



**ECC**  
**ENVIRONMENTAL**  
COMPLIANCE CONSULTANCY



ECC-79-237-REP-20-B

## **ENVIRONMENTAL SCOPING REPORT PLUS ASSESSMENT**

**EXPLORATION ACTIVITIES ON EPL 7368 FOR NUCLEAR FUEL MINERALS**

**ERONGO REGION**

PREPARED FOR



DECEMBER 2019

## TITLE AND APPROVAL PAGE

<b>Project Name:</b>	Exploration Activities on EPL 7368 for Nuclear Fuel Minerals, Erongo Region
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## EXECUTIVE SUMMARY

Marenica Ventures (Pty) Ltd is an Australian Securities Exchange Listed Company that has various exploration projects in Namibia. Marenica Ventures is seeking to further explore uranium mining opportunities and propose to undertake exploration activities on EPL 7368 for nuclear fuel minerals in the Erongo Region. The EPL is approximately 34 km north east of the Arandis town and 100 km north east of the Swakopmund town, off the B2 road.

The proposed project triggers listed activities in terms of the Environmental Management Act No.7 of 2007, therefore, an environmental clearance certificate is required. As part of the environmental clearance certificate application, an environmental impact assessment has been undertaken to satisfy the requirements of the Environmental Management Act, 2007. This Environmental Scoping Report and Impact assessment as well as the Environmental Management Plan (EMP) shall be submitted as part of the application for the environmental clearance certificate.

The proposed project will entail various types of exploration methods within the EPL 7368 site which may include drilling, aerial or remote sensing, ground penetrating radar, and mineral sampling. Non-invasive ground penetrating radar is planned to be undertaken followed by drilling program. If mineralisation is identified, further exploration methods shall be applied; if not identified, than EPL 7368 shall be rehabilitated and returned to government.

The area of the EPL falls within the Namib Desert biome, with vegetation mainly comprising of Namib grasslands. The EPL is located west of the Namib desert vegetation zone with a vegetation distribution pattern similar to the deserts. Which include species such as Pencil bush (*Arthroa leubnitzia*), dollar bush (*Zygophyllum stapfii*), shepherd's tree *Acacia Ebeclada* as well as scattered *Hypolithic cyanobacteria* (Ministry of Environment and Tourism, 2019). All plant species are considered to be drought tolerant, drought resistance or succulents.

The environmental impact assessment (EIA) was undertaken using a methodology developed by Environmental Compliance Consultancy (ECC), which is based on the International Finance Corporation (IFC) standard for environment and social impact assessments. Through the scoping process, a review of the site and surrounding environmental assessment was completed by undertaking a desktop review and site visit. The large mammal species found in the area are considered to be nomadic, moving widely and entering an area when food is plentiful after rainfall. Short-lived annual plant species, which occur after local episodic rainfalls and floods, provide a vital source of good quality grazing for game. Large ungulates such as Gemsbok and Hartmann's Zebra as well as antelope such as Springbok are occasionally seen around the project surrounding.

No vegetation may be cleared to create access tracks and working areas, attempt will be done to avoid areas with vegetation. The impacts of exploration activities with respect to airborne dust are expected to be limited to vehicular activities. There will be some release of exhaust fumes from machinery that will impact the immediate vicinity but will be of short duration. Additionally, there will be associated drilling and machinery noise, which could be a disturbance to immediate neighbours and wildlife, but this will be of short duration.

The assessment is considered to be comprehensive and sufficient to identify impacts, and it is concluded that the likely effects were not deemed significant and therefore no further assessment is required. On this basis, it is the opinion of ECC that an environmental clearance certificate could be issued, on conditions that the management and mitigation measures specified in the EMP are implemented and adhered to.

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## DEFINITIONS AND ABBREVIATIONS

DEA	Directorate of Environmental Affairs
ECC	Environmental Compliance Consultancy =
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPL	Exclusive Prospecting Licence
IFC	International Finance Cooperation
I&AP	Interested and affected parties
MET	Ministry of Environment and Tourism
MME	Ministry of Mines and Energy
MPMRC	Minerals (Prospecting and Mining Rights) Committee
NDP5	Fifth National Development Plan

# 1 INTRODUCTION

## 1.1 PURPOSE OF THIS REPORT

The purpose of this report is to present the findings of the environmental impact assessment (EIA) for the proposed project. The proposed project is to undertake mineral exploration activities on Exclusive Prospecting Licence (EPL) 7368 for nuclear fuel minerals, which is described in detail throughout the report. The EIA has been undertaken in terms of the requirements of the Environmental Management Act 7 of 2007 and the Environmental Impact Assessment Regulations, 2007 (No. 30 of 2012) gazetted under the Environmental Management Act, 2007 (referred to herein as the EIA Regulations). This Scoping Report and appendices will be submitted to the Ministry of Mines and Energy (MME) and the Directorate of Environmental Affairs (DEA) at the Ministry of Environment and Tourism (MET) for review as part of the application for an environmental clearance certificate.

This report has been prepared by Environmental Compliance Consultancy (ECC). ECC's terms of reference for the assessment is strictly to address potential effects, whether positive or negative, and their relative significance, and explore alternatives for technical recommendations and identify appropriate mitigation measures for the proposed project.

This report provides information to authorities, the public and stakeholders to aid in the decision-making process for the proposed project. The objectives are to:

- Provide a description of the proposed activity and the site on which the activity is to be undertaken, and the location of the activity on the site
- Provide a description of the environment that may be affected by the activity
- Identify the laws and guidelines that have been considered in the assessment and preparation of this report
- Provide details of the public consultation process
- Describe the need and desirability of the activity
- Provide a high-level environmental and social impact assessment on feasible alternatives that were considered, and
- Report the assessment findings, identifying the significance of effects.

In addition to the environmental assessment, an (EMP) (Appendix A) is also required. An EMP has been developed to provide a management framework for the planning and implementation of exploration activities thereby providing operational standards and operating arrangements to ensure that the potential environmental and social impacts of operating the exploration sites are mitigated, prevented and minimised as far as reasonably practicable and that statutory requirements and other legal obligations are fulfilled.

## 1.2 BACKGROUND TO THE PROPOSED PROJECT

Marenica Ventures Ltd proposes to undertake mineral exploration activities for nuclear fuel minerals on Exclusive Prospecting Licence (EPL) 7368 located approximately 34 km north east of Arandis, and 100 km north east Swakopmund via the B2 road. The EPL is approximately 35 km from Dorob National Park and is approximately 1674 ha (refer to Figure 1).



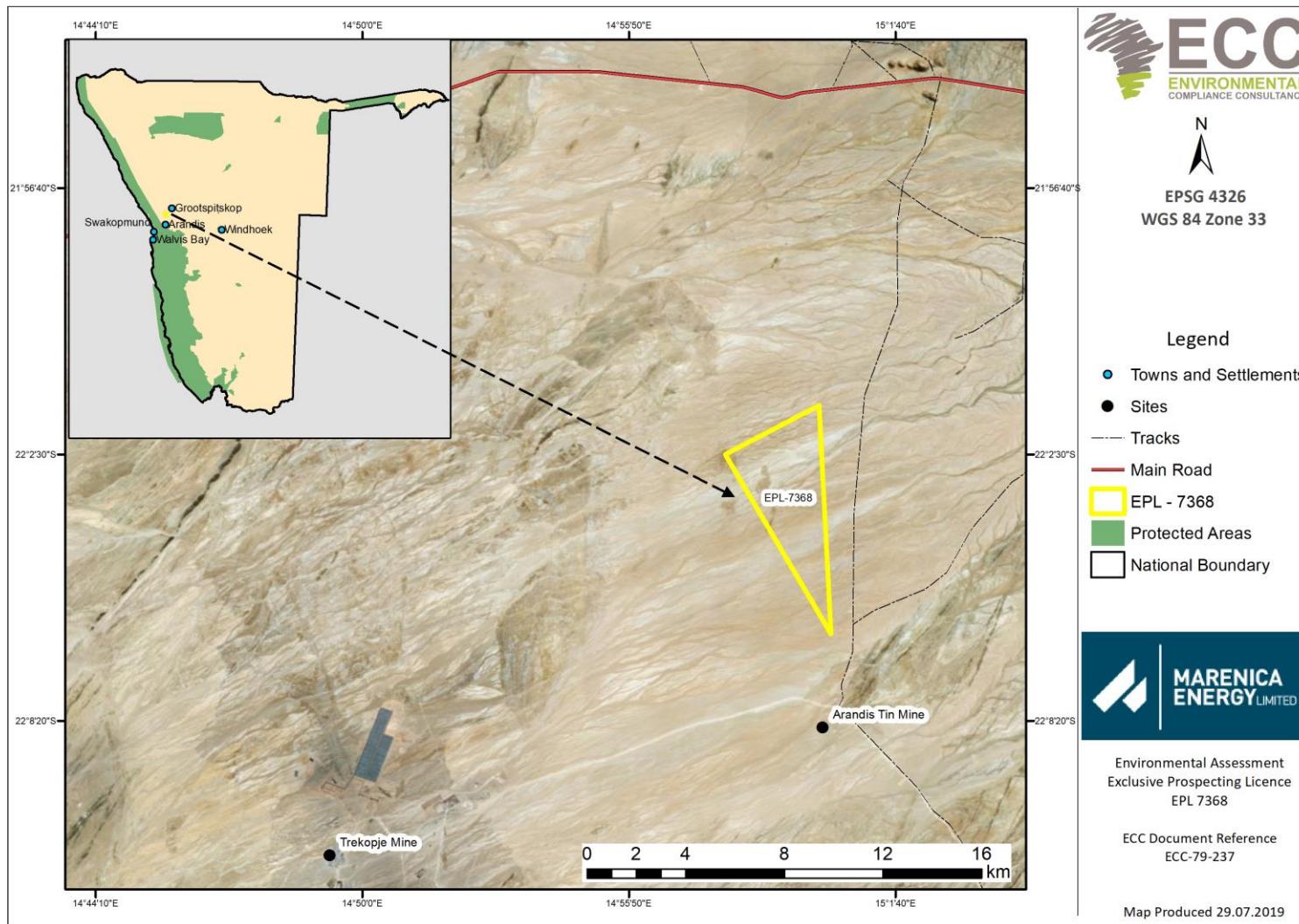


FIGURE 1 – LOCATION OF EPL 7368

### 1.3 ENVIRONMENTAL REQUIREMENTS

The Environmental Management Act, 2007 stipulates that an environmental clearance certificate is required to undertake listed activities in terms of the Act and its regulations, as such an environmental impact assessment (EIA) of the proposed project is required, and subsequent report (this document) submitted as part of the Environmental Clearance Certificate. Listed activities triggered by the proposed project in terms of the Environmental Management Act, 2007 and its supporting regulations are as follows.

#### MINING AND QUARRYING ACTIVITIES

- 3.1 The construction of facilities for any process or activities which requires a licence, right or other form of authorisation, and the renewal of a licence, right or other form of authorisation, in terms of the Minerals (Prospecting and Mining) Act, 1992
  - ✓ The proposed project requires a licence for the extraction of nuclear fuels minerals
- 3.2 Other forms of mining or extraction of any natural resources whether regulated by law or not
  - ✓ Minerals (soil and sand), metals will be sourced out within the project's footprint/ locally as far as possible
- 3.3 Resource extraction, manipulation, conservation and related activities
  - ✓ The proposed project will extract nuclear fuel minerals

### 1.4 THE PROPONENT OF THE PROPOSED PROJECT

Marenica Ventures Ltd (herein referred to as the proponent) is an Australian Securities Exchange Listed Company, which is seeking to explore for nuclear fuels minerals in Namibia. The proponent has developed a uranium concentration process that is unique and ground-breaking, lowering the extraction cost of uranium and significantly reducing potential environmental effects associated with reducing the mass of ore to be leached. This U-pgrade™ process technology can be applied to surficial uranium deposits and is capable of concentrating uranium by a factor of up to 50 times, thereby reducing the feed to a leaching circuit dramatically.

The proponent of the proposed project is Marenica Ventures and the proponent details are provided in TABLE 1.

**TABLE 1 - PROPONENT DETAILS**

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### 1.5 ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy, a Namibian consultancy registration number 2013/11401, has prepared this document on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa in the public and private sector. The CVs of the authors of this report are contained in Appendix F.

ECC is independent of the proponent and has no vested or financial interest in the proposed project, except for fair remuneration of professional services rendered. All compliance and regulatory requirements regarding this assessment document should be forwarded by email or post to the following address:

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## 1.6 REPORT STRUCTURE

This environmental scoping study and impact assessment report is structured as per the contents set out in the Table 2.

**TABLE 2 - ENVIRONMENTAL SCOPING REPORT SECTIONS**

SECTION	TITLE	CONTENT
-	Executive Summary	Executive summary of the EIA
-	Abbreviations	A list of abbreviations used during the report
<b>1</b>	Introduction	This section introduces the EIA and provides background information on the proposed project, proponent and purpose of the report
<b>2</b>	Regulatory Framework	This chapter describes the Namibian environmental regulatory framework applicable to the project and how it has been considered in the assessment and the scoping report and EMP.
<b>3</b>	Approach to the EIA	Presents the methodology of the EIA
<b>4</b>	Project Description	Presents the need of the project, the alternatives considered and a description of the proposed project and how the proposed project will be operated.
<b>5</b>	Environmental and social baseline environment	Presents information on the receiving environment that may be affected by the project.
<b>6</b>	Prediction and evaluation of impacts	This chapter presents the predicted potential environmental and social effects arising from the proposed project, and the mitigation and management strategies to be applied to avoid or reduce the effects.
<b>7</b>	Assessment findings and mitigation measures	This chapter presents the findings and the mitigation and management strategies to be applied to avoid or reduce the effects.
<b>8</b>	Environmental Management Plan	This chapter presents the site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner by understanding the potential environmental risks arising from the project and take appropriate actions to properly manage that risk.
<b>9</b>	Conclusions	Concludes the findings of the EIA
	References	A list of reference used for this report
<b>Appendices</b>	Appendices A-E	<ul style="list-style-type: none"> <li>- Appendix A: Environmental Management Plan</li> <li>- Appendix B: List of plant species</li> <li>- Appendix C: Non-technical Summary</li> <li>- Appendix D: Adverts</li> <li>- Appendix E: Site Notice</li> <li>- Appendix F: ECC CVS</li> </ul>

## 2 REGULATORY FRAMEWORK

This chapter outlines the regulatory and policy framework applicable to the proposed project. Table 3 provides a list of applicable legislation and the relevance to the project.

