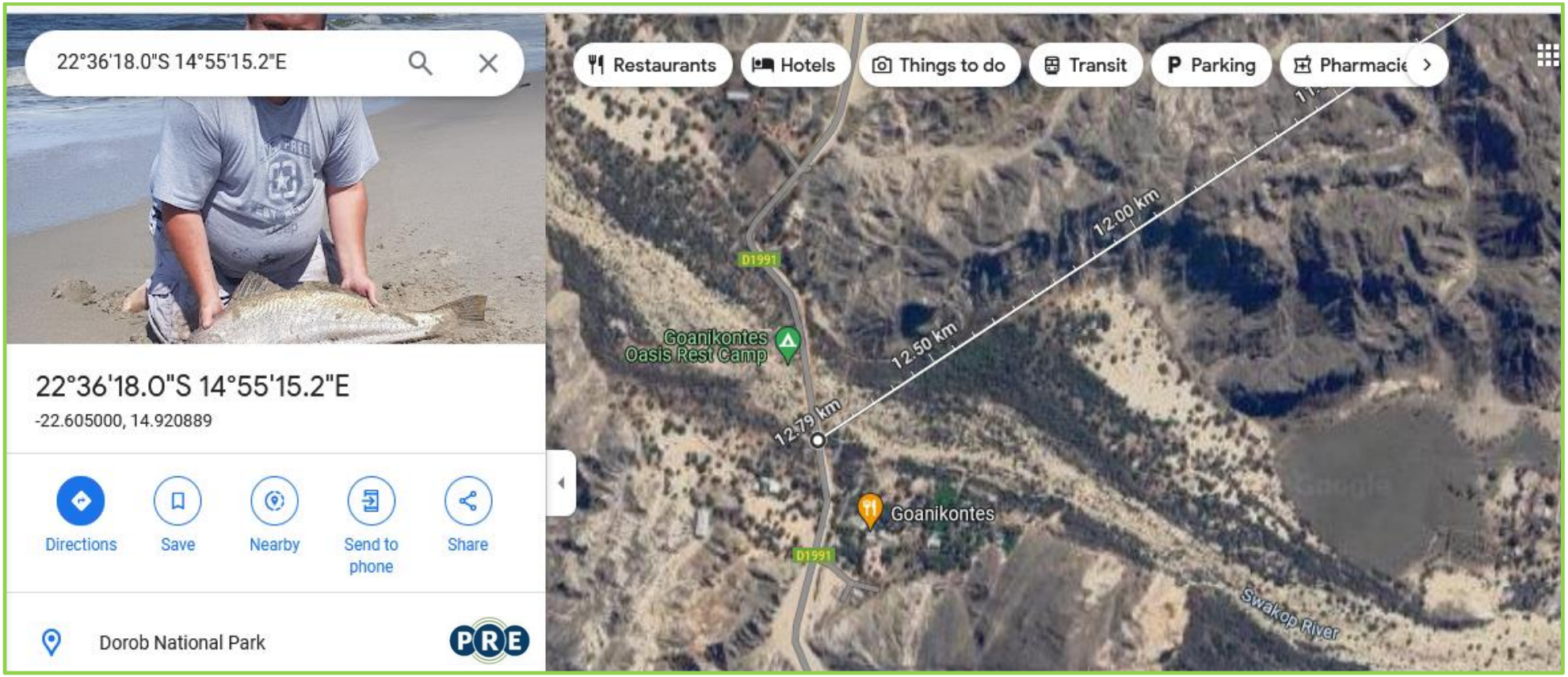

***Figure 5**: Satellite view of mining claim No75175 surrounding with measured distance from the mining site (Goggle Maps, 2024).*

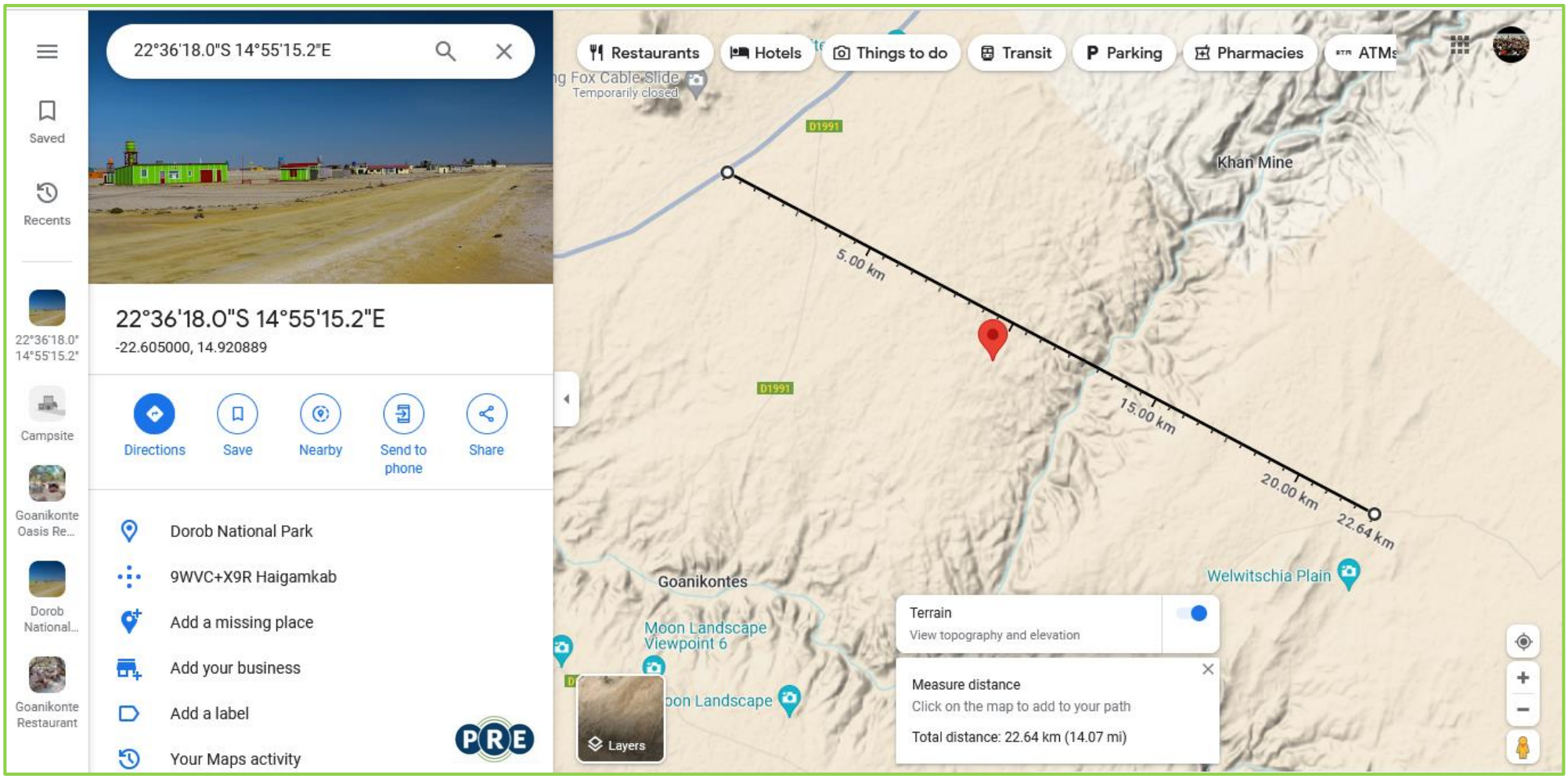

***Figure 6**: Terrain view of distance from the mining claim No75175 to surrounding land use (Goggle Maps, 2024).*

2.2 Infrastructure Establishment

Offices, storage, and accommodation, along with ablution facilities and septic tanks, will be established on-site using environmentally friendly materials to minimize the impact on the surrounding environment. This will include 6 standard (length of 6.058 meters, width of 2.438 meters and a height of 2.591 meters) steel shipping containers for office, storage and accommodation which is expandable to 10. In addition ablution facilities will be installed that include septic tanks. Solar panels will be used for electricity supply. In addition, water tanks will be installed onsite. Supply of water will be from Namwater lines and will be transported to the site on a regular basis. This selection of materials is aimed at facilitating efficient cleanup of the entire mining site once the mining operation reaches the end of its lifespan. Furthermore, these materials can be easily transported and disposed of at recognized waste disposal sites, ensuring safety and compliance. Construction will begin with excavation work to prepare the site for the installation of offices, storage facilities, accommodation units, ablution amenities, and septic tanks. It is worth noting that there is no vegetation on the site that will require clearance (***Figure 7&8***). Fire extinguishers will be installed inside the facilities, and fire incident management control and other safety protocols mechanism will be put in place.

Figure 7*: Picture taken around the proposed mining site.*

Figure 8: *Satellite image of the proposed mining site.*

2.3 Mining Process

The extraction of industrial minerals (mica) will be carried out through open cast quarrying/mining which include mechanical excavation to expose the mica-bearing ore, using machinery such as bulldozers, excavators, front-end loaders and tipper trucks. In this extraction process, heavy-duty machinery will be deployed to excavate and remove layers of earth and rock to access the mica-rich ore beneath the surface. Bulldozers will be utilized to clear and level the terrain, while excavators will dig into the earth to expose the mica deposits. Front-end loaders will then scoop up the ore and load it onto tipper trucks for transportation to the storage facility. It is crucial to note that the operation of such machinery may have environmental implications, including habitat disruption and the release of dust and emissions. Therefore, environmental management practices will be implemented to mitigate these impacts and ensure responsible mining practices are upheld.

- **Packaging and Distribution**: The extracted mica will be packaged and stored in steel shipping containers and then distributed to consumers. Transportation will be done using trucks.
- **Reclamation**: Once quarrying operations is completed, the site will undergo reclamation to restore it to a safe and environmentally sustainable condition. This may include backfilling, grading and other measures to mitigate the impact of mining activities and promote ecosystem restoration.

3 PROJECT MOTIVATION AND DESIRABILITY

Mining industrial minerals may be justified for economic development, resource utilisation, advancement in technology, and strategic relevance, particularly given the successful extraction of other minerals such as uranium in the region. As the populations in nearby towns like Arandis, Henties Bay, Swakopmund, and Walvis Bay continue to grow, driven by factors such as urbanization and migration, the demand for employment opportunities becomes increasingly pressing. With unemployment rates looming as a significant challenge among young people, the mining of industrial minerals like mica presents a viable solution for job creation and economic empowerment.

In addition, the proposed extraction of mica matches with the necessity of sustainable resource utilisation, ensuring that the enormous mineral wealth inherent in the region is utilised for the benefit of local populations and the wider economy. Moreover, the strategic relevance of mining activities cannot be overstated, especially in a region renowned for its successful extraction of minerals such as uranium. The diversification of the mining sector to include industrial minerals like mica not only strengthens the region's economic resilience but also bolsters its strategic significance on the global stage.

On the other hand, there is a need for mining processes to prioritise responsible and ethical extraction practices to minimize environmental impact while balancing conservation goals with developmental needs.

4 RELEVANT LEGISLATIONS

On behalf of the proponent, Portal Research and Engineering CC undertook the environmental impact assessment (EIA) and designed an environmental management plan (EMP) for the proposed extraction of industrial minerals (mica) from the mining claim No 75175. This study was conducted within the Namibian legal context, as discussed below:

4.1 The Constitution of Namibia

The principles of state policy enshrined in the Republic of Namibia's Constitution enable the state to enact laws that can be used and enforced by the country's judicial system. In terms of the environment and natural resources, the Republic of Namibia's constitution states in Article 95(1),

"The State shall actively promote and maintain the welfare of the people by adopting policies aimed at… The maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future…*".* As a result, natural resource conservation related policies and Acts have been enacted.

In addition, Article 91 (c) of the constitution state one the functions of the Ombudsman as:

"the duty to investigate complaints concerning the over-utilization of living natural resources, the irrational exploitation of non-renewable resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia".

4.2 Environmental Assessment Policy for Sustainable Development and Environmental Conservation.

The Environmental Assessment (EA) Policy was approved in August 1994 by Cabinet Resolution 16.8.94/002. The EA policy aims to promote sustainable development and economic growth while protecting the environment in the long term. The policy:

- Promotes sustainable development;
- Underscores the need to undertake Environmental Assessments (EAs) for all policies, programmes and development projects in Namibia;

- Encourages developers to practice “reduction-at-source” in pollution control and waste management;
- Describes the EAs process, and
- Stresses on the need to incorporate international accepted norms.

4.3 The Environmental Management Act No 7 of 2007

The environmental impact assessment (EIA) procedure for this project was conducted in compliance with Namibia's environmental legislation, specifically the country's Environmental Management Act (EMA) No. 7 of 2007. The EMA, No. 7 of 2007 was promulgated in December 2007 and commenced in 2012, with the goal of fostering sustainable environmental management and natural resource usage. The Act outlines decision-making principles, creates the Sustainable Development Advisory Council, and appoints the Environmental Commissioner.

The EMA, No. 7 of 2007 focuses inclusively on:

- Protection of Namibia's valuable environment;
- Promoting renewable resource use,
- Community involvement;
- Protection of ecological systems:
- Encouragement of developers to choose environmentally friendly options Conducting impact assessments taking concerns and interests into account
- Preventing environmental damage.

4.4 The Environmental Management Act regulations of 2012

The Namibian government gazetted the Regulation for the Implementation of Environmental Management Act No. 7 of 2007 in February 2012. The regulations provide guidelines on how an EIA should be conducted, and this information includes:

- List of activities that requires environmental impact assessment to be conducted.

- General requirements for EAP's
- Application for environmental clearance certificate
- Scoping report format
- Terms of reference
- Public consultation process
- Competent authority's responsibilities

4.5 Pollution Control and Waste Management Bill (guideline only)

The Pollution Control and Waste Management Bill among others is aimed at promoting sustainable development, prevent and regulate the discharge of pollutants in the air, water, and land as well as to regulate noise, dust and odor pollution.

4.6 Public and Environmental Health Act 1 of 2015

This Act is aimed to provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.

4.7 National Heritage Act No. 27 of 2004

The National Heritage Act No. 27 of 2004 was brought into force on 1 September 2005 by GN 105/2005 (GG 3490). The Act is aimed at providing protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish a National Heritage Council; to establish a National Heritage Register; and to provide for incidental matters.

4.8 Petroleum Products and Energy Act of Namibia (Act No. 3 of 2000)

The Act includes provisions for petroleum product conservation as well as distribution cost savings. Furthermore, the act established operational criteria for the petroleum industry, which included the following:

- The premises where petroleum products are stored
- Licensing of outlets and petroleum product wholesalers
- Conducting of business in respect of petroleum products, including:

- Application of health, hygiene, safety and environmental standards and requirements.
- Minimum safety standards, fire-fighting, security drills and contingency plans, pre-planning against fires and pollution, security of premises, safety equipment, emergency measures and provisions for product security.

- Premises where petroleum products are stored, including the facilities, equipment, design and construction.
- Maintenance of security and the continuity of petroleum product supplies in Namibia, and the maintenance of contingency and reserve petroleum product stocks.

There will be a need to store petroleum products on site for vehicle use.

5 METHODOLOGY AND APPROACH

5.1 Introduction

This section covers the methodology employed for the Environmental Impact Assessment (EIA) of the proposed extraction of industrial minerals on the mining claim license No. 75175 in the locality of Goantikontes in the Arandis Constituency, Erongo Region, Namibia. The EIA process covered an initial field survey and review of the development project designs, establishment of baseline information, EIA process and procedures, public consultation, assessment methods, review of alternatives and environmental impact mitigation.