**TABLE 3 - LEGAL COMPLIANCE**

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
<b>Minerals (Prospecting and Mining) Act No 33 of 1992</b>	<p>Provides for the reconnaissance, prospecting and mining for, and disposal of, and the exercise of control, minerals in Namibia.</p> <p>Section 50 (i) requires <i>“an environmental impact assessment indicating the extent of any pollution of the environment before any prospecting operations or mining operations are being carried out and an estimate of any pollution, if any, likely to be caused by such prospecting operations or mining operations”</i></p>	<p>The proposed activity is prospecting for minerals; hence it requires an EIA to be carried out as it triggers listed activities in terms of the Environmental Management Act and its regulations. This report presents the findings of the EIA.</p> <p>Works shall not commence until all conditions in the Act are met.</p> <p>The project shall be compliant with section 76 of the Minerals Act with regards to records, maps, plans and financial statements, and information, reports and returns submitted.</p>
<b>Environmental Management Act, 2007 (Act No. 7 of 2007) and its regulations, including the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2012)</b>	<p>The Act aims to promote sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment.</p> <p>It sets the principles of environmental management as well as the functions and powers of the Minister. The Act requires certain activities to obtain an environmental clearance certificate prior to project development. The Act states an EIA may be undertaken and submitted as part of the environmental clearance certificate application.</p> <p>The MET is responsible for the protection and management of Namibia’s natural environment. The Department of Environmental Affairs under the MET is responsible for the administration of the environmental clearance certificate process.</p>	<p>This Environmental Scoping Report and assessment plus the EMP documents the findings of the environmental assessment undertaken for the proposed project, which will form part of the environmental clearance application. The assessment and report have been undertaken in line with the requirements in terms of the Act and its regulations.</p>
<b>Water Act, 1956</b>	<p>This Act provides for “the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain</p>	<p>The Act stipulates obligations to prevent pollution of water. The EMP sets out measures to avoid polluting the water environment.</p>

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
	<p>respects... and for the control of certain activities on or in water in certain areas".</p> <p>The Ministry of Agriculture Water and Forestry Department of Water Affairs is responsible for the administration of the Water Act.</p> <p>The Minister may issue a Permit in terms of the regulations 5 and 9 of the government notice R1278 of 23 July 1971 as promulgated under section 30 (2) of the Water Act no. 54 of 1956, as amended. To abstract water from a controlled water source, a WA 002 should be filled and submitted to the MAWF</p>	<p>Regulation 5: "Upon receipt of an application in terms of regulation 4(1) the Minister may issue a permit authorising the applicant to sink, enlarge, deepen, alter, open up or clean any borehole, well or spring mentioned in the application or to abstract therefrom and use a specific quantity of water for the purposes and subject to the conditions specified in the permit: Provided that, if the Director is of opinion that artesian water is or will be found in a borehole or well, the Minister shall not consider an application unless it is recommended by the Board. "</p> <p>Regulation 9: The Minister may, when issuing a permit under regulation 5, impose such conditions, whether generally or in respect of different periods in any year, as he may deem necessary for an equitable distribution of water in the public interest or for the conservation of water supplies or for the protection of water sources, including conditions in respect of measures to minimise potential groundwater and surface water pollution are contained in the EMP.</p>
<p><b>The Nature Conservation Ordinance No. 4 of 1975</b></p>	<p>One of the major biodiversity related laws in Namibia is the legislation governing the conservation of wildlife, and protected areas.</p>	<p>The following sections are applicable to the proposed project and measures to ensure compliance are included in this environmental scoping report plus the EMP.</p> <ul style="list-style-type: none"> <li>- Section 18 of the Nature Conservation Ordinance restricts of the rights to enter game parks and nature reserves and prohibition of certain acts therein, and</li> <li>- Section 72 of the Nature Conservation Ordinance restricts picking and transport of protected species.</li> </ul>
<p><b>National Heritage Act, No. 27 of 2004.</b></p>	<p>The Act provides provision of the protection and conservation of places and objects with heritage significance.</p> <p>Section 55 compels exploration companies to report any archaeological findings to the National Heritage Council after which a heritage permit needs to be issued</p>	<p>There is potential for heritage objects to be found on the site, therefore the stipulations in the Act have been taken into consideration and are incorporated into the EMP. Section 55 compels exploration companies to report any archaeological findings to the National Heritage Council after which a permit needs to be issued before the findings can be disturbed.</p>

NATIONAL REGULATORY REGIME	SUMMARY	APPLICABILITY TO THE PROJECT
<b>Soil Conservation Act No.76 of 1969</b>	Makes provision for the prevention and control of soil erosion and the protection, improvement and the conservation, improvement and manner of use of the soil and vegetation.	Taken into consideration during the design of the works to be undertaken on the EPL site. Measures in the EMP sets out methods to avoid soil erosion.

## 2.1 POLICIES

### 2.1.1 MINERALS POLICY

The Minerals Policy was adopted in 2002 and sets guiding principles and direction for the development of the Namibian mining sector while communicating the values of the Namibian people. It sets out measures to achieve several objectives in line with the sustainable development of Namibia's natural resources. The policy strives to create an enabling environment for local and foreign investments in the mining sector and seeks to maximise the benefits for the Namibian people from the mining sector while encouraging local participation, amongst others.

The objectives of the Minerals Policy are in line with the objectives of the Fifth National Development Plan (NDP5) that include reduction of poverty, employment creation and economic empowerment in Namibia. The proposed project conforms to the policy and has been considered through the EIA process and the production of this report.

## 2.2 LICENCES

### 2.2.1 EXCLUSIVE PROSPECTING LICENCE

EPL 7368 was granted on the 16<sup>th</sup> of May 2019. In terms of the Minerals (Prospecting and Mining) Act, 1992, an EPL may be renewed, however may only be extended twice for two-year periods if demonstrable progress is shown. Renewals beyond seven years requires special approvals from the minister (Ministry of Mines and Energy, 2018).

Such renewals are subject to a reduction in size of the EPL. When a company applies for renewal of an EPL, this application must be lodged 90 days prior to the expiry date of the EPL or, with good reason, no later than the expiry date (Ministry of Environment and Tourism, Ministry of Mines and Energy, 2018).

Renewal application for EPL 7368 may be required if mineralisation is present and exploration activities last longer than three years. If renewal is applied for, the MET shall review the renewal application and make any comments and/or recommendations for consideration by the Minerals (Prospecting and Mining Rights) Committee (MPMRC). Due consideration must be given when renewing the licence to ascertain whether there is justification to renew the licence. Once an EPL expires and a new EPL is issued, even if it is to the previous holder, the full screening process must be followed with a full EIA process before operations may commence (Ministry of Environment and Tourism, Ministry of Mines and Energy, 2018).

### **3 APPROACH TO THE EIA**

#### **3.1 PURPOSE OF AN EIA**

The EIA process in Namibia is governed and controlled by the Environmental Management, 2007 and the EIA Regulations, 2012, which is administered by the Office of the Environmental Commissioner through the Department of Environmental Affairs of the MET.

An EIA is a process of identifying, predicting, evaluating and mitigating the potential impacts of a proposed project on the natural and human environment. The aim of the scoping assessment, EIA process and subsequent reports are to apply the principles of environmental management to proposed activities, reduce the negative and increase the positive impacts arising from a proposed project, provide an opportunity for the public to consider the environmental impacts of a proposed project through meaningful consultation, and to provide a vehicle to present the findings of the assessment process to competent authorities for decision making.

#### **3.2 THE ASSESSMENT PROCESS**

The EIA methodology applied to this EIA has been developed using the International Finance Corporation (IFC) standards and models, in particular Performance Standard 1, 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017)(International Finance Corporation, 2012); Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008); international and national best practice; and over 25 years of combined EIA experience.

The process followed through the basic assessment is illustrated in FIGURE 2.

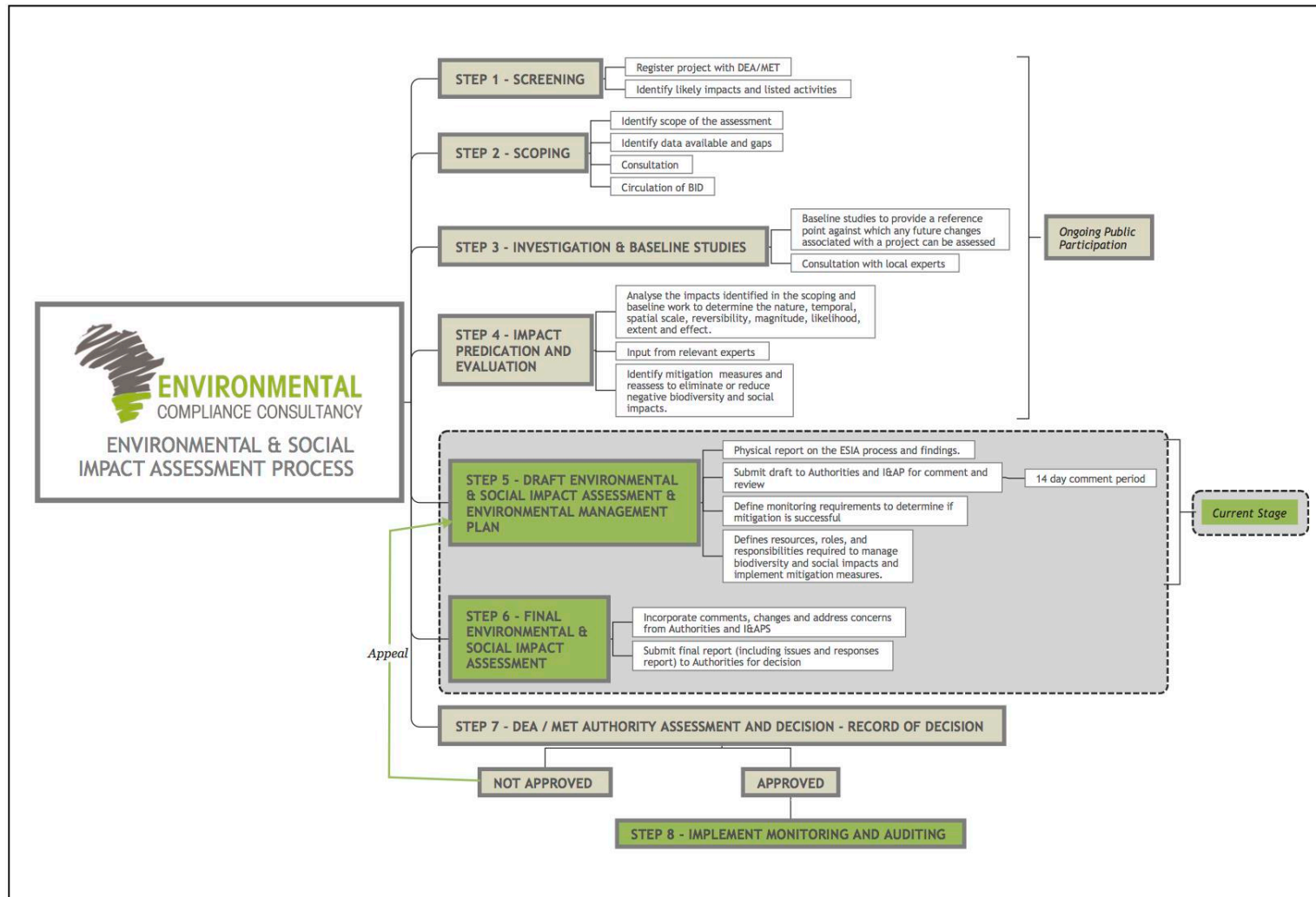


FIGURE 2 - ECC SCOPING PROCESS



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## 4 PROJECT DESCRIPTION

### 4.1 NEED FOR THE PROPOSED PROJECT

The mining sector in Namibia significantly contributes to the country's Gross Domestic Product (GDP), government tax receipts and export revenues. For this reason, exploration activities are encouraged in Namibia and the vision of the Minerals Policy being to *"further attract investment and enable the private sector to take the lead in exploration, mining, mineral beneficiation and marketing"* supports the development. The proposed project is in line with this vision and has the potential to create employment in the local communities, namely in the towns of Walvis Bay, Swakopmund and Arandis. In the event that exploration activities are successful, and a resource can be defined in commercially viable concentrations, exploration operations can potentially transcend into mining operations, which can result in socio-economic development.

Uranium is used in the nuclear industry to produce electricity. Nuclear is the world's second largest source of low-carbon power (>30% of the total in 2015). Approximately, 11% of the world's electricity is generated by approximately 450 nuclear power reactors in 50 countries and around 60 more reactors are under construction. This is equivalent to 16% of existing capacity, while an additional 150-160 are planned, equivalent to nearly half of existing capacity (World Nuclear Association, 2018). Furthermore, uranium is required to supply these reactors and ensure low-carbon power is generated. Namibia is one of the few countries which has uranium deposits and has three significant uranium mines capable of providing 10% of world uranium output. Uranium was discovered in the Namib Desert in 1928 and intensive exploration commenced in the late 1950s.

### 4.2 ALTERNATIVES

Several uranium deposits occur in Namibia and are grouped into three basic rock types: a) occurrences in and associated with plutonic rocks, b) pedogenic occurrences and c) sedimentary occurrences. An overlap exists between the pedogenic and the other main deposit types. Uranium occurrences in and associated with plutonic rocks comprise both potentially economic deposits and source rocks for uranium deposits in pedogenic and sedimentary sequences. These deposits are confined mainly to the western portion of the Damara Orogen (Schreuder, 1985). Therefore, there are limited areas to explore in Namibia.

An exploration program in the 1970s undertaken by general mining indicated high prospectively for uranium mineralisation in the EPL. Consequently, alternative sites were considered during this early exploration program, however, the potential for mineralisation was not as high as that of EPL 7368. The Environmental assessment has therefore taken a worst-case scenario as per best practice guidance, which includes a review of all likely exploration activities, thus no other technological alternatives are available for consideration at this stage.