5.2 Environmental Impact Assessment process and procedures

The EIA process and procedure is guided by the Environmental Management Act (no. 7 of 2007) and EIA Regulations of 2012 as illustrated in ***Figure 9***:

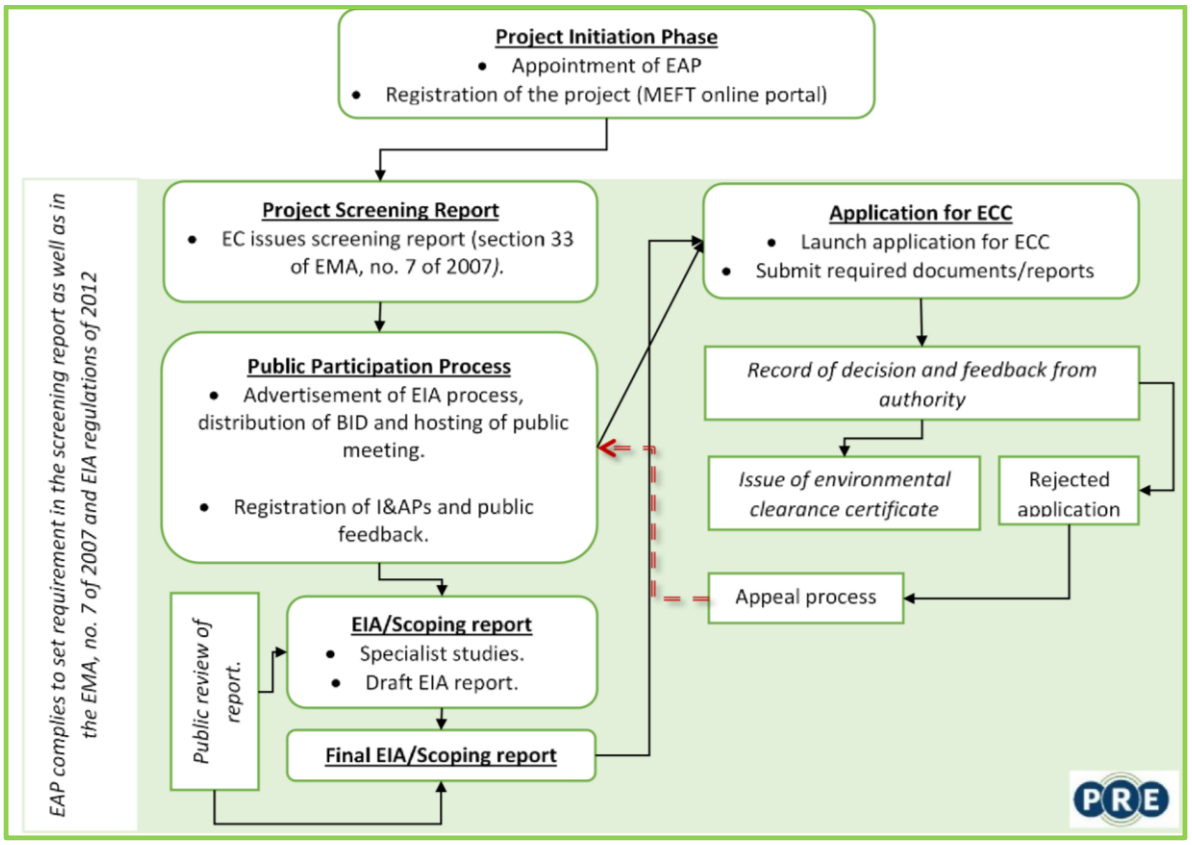

Figure 9: EIA process for the proposed mining of industrial minerals on the mining claim number 75175, Arandis Constituency.

5.3 Environmental Baseline Information

To acquire baseline information on the proposed project and project location, a desk research approach was employed to evaluate reports and published literature. This process involved compiling an overview of the environmental conditions in the targeted area, encompassing physical, biological, and human aspects.

5.4 Field Surveys/Site visit

A site visit was carried out to inspect the study's area and verify the environmental baseline information acquired during the initial desk study phase. In addition, the site visit allowed the consultants to do a preliminary feasibility investigation on the project.

5.5 Public Consultation Process

The Environmental Impact Assessment process necessitated the participation of interested and affected parties (I&APs) by the proposed development. The Environmental Management Act No 7 of 2007 (regulations of 2012), and specifically section 21 call for public participation in the EIA process. Because of this requirement, the proponent placed notices in two local newspapers (Confidente and The Namib Times) on the 8th and 15th March 2024 calling for registration of (I&APs) (***Appendix B***). Notices were also posted on the notice boards of the Erongo Regional Council, the Ministry of Mines and Energy in Swakopmund, and the Arandis Constituency office in Arandis (***Appendix C***). Furthermore, invitations for participation were sent out on emails of identified affected parties in the locality of the mining claim (***Appendix C***).

A background information document for the proposed project was produced and disseminated to the I&APs as well as the line ministry. Furthermore, the draft scoping report was distributed via email to the registered I&Aps.

5.6 Environmental Impact Assessment Methods

Different approaches were used to assess both the positive and negative impact of the proposed extraction of industrial minerals (mica) on the mining claim license No. 75175 in the locality of Goantikontes in the Arandis Constituency.

5.6.1 Leopold matrix method

A Leopold matrix was used for assessing the impact of the extraction of industrial minerals (mica). The Leopold matrix is a method for evaluating and numerically weighing potential impacts. It is a qualitative environmental impact assessment approach that includes the following levels: impact description, prediction and evaluation.

5.6.2 Valued ecosystem components

The identification of Valued Ecosystem Components (VECs) was the first stage in the Leopold matrix assessment approach. VECs constitute essential parts of the physical, biological and socioeconomic environment that are expected to be among the most vulnerable receptors to the impact of the planned extraction of mica (***Table 2***).

***Table 2**: Identified VECs.*

Environmental resource	Valued ecosystem component	Importance of the valued ecosystem component
Air and climate	Air quality	• Effects on air for local residents. • Health implications for all users. • Effects on atmosphere.
	Climate	• Contribution to global warming.
Land	Geomorphology and landscape	• Change in land morphology. • Use of non-renewable energy. • Importance to local community. • Importance for conservation • Effects of waste disposal methods.
Water	Ground water quality	• Sustainability issues. • Conflict use (irrigation and drinking).
	River water quality	• Sustainability issue. • Health implications for all users.
Ecology and biodiversity	Terrestrial ecology and biodiversity	• Importance to the well-being of all biological content of the ecosystem. • Importance for ecosystem well-being and proper functioning. • Use to community.
Human Environment	Socio-economic & biodiversity	• Economic use to the community. • Employment opportunities. • Community welfare.
	Public health and safety	• Operation impacts on community safety.
	Noise pollution	• Nuisance to local community and ecosystem.

5.6.3 Impacts aspects

Table 3 was used to populate multiple environmental variables that will be impacted by each mining activity.

Table 3: *Identified Impact Variables emanating from project activities.*

Project component	**Impact Variable**
Infrastructure Establishment – site selection and preparation.	• Excavation/Topsoil clearing and removal and land levelling. • Transport and equipment use. • Purchase and delivery of materials. • Staff hiring.
Infrastructure Establishment – civil works installations and commissioning.	• Modular setup of infrastructures (office, accommodation, storage and ablution facilities). • Transport and use of vehicles. • Equipment use. . • Water supply. • Waste disposal, clean-up, landscaping and preparations to make the facility ready for use. • Staff hiring
Mining Process. mica extraction	• Excavation, earthworks, backfill and compaction. • Vehicles and heavy machine use. • Blasting. • Energy use. • Staff hiring
Mining Process –packaging, storage and distribution	• Vehicles and heavy machine use. • Energy use. • Staff hiring.
Decommissioning- reclamation	• Excavation, earthworks, backfill and compaction. • Vehicles and heavy machine use • Energy use • Staff hiring

5.6.4 Impacts evaluation

The Leopold matrix's third stage involved evaluating the significance of each influence in order to ascertain how it will affect the receiving environment. As shown in ***Table 4***, each impact was rated according to its nature, extent, duration, magnitude and probability.

Table 4: *Ratings matrix for assessed impacts.*

Assessment of Impact	Rating	Description
Nature/Type	D I C	**Direct** - Caused by the project and occur simultaneously. **Indirect**- Associated with project and may not happen immediately. **Cumulative** - Combined impacts that could be associated with other existing activities or future activities not related to the project.
Extent	I L R N I	**Immediate.** Mining Site. **Local**-Surrounding communities/land use. **Regional**- Erongo Region. **National** - Namibia. **International**.
Duration	ST MT LT	**Short term** - 0-5 years. **Medium term** - 5-15 years. **Long Term** - >15 years.
Magnitude	L M H	**Low** - the natural, cultural and social functions and processes are not affected. **Medium**-the affected environment is altered but natural, cultural and social functions and processes can continue. **High**- the affected environment is altered to the extent that natural, cultural and social functions and processes will temporarily or permanently stop.
Probability	LP P HP D	**Low probability** -possibility of impact occurring is low, below 25%. **Probable**-there is a distinct possibility that it will occur, approximately 50%. **Highly probable** - the impact is most likely to occur, 75%. **Definite** - the impact will occur, more than 100%.
Significance without mitigation measures (WOM)	Impact Factor (IF)	**Impact Factor was measured on a scale of** 1 to 5 with 1 representing low significance and five highest significance.

5.7 Analysis of Alternatives

Alternative mining strategies were investigated in order to reduce negative environmental impacts while achieving project objectives.

5.8 Environmental Impact Mitigation

An Environmental Management Plan (EMP) was produced which described strategies for mitigating, controlling, and monitoring activities that may have significant environmental effects. The EMP was submitted together with the scoping report to the I&Aps for public review.

6 ENVIRONMENTAL IMPACT ASSESMENT'S FINDINGS AND DISCUSSIONS

6.1 Introduction

This section of the report presents and discusses findings of the environmental impact assessment which was carried for the proposed extraction of industrial minerals on the mining claim license No. 75175 in the locality of Goantikontes in the Arandis Constituency, Erongo Region, Namibia. Findings covers the environmental baseline information and assessment:

- Impact on abiotic environment.
- Impact on biotic environment.
- Impact on social and cultural environment.
- Impact on human environment.

6.2 Environmental Baseline Information

The environmental baseline conditions in the focus area were described in terms of physical, biological and human environmental synopsis. The results are presented in section ***6.2.1*** to ***6.2.4***.

6.2.1 Climate and weather

Namibia is one of the largest and driest countries in Sub-Saharan Africa, with considerable climatic variability characterised by prolonged droughts, unpredictable and varied rainfall patterns, temperature variability, and water scarcity (Dove, 2021). Particularly, the dry climate in the proposed area is mostly owing to the cold Benguela Current, whose cold air influence the weather in around coastal areas (Bender, 1999; Dove, 2021).

6.2.1.1 Rainfall

The rainfall pattern in Namibia is defined by a distinct gradient of more rainfall in the mainland interior receiving rainfall above 200 mm in some parts while the coastal regions receives rainfall below 100 mm per year, including the greater part of the Erongo region (***Figure 10***). This decrease in precipitation is primarily due to the influence of the cold Benguela current upwelling current, which is a source of dry cold air masses with limited precipitation in the form of fog along Namibia's coastal regions.

During summer, the movement of the ITCZ to the south influences rainfall in Namibia. The rainy season typically lasts from November to April the following year with January having the most rainfall (***Figure 12***). However, rainfall can occur in Namibia's southern regions during winter as the Temperate Zone moves northward. Coastal fog, on the other hand, is more predictable than rainfall in the western part of the country, particularly in Erongo region.

Dorob National Park – Mining Site

The Dorob National Park is located in Namibia, primarily within the Namib Desert. The Namib Desert is one of the driest places on Earth, characterized by its arid climate and low precipitation levels (***Figure 11***). While occasional rain showers or localized thunderstorms may occur, annual rainfall possibility in the park is extremely very low to zero (Jacobson and Jacobson, 2013). As a result, the focus area experiences minimal rainfall its ecosystem is adapted to extreme arid conditions.

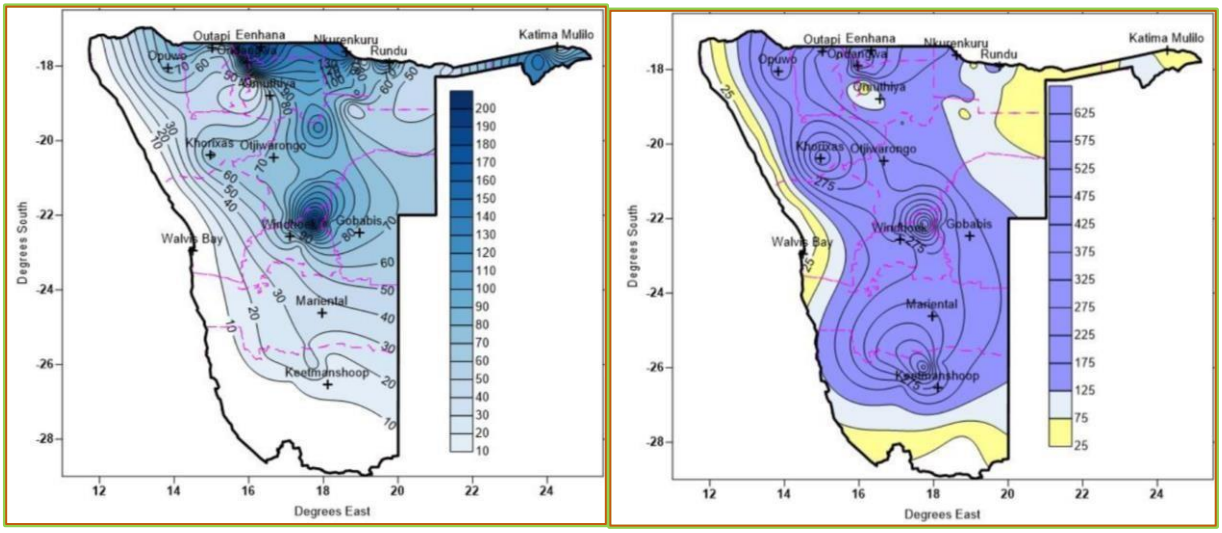

Figure 10: *Spatial distribution of rainfall in Namibia, December 2019 (left) and rainfall as a percentage of normal rainfall (right). Rainfall units are in milliliters. Source: Ministry of Work and Transport (2023).*

Figure 11: *Namibian average monthly temperature and rainfall between 1991 and 2020, inclusive (Dove, 2021).*

6.2.1.2 Temperature

Temperatures are generally high in Namibia's interior. The coastal region of the country, on the other hand, experiences comparatively milder temperatures throughout the year, due to the Cold Benguela current. Summer and rainy season temperatures are often higher (***Figure 13***). Furthermore, rising mean, maximum, and minimum temperatures have been observed for Namibia over the years (***Figures 12 and 13***).

Dorob National Park – Mining Site

Climatic conditions in most part of the Dorob National Park and particularly around Goanikontes in the locality of the proposed mining site is extremely arid with temperatures averaging between 17.57 in August and 21.52°C in March (Weatherandclimate.com, 2024).

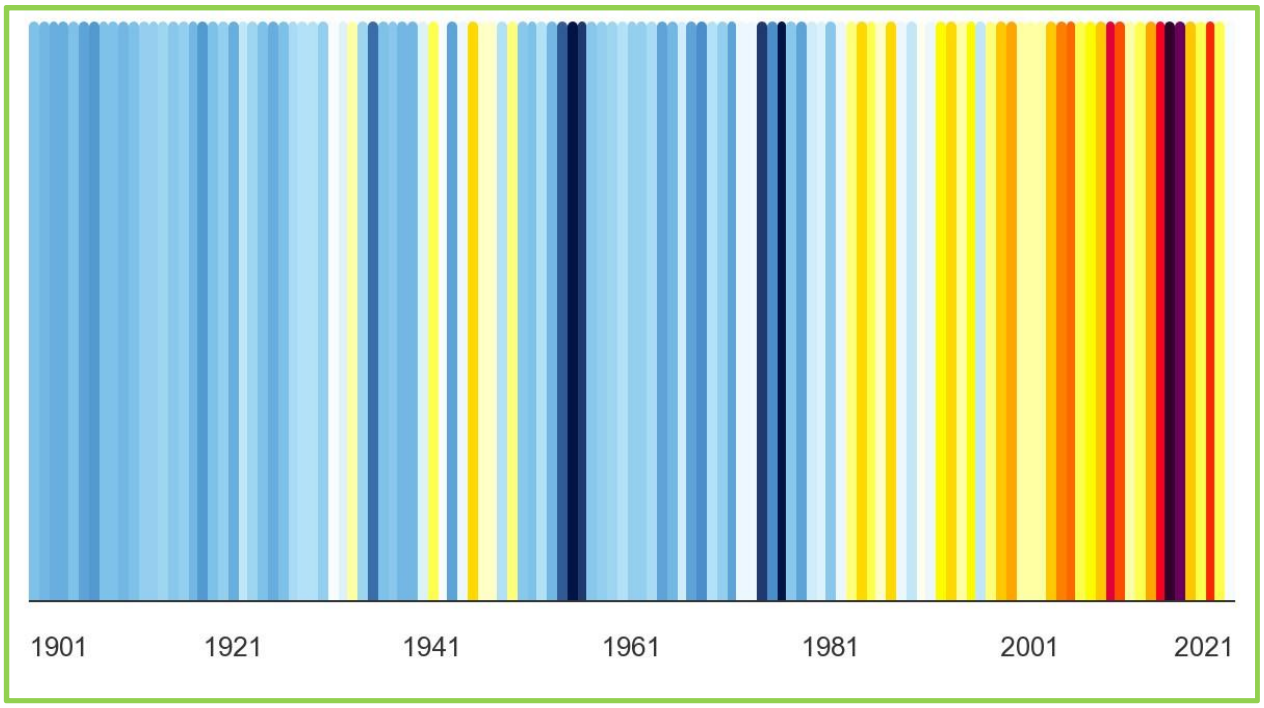

Figure 12:*Long-term annual mean temperature for Namibia between 1901 to 2021, inclusive (CCKP, 2022).*

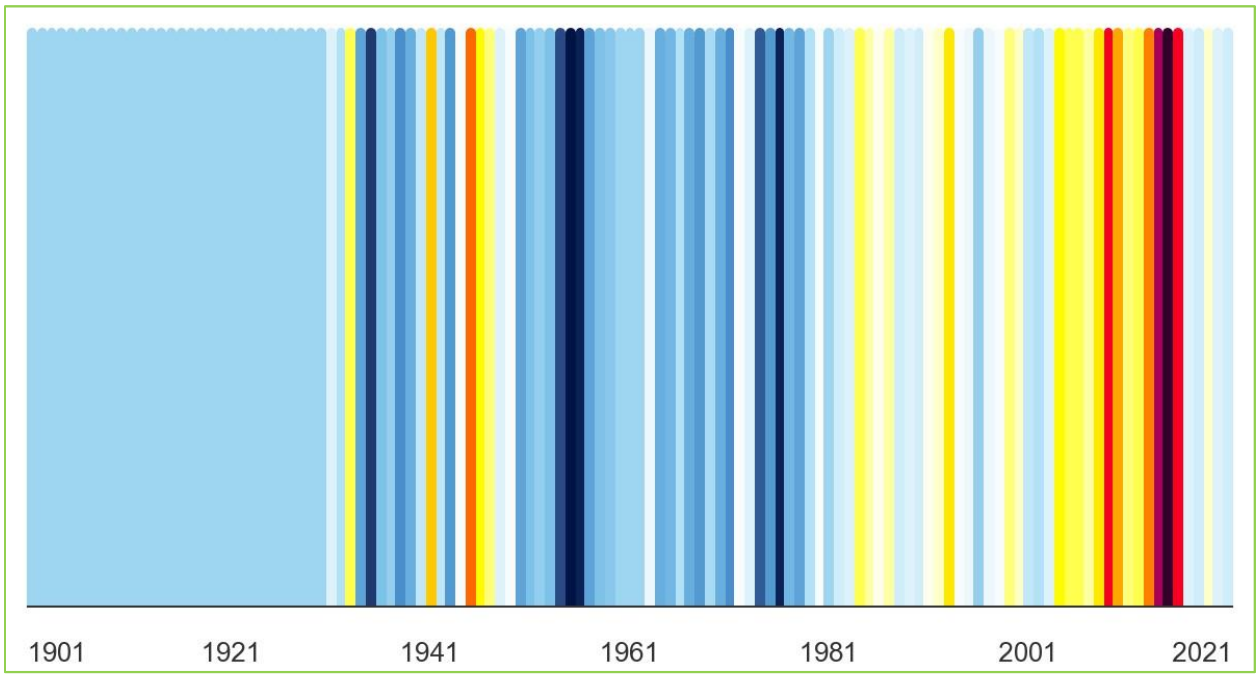

Figure 13*: Long-term annual mean temperature for Erongo region from 1901 to 2021, inclusive (CCKP, 2022).*

6.2.2 Geo-physical environment

The geological environment around Goanikontes in Dorob National Park is distinguished by its placement in the southern Central Zone of the northeast trending branch of the Damara Orogen. The area surrounding Goanikontes is one of several large uranium anomalies in the Damaran Orogen (Nex et al., 2001). The Swakop River's exposure provides insights into understanding the tectono-metamorphic context of magmatism and mineralization in the region (Nex et al., 2001; Abraham, 2009). Other rivers present around the area are Kuiseb and Khan rivers which are also ephermeral. The granitoids in the area are classified as equigranular granites and sheeted leucogranites, each having unique features and emplacement processes (Nex et al. 2001).

The mining claim area is made up of rocks dating back to the Cambrian Age, predominantly composed of highly deformed and metamorphosed Damara Sequence sediments, Khan formation and the Abbabis Complex. These geological features hold valuable insights into the potential mineral resources present in the area.

6.2.2.1 Water resources and sources

The supply of surface water is closely related to rainfall pattern in both time and space. As a result, surface water resources in Namibia are sparse and unpredictable. Rainfall in the Dorob National Park is minimal and unpredictable and the rivers in the region only flow after heavy rainfall in the highlands of the central Namibia. Groundwater resources, on the other hand, are unevenly distributed across the country, being closely associated with underground rock types that vary with geological conditions; as a result, there are only a few favourable locations where large volumes of groundwater can be extracted sustainably (Christellis et al., 2001). Furthermore, about 48% of the country is covered by unconsolidated deposits that could be porous aquifers, while the rest is made up of hard, fractured rocks (Christellis et al., 2001).

In the area of Goanikontes, the intermittent flow of the Swakop River through the region replenishes groundwater reserves and feeds into the Goanikontes Oasis. The presence of water in the oasis sustains abundant plant life, which stands out prominently against the dry surroundings and serves as a habitat for a diverse range of plant and animal species. However, the water provision for the Goanikontes resort and is sourced from the Namwater

pipeline. Due to the small-scale nature of the proposed mining limited by the size of the respective mining claim (No 75175), water supply will be outsourced from the Namwater (i.e. no borehole will be constructed).

6.2.3 Biological environment

Due to the extreme aridity of the desert environment, vegetation is generally sparse and patchy, with distinct patterns of distribution affecting the distribution and diversity of fauna. However, the life in Dorob National Park encompasses a range of plant and animal species within its unique desert ecosystem. In some part of the park such as in the area around Goanikontes, the species diversity becomes more prominent due to the Swakop River and the Oasis.

6.2.3.1 Flora

The area around Goanikontes Oasis has highest flora diversity within the locality of the proposed mining site. The proposed mining site is about 13 km from the Goanikontes Oasis. The proposed mining site is also located about 3 km from the Swako River which have a number of flora of its own. Within the boundary and larger surrounding (excluding the Swakop riverbed) of the mining claim licensed No. 75175 there is no vegetation. The list of the expected flora species is presented in ***Appendix D***. It is noteworthy to mention that most of these species are endemic to Namibia desert.

6.2.3.2 Fauna

The sparsely distribution of vegetation cover in parts of the Dorob National Park forms the foundation of the local ecosystem, offering food, refuge, and shelter for a broad range of wildlife.The diversity of fauna is prominent in areas along the rivers and wetlands in the park. Consequently, Goanikontes and its environs serve as habitats for diverse

Birds

The area's avian population is equally varied, with at least 104 bird species sighted around Goanikontes (eBird, 2024). This encompasses species of canaries, sparrows, weavers, sunbirds, chats, flycatchers, doves, swifts, falcons, flamingos and common ostrich. The most common (abundant) species are black throated canary (*Crithagra atrogularis*), cape sparrow (*Passer melanurus*), alpine swift (*Tachymarptis melba*) southern mask-weaver (*Ploceus*

velatus), laughing dove (*Spilopelia senegalensis*) pale-winged starling (*Onychognathus nabouroup*). Other species of importance are the rüppell's parrot (Poicephalus rueppellii), violet wood-hoopoe (Phoeniculus damarensis) and gray's Lark (Ammomanopsis grayi) which are endemic to Namibia (Heinrich, 2021). Though most of the bird species around the focus area are of least concern in terms of conservation, the white-backed vulture (Gyps africanus) is listed as critically endangered (eBird, 2024) and making it of high conservation priority among others. The list of other bird species recorded around Goanikontes area is presented in ***Appendix E*****.**

Reptiles

Namibia is one of the important habitat for reptiles in Africa. The country has about 261 species, which account for about 30% of the African species diversity (Griffin 1998). Furthermore, there are about 55 species that are endemic to Namibia which makes up about 21% of the estimated 261 species found in Namibia. In general, there are about 100 species in Erongo region of which most of them are around the Namib-Naukluft and Sekeleton Coast national parks and at least 20 to 30 species are endemic to the central eastern part of the region (Cunningham and van Zyl, 2022). Cunningham and van Zyl (2022) further indicate that the data for Dorob National Park is scarce. However, according to *inaturalists* website (https://www.inaturalist.org/) there are at least 44 reptile species in the Arandis constituency reflecting a high probability of diverse endemism of reptiles around Goanikontes. This include species such as the Namaqua chameleon (*Chamaeleo namaquensis*), Namibian rock monitor (*Varanus albigularis*), Namaqua sand lizard (*Pedioplanis namaquensis*) Bradfield's dwarf gecko (*Lygodactylus bradfieldi*). These species are listed of least conservation concern (iNaturalist, 2024).

Amphibians

The diversity for amphibians in Namibia require conservation efforts due to the low number of species reported to be endemic to Namibia. Out of the estimated 200 species found in southern Africa, Namibia is expected to have a share of about 57 to 65 species (29 - 33 %) of which only about 6 are thought to be endemic to Namibia (Cunningham and van Zyl, 2022). Due to the habitat and adaptation strategies, the given figures are not surprising considering that Namibia is an arid country. Most amphibians are adapted to wet habitats and therefore a great number of amphibians in Namibia occurs in the north-eastern part of Namibia.

Due to the presence of wetlands within the Goanikontes Oasis, it is possible for the hoesch's toad (*Poyntonophrynus hoeschi*), marbled rubber frog (*Phrynomantis annectens*), and poynton's river frog (*Amietia poyntoni*) to be found in the area. These three species have been documented on the outskirts of the Arandis Constituency. According to data from iNaturalist (2024), all three species are classified as having the least concern status for conservation.

Invertebrates

The invertebrates that can be affected by the proposed project includes spiders and scorpions. The two species group are mostly nocturnal and largely active at night in search of food. Generally, spiders and scorpions can be considered as key state of environmental indicator species due to their carbon turnover as well as their ability to respond rapidly to changes in the environment.

There are at least 9 species of scorpions that are reported in Arandis constituency (iNaturalist, 2024) which are: (*Uroplectes otjimbinguensis*; *Uroplectes pilosus*), shaggy thicktail scorpion (*Parabuthus villosus*), gracile thicktail scorpion (*Parabuthus gracilis*), Orange lesser-thicktail scorpion (*Uroplectes planimanus*), Namib rock scorpion (*Hadogenes tityrus*), smooth-claw thicktail scorpion (*Parabuthus glabrimanus*), sesriems scorpion (*Hottentotta conspersus*), Namib thicktail scorpion (*Parabuthus namibensis*).

In terms of spiders, five species are recorded in the Arandis constituency, including the African sixeyed sand spider (*Hexophthalma goanikontesensis*) which is endemic to Goanikontes area. Other species are; African sixeyed sand spider (*Hexophthalma hahni*) common garden orbweb spider (*Argiope australis*), African social spider (*Stegodyphus dumicola*), and dancing white lady (*Leucorchestris arenicola*) (iNaturalist, 2024). These species are expected to occur around the Goanikontes and possibly around the focus area.

Mammals

Mammals are one of the most important wildlife in terms of socio-economic contributions due to their intrinsic value that significantly contribute to tourism in the wider general area. However, there is not many large mammals i.e. elephants, lions, leopards, cheetahs, antelopes etc. around the focus (project) area due to the arid climate of the Namib Desert resulting in poor vegetation cover. This include species like gemsbok springbok (*Antidorcas*

marsupialis), the vulnerable Hartmann's mountain zebra (*Equus zebra*), dassie rat (*Petromus typicus*) bushveld gerbil (*Gerbilliscus leucogaster*), meerkat (*Suricata suricatta*), the near threatened brown hyaena (*Parahyaena brunnea*), southern small-spotted genet (*Genetta feline*) chacma baboon (*Papio ursinus*), rock hyrax (*Procavia capensis*) and the bushveld sengi (*Elephantulus intufi*) (MEFT, 2024; iNaturalist, 2024).

6.2.4 Human environment

The proposed mining of industrial minerals on the mining claim licence No. 75175 in the locality of goanikontes may have local and regional effects on the human environment. Human environment in this case refers to the physical, social and economic conditions or factors that interactively influence the state and quality of living conditions of people affected by the proposed project. These factors can include land use and socio-economic activities in the proposed mining area. The proposed mining claim licence is situated in Arandis constituency in Erongo region. According to the projection made by Namibia Statistics Agency (2014), the growth of the population in Erongo region will be second only to Khomas region by 2041 while the overall urban population in the country is expected to increase by 24 per cent within the same period. The annual growth rate in Erongo region is estimated at 3.4 per cent which is higher than Khomas region (3.1 per cent) and the overall country's annual growth rate of 1.4 per cent (Namibia Statistics Agency, 2012).

Erongo region has some of the countries popular tourist destinations owing it to its unique landscape and climate. On the other hand, the Arandis constituency has popular features of high tourist attractions such as the Goanikontes Oasis, the moon landscape view and Cape cross.

6.2.4.1 Land use

This area is in the desert and in the Dorob National Park which is a protected area. Therefore, therefore, land use in the area is minimal due to conservation purposes. However, a couple of activities still occur that include, tourism, agriculture, mining and to the lesser extent domestic use.

6.2.4.2 Socio economic status

Minimal human land use characterizes the focus area, with tourism, mining, and to a lesser extent, agriculture being the primary economic activities. The socio-economic status is largely influenced by these industries. However, the positive impact of these economic activities is most evident in the nearby towns of Swakopmund, Arandis, and Walvis Bay, where the majority of employees working in these sectors reside.

6.3 Public Participation in the EIA process

The public participation process (PPP) provided a platform to IAPs and stakeholders in an independent and neutral way that encouraged IAPs and stakeholders to participate and raise comments, issues of concern and suggestions for inputs into the EIA and EMP reports. During the EIA phase, public participation allowed IAPs and stakeholders to review and provide comments on the findings of the environmental assessment and the proposed management measures. IAPs and stakeholders will be notified about the outcome of the authority's decision and by when the decision may be appealed.

6.3.1 Public Notices and Invitations

Following the EMA Act No 7 of 2007 (and its regulations of 2012), public notices were placed in two local newspapers (Confidente and The Namib Times) on the 8th and 15th March 2024 calling for registration of IAPs and stakeholders (***Appendix B***). Furthermore, notices were put at the notice board of the Erongo Regional Council Office, the Ministry of Mines and Energy office and the Swakopmund Constituency Office in Swakopmund as well as Arandis Constituency Office in Arandis (***Appendix B***). In addition, proactive measures were taken to engage directly with identified affected community at Goanikontes through the management of the resort at the Goanikontes Oasis as well as Bannerman Energy per request of Goanikontes camp and resort management (***Appendix C***). A public meeting was called for via email, by the consultant to take place on the 27th March 2024 at Goanikontes resort.

6.3.2 Public meeting and participation

After a wide coverage of the public invitations to register their interest in the assessment process as indicated in 6.3.1 (above), only two people/organisations registered as interested and/or affected parties via email (***Appendix C-III***). Attempt to host a meeting in Goanikontes was futile due to no interest shown despite proactive measures (***Appendix B & C***) to engage

directly with identified affected community at Goanikontes who are mostly workers at the Goanikontes Resort and Camping site and agricultural activities. The estimated population of this community is about 100 people (Advisor.Travel, 2024).