Once the exploration programme is further defined, the best available option for methods shall be identified to ensure the impacts on the environment and society are minimised.

#### 4.2.1 NO-GO ALTERNATIVE

Should exploration activities within EPL 7368 not take place, the anticipated environmental impacts from exploration activities would not occur, however, the social and economic benefits associated with the project would also not be realised. There would not be an opportunity to define resources in the project area, a missed opportunity for geological mapping and data collection that if found to be viable for mining could benefit the Namibian economy.

### 4.3 PROPOSED EXPLORATION ACTIVITIES

Exploration activities on EPL 7368 will include soil and rock sampling, geological mapping, electromagnetic and geophysical surveys, drilling and core sampling. Some vegetation may be cleared to allow access tracks and working areas to be created and for the installation and development of exploration drill holes.

Existing tracks will be used as far as reasonably practical; in the event that new tracks are required they will be developed by hand. Vegetation clearance may be required for drill access tracks, drill pads and for a driller's camp (if required). This will also be carried out by hand or bulldozer depending on the bush thickness and the required clearance distances.

The exploration methods on the EPL site may involve the following methods: drilling; aerial or remote sensing; ground penetrating radar; and mineral sampling. Further detail of these methods are as follows.

– **REMOTE SENSING AND GEOPHYSICAL SURVEYS**

During mineral exploration, remote sensing and geophysical surveys enables explorers to find and assess deposits without having to undertake massive exploration operations. Remote sensing may be used to map the geology and existing faults and fractures that localize the ore deposits or may be used to recognize rocks which have been hydrothermally altered. Remote sensing includes a number of tools and techniques including geographical information systems, radar, geographical information systems and sonar.

– **GROUND PENETRATING RADAR**

Ground penetrating radar is likely to be the preferred method for exploration activities on the EPL. This will most likely be undertaken by foot.

– **ROTARY AIR BLAST (RAB) DRILLING AND DIAMOND DRILLING**

Drilling to be undertaken in order to obtain drill core samples. The collected samples will be temporarily stored in plastic bags on site and transported to a sample preparation laboratory in Swakopmund.

All exploration activities will be undertaken in programmed segments. The number of drill holes will be determined on results obtained through the data collection during ground penetrating radar. Equipment used during drilling shall include an RC on trailer-mounted rig towed by a light vehicle.

Pitting and trenching are unlikely as this is not the preferred method of exploration and therefore have not been included in this scoping report.

#### 4.3.1 EXPLORATION SCHEDULE

The duration of exploration activities is anticipated to be conducted over the course of a 3-year period (or for the duration of the mineral licence) and the periods of each exploration programme will vary and will be refined as geological information becomes available. Exploration is intended once the environmental clearance has been granted. The presence of mineralisation shall be determined during the first period of tenor. Non-invasive ground penetrating radar is planned to be undertaken in the first three months on both sites, potentially followed by a drilling program. If mineralisation is identified, further exploration methods shall be applied; if not identified, the EPL shall be rehabilitated and returned to government.

#### 4.3.2 WORKERS AND ACCOMMODATION

During the initial exploration stage, approximately seven (7) employees will be required, and workers will mainly be from the towns of Swakopmund and Walvis Bay. The roles of the employees include two (2) radar specialists / geologists and five (5) drill crew members. Additional roles may be required which shall be determined by the programme and exploration methods.

The workers will be accommodated in designated camp areas during the exploration programme and will require staying close to the site during on ground exploration works and therefore will likely stay in an onsite camp.

#### 4.3.3 RESOURCE USE AND WASTE MANAGEMENT

Water will be required for various uses including human consumption and exploration activities. Potable water will be brought to site by light vehicle and shall be used for human consumption and if required for operation of the drill rig.

During drilling operations, water shall be used, recirculated and stored in lined collections ponds.

Waste including sewerage and solid waste such as packaging, will be produced on site. All solid waste, shall be collected, taken off site and disposed of at the nearest waste management facility. Mobile toilets (of a 'long drop' or pit latrine type) may be brought to site. Any sewerage generated will be managed by the supplier of the toilet or the contactor.

#### 4.3.4 REHABILITATION

Once exploration activities are completed the area shall be rehabilitated. Rehabilitation shall be determined during the exploration programme and shall be agreed with the landowner and the MET.

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## 5 ENVIRONMENTAL AND SOCIAL BASELINE ENVIRONMENT

### 5.1 INTRODUCTION

This section provides an overview of the existing biophysical environment through the analysis of the baseline data regarding the existing natural and socio-economic environment.

### 5.2 METHODOLOGY

Desktop studies on the national database are undertaken as part of the scoping stage to get information of the current status of the receiving environment. This provides a baseline where changes that occur as a result of the proposed project can be measured.

The environmental and social topics that may be affected by the proposed project are described in this section. The baseline focuses on receptors which could be affected by the proposed project.

### 5.3 CONSULTATION

Public participation and consultation are a requirement in terms of section 21 of the Environmental Management Act No.7 of 2007 and its regulations for a project that requires an Environmental Clearance Certificate. Consultation is a compulsory and critical component in the EIA process, aimed at achieving transparent decision-making, and can provide many benefits.

A key aim of the consultation process is to inform stakeholders and interested and affected parties (I&AP) about the proposed project. The methods undertaken for the proposed project are detailed as follows, which are in line with the requirements of the EIA regulations.

#### 5.3.1 NON-TECHNICAL SUMMARY

The Non-Technical Summary (NTS) presents a high-level description of the proposed project; sets out the EIA process and when and how consultation is undertaken. The contact details for further enquiries are made available to all registered I&APs and the NTS can be found in Appendix C.

#### 5.3.2 NEWSPAPER ADVERTISEMENTS

Notices regarding the proposed project and associated activities were circulated in two newspapers namely the 'Namibian' and in the 'Informante' on the 26<sup>th</sup> September and 3<sup>rd</sup> October 2019. The purpose of this was to commence the consultation process and enable I&APs to register an interest with the project. The adverts can be found in Appendix D.

#### 5.3.3 SITE NOTICES

A site notice ensures neighbouring properties and stakeholders are made aware of the proposed project. The notice was set up at the boundary of the EPL as illustrated in Appendix E.

#### 5.3.4 CONSULTATION FEEDBACK

No issues or concerns were raised by the I&APs during the consultation period.

### 5.4 BASELINE OF THE SURROUNDING ENVIRONMENT

EPL 7368 is located in approximately 35 km west the Dorob National Park. The park is bordered to the north by the Ugab River and the Skeleton Coast Park. The Omaruru River bisects it, while the Swakop River is situated just south of its boundary.

Natural features and tourism include the Atlantic coastline, gravel plains, sandy beaches with dune hummocks and a variety of lichen fields.

### 5.5 CLIMATE

The proposed site experiences the typical desert climate. The nearest town Arandis has virtually no rainfall during the year. The average annual temperatures in Arandis is 19.0 degrees Celsius. About 44mm of precipitation falls annually.

Variation between daily minimum and maximum temperatures are wide. The temperatures are highest on average in March, at around 21.8 °C. July has the lowest average temperature of the year is about 16.0 °C. The variation in the precipitation between the driest and wettest months is 15 mm. During the year, the average temperatures vary by 5.8 °C (Climate.org, 2019). Atmospheric conditions are prone to air borne dust enhanced by air movements. There is no wind data of the area, however Figure 3 indicated predominate winds experienced in the south-western – north-eastern direction with an average 3.1 m/s and frequent occurrence throughout the years (Iowa Environmental Mesonet , 2019).

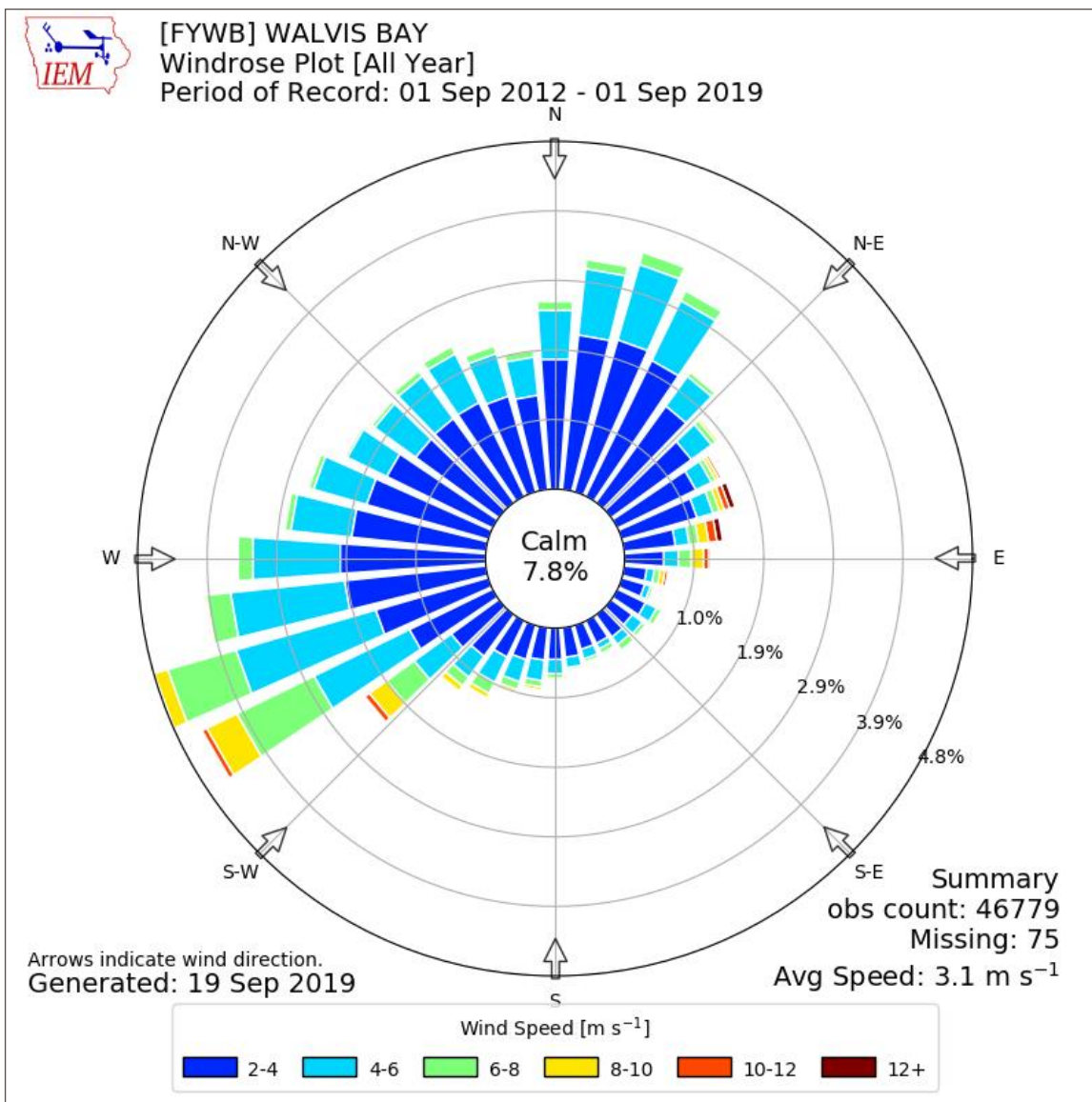


FIGURE 3 - PREVAILING WIND IN WALVIS BAY

## 5.6 VEGETATION AND WILDLIFE

The area of the EPL falls within the Namib desert biome, with vegetation mainly comprising of Namib grasslands FIGURE 6. Vegetation is dominated by sparsely-scattered dwarf shrubs and ephemeral grasses, which include species such as Pencil bush (*Arthroa leubnitzia*), dollar bush (*Zygophyllum stapfii*) (Ministry of Environment and Tourism, 2019). All plant species are considered to be drought tolerant, drought resistance or succulents, however generally, most vegetation relates strongly to the frequency, intensity and duration of the flooding events. A list of species is included in Appendix D (National Herbarium of Namibia (WIND), 2016).

The large mammal species found in the area are considered to be nomadic, moving widely and entering an area when food is plentiful after rainfall. Short-lived annual plant species, which occur after local rainfalls and floods, provide a vital source of good quality grazing for wild animals, such as Gemsbok, Springbok and Hartmann's Zebra that are occasionally seen within the project surrounding (Mendelsohn et al., 2003).