Despite the few individuals registering as interested and affected parties and the subsequent decision not to hold a public meeting, it is crucial to underscore that the Environmental Impact Assessment (EIA) was conducted with utmost diligence and independence. This thoroughness was ensured through comprehensive dissemination of information via public notices published in local newspapers and prominently displayed on notice boards at strategic locations such as the Erongo Regional Council Office, the constituency Councillor's office, and the Ministry of Mines and Energy.

Moreover, proactive measures were taken to engage directly with identified affected communities, although regrettably, they did not demonstrate interest in participating. Despite this lack of engagement, the EIA process proceeded meticulously, with all relevant stakeholders being informed and given the opportunity to contribute.

The evidence (***Appendix B & C***) supporting these efforts, including detailed email conversations, serves as concrete proof of the commitment to fulfilling the requisite public consultation aspect of the EIA process. It reflects a conscientious approach to ensuring transparency, accountability, and inclusivity in the assessment of environmental impacts.

In addition, the draft EIA and EMP report was shared for inputs with all the established contacts despite lack of interest shown ((***Appendix C***).

6.4 Impact Identification Assessment

The assessment aimed to identify potential environmental impacts and issues associated with the proposed mining of industrial minerals (mica) in the Dorob National Park on a mining claim license No. 75175 within the locality (about 13 km) of Goanikontes. After a comprehensive analysis, the following factors or issues have been identified as having most significant importance (***Table 5-7***):

- ***Dust and Gaseous Emissions:***

The assessment identified the potential release of dust and gaseous emissions during the infrastructure establishment and mining operation and its potential impact on the air quality and climate. It emphasized the importance of managing and minimizing these emissions to prevent air pollution and associated health risks. The probability of dust and gaseous emission was found to be medium to high in most project activities.

- ***Noise Pollution:***

This factor addressed the potential increase in noise levels associated with the mining operation due to use of heavy duty machineries. It evaluated the impact on the surrounding environment, including nearby community particularly that of Goanikontes. The probability impact of noise pollution was found to be low in relation to the nearby communities due to the distance (about 13 km) and biological environment due to low diversity and abundance of fauna and flora in the specific focus project area (mining site). However, for individuals working at the mining site, noise is expected to be medium to high due to use of heavy duty machineries.

- ***Human Health and Accident Risks:***

This factor focused on the potential risks to human health and safety associated with the infrastructure establishment and mining operation. It considered aspects such exposure to dust and air pollutants, noise as well as accidents and injuries. The probability of Human health and accidents was found to be low to medium.

- **Habitat Destruction or Modification:**

The assessment recognized the possibility of habitat destruction or modification due to the infrastructure establishment and mining operation. This factor addresses the importance of preserving and protecting the existing habitats and ecosystems in the area. The probability of habitat destruction or modification was found to be low due to low biodiversity in the focus project area (mining site). The scale of mining is also small considering the size of the mining claim license No. 75175 which is about 18 hectares.

- **Land Modification (Geomorphology):**

This factor considered the alteration of the land's physical features and geomorphological processes due to the infrastructure establishment and mining operation. It evaluated the potential changes to landforms, drainage patterns, and erosion risks. The probability of land modification was found to be medium to high depending on the geological setup of the mica around the site. However this only within the specific project area which is about 18 hectares.

- **Loss of Topsoil:**

The assessment recognized the potential loss of topsoil during the mining phase. This factor emphasized the importance of implementing measures to minimize soil erosion. The probability of loss of topsoil was found to be high. However this only within the specific project area which is 18 hectares.

- **Loss of Reptiles and Invertebrates Diversity:**

This factor emphasized the potential impact on the local biodiversity, particularly reptiles, and invertebrates. The biodiversity within the specific project area is low due to arid conditions of the Namib Desert. There is no vegetation and water source on the specific project site with the nearest wetland about 13 km away at Goanikontes Oasis. However, some species of reptiles and invertebrates (such as scorpions) may inhabit the project area though its abundance is expected to be low due to the size of the specific project area which is 18 hectares. Therefore, the probability of loss of reptiles and invertebrates was found to be low.

- **Land/Soil Pollution:**

This factor focused on the potential contamination of land and soil due to improper waste management practices associated with mining operation. It highlighted the importance of preventing soil pollution and preserving soil quality. The probability of land pollution was found to be low to medium depending on how generated waste is handled.

- **Groundwater Pollution (Leaching):**

The proposed mining site is about 3 km from the Khan Ephemeral River. The assessment found that the probability of groundwater contamination is low due to low usage of chemicals and potential pollutants. The most possible ground pollution could come from waste water

management from ablution facilities which is expected to be low due to the scale of the projected limited by its land size.

- **Tourism:**

The proposed project site lies within Dorob National Park, renowned for its scenic landscapes and unique biodiversity, making it a popular tourist destination. The evaluation assessed the potential impact of mining activities on tourism, revealing a low to medium level of impact. This conclusion is drawn from the absence of existing tour routes passing through the mining site and the lack of distinct tourist attractions in the immediate vicinity of the project area. The most popular tourist sites are about 13 -15 km from the proposed mining site at Goanikontes and Moon Landscape View Points (***Section 2.1 Figure 5-7***).

Table 5: *Impact identification and evaluation from infrastructure establishment related activities.*

Project Stage and Activities	**Impact and Receiving Environment (VECs)**		**Duration** Short Term, Medium Term, Long Term.	**Magnitude** Low, Medium, High.	**Extent** Immediate (I) Localised (L) Regional (R) National (N)	**Type** Direct Indirect Cumulative.	**Probability** Low, Medium, High.
Infrastructure Establishment (site preparation) • Excavation/Topsoil clearing and removal and land levelling- **No vegetation on site** • Transport and equipment use. • Purchase and delivery of materials. • Waste generation	**Air**- dust creation		Short Term	Low	I	Direct	High
	Land- removal of top soil. Waste creation.		Long Term	Low	I	Direct	High
	Ecology- Habitat destruction.		Long Term	Low	I, L	Direct	Medium
	Biodiversity- Possible impact on small fauna's diversity. Flora absent from site.		Long Term	Low	I, L	Direct	Low
	Human environment-	Noise and air pollution, health and Safety of employees.	Short Term	Low	I, L	Direct	Medium
		Employment creation	Short Term	Low	I, L, R	Direct	High
		Conflict overlapping land use i.e. tourism.	Medium Term	Low	I, L, R, N	Indirect	low
Infrastructure Establishment (civil works and facilities installations) • Modular setup of infrastructures (office, accommodation, storage and ablution facilities). • Transport and use of vehicles. • Equipment use.	**Air**- dust creation		Short Term	Low	I	Direct	Medium
	Land- removal of top soil. Waste creation		Long Term	Low	I	Direct	Medium
	Ecology- Habitat destruction.		Long Term	Low	I, L	Direct	Medium
	Biodiversity- Possible impact on small fauna's diversity. Flora absent from site.		Long Term	Low	I, L	Direct	Low
	Human environment-,	Noise and air pollution, health and Safety of employees.	Short Term	Low	I, L	Direct	Low
		Employment creation.	Short Term	Low - Medium	I, L,R	Direct	High

• Water supply. • Waste generation		Conflict overlapping land use i.e. tourism.	Long Term	Low	I, L, R, N	Direct	low
<u>Infrastructure Establishment (commissioning- preparations to make the facility ready for use)</u> • Clean-up, • landscaping • Equipment use • Waste disposal	**Air**- dust creation		Short Term	Low	I	Direct	Low
	Land- Waste creation and disposal (pollution)		Short Term	Medium	I, L	Direct	High
	Ecology- Habitat destruction.		Long Term	Low	I, L	Direct	Low
	Biodiversity- Possible impact on small fauna's diversity. Flora absent from site.		Long Term	Low	I, L	Direct	Low
	Human environment	Noise and air pollution, health and Safety of employees.	Short Term	Low	I, L	Direct	Low
		Employment creation.	Short Term	Low - Medium	I, L,R	Direct	High
		Conflict overlapping land use i.e. tourism.	Medium Term	Low	I, L, R, N	Indirect	Low

Table 6: *Impact identification and evaluation from mining operation related activities.*

Project Stage and Activities	**Impact and Receiving Environment (VECs)**		**Duration** Short Term, Medium Term, Long Term	**Magnitude** Low, Medium, High	**Extent** Immediate (I) Localised (L) Regional (R) National (N)	**Type** Direct Indirect Cumulative	**Probability** Low, Medium, High.
Mining Process. (mica extraction) • Excavation, earthworks, Top soil removal, Mica extraction, backfill and compaction. • Vehicles and heavy machine use. • Blasting. • Energy use.	**Air and climate**- Dust creation, air pollutant emission, vehicles gaseous emission etc.		Medium Term	Medium	I, L	Cumulative	High
	Land- Waste creation and disposal (pollution).		Long Term	Medium	I	Cumulative	Medium
	Ecology- Habitat destruction		Long Term	Medium	I, L, R	Cumulative	Medium
	Biodiversity- Possible impact on small fauna's diversity. Flora absent from site		Long Term	Low	I, L, R	Cumulative	Low
	Human environment	Noise and air pollution.	Medium Term	Medium	I, L	Cumulative	Medium
		Employment creation	High Term	Medium-High	I, L, R	Direct	High
		Conflict overlapping land use i.e. tourism.	Medium Term	Low	I, L, R	Indirect	Low
	Underground water – Usage, Possible contamination.		Medium Term	Low	I, L	Cumulative	Low
Mining Process (packaging, storage and distribution) • Vehicles and heavy machine use. • Energy use.	**Air and climate**- Dust creation, air pollutant emission, vehicles gaseous emission etc.		Long Term	Low	I, L	Cumulative	Medium
	Land- Land use, increased traffic, waste creation and disposal (pollution).		Medium Term	Low	I, L, R	Direct	Low
	Ecology- Habitat destruction.		Medium Term	Low	I, L, R	Cumulative	Low
	Biodiversity- Possible impact on small fauna's diversity. Flora absent from site.		Long Term	Low	I, L, R	Cumulative	Low

• Transportation of mica.	**Human environment**	Noise and air pollution, fuel odor, accident and health risk.	Medium Term	Low	I, L	Direct	Medium
		Employment creation.	High Term	Medium-High	I, L,R	Direct	High
		Conflict overlapping land use i.e. tourism.	Medium Term	Low	I,L,R	Direct	Low
Decommissioning-(reclamation/restoration)	**Air and Climate**- Dust creation, air pollutant emission, vehicles gaseous emission etc.		Medium Term	Medium	I,L	Direct	Medium
• Excavation, earthworks, backfill and compaction. • Vehicles and heavy machine use • Energy use • Dismantling of infrastructure • Transportation (i.e container offices and accommodation) or treatment of waste	**Land-** Waste disposal (land pollution) etc.		Long Term	Medium	I,L	Direct	Low
	Ecology- Habitat destruction.		Short Term	Low	I,L	Direct	Low
	Biodiversity- Possible impact on small faunas' diversity. Flora absent from site.		Short Term	Low	I,L	Direct	Low
	Human environment	Noise pollution, air pollution, accident and health risk.	Medium Term	Medium	I,L	Direct	Low
		Employment creation	Short Term	Medium	I,L,R	Direct	High
		Conflict overlapping land use i.e. tourism.	Medium Term	Low	I,L,R	Direct	Low

Table 7: *Significance of the potential Impacts.*

Impacts Factors	1. Site preparation - Land levelling.	2. Civil works and facilities installations	3. Landscaping	4. Excavation. earthworks	5. Blasting, Mica extraction	6. Vehicles and heavy machine use	7. Storage of mica on site	8. Transportation	9. Backfilling.	10. Cleaning of facility.	11. Routine check and necessary repairs.	12. Energy consumption.	13. Water resources use	14. Waste generation and disposal	15. Human resource	16. Decommissioning	**Sum of IF values**	**Average of IF values**
Air and Climate																		
1. Dust and gaseous emission	2/5	2/5	2/5	3/5	4/5	1/5	0/5	1/5	3/5	0/5	0/5	0/5	0/5	1/5	0/5	2/5	21	1.31
2. Noise pollution	2/5	2/5	1/5	2/5	4/5	1/5	0/5	1/5	1/5	0/5	1/5	0/5	0/5	0/5	0/5	2/5	17	1.06
Land																		
3. Land use conflict	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	0/5	0/5	1	0.06
4. Loss of top soil	3/5	0/5	1/5	4/5	4/5	0/5	0/5	0/5	1/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	14	0.88
5. Land modification (geomorphology)	3/5	0/5	1/5	4/5	4/5	1/5	0/5	0/5	1/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	15	0.94
6. Land/soil pollution	1/5	1/5	0/5	0/5	1/5	1/5	0/5	1/5	1/5	0/5	0/5	0/5	0/5	3/5	0/5	0/5	9	0.56
Ecology and Biodiversity																		
7. Habitat destruction or modification	3/5	1/5	1/5	4/5	4/5	1/5	0/5	1/5	1/5	0/5	0/5	0/5	0/5	1/5	0/5	0/5	16	1.00

8. Loss of vegetation (trees, shrubs grass, herbs etc.).	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0	0.00
9. Loss of reptiles, insects diversity	1/5	1/5	1/5	2/5	1/5	0/5	0/5	1/5	1/5	0/5	0/5	0/5	0/5	1/5	0/5	0/5	9	0.56
10. Loss of birds' diversity.	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	1/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	2	0.13
11. Loss of large mammals	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	1/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	2	0.13
Water																		
12. Increased surface water use.	0/5	0/5	1/5	0/5	1/5	0/5	0/5	0/5	0/5	1/5	1/5	0/5	1/5	0/5	1/5	0/5	6	0.38
13. Increased groundwater use.	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0	0
14. Groundwater pollution (leaching).	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1	0.06
Human environment																		
15. Human health and accident risks.	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/5	0/5	1/5	0/5	0/5	1/5	1/5	0/5	12	0.75
16. Community welfare	0/5	0/5	0/5	0/5	3/5	0/5	0/5	1/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	1/5	6	0.38
17. Increased traffic congestion.	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	0/5	0/5	0/5	1/5	0/5	0/5	0/5	0/5	2	0.13
18. Increased traffic accidents	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	1	0.06
Sum IF values	15	8	9	20	27	6	1	12	13	1	3	1	1	8	3	7	**IF =0.47**	
Average of IF values	0.83	0.44	0.50	1.11	1.50	0.33	0.06	0.67	0.72	0.06	0.17	0.06	0.06	0.44	0.17	0.39		

7 ENVIRONMENTAL MANAGEMENT PLAN

7.1 Introduction

An Environmental Management Plan (EMP) was developed for the proposed mining of industrial minerals (mica) in the Dorob National Park on a mining claim license No 75175 within the locality (about 13 km) of Goanikontes. The purpose of this plan is to outline the measures and actions that need to be implemented in order to mitigate potential environmental impacts associated with the proposed project. The project is expected to have minimal environmental impact (apart from land modification and loss of top soil). This is due to lack of flora and low abundance and diversity of fauna in the arid Namib Desert environment as well as the location of the mining site from nearby communities. Even so a comprehensive approach has been taken to address all identified impacts, regardless of their magnitude. This ensured that environmental conservation and sustainability are prioritized throughout the mining lifecycle.

7.2 Environmental Management Plan

The full detailed Environmental Management Plan (EMP) is presented in ***Table 8***. The EMP includes specific mitigation measures for potential impacts such as dust emissions, noise pollution, waste management, and the protection of habitats and species. Additionally, it outlines the monitoring protocols that need to be put in place to assess the effectiveness of the mitigation measures and ensure ongoing compliance with environmental standards. The project proponents should be committed to engage with relevant stakeholders, including local communities and regulatory authorities, to ensure that their concerns and interests are considered throughout the mining lifecycle. Regular communication, consultation, and collaboration need to be prioritized to address environmental issues and foster a positive relationship with the local community.

It is important to note that this EMP is a dynamic document that need to be regularly reviewed and updated as necessary to adapt to changing circumstances and emerging environmental issues. The project proponents should maintain an environmental management team through the appointed contractor/s for overseeing the implementation of the EMP and ensuring continuous compliance with environmental regulations.