FIGURE 4 - DOLLAR BUSH (*Zygophyllum stapfii*)



FIGURE 5 - *Acacia ebeclada*

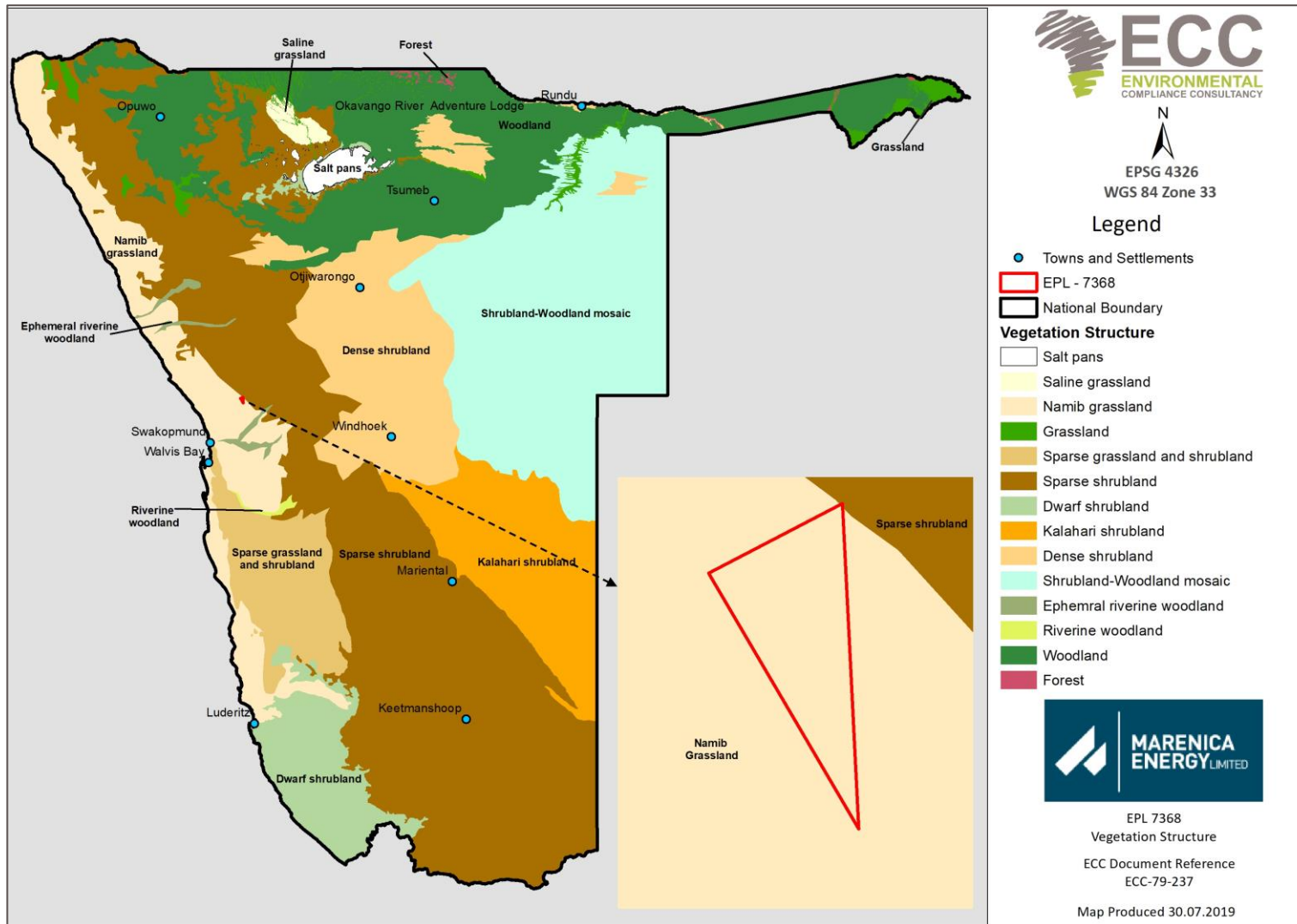


FIGURE 6 - VEGETATION COVER ON THE EPL 7368

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## 5.7 SOILS AND GEOLOGY

The EPL 7368 stretches over an area that is predominately made up of the Swakop Group rock type and Petric Calcisols soils (FIGURE 7 and 8). The characteristics of this dominant soil type are soils with a solid layer at a shallow depth that remains hard even when wet. Soils have accumulations of calcium sulphate, which are restricted to the very dry areas of the central Namib. The soil generally has very low levels of fertility, so only the hardiest of plants will grow in them (Mendelsohn et al., 2003).

The elevation of the area ranges between 600m – 900m above sea level (FIGURE 7) and is characterized by undulating hills and sandy valley areas. Although windblown sand is found along the foot of the dolerite ridges the topsoil found within the proposed project area generally comprise of gravel plains comprising of surface quartz gravels.



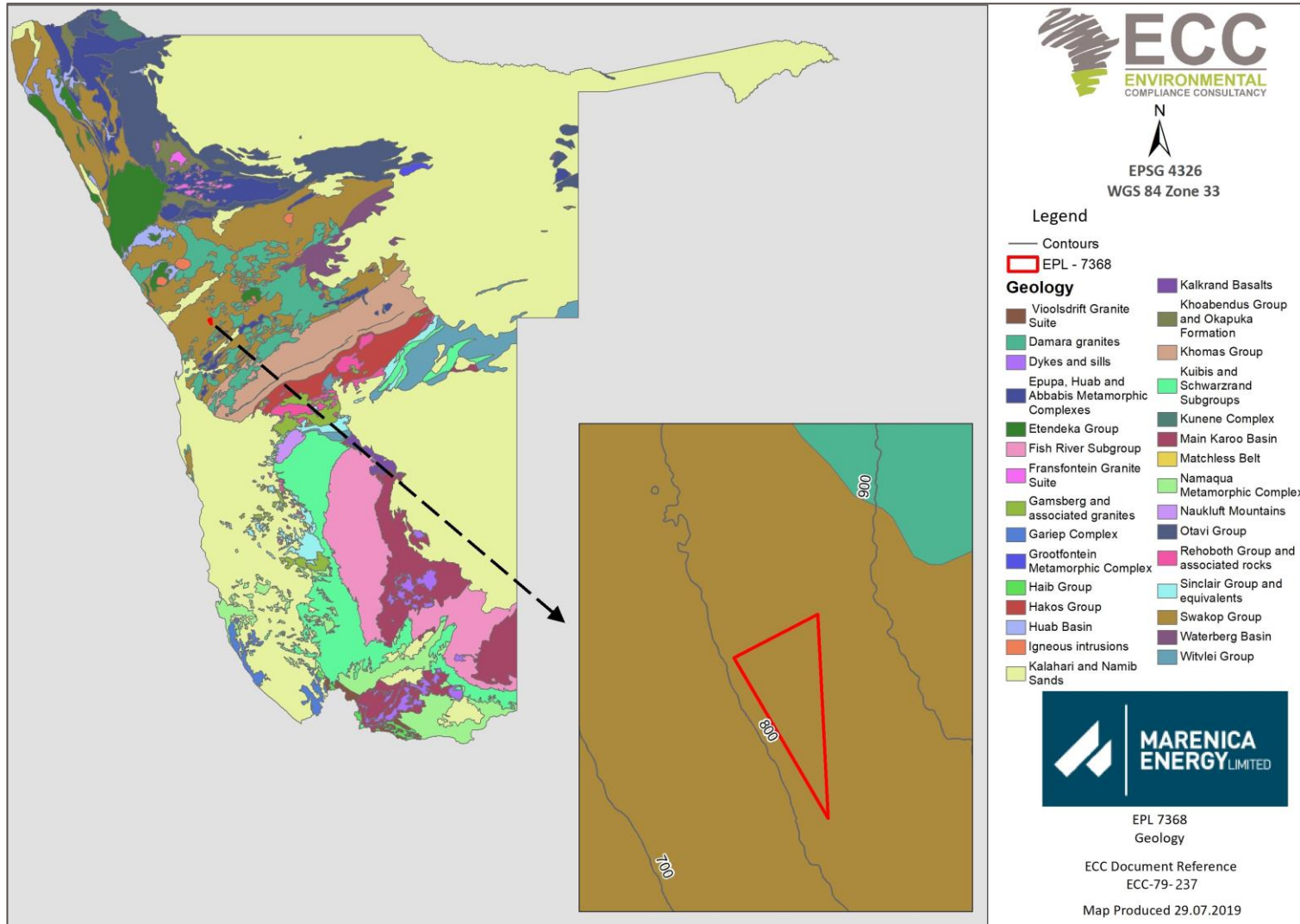


FIGURE 7 – NATIONAL AND LOCAL GEOLOGY MAP OF EPL 7368

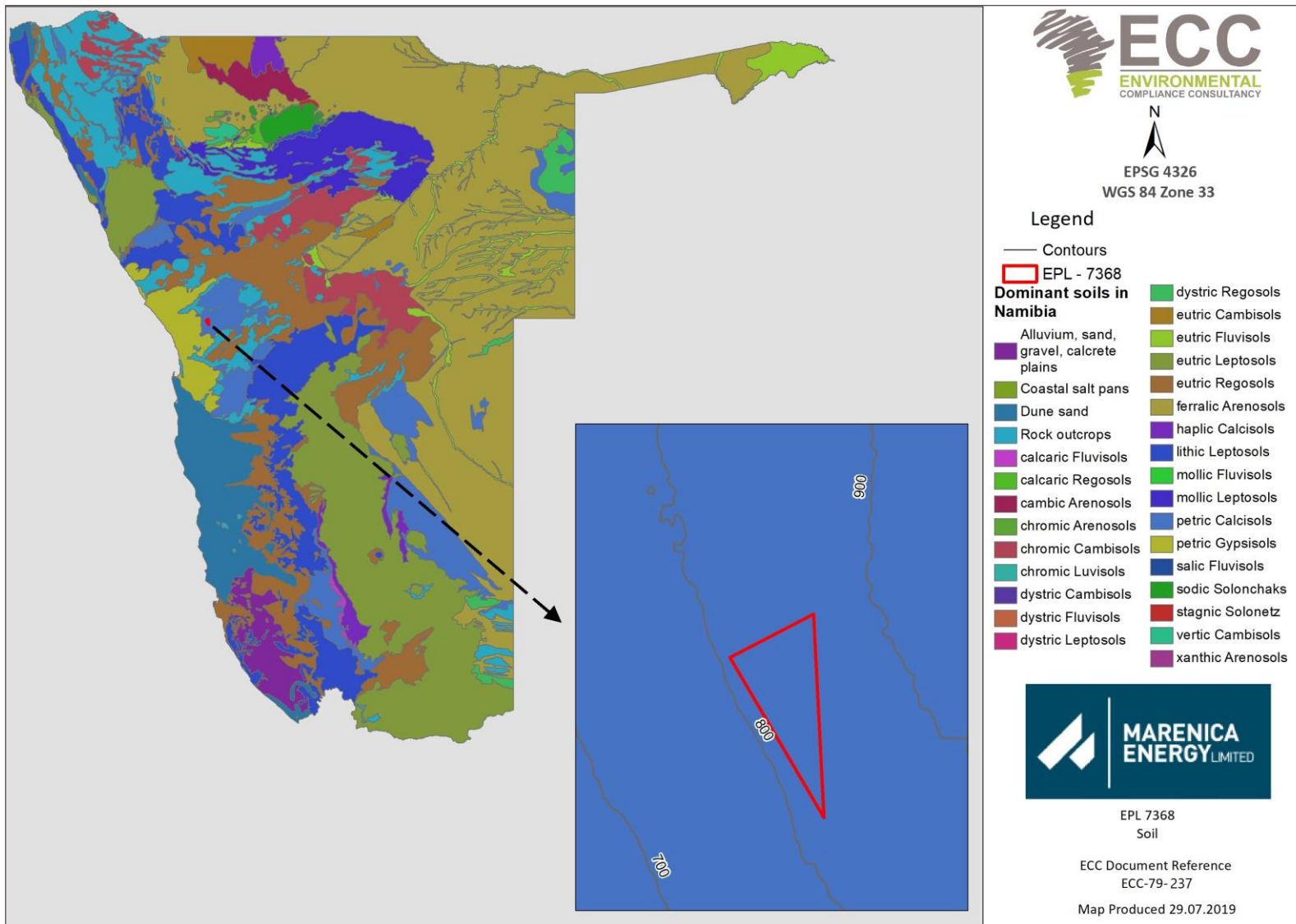


FIGURE 8 – NATIONAL AND LOCAL SOIL MAP OF EPL 7368

## 5.8 HYDROLOGY - GROUNDWATER AND SURFACE WATER

In Namibia, water resources management is carried out at basin level. Hence there are eleven (11) water basins in the country, of which the EPL area is part of the Omaruru – Swakop Basin. There are about five (5) boreholes around the proposed EPL site.

No large rivers transect the study area, the Khan River located to the south of Arandis being the most prominent river to the south of Arandis. The town of Arandis therefore falls within the catchment area of the Khan River which in turn is part of the greater Swakop River catchment area. Further north of the town the catchment area of the Omaruru River is found. All these rivers are ephemeral and are dry for most parts of the year (Mendelsohn et al., 2003)

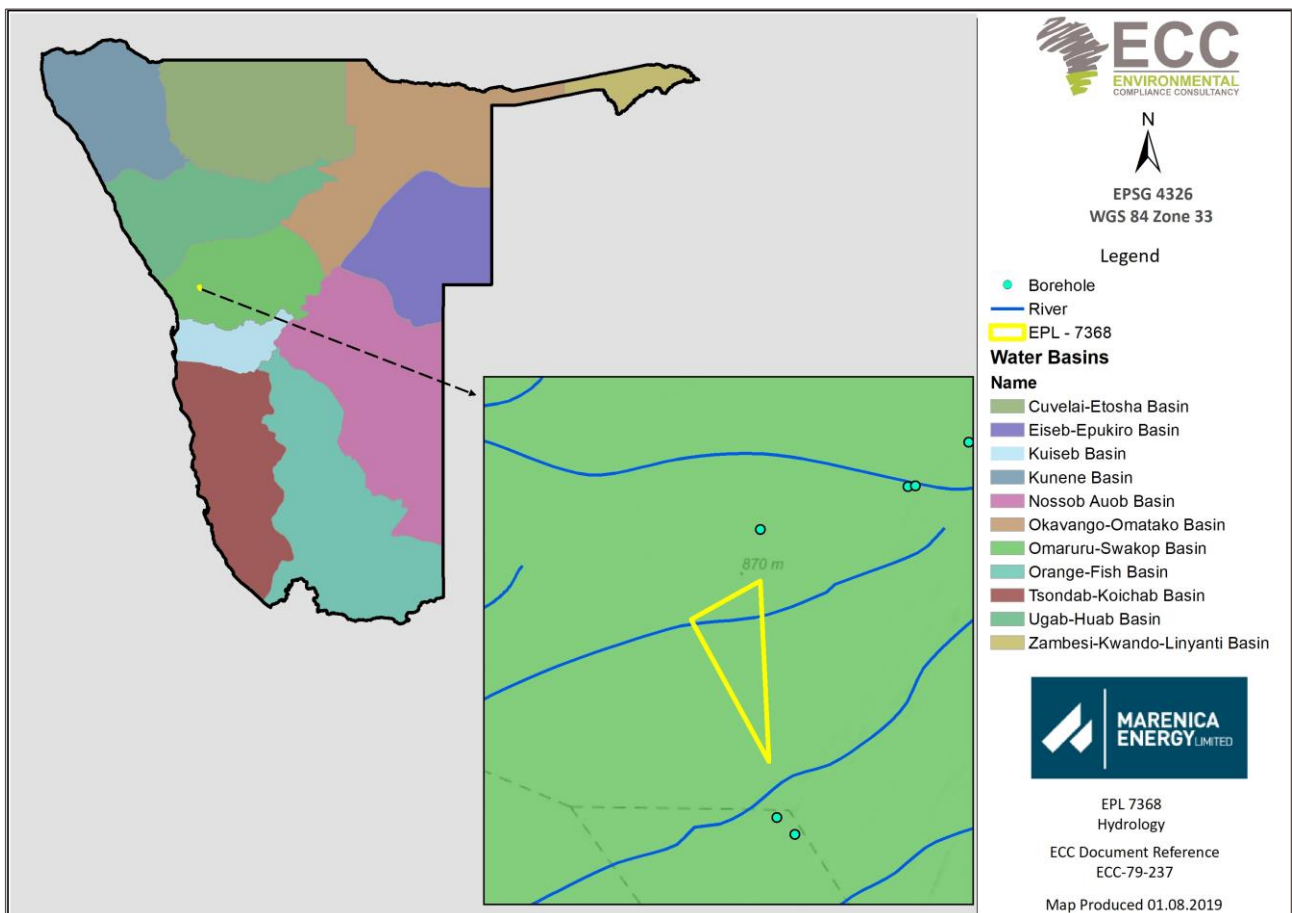


FIGURE 9– NATIONAL AND LOCAL HYDROLOGY OF THE EPL 7368

## 5.9 LAND USE AND INFRASTRUCTURE

Apart from the Arandis town, there is no active land use in the proximity of the proposed EPL site. Not many people reside in the area and it does not have any tourism facilities, neither is it used for tourism activities. The Dorob National Park is located approximately 35km west of the EPL site.

## 5.10 SOCIO-ECONOMIC

### 5.10.1 GOVERNANCE

Namibia was established in 1990 and is led by a democratically-elected and stable government. The country ranked top fifth out of 54 African countries in the Ibrahim Index of African Governance in 2015 for the indicators including the quality of governance and the government’s ability to support human development, sustainable economic opportunity, rule of law and human rights (National Planning Commission, 2017).

As a result of sound governance and stable macroeconomic management, Namibia has experienced rapid socioeconomic development. Namibia has achieved the level of 'medium human development' and ranks 125th on the Human Development Index out of 188 countries (National Planning Commission, 2017).

#### 5.10.2 DEMOGRAPHIC PROFILE

Namibia is one of the least densely populated countries in the world, with a population of 2.3 million people. Life expectancy is 65 years and expected years of schooling is 11.7 (National Planning Commission, 2017). Namibia's population is expected to increase from an estimated 2.11 million in 2011 to 3.44 million by 2041 (63%) (Namibia Statistics Agency, 2011).

The Erongo Region consists of seven constituencies covering approximately 64,000 km<sup>2</sup> and is home to almost 150 809 people and grows at a rate of 3.4 annually (Population and Housing Census, 2011). The majority of this population reside in the two urban centres, namely, the tourist town of Swakopmund and the fishing and major port town of Walvis Bay (75 km). Also located within the region are the smaller towns of Henties Bay, a coastal tourist town north of Swakopmund, and Arandis, a mining town associated with mainly Rössing mine (Namibia Statistics Agency, 2011).

#### 5.10.3 HIV/AIDS IN NAMIBIA

HIV/AIDS in Namibia is a critical public health issue and is one of the leading causes of death. Namibia has a generalised HIV epidemic, meaning that there is a high HIV prevalence among the whole population. The epidemic is now starting to stabilise, after a rapid increase from the time that the first case of HIV was reported in 1986 through until a peak in 2002. HIV prevalence in Namibia is not yet measured through a population-based survey, instead, HIV prevalence among pregnant women attending Ante Natal Clinics is used. In 2010, 18.8% of pregnant women were HIV positive, a reduction from the high of 22% in 2002. However, HIV prevalence is unevenly distributed throughout the country, therefore this figure is not a national representation. The overall trend illustrates that HIV prevalence is stabilising rather than increasing (UNICEF, 2011).

#### 5.10.4 EMPLOYMENT

Unemployment rates in Namibia particularly, among the youth are exceedingly high. According to the Namibia Labour Survey (2018), the unemployment rate of the country was 33.4% in 2018. The labour force participation rate is the proportion of the economically active people in a given population group, which is calculated as the number of economically active people divided by the total population in the same population group. The labour force participation for the country was 71.2% (Namibia Labour Force Survey 2018). About 66-70% of the total population of the area are directly and indirectly reliant on the mines for their livelihoods. Mine closure and mine extension could have significant economic impacts to both the national and local economies.

#### 5.10.5 ECONOMIC ACTIVITIES

The Namibian economy has grown on average by 4.6% per year between 2012 and 2016, however, slowed down in 2016 to 0.2% due to a reduction in productivity in the farming industry. The growth rate over the years has not reduced unemployment; in 2016 nearly 18% of the population lived in poverty. A lack of industrialisation and infrastructure has contributed to Namibia's economic imbalance. The 5th Namibian NDP (National Planning Commission (2017) states that, by modernising and industrialising of the major sectors of agriculture, fisheries, manufacturing, mining and tourism, and by providing trading opportunities so that workers can upgrade their skills. Namibia will create jobs in a diverse range of industries which will improve the economy.

The mining and quarrying sector is the largest income which contributed an overall 11.3 percent to GDP and 64.2 percent to gross primary industry contribution to GDP, this is then followed by the tourism, fishing and manufacturing (National Planning Commission, 2018).

The economic activities of the Erongo region revolve around its natural resources such as fish, water, and non-renewable resources which include minerals. Furthermore, tourism is also one of the most economic contributors of the region.

### 5.11 CULTURAL HERITAGE

According to the Namibian National Heritage database there are no known national heritage receptors on the EPL. In cases where heritage sites are discovered the chance find procedure will be used.

## 6 PREDICTION AND EVALUATION OF IMPACTS METHODOLOGY

### 6.1 INTRODUCTION

This section provides an overview of the scoping assessment process detailing each of the steps completed, currently being undertaken and those proposed to be carried out at some future date. Prediction and evaluation of impacts is a key step in the scoping assessment and EIA process. This chapter outlines the method followed to predict and evaluate the impacts arising from the proposed project. The findings of the assessment are presented in Chapter 7.

### 6.2 ECC METHODOLOGY FOR THE IMPACT ASSESSMENTS

ECCs methodology for environmental impact assessments is adopted and based on models for environmental and social impact assessments set out by the International Finance Corporation (IFC) principal 1 'Assessment and management of environmental and social risks and impacts. Furthermore, this impact assessment was undertaken for Marenica Ventures in accordance with Namibian legal requirements.

This impact assessment is a formal process in which the effects of certain types of development on the biophysical, social and economic environments are identified, assessed and reported, so that the effects can be taken into account when considering whether to grant development consent or to provide financial support.

Final mitigation measures and recommendations are based on the cumulative experience of the consulting team and the client, taking into consideration the potential environmental and social impacts.

### 6.3 DETERMINATION OF SIGNIFICANCE

The evaluation and prediction of the environmental and social impacts require the assessment of the project characteristics against the baseline characteristics, ensuring all potentially significant impacts are identified and assessed

The significance of an impact was determined by taking into consideration the combination of the sensitivity and importance/value of environmental and social receptors that may be affected by the proposed project, the nature and characteristics of the impact, and the magnitude of potential change. The magnitude of change (the impact) is the identifiable changes to the existing environment which may be direct or indirect; temporary/short term, long-term or permanent; and either beneficial or adverse. These are described as follows and thresholds are presented in

TABLE 4 - NATURE OF IMPACTS

NATURE		
Term	Score	Description
Beneficial (Positive)	1	An impact that is considered to represent an improvement on the baseline or introduces a positive change.
Adverse (Negative)	2	An impact that is considered to represent an adverse change from the baseline or introduces a new undesirable factor.

TABLE 5 - TYPE OF IMPACT

TYPE		
Term	Score	Description
Direct	1	Impacts causing an impact through direct interaction between a planned project activity and the receiving environment/receptors.
Indirect	2	Impacts that result from other activities that are encouraged to happen as a result / consequence of the Project. Associated with the project and may occur at a later time or wider area

Cumulative	3	Impacts that arise as a result of an impact and effect from the project interacting with those from another activity to create an additional impact and effect
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**TABLE 6 – REVERSIBILITY OF IMPACT**

REVERSIBILITY		
Term	Score	Description
Reversible	1	Impacts are reversible and recoverable in the future
Partly Reversible	2	Some parts of the impact can be reversed while others remain
Irreversible	3	Impacts which are not reversible and are permanent

**TABLE 7 - MAGNITUDE OF CHANGE**

MAGNITUDE OF CHANGE		
Term	Score	Description
None / negligible	2	Very minor loss or detrimental alteration to one (or maybe more) characteristic, feature or element; or Very minor benefit to, or positive addition of, one (or maybe more) characteristic, feature or element.
Low / Minor	4	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (or maybe more) key characteristic, feature or element; or Minor benefit to, or addition of, one (or maybe more) key characteristic, feature or element; some beneficial effect on attribute quality or a reduced risk of a negative effect occurring.
Moderate	6	Loss of resource, but not adversely affecting its integrity; partial loss of/damage to key characteristics, features or elements; or Benefit to, or addition of, key characteristics, features or elements; improvements of attribute quality.
High / Major	8	Loss of resource, and quality and integrity of resource; severe damage to key characteristics, features or elements; or Large scale or major improvement of resources quality; extensive restoration or enhancement; major improvement of attribute quality.
Very high / unknown	10	Loss of resource, significantly affecting the long term quality and integrity of a resource; irreparable damage or loss of key characteristics, features or elements; or the magnitude is too great to quantify as it is unknown.

**TABLE 8 - DURATION OF IMPACT**

DURATION		
Term	Score	Description
Temporary	1	Transient; a period of less than 1 year
Short term	2	Impacts that are likely to last for the duration of the activity causing the impact and are recoverable (1-5 years)
Medium term	3	Impacts that are likely to continue after the activity causing the impact and are recoverable (5-15 years)
Long term	4	Impacts that are likely to last far beyond the end of the activity causing the damage (greater than 15 years with impact ceasing after decommissioning of the project)
Permanent	5	Permanent

**TABLE 9 - SCALE OF CHANGE**

SCALE OF CHANGE - EXTENT / GEOGRAPHIC SCALE
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Term	Score	Description
On-site	1	Impacts that are limited to the boundaries of the proposed project site
Local	2	Impacts that occur in the local area of influence, including around the proposed site and within the wider community
Regional	3	Impacts that affect a receptor that is regionally important by virtue of scale, designation, quality or rarity.
National	4	Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.
International	5	Impacts that affect a receptor that is internationally important by virtue of scale, designation, quality or rarity.

TABLE 10 – PROBABILITY OF CHANGE

PROBABILITY		
Term	Score	Description
Improbably (Rare)	1	The event may occur in exceptional circumstances yet, rarely occurs in the industry. The event could occur once every 100 years
Low probability (Unlikely)	2	The event has happened elsewhere yet, is unlikely to occur. The event could occur once every 10 years
Medium Probability (Possible)	3	The event could occur under some circumstances. The event could occur once every 5 years.
High Probability (Likely)	4	The event is expected to occur. The event could occur twice per year
Definite (Almost certain)	5	The event will occur. The event could occur once per month

TABLE 11– SIGNIFICANCE DESCRIPTION


SIGNIFICANCE OF IMPACT	DESCRIPTION
<b>Low – Major (Beneficial)</b> All scores	Impacts are considered to be beneficial to the environment and society:
<b>Low (negative)</b> 0 - 25	Impacts are considered to be local factors that are unlikely to be critical to decision-making.
<b>Minor (negative)</b> 25 - 50	Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.
<b>Moderate (negative)</b> 50 - 75	Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.
<b>Major (negative)</b> 75 - 100	Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors. Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non-compliance.

TABLE 12 - SENSITIVITY AND VALUE OF RECEPTOR



SENSITIVITY AND VALUE		DESCRIPTION
Low	1	Of value, importance or rarity on a local scale; and/or not particularly sensitive to change or has considerable capacity to accommodate a change.
Medium	2	Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or moderate sensitivity to change, or moderate capacity to accommodate a change.
High	3	Of value, importance or rarity on an international and national scale, and with very limited potential for substitution; and/or very sensitive to change or has little capacity to accommodate a change.

TABLE 13 – SIGNIFICANT OF IMPACTS

			Significance of Impact				
			Significance of Impact	Impacts are considered to be local factors that are unlikely to be critical to decision-making.	Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.	Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.	Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors. Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non-compliance.
	Biophysical	Social		Low	Minor (2)	Moderate (3)	Major (4)
Sensitivity	A biophysical receptor that is protected under legislation or international conventions (CITES) listed as rare, threatened or endangered IUCN species. Highly valued/sensitive resource/receptors	Those affected people/communities will not be able to adapt to changes or continue to maintain pre-impact livelihoods.	High (3)	Minor (3)	Moderate (6)	Major (9)	Major (12)
	Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or Not protected or listed (globally) but may be a rare or threatened species in country; with little resilience to ecosystem changes, important to ecosystem functions, or one under threat or population decline.	Able to adapt with some difficulty and maintain pre-impact status but only with a degree of support	Medium (2)	Low (2)	Minor (4)	Moderate (6)	Major (8)
	Not protected or listed as common / abundant; or not critical to other ecosystems functions	Those affected are able to adapt with relative ease and maintain pre-impact status. There is no perceptible change to people's livelihood.	Low (1)	Low (1)	Low (2)	Minor (3)	Moderate (4)

**TABLE 14 - DEFINING SIGNIFICANCE**

	<b>Significance Definitions</b>
<b>Low</b>	An impact of low significance (or an insignificant impact) is where a resource or receptor (including people) will not be affected in any way by a particular activity, or the predicted effect is deemed to be 'negligible' or 'imperceptible' or is indistinguishable from natural background variations.
<b>Minor</b>	An impact of minor significance is one where an effect will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short term, reversible and/or localized in extent.
<b>Moderate</b>	An impact of moderate significance is one within accepted limits and standards. The emphasis for moderate impacts is on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that 'moderate' impacts have to be reduced to 'minor' impacts, but that moderate impacts are being managed effectively and efficiently. Impacts are long term, but reversible and/or have regional significance.
<b>Major</b>	An impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. A goal of the EIA process is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long term or extend over a large area. However, for some aspects there may be major residual. Impacts are expected to be permanent and non- reversible on a national scale and/or have international significance or result in a legislative non- compliance.