Table 8: *Environmental Management Plan.*

Impacts	Mean IF value	Mitigation	Monitoring action and methods	Performance indicator	Responsible personnel
Air and Climate					
Dust and gaseous emission	1.31	• Use dust suppression systems (e.g. automated spray controllers, high pressure pumps, strainers and filtration, Dust extraction and ventilation systems for mining and processing operations etc.) • Cover or wet down stockpiles of mining materials to prevent dust dispersion. • Use windbreaks, such as fences or barriers, to minimize the spread of dust at work area. • Schedule mining activities to minimize dusty operations during high-wind periods. • Apply water or dust suppressants on mining areas prone to dust generation. However, water usage should be minimized. • Limit engine idling time and enforce anti-idling policies for mining machineries/vehicles. • Use low-emission mining equipment and machinery.	• Deploy dust monitoring equipment, such as dust deposition gauges or real-time dust monitors, at various locations within and around the mining site. • Measure and record dust levels at regular intervals to assess the effectiveness of dust control measures. • Conduct visual inspections to detect fugitive dust emissions from mining activities. • Implement continuous gas monitoring systems that provide real-time data on emission levels. • Utilize gas detectors and analyzers to monitor the presence and concentration of gaseous emissions, such as volatile organic compounds (VOCs), nitrogen oxides (NOx), and sulfur dioxide (SO2).	• Measured levels of dust particles and gaseous concentrations • Community/stakeholders satisfaction through continuous surveys. • Timely Reporting and Response	Contractor.

		• Ensure all vehicles and machinery are properly maintained to minimize emissions. • Providing training to employees on dust and gas control measures, as well as raising awareness about the importance of emission reduction, can improve compliance and effectiveness of mitigation measures. • Regularly monitoring air quality and emissions from the mining site can help identify areas for improvement and ensure compliance with regulations. Reporting findings transparently to relevant authorities and the public fosters accountability and trust.			
Noise pollution	1.06	• Use sound suppression and noise attenuation solutions • Regularly maintain and service equipment to ensure optimal performance and noise reduction. • Provide appropriate hearing protection, such as earplugs or earmuffs, to mine workers exposed to high noise levels.	• Install noise monitoring equipment in areas sensitive to noise pollution, such as accommodation and office zones. • Measure and record noise levels generated by mining operation activities at regular intervals.	Noise level	Contractor.
Land					
Land use conflict	0.06	• Obtain consent from the authority (i.e. the National Heritage Council)	N/A	N/A	Proponent
Loss of top soil	0.88	• Top soil should be carefully removed and kept at a designated area for rehabilitation after completion of the mining cycle.	• Monitor type of soil before mining operation and after.	Type of top soil condition before and after.	Contractor.

		• Rehabilitate the mining site.			
Land modification (geomorphology)	0.94	• Develop a land restoration plan to guide the post-mining rehabilitation of modified areas. • Ensure that disturbed areas are properly graded, stabilized, and protected against erosion to facilitate successful land recovery.	• Carry out pre-survey survey to establish baseline conditions during and after mining operation.	Habitat condition before and after.	Contractor.
Land/soil pollution	0.56	• Develop a comprehensive waste management plan that minimize waste generation. • Dispose of waste in safe area. • Identify and properly handle hazardous materials.	• Conduct regular inspections and audits to ensure proper implementation of pollution prevention measures. • Maintain accurate records of mining activities, waste disposal, and environmental monitoring.	• Frequency of soil sampling and analysis conducted during and after mining operation to monitor soil quality and detect contamination incidents.	Contractor and proponent
Ecology and Biodiversity					
Habitat destruction or modification	1.00	• Conduct a baseline assessment of the existing habitat and biodiversity in and around the mining site before initiating any work as conducted in EIA process. • Implement programs to restore habitats post-mining. • Compensate for habitat loss by establishing new habitats elsewhere in the locality including funding conservation projects in other locations. • Document the presence of sensitive habitats, endangered species, or other ecologically significant elements.	• Document any instances of habitat destruction or modification, including the extent and nature of the impact. • Evaluate the effectiveness of mitigation measures and identify any ongoing habitat modification or degradation during operations.	• Percentage of habitat area affected by mining activities compared to the total area of the impacted habitat.	Contractor and proponent.

		• Involve local communities and stakeholders in decision-making processes related to mining operations.			
Loss of vegetation (trees, shrubs grass, herbs etc).	0	N/A	N/A	N/A	N/A
Loss of reptiles, insects etc.	0.56	• Fence off the working area to avoid interaction with these animals. • Compensating for biodiversity loss by implementing biodiversity offsetting schemes in the locality of mining site such as around Goanikontes Oasis, to offset the ecological damage caused by mining activities.	• Conduct comprehensive surveys to identify and document the presence of reptiles, insects, and amphibians in and around the mining site before initiating any work. • Continuous monitoring of presence of these animals.	• Incident report of for human animal interaction during mining operation	Contractor and proponent.
Loss of birds' diversity.	0.13	• Impact considered very minimal due to absent of these animals around the mining site. • Fence off the mining work area to avoid interaction with these animals. • Compensating for biodiversity loss by implementing biodiversity offsetting schemes in the locality of mining site such as around Goanikontes Oasis, to offset the ecological damage caused by mining activities.	• Conduct comprehensive surveys to identify and document the presence of birds in and around the mining site before initiating any work. • Continuous monitoring of presence of birds.	• Incident report of human animal interaction during mining operation.	Contractor and proponent.
Loss of large mammals.	0.13	• Impact considered very minimal due to absent of these animals around the project site. However, fencing off working areas, road sign in the vicinity of the facility should be prioritized.	• Conduct comprehensive surveys to identify and document the presence of large mammals in and around the mining site before initiating any work. • Continuous monitoring of presence of birds.	• Incident report of human animal interaction during mining operation.	Contractor and proponent.

Water					
Increased surface water use and pollution.	0.38	• Implement water-efficient practices, such to minimize water consumption. • Educate staff about the importance of water conservation and provide guidelines for responsible water use.	• Monitor water consumption level.	• Consumption rate	Contractor and proponent.
Increased groundwater use.	0	• N/A- No groundwater will be used.	N/A	• N/A	N/A
Groundwater pollution (leaching).	0.06	• Ensure proper installation, maintenance, and monitoring of underground pit latrine. • • Dispose waste at designated safe site. • Train employees on proper handling and storage of hazardous materials and establish protocols for immediate spill response and cleanup.	• Monitor groundwater quality from surrounding boreholes and Oasis at Goanikontes before and after mining operations to detect possible contamination.	• Water quality levels such as pH, Salinity, hardness, alkalinity, Chlorine, heavy metals and presence of hydrocarbons in the water.	Contractor and proponent.
Human environment					
Human health and accident risks.	0.75	• Provide comprehensive safety training to all workers involved in the mining operations, emphasizing potential hazards, safe work practices, and emergency procedures. • Promote awareness of potential health and accident risks among workers through safety campaigns and clear signage. • Have fire-fighting equipment in place.	• Conduct regular safety inspections and audits to identify potential hazards, assess the effectiveness of safety measures, and address any safety concerns promptly. • Document and track corrective actions to ensure compliance with safety standards. • Establish a system for reporting and documenting accidents, near misses, or incidents that may have caused or had the potential to cause harm to workers or the public.	Health status of residents.	Contractor and proponent

		• Employ an occupational health and safety officer. • Conduct regular drills and training exercises to ensure workers are prepared to respond effectively to emergencies.	• Conduct regular monitoring of air quality, to assess potential impacts on human health. • Monitor for airborne pollutants, such as particulate matter, volatile organic compounds (VOCs), and exhaust emissions. • Monitor public health indicators, such as reported illnesses or complaints, among mine workers.		
Community welfare	0.38	• Provide clear and timely communication about the mining plans, schedule, and potential impacts on the community. • Maintain a clean and organized mining site to minimize visual blight and promote a positive appearance. • Provide assistance, when feasible, to address any temporary disruptions or inconveniences caused by the mining operation activities. • Support local community initiatives or projects that contribute to the welfare and well-being of the community.	• Conduct community feedback and Surveys. • Conduct continuous social impact assessment. • Health and Safety Monitoring	• Access to essential services. • Employment and other opportunities created. • Overall satisfaction with the project's outcomes.	Contractor and Proponent.
Increased traffic congestion.	0.13	• Implement appropriate safety measures, such as speed limits, road barriers, and warning signs, to minimize the risk of accidents around mining site.	• Conduct periodic traffic impact assessments to evaluate the effectiveness of the mitigation measures in managing traffic congestion and reducing the risk of accidents.	Low traffic congestion	Contractor and Proponent

		• Ensure that all workers and mining vehicles follow strict safety protocols to prevent accidents and collisions with other vehicles. • Establish a mechanism for the public to provide feedback and report any traffic-related concerns or issues.	• Use the assessment results to make any necessary adjustments to the traffic management plan and improve traffic flow		
Increased traffic accidents	0.06	• Implement appropriate safety measures, such as speed limits, road barriers, and warning signs, to minimize the risk of accidents around mining site. • Ensure that all workers and mining vehicles follow strict safety protocols to prevent accidents and collisions with other vehicles	• Conduct periodic traffic impact assessments to evaluate the effectiveness of the mitigation measures in managing traffic congestion and reducing the risk of accidents. • Use the assessment results to make any necessary adjustments to the traffic management plan and improve traffic flow	Low traffic accidents.	Contractor and Proponent

7.3 Analysis of Alternatives

The current proposed mining site is necessitated due to natural availability of the industrial minerals contained within the mining claim license No. 75175 and therefore there are not alternatives.

7.4 Discussion, Conclusions and Recommendations

The environmental impacts assessment conducted for the proposed mining of industrial minerals (mica) in the Dorob National Park on a mining claim license No. 75175 within the locality (about 13 km) of Goanikontes, has determined that the project is expected to have minimal negative impact on the environment. This is mostly due to the fact that the proposed site is located in the Namib Desert in an area where there is no flora and therefore low abundance and diversity fauna. However the natural habitat and instinct landscape will be affected. The assessment took into account various factors including; land use, air quality, water resources, land pollution, habitat and land modification or destruction noise pollution, biodiversity, and Human environment,.

The findings of the assessment indicated that with the implementation of the Environmental Management Plan (EMP), the identified impacts could be effectively mitigated. The EMP outlines a range of measures and actions that need to be undertaken to minimize potential environmental risks and ensure sustainable practices throughout the project's lifecycle. Moreover, it is important to recognize that the proposed mining of industrial minerals has the potential to bring significant benefits to the local community, particularly in terms of socio-economic gains that include employment creations. While this specific environmental impact assessment has been conducted, it is essential to acknowledge that other assessments, such as social and economic impact assessments, could shed more light to comprehensively evaluate the project's overall effects. These assessments will provide a holistic understanding of the potential benefits and challenges associated with the mining activities.

In conclusion, the environmental impacts assessment and development of the Environmental Management Plan have demonstrated a proactive approach to environmental stewardship and sustainable development. By adhering to the EMP while constantly reviewing it, the proposed mining activities has the potential to contribute positively to the community's well-being while ensuring the preservation of the natural and cultural heritage of the area.

Therefore, it is recommended that an Environmental Clearance Certificate (ECC) be granted to the Proponent for its proposed mining of industrial minerals (mica) in the Dorob National Park on a mining claim license No 75175 within the locality of Goanikontes.

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APPENDICES

APPENDIX A: Curriculum Vitae of Lead EAP.

CONTACT

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Portal Research and Engineering CC

connecttoportal@outlook.com

PROFILE

Mr. Tobias Endjambi is an experienced researcher in various fields related to environment. He holds a Bachelor of Science in Fisheries and Aquatic Sciences (Honors) from UNAM and Master of Environmental Engineering from NUST.

EDUCATION

- University of Namibia : Bachelor of Science in Fisheries and Aquatic Sciences (2014).
- Namibia University of Science and Technology: Master of Environmental Engineering (2022).
- Benguela Current Convention- The Southern African Institute for Environmental Assessment: Certificate of Completion: *Understanding and Reviewing Environmental Impact Assessment and Strategic Environmental Assessment* (2021).
- Food and Agriculture Organisation – EAF Nansen Programme: Certificate of Completion: *EAF-Nansen Programme Training Course for Potential Co-Cruise Leaders on R/V Dr Fridjof Nansen Surveys* (2020).
- InDEEP: Certificate of Participation: *IDEEP Workshop on Biodiversity and Connectivity of Deep-Sea Ecosystems in Areas Targeted by Mining*

EXPERIENCE

- EIA for Fuel retail facility in Spitzkoppe
- EIA for Fuel retail facility in Omakange (Tortoise Environmental Consultancy).
- EIA on sand mining activities at Omapalala, Ondonga Traditional Authority (Tortoise Environmental Consultancy).
- EIA on sand mining activities in Okathitukiiyambo, Ongandjera Traditional Authority (Tortoise Environmental Consultancy).

REFERENCES

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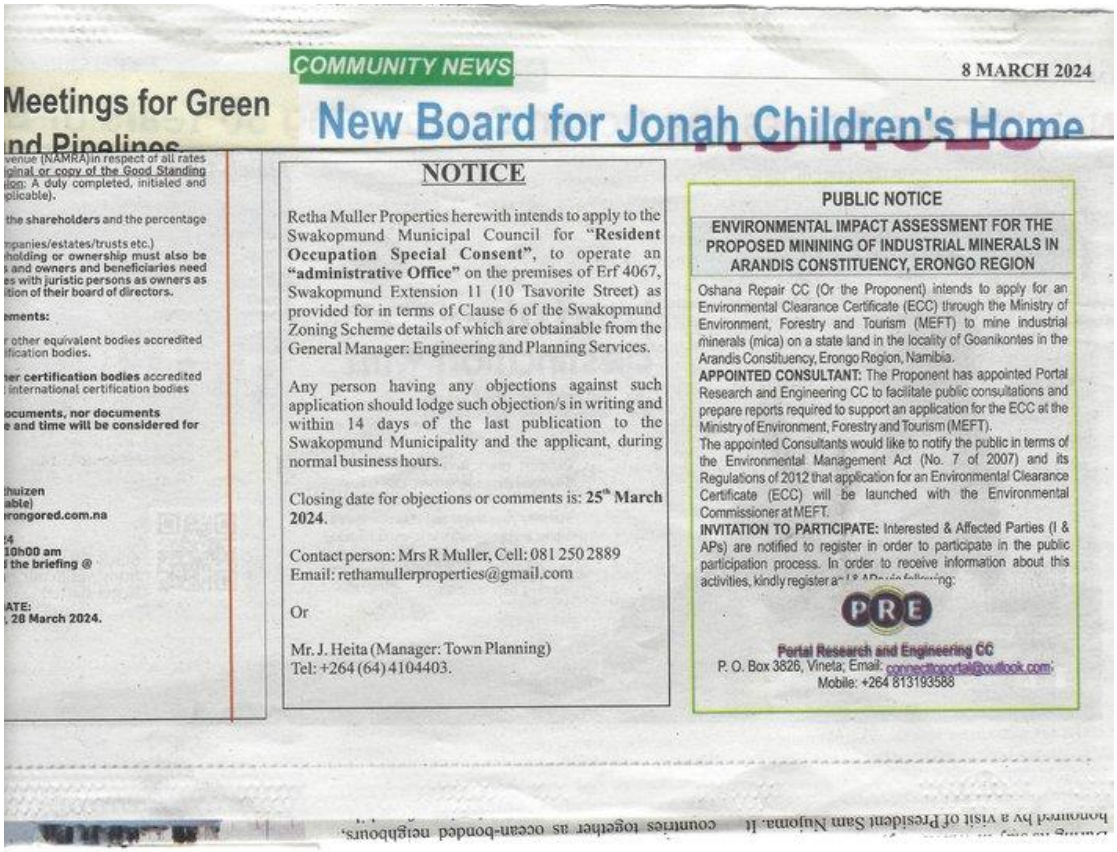
APPENDIX B: Public Adverts.

I. Namib Times Adverts



COMMUNITY NEWS

8 MARCH 2024

Meetings for Green
nd Pipelines

New Board for Jonah Children's Home

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and owners and beneficiaries need
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:4
10h00 am
the briefing @

ATE:
28 March 2024.