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- The **sensitivity and value of a receptor** are determined by identifying how sensitive and vulnerable a receptor is to change, and the importance of the receptor (internationally, nationally, regionally and locally).
- The **nature and characteristics of the impact** are determined through consideration of the frequency, duration, reversibility and probability and the impact occurring.
- The **magnitude of change** measures the scale or extent of the change from the baseline condition, irrespective of the value. The magnitude of change may alter over time, therefore temporal variation is considered (short-term, medium-term; long-term, reversible, reversible or permanent).

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International	5	Impacts that affect a receptor that is internationally important by virtue of scale, designation, quality or rarity.

**TABLE 10 – PROBABILITY OF CHANGE**

PROBABILITY		
Term	Score	Description
Improbably (Rare)	1	The event may occur in exceptional circumstances yet, rarely occurs in the industry. The event could occur once every 100 years
Low probability (Unlikely)	2	The event has happened elsewhere yet, is unlikely to occur. The event could occur once every 10 years
Medium Probability (Possible)	3	The event could occur under some circumstances. The event could occur once every 5 years.
High Probability (Likely)	4	The event is expected to occur. The event could occur twice per year
Definite (Almost certain)	5	The event will occur. The event could occur once per month


**TABLE 11– SIGNIFICANCE DESCRIPTION**

SIGNIFICANCE OF IMPACT	DESCRIPTION
<b>Low – Major (Beneficial)</b> All scores	Impacts are considered to be beneficial to the environment and society:
<b>Low (negative)</b> 0 - 25	Impacts are considered to be local factors that are unlikely to be critical to decision-making.
<b>Minor (negative)</b> 25 - 50	Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.
<b>Moderate (negative)</b> 50 - 75	Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.
<b>Major (negative)</b> 75 - 100	Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors. Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non-compliance.

**TABLE 12 - SENSITIVITY AND VALUE OF RECEPTOR**

SENSITIVITY AND VALUE		DESCRIPTION
Low	1	Of value, importance or rarity on a local scale; and/or not particularly sensitive to change or has considerable capacity to accommodate a change.
Medium	2	Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or moderate sensitivity to change, or moderate capacity to accommodate a change.
High	3	Of value, importance or rarity on an international and national scale, and with very limited potential for substitution; and/or very sensitive to change or has little capacity to accommodate a change.

TABLE 13 – SIGNIFICANT OF IMPACTS

			Significance of Impact				
			Significance of Impact	Impacts are considered to be local factors that are unlikely to be critical to decision-making.	Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.	Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.	Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors. Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non-compliance.
	Biophysical	Social		Low	Minor (2)	Moderate (3)	Major (4)
Sensitivity	A biophysical receptor that is protected under legislation or international conventions (CITES) listed as rare, threatened or endangered IUCN species. Highly valued/sensitive resource/receptors	Those affected people/communities will not be able to adapt to changes or continue to maintain-pre impact livelihoods.	High (3)	Minor (3)	Moderate (6)	Major (9)	Major (12)
	Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or Not protected or listed (globally) but may be a rare or threatened species in country; with little resilience to ecosystem changes, important to ecosystem functions, or one under threat or population decline.	Able to adapt with some difficulty and maintain pre-impact status but only with a degree of support	Medium (2)	Low (2)	Minor (4)	Moderate (6)	Major (8)
	Not protected or listed as common / abundant; or not critical to other ecosystems functions	Those affected are able to adapt with relative ease and maintain pre-impact status. There is no perceptible change to people's livelihood.	Low (1)	Low (1)	Low (2)	Minor (3)	Moderate (4)

**TABLE 14 - DEFINING SIGNIFICANCE**

	<b>Significance Definitions</b>
<b>Low</b>	An impact of low significance (or an insignificant impact) is where a resource or receptor (including people) will not be affected in any way by a particular activity, or the predicted effect is deemed to be 'negligible' or 'imperceptible' or is indistinguishable from natural background variations.
<b>Minor</b>	An impact of minor significance is one where an effect will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short term, reversible and/or localized in extent.
<b>Moderate</b>	An impact of moderate significance is one within accepted limits and standards. The emphasis for moderate impacts is on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that 'moderate' impacts have to be reduced to 'minor' impacts, but that moderate impacts are being managed effectively and efficiently. Impacts are long term, but reversible and/or have regional significance.
<b>Major</b>	An impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. A goal of the EIA process is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long term or extend over a large area. However, for some aspects there may be major residual. Impacts are expected to be permanent and non- reversible on a national scale and/or have international significance or result in a legislative non- compliance.

The level of significance of impacts has been derived using professional judgment and applying the identified thresholds for receptor sensitivity and magnitude of change, as well as the definition for significance. In most instances, moderate and major adverse impacts are considered as significant, and however, there may be some instances where impacts are lower than this but are considered to be significant. The following thresholds were therefore used to double check the assessment of significance had been applied appropriately; a significant impact would meet at least one of the following criteria:

- It exceeds widely recognized levels of acceptable change
- It threatens or enhances the viability or integrity of a receptor or receptor group of concern, and
- It is likely to be material to the ultimate decision about whether or not the environmental clearance certificate is granted.

## 7 ASSESSMENT FINDINGS AND MITIGATION MEASURES

This section sets out the overall approach that was adopted to assess the potential environmental and social impacts associated with the project. To fully understand the significance of each of the potential impacts, each impact must be evaluated and assessed.

### 7.1 SCOPING ASSESSMENT FINDINGS

When undertaking the scoping exercise, the design of the proposed project and best practice measures were considered to ensure the likely significant effects and any required additional mitigation were identified. The following topics were considered during the scoping phase:

- Surface water and ground water (including geomorphology)
- Soils and geology
- Noise
- Ecology (fauna and flora)
- Air Quality (including dust)
- Cultural heritage, and
- Socio-economics (employment & demographics)

Due to the nature and localised scale of the exploration activities, and the environmental context of both sites, the potential environmental and social effects are limited and unlikely to be significant. Where effects occur, they will be managed (avoided or reduced) through implementation of best practice mitigation, as detailed in the EMP (contained in Appendix A). All topics were considered during the scoping assessments, which did not identify areas of uncertainty and thus no further investigation was deemed required.

**TABLE 15- LIMITATIONS AND ASSUMPTIONS OF THE ASSESSMENT**

LIMITATION / UNCERTAINTY	ASSUMPTION
The program of exploration works is not confirmed	It is assumed that exploration work shall take up to seven years and involve drilling; aerial or remote sensing; geophysical surveys; and mineral sampling. Pitting and trenching are unlikely.
Number of employees and area they will come from	It is assumed that most of the workers will come from the Arandis town.
Number of boreholes to be created or water source is unconfirmed and needs to be able to supply at least 5m <sup>3</sup> / hour	Water will be acquired from existing sources on site. If this is not possible, water will be brought on site by a truck or a borehole will be drilled.
Access route and creation of new tracks	No new tracks or access roads shall be created, public roads to be used to access the EPL.



TABLE 16 – SUMMARY OF THE POTENTIAL IMPACT

RECEPTOR	DESCRIPTION OF ACTIVITY	DESCRIPTION OF IMPACT	EFFECT/DESCRIPTION OF MAGNITUDE	VALUE OF SENSITIVITY	MAGNITUDE OF CHANGE	SIGNIFICANCE OF IMPACT	IMPACT MANAGEMENT/CONTROL MEASURES	RESIDUAL IMPACT AFTER MITIGATION
Groundwater and Soil	Fuel handling and storage, lubrication of equipment	- Spillages lead to groundwater contamination and soil contamination	Direct On-site Short-term Temporary/reversible Likely	Medium	Moderate	Moderate (6)	<p><b>Safe delivery and handling:</b></p> <ul style="list-style-type: none"> <li>- Training employees and toolbox talks</li> <li>- Good housekeeping across the site</li> <li>- Spill kits to be placed at designated areas across the site,</li> <li>- Absorption material should be available and at hand. Where saw dust is used, it should be cleaned up immediately and not left for long periods as this poses a fire hazard</li> <li>- Any major spill is reported to the project manager and Ministry of Mines and Energy</li> <li>- Equipment to be well maintained and serviced regularly</li> <li>- The use of hydrocarbons under 200 litres can be used for mobile refuelling or servicing</li> </ul> <p><b>Storage:</b> All tanks to be stored on a non-porous floor and bunded area</p>	Low (2)

RECEPTOR	DESCRIPTION OF ACTIVITY	DESCRIPTION OF IMPACT	EFFECT/DESCRIPTION OF MAGNITUDE	VALUE OF SENSITIVITY	MAGNITUDE OF CHANGE	SIGNIFICANCE OF IMPACT	IMPACT MANAGEMENT/CONTROL MEASURES	RESIDUAL IMPACT AFTER MITIGATION
							<ul style="list-style-type: none"> <li>- Bunds need to be capable of storing at least 110% of the volume of the tank</li> <li>- All containers should be suitable for use and not damaged</li> <li>- Tanks should be locked at all times</li> </ul> <p><b>Refuelling:</b></p> <ul style="list-style-type: none"> <li>- Drip tray to be used during refueling of vehicles and must be on an impermeable flat surface where possible, and</li> <li>- Funnel should be available and used to avoid spillage during decanting.</li> </ul>	
Soil	<ul style="list-style-type: none"> <li>- Drilling and the use of equipment can cause reduction in soil quality)</li> </ul>	<ul style="list-style-type: none"> <li>- Drilling can cause reduction in soil quality (through soil contamination), and</li> <li>- Soil erosion can be caused through vegetation clearance and possible creation of tracks.</li> </ul>	<p style="text-align: center;">Direct</p> <p style="text-align: center;">On-site</p> <p style="text-align: center;">Short-term</p> <p style="text-align: center;">Reversible</p> <p style="text-align: center;">Likely</p>	Medium	Moderate	Moderate (6)	<ul style="list-style-type: none"> <li>- Topsoil should be separately stockpiled to be re-spread when backfilling</li> <li>- Equipment must be in good condition to ensure that the oil spills do not contaminate the site, and</li> <li>- During drilling oil absorbent matting should be placed under and around the rig.</li> </ul>	Low (2)

RECEPTOR	DESCRIPTION OF ACTIVITY	DESCRIPTION OF IMPACT	EFFECT/DESCRIPTION OF MAGNITUDE	VALUE OF SENSITIVITY	MAGNITUDE OF CHANGE	SIGNIFICANCE OF IMPACT	IMPACT MANAGEMENT/CONTROL MEASURES	RESIDUAL IMPACT AFTER MITIGATION
<b>Terrestrial Ecology and biodiversity</b>	<ul style="list-style-type: none"> <li>- Exploration activities in sensitive environments</li> <li>- Vegetation clearing</li> <li>- Hauling equipment, and</li> <li>- Vehicle movements</li> </ul>	<ul style="list-style-type: none"> <li>- Possible injury or death of animals</li> <li>- Poaching</li> <li>- Habitat fragmentation from clearing, pitting and trenching, and</li> <li>- Habitat loss from excessive Clearing.</li> </ul>	<p>Direct</p> <p>Local</p> <p>Short-term</p> <p>Temporary/reversible</p> <p>Certain</p>	Medium	Low	Minor (2)	<ul style="list-style-type: none"> <li>- Use existing tracks where possible</li> <li>- Route new tracks around established and protected trees, and clumps of vegetation</li> <li>- Identify rare, endangered, threatened and protected species and demarcate them and avoid cutting them down</li> <li>- All workers on-site are to be notified to avoid any excluded areas or species</li> <li>- Progressive rehabilitation during the exploration phase should be applied</li> <li>- Natural drainage patterns should be restored and,</li> <li>- Relocation of protected plant species if disturbance cannot be avoided.</li> </ul>	Low (2)
<b>Community</b>	<ul style="list-style-type: none"> <li>- Dust creation due to drilling activities</li> </ul>	<ul style="list-style-type: none"> <li>- Impacts of public health and visibility, and</li> <li>- Impact on fauna and flora</li> </ul>	<p>Direct</p> <p>Local</p> <p>Temporary</p> <p>Reversible</p>	Low	Minor	Minor (3)	<ul style="list-style-type: none"> <li>- Avoid off-road driving</li> <li>- Apply dust suppression methods- water sprinkling</li> <li>- Communication with farmers/landowners/neighbor, and</li> </ul>	Low (2)

RECEPTOR	DESCRIPTION OF ACTIVITY	DESCRIPTION OF IMPACT	EFFECT/DESCRIPTION OF MAGNITUDE	VALUE OF SENSITIVITY	MAGNITUDE OF CHANGE	SIGNIFICANCE OF IMPACT	IMPACT MANAGEMENT/CONTROL MEASURES	RESIDUAL IMPACT AFTER MITIGATION
			Likely				- Drill rig selection/drill method will be selected depending on proximity to sensitive receptor.	
<b>Community and environment</b>	- Noise generation through the use of airborne equipment (remote sensing drone, helicopter)	- Disruption to tourists and nearby farmers - Disturbance of local wildlife - Increased noise levels to sensitive receptors	Direct Local Temporary Reversible Likely	Low	Negligible	Low (2)	- No flying is to be conducted (aerial surveys) between dusk and dawn, on Sundays and on public holidays - When operating a drone, a minimum distance of 50m must be maintained for uninvolved persons and other objects such as vehicles, buildings etc. - Correspond with wildlife authorities to determine the best time to conduct aerial surveys, and - When possible avoid flying directly over human settlements.	Low (1)
<b>Neighbours / Tourists</b>	- Visual impact from drill rigs, equipment on and laydown area on site	- Eyesore due to poor housekeeping - Change in landscape	Direct Local Short-term Reversible	Low	Minor	Minor (3)	- Make provision for visual barriers at exploration site, and - Maintain good housekeeping on site.	Minor (3)