NOTICE

Retha Muller Properties herewith intends to apply to the Swakopmund Municipal Council for **"Resident Occupation Special Consent"**, to operate an **"administrative Office"** on the premises of Erf 4067, Swakopmund Extension 11 (10 Tsavorite Street) as provided for in terms of Clause 6 of the Swakopmund Zoning Scheme details of which are obtainable from the General Manager: Engineering and Planning Services.

Any person having any objections against such application should lodge such objection/s in writing and within 14 days of the last publication to the Swakopmund Municipality and the applicant, during normal business hours.

Closing date for objections or comments is: **25th March 2024.**

Contact person: Mrs R Muller, Cell: 081 250 2889
Email: rethamullerproperties@gmail.com

Or

Mr. J. Heita (Manager: Town Planning)
Tel: +264 (64) 4104403.

PUBLIC NOTICE

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED MININING OF INDUSTRIAL MINERALS IN ARANDIS CONSTITUENCY, ERONGO REGION

Oshana Repair CC (Or the Proponent) intends to apply for an Environmental Clearance Certificate (ECC) through the Ministry of Environment, Forestry and Tourism (MEFT) to mine industrial minerals (mica) on a state land in the locality of Goanikontes in the Arandis Constituency, Erongo Region, Namibia.

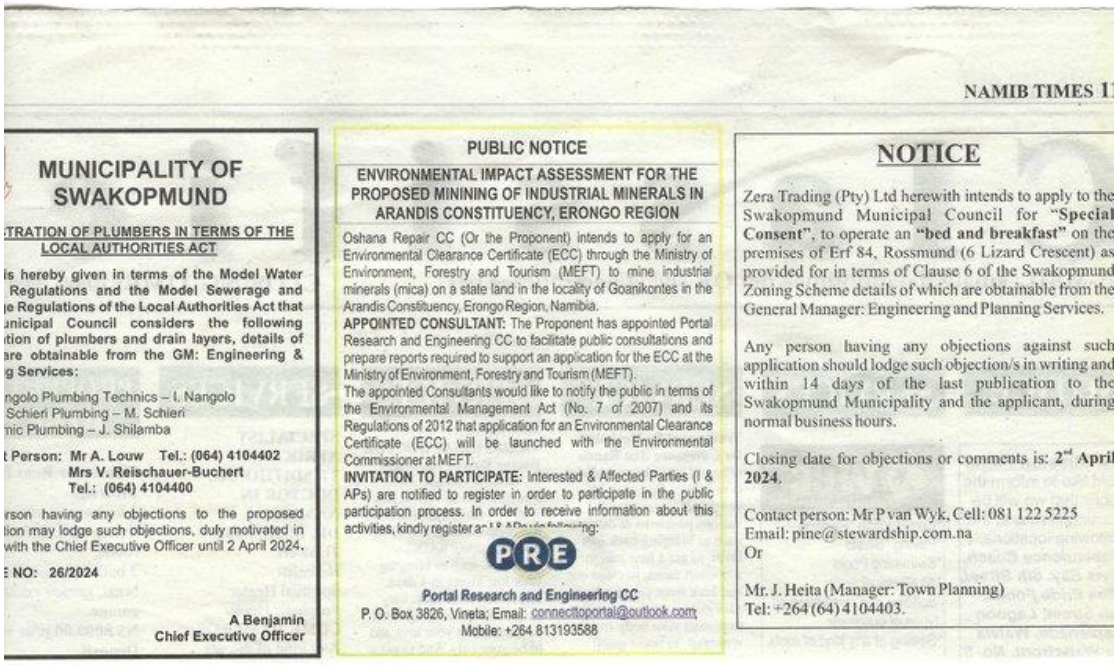
APPOINTED CONSULTANT: The Proponent has appointed Portal Research and Engineering CC to facilitate public consultations and prepare reports required to support an application for the ECC at the Ministry of Environment, Forestry and Tourism (MEFT).

The appointed Consultants would like to notify the public in terms of the Environmental Management Act (No. 7 of 2007) and its Regulations of 2012 that application for an Environmental Clearance Certificate (ECC) will be launched with the Environmental Commissioner at MEFT.

INVITATION TO PARTICIPATE: Interested & Affected Parties (I & APs) are notified to register in order to participate in the public participation process. In order to receive information about this activities, kindly register a[illegible] following:

PRE

Portal Research and Engineering CC
P. O. Box 3826, Vineta; Email: connectoportal@outlook.com
Mobile: +264 813193588



NAMIB TIMES 1

MUNICIPALITY OF SWAKOPMUND

TRATION OF PLUMBERS IN TERMS OF THE LOCAL AUTHORITIES ACT

s hereby given in terms of the Model Water Regulations and the Model Sewerage and e Regulations of the Local Authorities Act that unicipal Council considers the following tion of plumbers and drain layers, details of are obtainable from the GM: Engineering & g Services:

ngolo Plumbing Technics – I. Nangolo
Schieri Plumbing – M. Schieri
nic Plumbing – J. Shilamba

t Person: Mr A. Louw Tel.: (064) 4104402
Mrs V. Reischauer-Buchert
Tel.: (064) 4104400

rson having any objections to the proposed tion may lodge such objections, duly motivated in with the Chief Executive Officer until 2 April 2024.

E NO: 26/2024

A Benjamin
Chief Executive Officer

PUBLIC NOTICE

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED MININING OF INDUSTRIAL MINERALS IN ARANDIS CONSTITUENCY, ERONGO REGION

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PRE

Portal Research and Engineering CC
P. O. Box 3826, Vineta; Email: connectoportal@outlook.com
Mobile: +264 813193588

NOTICE

Zera Trading (Pty) Ltd herewith intends to apply to the Swakopmund Municipal Council for **"Special Consent"**, to operate an **"bed and breakfast"** on the premises of Erf 84, Rossmund (6 Lizard Crescent) as provided for in terms of Clause 6 of the Swakopmund Zoning Scheme details of which are obtainable from the General Manager: Engineering and Planning Services.

Any person having any objections against such application should lodge such objection/s in writing and within 14 days of the last publication to the Swakopmund Municipality and the applicant, during normal business hours.

Closing date for objections or comments is: **2nd April 2024.**

Contact person: Mr P van Wyk, Cell: 081 122 5225
Email: pine@stewardship.com.na
Or

Mr. J. Heita (Manager: Town Planning)
Tel: +264 (64) 4104403.

II. Confidente Adverts

CONFIDENTE

CLASSIFIEDS

PUBLIC NOTICE

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED MINING OF INDUSTRIAL MINERALS IN ARANDIS CONSTITUENCY, ERONGO REGION

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INVITATION TO PARTICIPATE: Interested & Affected Parties (I & APs) are notified to register in order to participate in the public participation process. In order to receive information about this activities, kindly register as I & APs via following:

PRE

Portal Research and Engineering CC

NAMIBIA

PRODUCTS

undersigned, within fourteen (14) days after the second placement of the advert.

Chief Executive Officer
P O Box 61
Henties Bay

of the advert.

Chief Executive Officer
P O Box 61
Henties Bay

PUBLIC NOTICE

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED MINING OF INDUSTRIAL MINERALS IN ARANDIS CONSTITUENCY, ERONGO REGION

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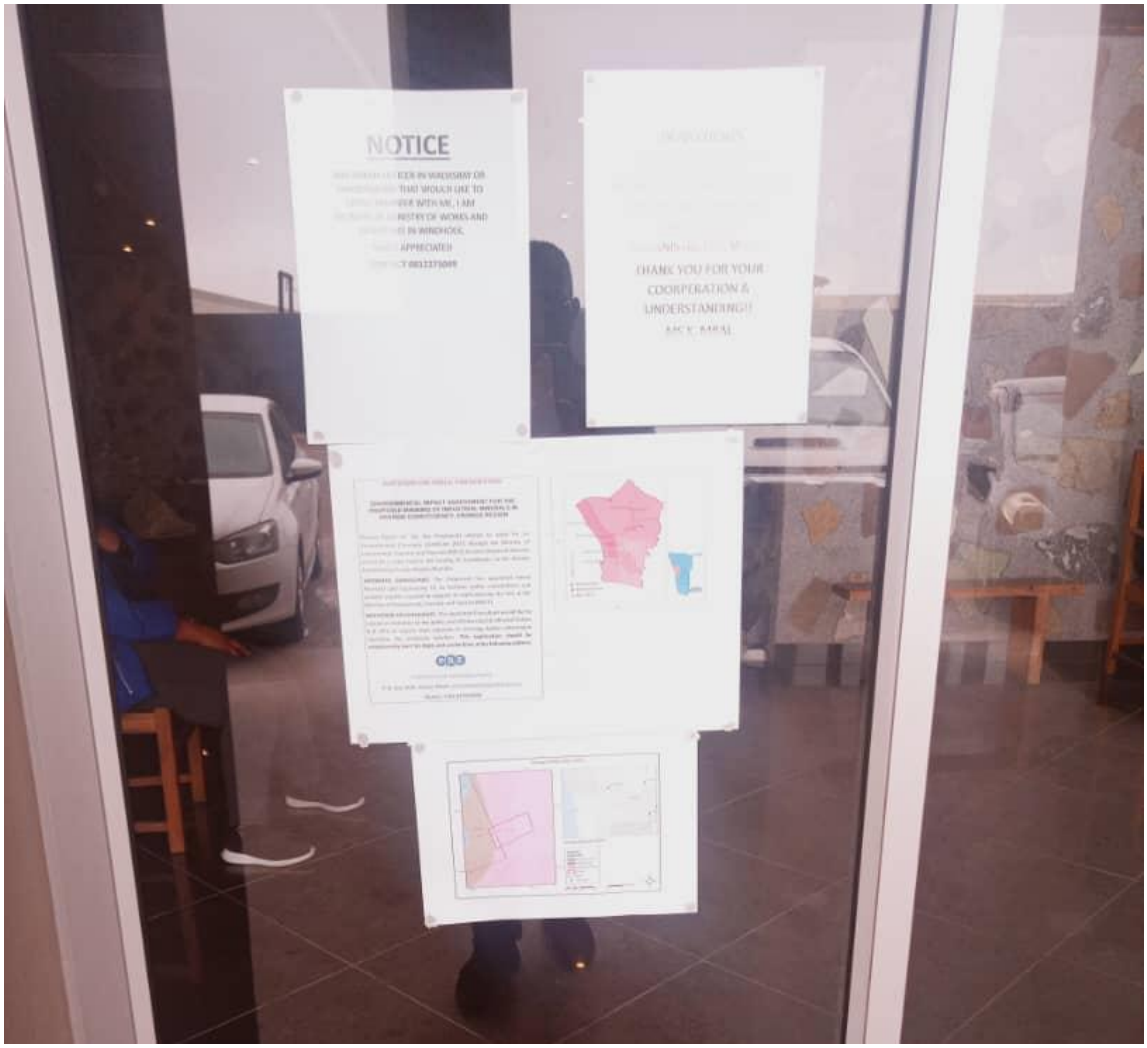
INVITATION TO PARTICIPATE: Interested & Affected Parties (I & APs) are notified to register in order to participate in the public participation process. In order to receive information about this activities, kindly register as I & APs via following:

PRE

III. Swakopmund Constituency Office, Swakopmund

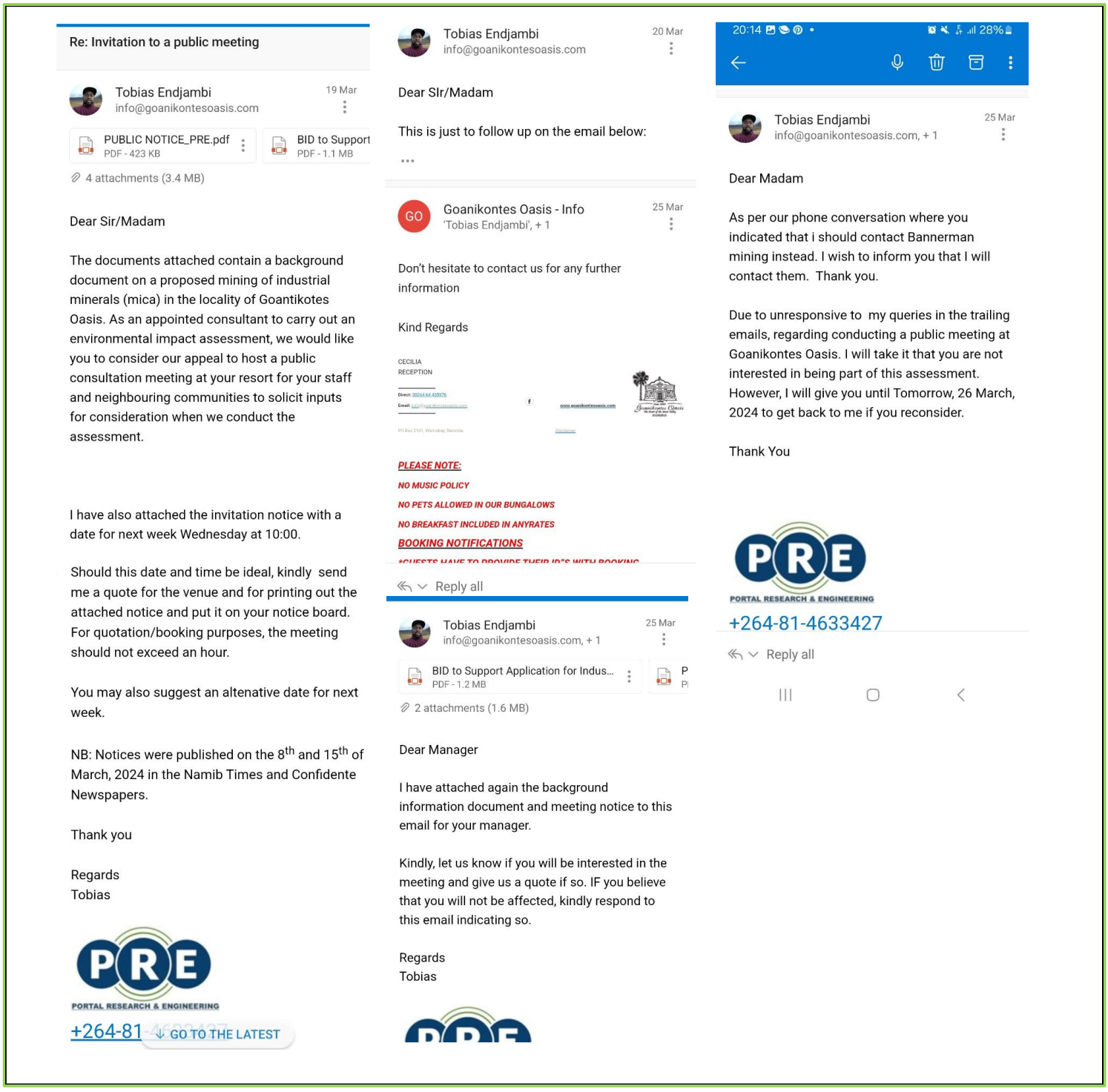
IV. Erongo Regional Council Office, Swakopmund

V. Ministry of Mines and Energy Office, Swakopmund



APPENDIX C: Email Communications.

I. Communication with Goanikontes Resort and Camping Site.



Re: Invitation to a public meeting

Tobias Endjambi
info@goanikontesoasis.com
19 Mar

PUBLIC NOTICE_PRE.pdf
PDF - 423 KB

BID to Support
PDF - 1.1 MB

4 attachments (3.4 MB)

Dear Sir/Madam

The documents attached contain a background document on a proposed mining of industrial minerals (mica) in the locality of Goantikotes Oasis. As an appointed consultant to carry out an environmental impact assessment, we would like you to consider our appeal to host a public consultation meeting at your resort for your staff and neighbouring communities to solicit inputs for consideration when we conduct the assessment.

I have also attached the invitation notice with a date for next week Wednesday at 10:00.

Should this date and time be ideal, kindly send me a quote for the venue and for printing out the attached notice and put it on your notice board. For quotation/booking purposes, the meeting should not exceed an hour.

You may also suggest an altenative date for next week.

NB: Notices were published on the 8th and 15th of March, 2024 in the Namib Times and Confidente Newspapers.

Thank you

Regards
Tobias

PORTAL RESEARCH & ENGINEERING
+264-81-4633427

GO TO THE LATEST

Tobias Endjambi
info@goanikontesoasis.com
20 Mar

Dear SIr/Madam

This is just to follow up on the email below:

Goanikontes Oasis - Info
'Tobias Endjambi', + 1
25 Mar

Don't hesitate to contact us for any further information

Kind Regards

CECILIA
RECEPTION

PLEASE NOTE:
NO MUSIC POLICY
NO PETS ALLOWED IN OUR BUNGALOWS
NO BREAKFAST INCLUDED IN ANYRATES
BOOKING NOTIFICATIONS

Reply all

Tobias Endjambi
info@goanikontesoasis.com, + 1
25 Mar

BID to Support Application for Indus...
PDF - 1.2 MB

2 attachments (1.6 MB)

Dear Manager

I have attached again the background information document and meeting notice to this email for your manager.

Kindly, let us know if you will be interested in the meeting and give us a quote if so. IF you believe that you will not be affected, kindly respond to this email indicating so.

Regards
Tobias

20:14 28%

Tobias Endjambi
info@goanikontesoasis.com, + 1
25 Mar

Dear Madam

As per our phone conversation where you indicated that i should contact Bannerman mining instead. I wish to inform you that I will contact them. Thank you.

Due to unresponsive to my queries in the trailing emails, regarding conducting a public meeting at Goanikontes Oasis. I will take it that you are not interested in being part of this assessment. However, I will give you until Tomorrow, 26 March, 2024 to get back to me if you reconsider.

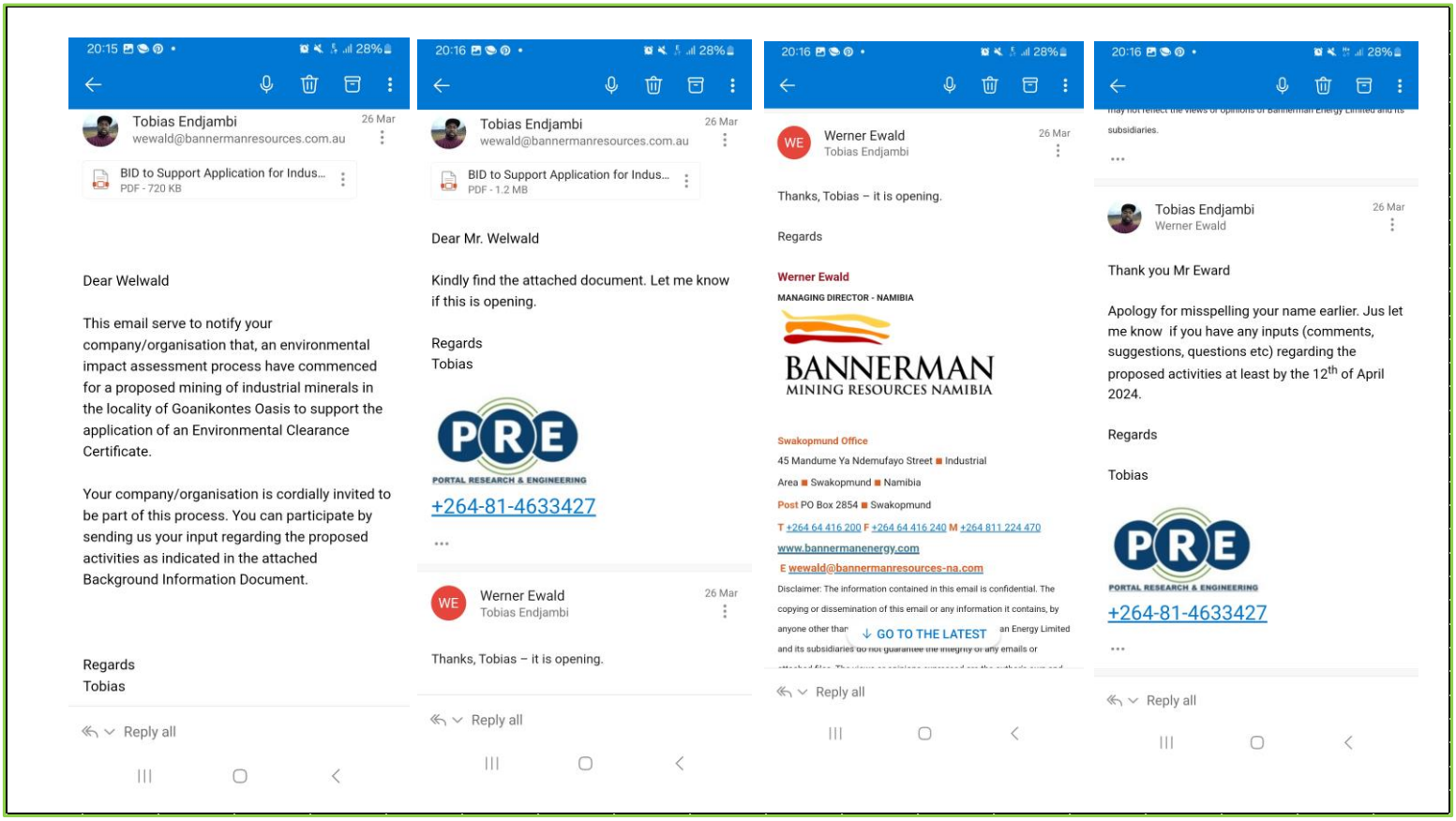
Thank You

PORTAL RESEARCH & ENGINEERING
+264-81-4633427

Reply all


12:05
62%
Tobias Endjambi
info@goanikontesoasis.com, + 1
16 Apr
EIA Industrial Minerals Erongo April ...
PDF - 3.9 MB
Dear Madam
Kindly receive the attached EIA and EMP report for review.
I will appreciate if you send your inputs by next week Monday 22 April 2024, at 10H00.
Regards
Tobias
PRE
PORTAL RESEARCH & ENGINEERING
+264-81-4633427

II. Communications with Bannerman Mining Resources Namibia



Tobias Endjambi
wewald@bannermanresources.com.au
26 Mar

BID to Support Application for Indus...
PDF - 720 KB

Dear Welwald

This email serve to notify your company/organisation that, an environmental impact assessment process have commenced for a proposed mining of industrial minerals in the locality of Goanikontes Oasis to support the application of an Environmental Clearance Certificate.

Your company/organisation is cordially invited to be part of this process. You can participate by sending us your input regarding the proposed activities as indicated in the attached Background Information Document.

Regards
Tobias

Reply all

Tobias Endjambi
wewald@bannermanresources.com.au
26 Mar

BID to Support Application for Indus...
PDF - 1.2 MB

Dear Mr. Welwald

Kindly find the attached document. Let me know if this is opening.

Regards
Tobias

PORTAL RESEARCH & ENGINEERING
+264-81-4633427

Werner Ewald
Tobias Endjambi
26 Mar

Thanks, Tobias – it is opening.

Reply all

Werner Ewald
Tobias Endjambi
26 Mar

Thanks, Tobias – it is opening.

Regards

Werner Ewald
MANAGING DIRECTOR - NAMIBIA
BANNERMAN
MINING RESOURCES NAMIBIA

Swakopmund Office
45 Mandume Ya Ndemufayo Street ■ Industrial Area ■ Swakopmund ■ Namibia
Post PO Box 2854 ■ Swakopmund
T +264 64 416 200 F +264 64 416 240 M +264 811 224 470
www.bannermanenergy.com
E wewald@bannermanresources-na.com
Disclaimer: The information contained in this email is confidential. The copying or dissemination of this email or any information it contains, by anyone other than ↓ GO TO THE LATEST an Energy Limited and its subsidiaries do not guarantee the integrity of any emails or

Reply all

subsidiaries.

Tobias Endjambi
Werner Ewald
26 Mar

Thank you Mr Eward

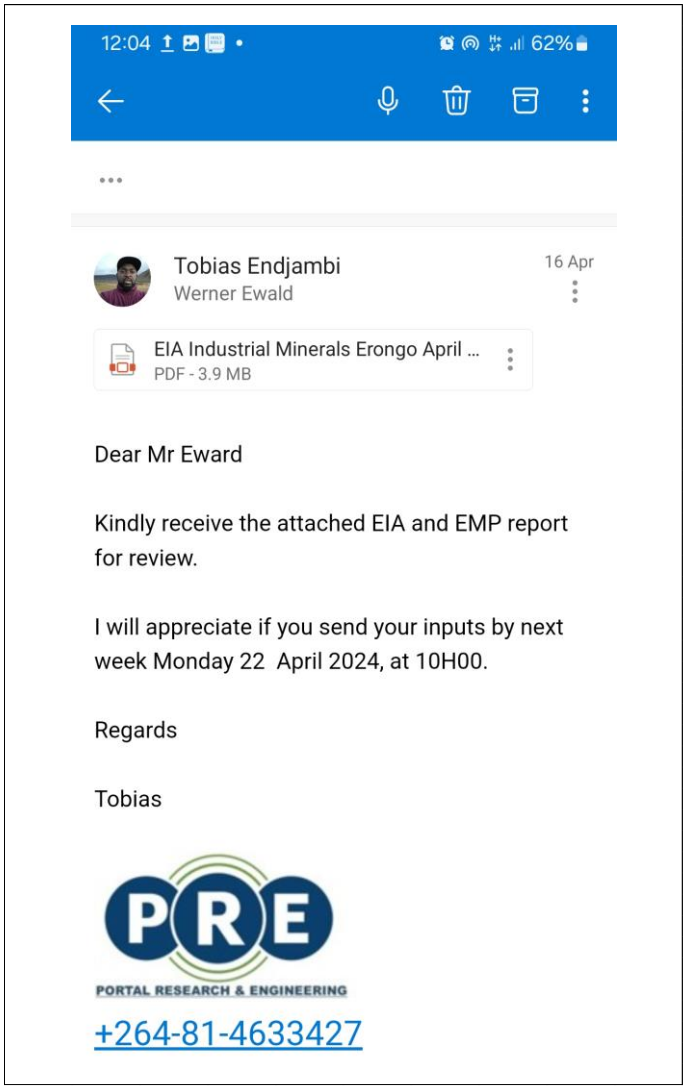
Apology for misspelling your name earlier. Jus let me know if you have any inputs (comments, suggestions, questions etc) regarding the proposed activities at least by the 12th of April 2024.

Regards

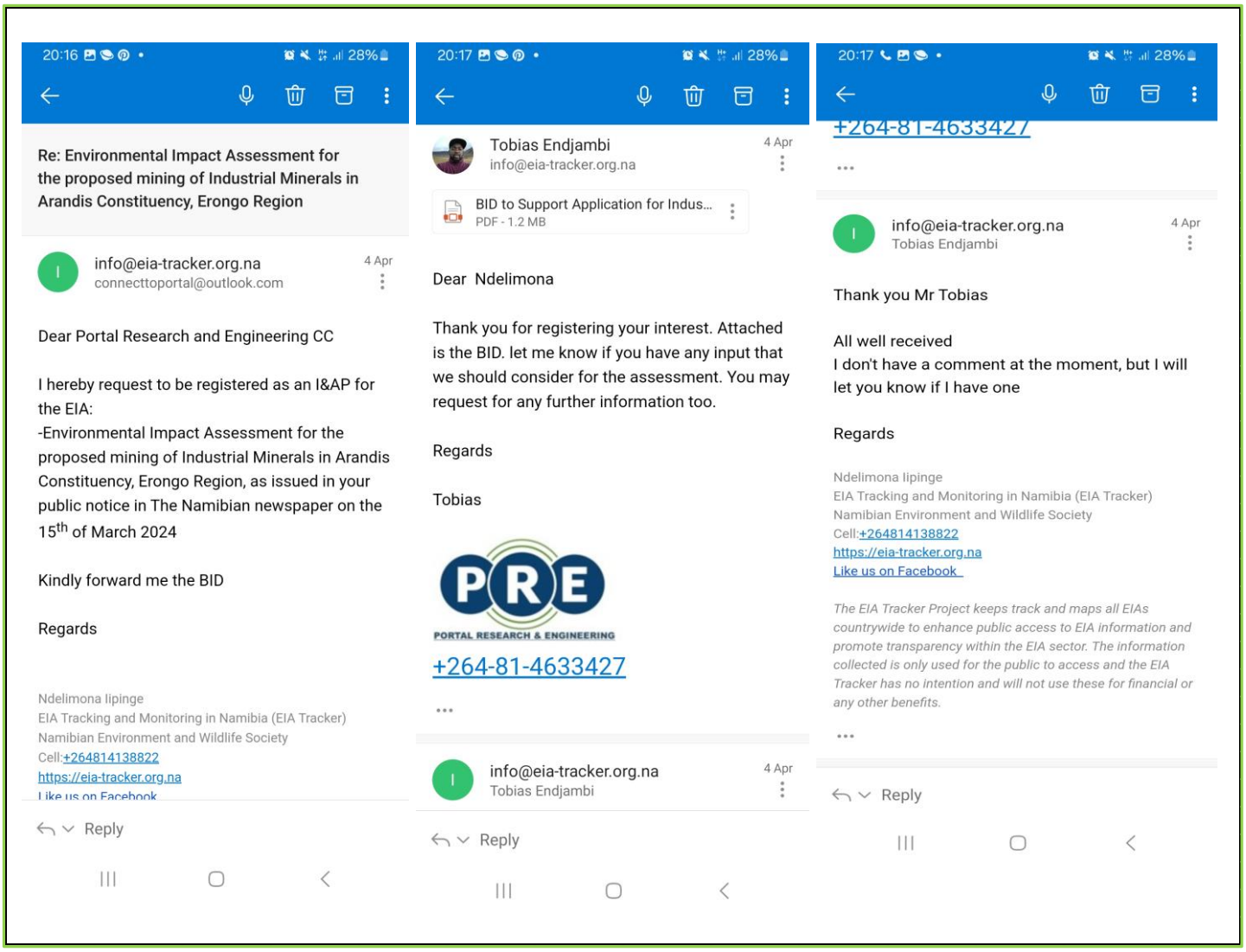
Tobias

PORTAL RESEARCH & ENGINEERING
+264-81-4633427

Reply all


12:04
62%
Tobias Endjambi
Werner Ewald
16 Apr
EIA Industrial Minerals Erongo April ...
PDF - 3.9 MB
Dear Mr Eward
Kindly receive the attached EIA and EMP report for review.
I will appreciate if you send your inputs by next week Monday 22 April 2024, at 10H00.
Regards
Tobias
PRE
PORTAL RESEARCH & ENGINEERING
+264-81-4633427

III. Communication with other interested and affected parties



20:33 26%

Registration as an I&AP for the proposed mining of industrial minerals in Arandis Constituency, Erongo Region

IE **Info ECC**
info@eccenvironmental.com

To You connecttoportal@outlook.com
Friday, 12 April at 16:50

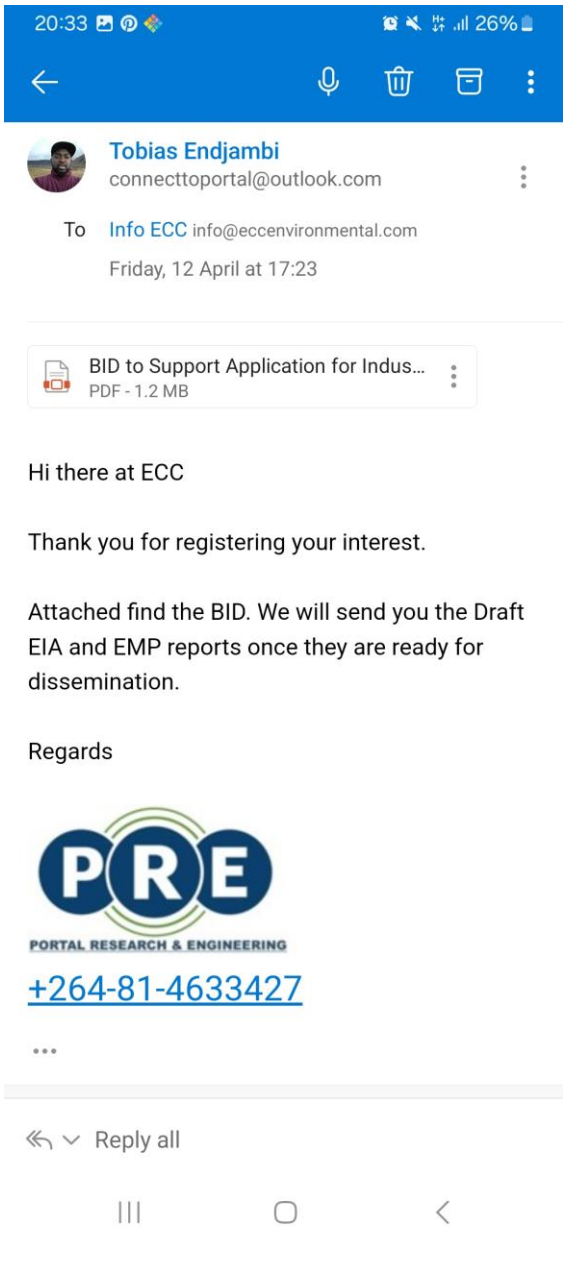
Good day,

Environmental Compliance Consultancy (Pty) Ltd (ECC), would like to register as an Interested and Affected Party (I&AP) for the proposed mining of industrial minerals in Arandis Constituency, Erongo Region. ECC would like to stay informed about the project.