RECEPTOR	DESCRIPTION OF ACTIVITY	DESCRIPTION OF IMPACT	EFFECT/DESCRIPTION OF MAGNITUDE	VALUE OF SENSITIVITY	MAGNITUDE OF CHANGE	SIGNIFICANCE OF IMPACT	IMPACT MANAGEMENT/CONTROL MEASURES	RESIDUAL IMPACT AFTER MITIGATION
		- Obscuring views	Certain					
<b>Topography and landscape</b>	- Creation of new tracks and roads	- Environmental disturbance - Loss of flora and fauna - Disturbance of migratory animals in the area	Direct Local Short-term Reversible Likely	Medium	Moderate	Moderate (6)	- Make use of existing tracks if available - When developing a new track off an existing roadway ensure the junction is discreet but is also safe - Monitor the condition of the track before, during, and after use - Do not needlessly remove vegetation from either side of the roadway, and - Rehabilitate tracks after use.	Low (2)
<b>Heritage</b>	- Drilling can destroy heritage remains - Direct and indirect impacts to cultural resources	- Impact on viewshed/landscape surrounding heritage features	Direct On site Long-term Irreversible Unlikely	High	Major	Major (9)	If discovery of unearthed archaeological remains is to be uncovered, the following measures (chance find procedure) shall be applied:  - Works to cease, area to be demarcated with appropriate tape by the site supervisor, and the Site Manager to be informed - Site Manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary	Minor (4)

RECEPTOR	DESCRIPTION OF ACTIVITY	DESCRIPTION OF IMPACT	EFFECT/DESCRIPTION OF MAGNITUDE	VALUE OF SENSITIVITY	MAGNITUDE OF CHANGE	SIGNIFICANCE OF IMPACT	IMPACT MANAGEMENT/CONTROL MEASURES	RESIDUAL IMPACT AFTER MITIGATION
							<ul style="list-style-type: none"> <li>- If work cannot proceed without damage to findings, Site Manager is to inform the Environmental Manager who will get in touch with an archaeologist for advice</li> <li>- Archaeological specialist is to evaluate the significance of the remains and identify appropriate action, for example, record and remove; relocate or leave in situ (depending on the nature and value of the remains)</li> <li>- Inform the police if the remains are human, and</li> <li>- Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as appropriate.</li> </ul>	
<b>Social Economic</b>	<ul style="list-style-type: none"> <li>- Job creation due to exploration activities</li> </ul>	<ul style="list-style-type: none"> <li>- Employment creation and skills development</li> <li>- Opportunities during the exploration phase (Approx. 10-20 jobs)</li> </ul>	<p>Direct</p> <p>Regional</p> <p>Long-term</p> <p>Reversible</p> <p>Certain</p>	Medium	Minor	Minor (4)	<ul style="list-style-type: none"> <li>- Maximise local employment and local business opportunities to promote and improve the local economy</li> <li>- Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and</li> </ul>	Low major beneficial

RECEPTOR	DESCRIPTION OF ACTIVITY	DESCRIPTION OF IMPACT	EFFECT/DESCRIPTION OF MAGNITUDE	VALUE OF SENSITIVITY	MAGNITUDE OF CHANGE	SIGNIFICANCE OF IMPACT	IMPACT MANAGEMENT/CONTROL MEASURES	RESIDUAL IMPACT AFTER MITIGATION
							<ul style="list-style-type: none"> <li>applicable, ensure that relevant local individuals are trained, and</li> <li>– Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.</li> </ul>	
<b>Community Environment</b>	<ul style="list-style-type: none"> <li>– Generation of waste due to exploration activities</li> </ul>	<ul style="list-style-type: none"> <li>– Nuisances (odours and visual), and</li> <li>– Litter (nuisance and ecological risk)</li> </ul>	<p>Direct</p> <p>On-site</p> <p>Short-term</p> <p>Reversible</p> <p>Likely</p>	Moderate	Low	Minor (3)	<ul style="list-style-type: none"> <li>– Training and toolbox talk to workers shall be provided</li> <li>– Ensure good housekeeping across site</li> <li>– Implement the waste management hierarchy across the site: avoid, reuse, and recycle</li> <li>– Waste shall be collected and shall be removed on a regular basis to avoid bad odours</li> <li>– It is unlikely that hazardous material and wastes will be produced, however in the event that they are, they shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials, and</li> <li>– Hazardous and non-hazardous waste shall be stored separately at all times.</li> </ul>	Low (2)

## 8 ENVIRONMENTAL MANAGEMENT PLAN

The EMP for the proposed project is presented in Appendix A. It provides management options to ensure the impacts of the proposed project are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary.

The management measures should be adhered to during all stages of the exploration activities. All persons involved and partaking in the proposed activities should be made aware of the measures outlined in the EMP to ensure activities are conducted in an environmentally sound manner.

The objectives of the EMP are:

- To include all components of the development and operations of the project
- To prescribe the best practicable control methods to lessen the environmental impacts associated with the project
- To monitor and audit the performance of operational personnel in applying such controls, and
- To ensure that appropriate environmental training is provided to responsible operational personnel.



## 9 CONCLUSION

The environmental assessment that was undertaken for the proposed project followed ECC's EIA methodology to identify if there is potential for significant effects to occur as a result of the proposed project. Through the scoping process, all social and environmental receptors were scoped out as not requiring further assessment as it was unlikely that there would be significant effects. Various best practice and mitigation measures have been identified to avoid and reduce effects as far as reasonably practicable, as well as ensure the environment is protected and unforeseen effects are avoided.

**On this basis, it is the opinion of ECC that an environmental clearance certificate could be issued, on conditions that the management and mitigation measures specified in the EMP are implemented and adhered to.**

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## APPENDIX A: ENVIRONMENTAL MANAGEMENT PLAN

## APPENDIX B: LIST OF PLANT SPECIES

## APPENDIX C: NON-TECHNICAL SUMMARY



**ECC**  
**ENVIRONMENTAL**  
**COMPLIANCE CONSULTANCY**



ECC-79-237-NTS-17-C

**NON-TECHNICAL SUMMARY**  
**EXPLORATION ACTIVITIES ON EPL 7368 FOR NUCLEAR FUEL**  
**MINERALS**

*PREPARED FOR*

MARENICA VENTURES (PTY) LTD



SEPTEMBER 2019

# NON-TECHNICAL SUMMARY

## PROPOSED EXPLORATION ACTIVITIES ON EPL 7368 FOR NUCLEAR FUEL MINERALS

### 1 PURPOSE OF THIS DOCUMENT

The purpose of this Non-Technical Summary (NTS) is to provide Interested and Affected Parties (I&APs) a background to the proposed project and to invite I&APs to register as part of the Environmental Impact Assessment (EIA) process. The project involves exploration activities on the EPL 7368 for nuclear fuel minerals in the Erongo region. Through registering, all I&APs will be kept informed throughout the EIA process, and a platform for participation will be provided to submit comments/recommendations pertaining to the project.

This NTS includes the following information on:

- The proposed project and location
- The necessity of the project, benefits or adverse impacts anticipated
- The alternatives to the project have been considered and assessed
- How the EIA process works
- The public participation process and how to become involved, and
- Next steps and the way forward.

### 2 DESCRIPTION OF PROPOSED PROJECT

#### 2.1 BRIEF INTRODUCTION

Environmental Compliance Consultancy (ECC) has been engaged by the proponent (Marenica Ventures (Pty) Ltd) to undertake an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) in terms of the Environmental Management Act of 2007 and its Regulations. An environmental clearance application will be submitted to the relevant competent authorities: The Ministry of Mines and Energy (MME) and Ministry of Environment and Tourism (MET).

#### 2.2 LOCATION

The project is located in the Erongo Region. The EPL is located approximately 35km west of the Dorob-

National Park, refer to the location map provided in FIGURE 1.

#### 2.3 WHAT IS PROPOSED

Marenica Ventures (Pty) Ltd undertakes mineral exploration in Namibia and propose to undertake low impact exploration activities on EPL 7368 for nuclear fuel minerals in the Erongo Region.

#### 2.4 OPERATION PHASE

The proposed exploration activities are low-impact and non-intrusive. The following are envisaged during the proposed projects:

- Potential creation of access tracks, where existing tracks cannot be utilised
- Limited vegetation clearing for the creation of tracks
- Drilling of exploration boreholes, and
- Exploration methods may include soil and rock sampling, geological mapping, electromagnetic surveys, drilling and drill-core sampling.

#### 2.5 WHY IS THE PROJECT NEEDED

Marenica Ventures (Pty) Ltd intends to pursue exploration opportunities with the aim of identifying new mining prospects. Namibia is rich in natural resources and the mining industry is the largest income earner in Namibia. Exploration could lead to mining activities which would contribute to the national and local earnings of the country.

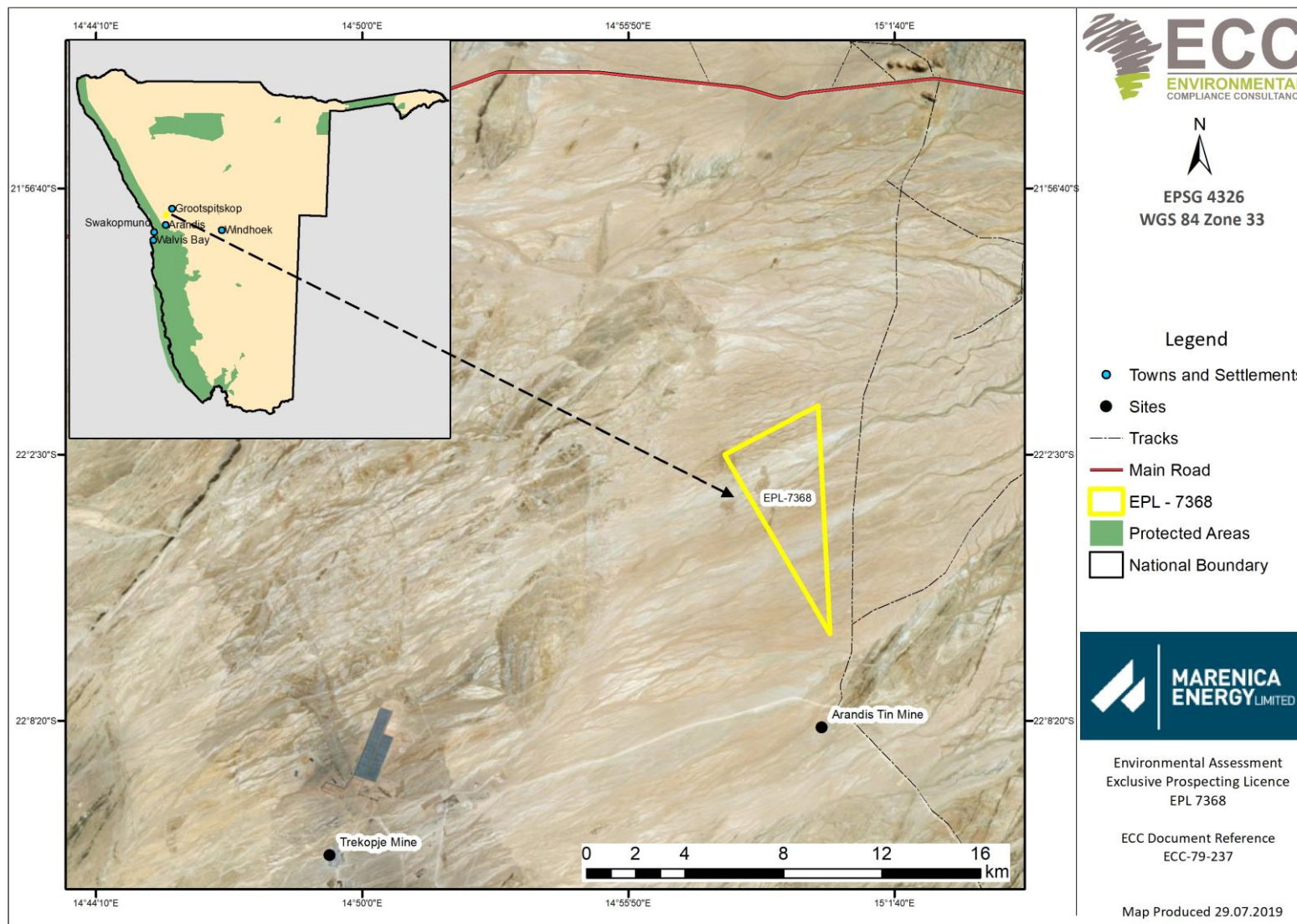


FIGURE 1 – LOCATION MAP OF THE PROPOSED PROJECT



## 2.6 POTENTIAL IMPACTS OF THE PROJECT

### 2.6.1 SOCIO-ECONOMIC

The potential social impacts are anticipated to be of low significance, and those that may transpire shall be confined within the EPL site, these potential impacts may include the following:

- Potential to unearth, damage or destroy undiscovered heritage remains
- Minor disruption to the residents within the EPL, including some increase in noise levels and dust arising from drilling and vehicle use
- Some jobs will be created as a result of the project, and
- There will be economic benefits due to increased investment and investor confidence in the Namibian minerals sector.

### 2.6.2 THE ENVIRONMENT

The potential environmental impacts are anticipated to be of minor significance, and those that may occur shall be contained within the EPL site, these potential impacts may include the following:

- Some potential vegetation loss due to possible tracks creation
- Minor risk of loss of contaminant of hydrocarbon, chemical or drill fluids from exploration activities potentially leading to localised ground contamination.

## 3 CONSIDERATION OF ALTERNATIVES

Best practice environmental assessment methodology calls for consideration and assessment of alternatives to the proposed project.

In project such as these ones, it is difficult to identify alternatives to satisfy the need of the proposed project; the activities shall be specific to the EPL which was granted by the MME on the 16<sup>th</sup> May 2019.

During the assessment, alternatives will take the form of a consideration of optimisation and efficiency to reduce potential effects e.g. different types of technology or operations, route access and exploration methods.

## 4 THE ENVIRONMENTAL ASSESSMENT PROCESS

This EIA, conducted by ECC, is undertaken in terms of the Environmental Management Act, 2007 and its regulations.

The process followed in this EIA is set out in the flowchart in

FIGURE 22 below.