Kindly see our details below:

Office num: +264 81 669 7608
Postal: PO BOX 91193 | Klein Windhoek | Namibia
Address: 1 Jan Jonker St | Wasserberg Park | Klein Windhoek | Namibia
Email: info@eccenvironmental.com

Reply all



20:33 26%

Tobias Endjambi
connecttoportal@outlook.com

To Info ECC info@eccenvironmental.com
Friday, 12 April at 17:23

BID to Support Application for Indus...
PDF - 1.2 MB

Hi there at ECC

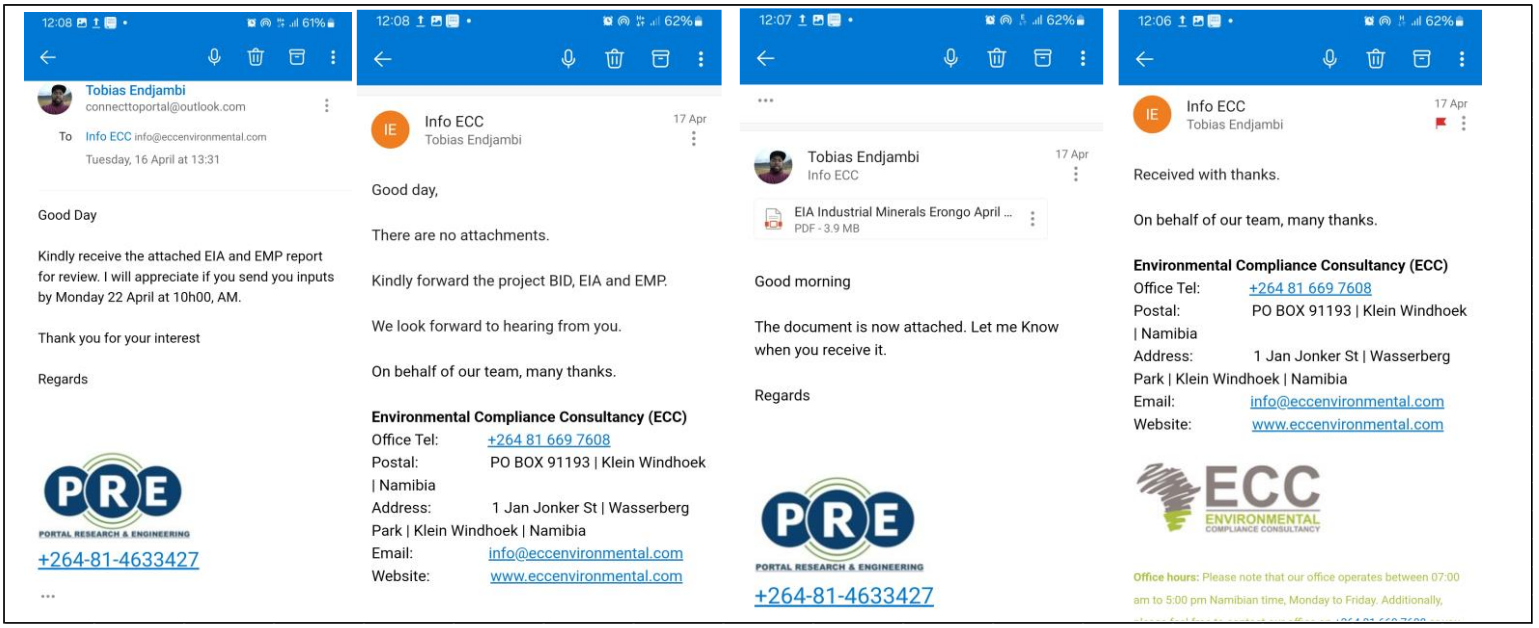
Thank you for registering your interest.

Attached find the BID. We will send you the Draft EIA and EMP reports once they are ready for dissemination.

Regards

PRE
PORTAL RESEARCH & ENGINEERING
+264-81-4633427

Reply all



Tobias Endjambi
connecttoportal@outlook.com

To Info ECC info@eccenvironmental.com
Tuesday, 16 April at 13:31

Good Day

Kindly receive the attached EIA and EMP report for review. I will appreciate if you send you inputs by Monday 22 April at 10h00, AM.

Thank you for your interest

Regards

PORTAL RESEARCH & ENGINEERING
+264-81-4633427

Info ECC
Tobias Endjambi
17 Apr

Good day,

There are no attachments.

Kindly forward the project BID, EIA and EMP.

We look forward to hearing from you.

On behalf of our team, many thanks.

Environmental Compliance Consultancy (ECC)
Office Tel: +264 81 669 7608
Postal: PO BOX 91193 | Klein Windhoek | Namibia
Address: 1 Jan Jonker St | Wasserberg Park | Klein Windhoek | Namibia
Email: info@eccenvironmental.com
Website: www.eccenvironmental.com

Tobias Endjambi
Info ECC
17 Apr

EIA Industrial Minerals Erongo April ...
PDF - 3.9 MB

Good morning

The document is now attached. Let me Know when you receive it.

Regards

PORTAL RESEARCH & ENGINEERING
+264-81-4633427

Info ECC
Tobias Endjambi
17 Apr

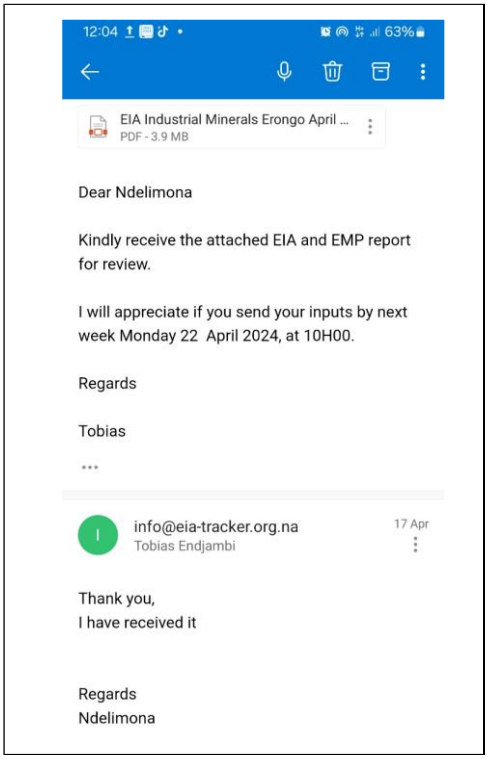
Received with thanks.

On behalf of our team, many thanks.

Environmental Compliance Consultancy (ECC)
Office Tel: +264 81 669 7608
Postal: PO BOX 91193 | Klein Windhoek | Namibia
Address: 1 Jan Jonker St | Wasserberg Park | Klein Windhoek | Namibia
Email: info@eccenvironmental.com
Website: www.eccenvironmental.com

ECC ENVIRONMENTAL COMPLIANCE CONSULTANCY

Office hours: Please note that our office operates between 07:00 am to 5:00 pm Namibian time, Monday to Friday. Additionally,



EIA Industrial Minerals Erongo April ...
PDF - 3.9 MB

Dear Ndelimona

Kindly receive the attached EIA and EMP report for review.

I will appreciate if you send your inputs by next week Monday 22 April 2024, at 10H00.

Regards

Tobias

info@eia-tracker.org.na
Tobias Endjambi
17 Apr

Thank you,
I have received it

Regards
Ndelimona

APPENDIX D: Flora list.

Table 9: *Expected flora diversity of around the general mining area (Craven, P., & Marais).*

Goanikontes and surrounding	Swakop River East and surrounding	Swakop River West and surrounding
Zygophyllum stapffii	*Odyssea paucinervis*	*Zygophyllum simplex*
Adenolobus pechuelii	*Heliotropium curassavicum*	*Sarcocornia natalensis*
Asclepias buchenaviana	*Cyperus marginatus*	*Suaeda species*
Hoodia currori	*Nicotiana glauca*	*Galenia papulosa*
Pechuel-Loeschea leubnitziae	*Heliotropium ovalifolium*	*Phragmites australis*
Hermannia amabilis	*Cladoraphis spinosa*	*Psilocaulon species*
Tapinanthus oleifolius		*Sporobolus consimilis*
Tribulus zeyheri		*Sporobolus nebulosus*
Heliotropium tubulosum		*Lichens*
Acacia erioloba		*Arthraerua leubnitziae*
Acacia albida		*Acacia reficiens*
Tamarix usneoides		*Citrullus ecirrhosus*
Euclea pseudebenus		*Orthanthera albida*
Acanthosicyos horridus		*Heiichrysum roseo-niveum*
Petalidium pilosi-bracteolatum and Petalidium variabile		*Blepharis grossa*
Salvadora persica		*Oleome foliosa var foliosa*
Salsola species		*Sutera maxii*
Welwitschia mirabilis		*Zygophyllum simplex*
Trichocaulon clavatum		
Commiphora saxicola		
Sarcocaulon marlothii		
Aloe asperifolia		
Ipomoea adenioides		
Parkinsonia africana		
Ophioglossum polyphyllum		
Lycium tetrandrum		
Mesembryanthemum guerichianum		
Euphorbia phylloclada		

APPENDIX E: Birds list.

Table 10: Expected diversity of birds around the general project area (eBird, 2024).

No.	Species	Number of Count	Last Date of Count
1	Helmeted Guineafowl	1	22 Feb 2024
2	Southern Masked-Weaver	2	22 Feb 2024
3	House Sparrow	2	22 Feb 2024
4	Laughing Dove	2	30 Oct 2023
5	Gray Go-away-bird	1	30 Oct 2023
6	Alpine Swift	50	30 Oct 2023
7	Bradfield's Swift	1	30 Oct 2023
8	Common Reed Warbler	1	30 Oct 2023
9	Rock Martin	2	30 Oct 2023
10	Orange River White-eye	1	30 Oct 2023
11	Familiar Chat	1	30 Oct 2023
12	Dusky Sunbird	2	30 Oct 2023
13	Lesser Masked-Weaver	6	30 Oct 2023
14	Cape Sparrow	5	30 Oct 2023
15	White-backed Mousebird	1	30 Oct 2023
16	Great Egret	1	17 Sep 2023
17	Swallow-tailed Bee-eater	1	17 Sep 2023
18	Peregrine Falcon	1	17 Sep 2023
19	Rosy-faced Lovebird	1	17 Sep 2023
20	Black-chested Prinia	1	17 Sep 2023
21	Red-headed Cisticola	1	17 Sep 2023
22	Black-fronted Bulbul	4	17 Sep 2023
23	Layard's Warbler	1	17 Sep 2023
24	Pale-winged Starling	3	17 Sep 2023
25	Black-throated Canary	100	17 Sep 2023
26	White-backed Vulture	1	9 Aug 2023
27	Violet Woodhoopoe	1	9 Aug 2023
28	Cape Crow	3	9 Aug 2023
29	Great Rufous Sparrow	4	9 Aug 2023
30	Cape Wagtail	4	9 Aug 2023
31	Red-faced Mousebird		3 Aug 2023
32	African Gray Hornbill		3 Aug 2023

33	Pied Barbet		3 Aug 2023
34	Scarlet-chested Sunbird		3 Aug 2023
35	Marico Sunbird		3 Aug 2023
36	Common Waxbill		3 Aug 2023
37	Common Scimitarbill	1	31 Jul 2023
38	Pririt Batis	1	31 Jul 2023
39	Red-capped Lark	1	22 Nov 2022
40	Tractrac Chat	1	22 Nov 2022
41	Gray's Lark	1	9 Nov 2022
42	Rock Kestrel	2	3 Oct 2022
43	Bokmakierie	1	3 Oct 2022
44	Yellow-rumped Eremomela	2	3 Oct 2022
45	Cardinal Woodpecker	2	2 Oct 2022
46	Pearl-spotted Owlet	1	14 Sep 2022
47	Namaqua Dove	3	14 Sep 2022
48	Cape Crombec	1	14 Sep 2022
49	Southern Gray-headed Sparrow	2	14 Sep 2022
50	Southern Cordonbleu	2	14 Sep 2022
51	Eurasian Moorhen	1	10 Sep 2022
52	Mountain Wheatear	1	10 Sep 2022
53	Capped Wheatear	1	27 Aug 2022
54	Cape Cormorant	1	27 Aug 2022
55	Little Grebe	1	7 Aug 2022
56	Ring-necked Dove	2	7 Aug 2022
57	Purple Heron	1	7 Aug 2022
58	Woodland Kingfisher	1	7 Aug 2022
59	Chestnut-vented Warbler	1	7 Aug 2022
60	White-throated Canary	2	7 Aug 2022
61	Lesser Flamingo	1	4 Aug 2022
62	Speckled Pigeon	2	4 Aug 2022
63	Gray Heron	1	4 Aug 2022
64	Common Ostrich	1	26 Feb 2020
65	Three-banded Plover	1	16 Feb 2020
66	Desert Cisticola	1	16 Feb 2020
67	Barn Swallow	2	16 Feb 2020

68	Willow Warbler	1	16 Feb 2020
69	Spotted Flycatcher	1	16 Feb 2020
70	European Bee-eater	2	27 Sep 2019
71	Hartlaub's Spurfowl		8 Oct 2017
72	Red-billed Spurfowl		8 Oct 2017
73	Rock Pigeon		8 Oct 2017
74	White-rumped Swift		8 Oct 2017
75	Shikra		8 Oct 2017
76	Jackal Buzzard		8 Oct 2017
77	Eurasian Hoopoe		8 Oct 2017
78	Southern Yellow-billed Hornbill		8 Oct 2017
79	Damara Red-billed Hornbill		8 Oct 2017
80	Lilac-breasted Roller		8 Oct 2017
81	Lesser Honeyguide		8 Oct 2017
82	Rüppell's Parrot		8 Oct 2017
83	Fork-tailed Drongo		8 Oct 2017
84	Southern Fiscal		8 Oct 2017
85	Ashy Tit		8 Oct 2017
86	Southern Penduline-Tit		8 Oct 2017
87	Stark's Lark		8 Oct 2017
88	Burnt-neck Eremomela		8 Oct 2017
89	Green-backed Camaroptera		8 Oct 2017
90	Rattling Cisticola		8 Oct 2017
91	Cape Starling		8 Oct 2017
92	Chat Flycatcher		8 Oct 2017
93	Karoo Chat		8 Oct 2017
94	Southern Anteater-Chat		8 Oct 2017
95	Red-billed Buffalo-Weaver		8 Oct 2017
96	Sociable Weaver		8 Oct 2017
97	Cape Bunting		8 Oct 2017
98	Pied Avocet	1	16 Oct 2015
99	Kittlitz's Plover	1	16 Oct 2015
100	Chestnut-banded Plover	1	16 Oct 2015
101	Cape Teal	1	15 Oct 2015
102	Greater Flamingo	1	15 Oct 2015

103	South African Swallow	1	15 Oct 2015
104	Yellow-bellied Eremomela	1	7 Aug 2005