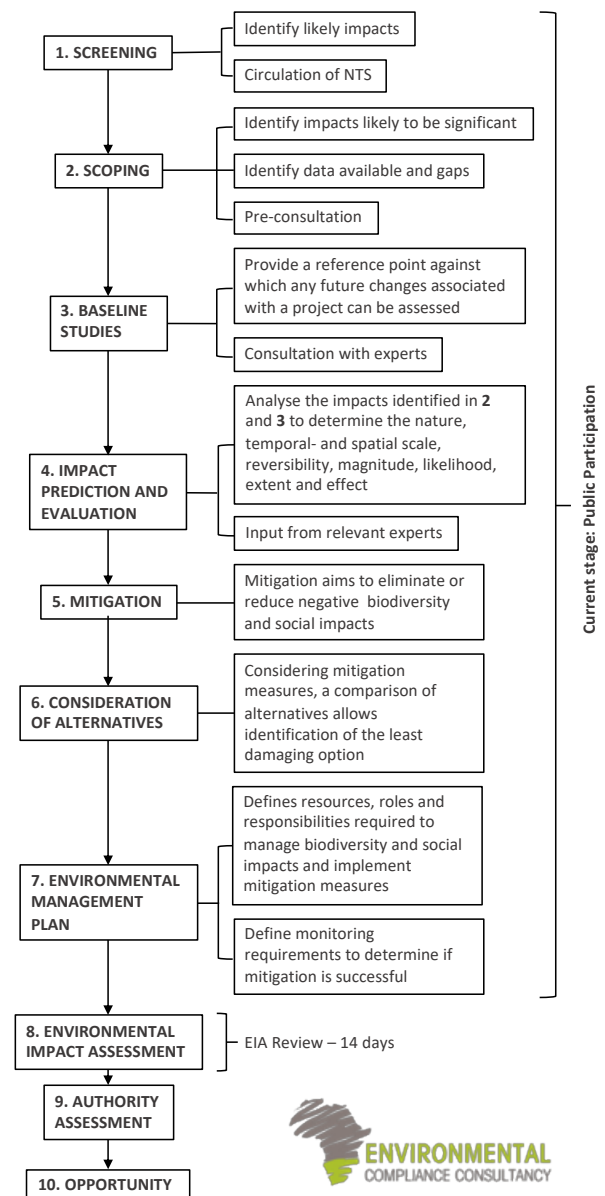


FIGURE 2 - FLOWCHART OF THE ENVIRONMENTAL ASSESSMENT PROCESS

## 4.1 SCREENING

A review of the proposed projects screening findings against the listed activities was conducted; the findings of which are summarised below.

### MINING AND QUARRYING ACTIVITIES

(3.1) The construction of facilities for any process or activities which requires a licence, right or other form of authorisation, and the renewal of a licence, right or other form of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992

- The proposed project requires a licence for extraction of Nuclear Fuel Minerals

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

- Minerals (soil and sand), Nuclear Fuel Minerals will be sourced out within the project's footprint/ locally as far as possible

(3.3) Resource extraction, manipulation, conservation and related activities

- The proposed project will extract nuclear fuel minerals

The potential environmental and social effects are anticipated to be of minor significance, and those that may occur shall be contained on the EPL site.

## 4.2 SCOPING

Due to the nature of the proposed project, and the implementation of industry, best practice mitigation measures during the mineral exploration phase of the project, the effects on the environment and society are expected to be minimal and localised.

## 4.3 BASELINE STUDIES

For the proposed project, baseline information was obtained through a desk-based study through focusing on the environmental receptors that could be affected by the proposed projects. ECC will also engage with stakeholders, I&APs and the proponents to seek input into the assessment.

## 4.4 IMPACT ASSESSMENT

Impacts will be assessed using the ECC EIA methodology. The EIA will be conducted in terms of the Environmental Management Act, 2007 and its regulations. ECCs methodology for impact assessments was developed using IFC standards in

particular Performance Standard 1 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017), (International Finance Corporation, 2012) and Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008) including International and National best practice with over 25 years of combined EIA experience.

## 4.5 ENVIRONMENTAL MANAGEMENT PLAN

An EMP shall be developed for the proposed project setting out auditable management actions for Marenica Ventures (Pty) Ltd to ensure careful and sustainable management measures are implemented for their activities in respect of the surrounding environment and community.

## 4.6 PUBLIC PARTICIPATION AND ADVERTISING

Public participation is an important part of the EIA process; it allows the public and other stakeholders to raise concerns or provide valuable local environmental knowledge that can benefit the assessment, in addition it can aid the design process. These projects are currently at the scoping phase and public participation phase.

At this phase ECC will perform the following:

- Identify key stakeholders, authorities, municipalities, environmental groups and interested or affected members of the public, hereafter referred to as I&APs
- Distribute the NTS for the proposed project (this document)
- Advertise the environmental application in two national newspapers
- Place notices on-site at or near the boundary
- If required host a public meeting to encourage stakeholder participation and engagement, and provide details of issues identified by the environmental practitioner, stakeholders and I&APs
- Record all comments of I&APs and present such comments, as well as responses provided by ECC, in the comments and responses report, which will be included in the scoping report that shall be submitted with the application, and

- Circulate I&AP comments to the project team for consideration of project design.

Comments must be submitted in writing and can be emailed using the details in the contact us section below.

#### CONTACT US

We welcome any enquiries regarding this document and its content. Please contact:

**Environmental Compliance Consultancy (ECC)**

[info@eccenvironmental.com](mailto:info@eccenvironmental.com)

Tel: +264 81 669 7608

[www.eccenvironmental.com](http://www.eccenvironmental.com)

At ECC we make sure all information is easily accessible to the public.

Follow us online to be kept up to date:



## APPENDIX D: ADVERTS



**NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS**

**EXPLORATION ACTIVITIES FOR NUCLEAR FUEL MINERALS ON EPL 7368, ERONGO REGION, NAMIBIA**

Environmental Compliance Consultancy CC (ECC) hereby gives notice to the public that an application for an Environmental Clearance Certificate in terms of the Environmental Management Act, 2007 will be made as per the following:

**Applicant:** Marenica Ventures (Pty) Ltd  
**Environmental Assessment Practitioner (EAP):** Environmental Compliance Consultancy  
**Location:** Erongo Region, Namibia

**Project:** Exploration activities on EPL 7368 for Nuclear Fuel Minerals, Erongo Region, Namibia.

**Proposed Activity:** The proponent proposes to carry out low impact, non-intrusive exploration activities for Nuclear Fuel Minerals. Exploration methods may include geochemical surveys (soil and rock sampling), geophysical surveys (electromagnetic surveys), drilling and drill-core sampling.

**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, No. 7 of 2007, ECC on behalf of Marenica Ventures (Pty) Ltd is required to apply for environmental clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Purpose of the Review and Comment Period:** The purpose of the review and comment period is to present the proposed project and to afford I&APs an opportunity to comment on the project to ensure that all issues and concerns are captured and considered in the assessment.

**Review Period:** The review and comment period are effective from 26<sup>th</sup> of September 2019 – 10<sup>th</sup> October 2019.

**How you can participate:** ECC is undertaking the required environmental assessment and public participation process in terms of the Act. Interested and affected parties (I&APs) and Stakeholders are required to register for the project at: <https://eccenvironmental.com/projects/>

Environmental Compliance Consultancy  
Registration Number: CC/2013/11404  
Members: Mr JS Bezuidenhout or Mrs J Mooney  
PO Box 91193, Klein Windhoek  
Tel: +264 81 669 7608  
E-mail: [info@eccenvironmental.com](mailto:info@eccenvironmental.com)  
Website: <http://www.eccenvironmental.com>  
Project ID: ECC-79-237-08-A



## CAREER OPPORTUNITY



Vedanta Zinc International (VZI) is part of the globally active Vedanta group, which has investments in zinc, iron ore, copper, lead and silver, and oil and gas. Johannesburg-based VZI is a leading zinc producer with active operations in South Africa, Namibia and another in planned closure in Ireland. With a worldwide, empowered talent pool, VZI places strong emphasis on partnering with all of its stakeholders, practising the core values of entrepreneurship, excellence, trust, innovation, integrity, care and respect.

The following opportunity exists for a dedicated, hardworking, and enthusiastic and results-driven individual to join Skorpion Zinc on a permanent basis. Internal and external candidates are eligible to apply.

### SENIOR METALLURGIST (DL)

**PURPOSE OF THE JOB**  
Reporting directly to the Technical Manager, the incumbent will be responsible to monitor and evaluate plant operation efficiency and equipment and personnel performance and undertake research and development projects aimed at improving plant processes and production output.

**MINIMUM REQUIREMENTS:**

- B. Eng. B.Sc. or B.Tech. Degree in Metallurgical or Chemical Engineering
- 5 years' experience as a Metallurgist
- 1 year middle management experience
- Valid code 08 or (BE) driver's license
- Police Clearance/ Certificate of Good Conduct

**KEY PERFORMANCE AREAS:**

- Monitor, investigate and analyse plant technical performance (chemical process and equipment) for continuous improvement and maximum operation efficiency
- Conduct research and development initiatives (including involvement in projects, to seek more efficient and/or cost effective methods and means to produce a quality product.)
- Develop training documentation and train refinery operations personnel in relevant technical matters.
- Coordinate personal development
- Maintain appropriate SHEQ standards within area of operation.

Skorpion Zinc, a subsidiary of Vedanta Resources plc, is an integrated world-class mining and refinery operation located near the southern town of Rosh Pinah in Namibia. Using the latest technological innovations, we add value by beneficiating the ore to final metal on site, producing Special High Grade Zinc (SHG). By combining state-of-the-art technologies with the skills of a highly motivated workforce, Skorpion Zinc prides itself on being a young and dynamic organization with some of the most creative, forward-thinking employees in today's world.

**ADVANTAGEOUS:**

- Metallurgical accounting experience
- Ability to interpret short to medium term technical and production requirements
- Ability to set, monitor, evaluate and achieve cost, production and efficiency targets
- Candidates with experience in mining or manufacturing industries

**SKILLS AND KNOWLEDGE:**

- Knowledge of plant metallurgical processes
- Refinery policies, procedures and systems
- Analysing / problem solving skills
- Planning and organising skills
- Technical skills
- Communication skills

**REMUNERATION:**  
Will be according to qualifications and experience and will include competitive conditions of employment.

Interested individuals meeting the minimum requirements should address their application letters and CV to:

HRBP – Refinery  
Private Bag 2003, Rosh Pinah  
Email: [recruitment@vedantaresources.co.za](mailto:recruitment@vedantaresources.co.za)

**Closing date for applications: 04 October 2019**

Female applicants and persons with disabilities are encouraged to apply.

Skorpion Zinc is an Equal Opportunity Employer



# WEEKEND DEALS

WHILE STOCKS LAST!



**ROMA BEDROOM SUITE**  
NOW ONLY  
N\$12999<sup>95</sup>

FROM ONLY  
**N\$509** \*  
pm  
FOR 36 MONTHS  
DEPOSIT N\$1300

**FREE**  
Cupboard & Binnet Box  
valued @ N\$3500  
**SAVE**  
N\$2000



**Sleepmasters**  
MONTROSE QUEEN  
152CM BASE SET  
NOW ONLY  
N\$6499<sup>95</sup>  
**10 YEAR WARRANTY**

FROM ONLY  
**N\$289** \*  
pm  
FOR 30 MONTHS  
DEPOSIT N\$650

**SAVE**  
N\$1500

OFFERS VALID FROM 26<sup>TH</sup> - 29<sup>TH</sup> SEPTEMBER 2019

\*T's and C's apply

View our full range online @ [www.bradlows.co.za](http://www.bradlows.co.za)



**B. BRADLOWS**

2019/174 Financed by JD Financial Services (Pty) Ltd Registration No. 2008/048. 1/4 Bradlows E & O E

Infomante on the 13 and 20<sup>th</sup> June 2019, newspaper is available online



The screenshot shows the homepage of the newspaper 'Informanté'. The masthead features the newspaper's logo and the slogan 'firm but fair'. Below the masthead is a navigation menu with categories: HOME, NEWS, BUSINESS, ENVIRONMENT, ENTERTAINMENT, SPORTS, OPINION, CLASSIFIEDS, TRUSTCO, and INFORMANTÉ RADIO. A 'LATEST NEWS' section lists several articles. The main content area displays a notice from ECC (Environmental Compliance Consultancy) regarding an environmental assessment for nuclear fuel minerals. The notice is titled 'NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS' and 'EXPLORATION ACTIVITIES FOR NUCLEAR FUEL MINERALS ON EPL 7368, REGION 3, NORTHERN PROVINCE'. A large white text overlay reads 'ECC – Notice of Environmental Assessment'.



## APPENDIX E: SITE NOTICE







## APPENDIX F: ECC CVS



# Stephan Bezuidenhout

## ENVIRONMENTAL ASSESSMENT PRACTITIONER

Hello! :)



### ABOUT ME

**Name**

Jacobus Stephan Bezuidenhout  
- But you can call me Stephan -

**Born**

11 April 1989

**Phone**

+264 81 262 7872

**Email**

stephan@eccenvironmental.com

**Website**

www.eccenvironmental.com

Contact me!

### How to reach me!

kid.bezuidenhout 

+264812627872 

Stephan   
Bezuidenhout



University of Pretoria  
South Africa  
2012

### Education & Qualifications

*Postgraduate Degree in Environmental Management & Analysis*

University of Stellenbosch  
South Africa  
2008

*Bachelors in Applied Science*

Additional Qualifications:

- Snake Bite and Snake Handling
- Level 1 & 2 First Aid
- Industrial Environmental Compliance

*N.S., et al., Some ecological side-effects of chemical and physical bush clearing in a southern African rangeland ecosystem, Southern African Journal of Botany (2015), <http://dx.doi.org/10.1016/j.sajb.2015.07.012>*

Publications:

*The FSC National Forest Stewardship Standard of Namibia (Draft V4). Co-authored by S Bezuidenhout, P Cunningham, A Ashby, F Detering, W Enslin & D Honsbein*



### Experience & Work History

#### Managing Director

Current

Since 2012, Stephan has been working as an environmental assessment practitioner. Stephan has a strong ecological background and has gained more than seven years experience in the environmental industry. As a lead practitioner, Stephan has successfully driven environmental impact assessments and compliance assessments within Southern Africa. His hands on and practical experience and knowledge of international standards, such as IFC and World Bank standards allows Stephan to advise his clients and teams constructively and effectively.

#### ENVIRONMENTAL CONSULTANT & PRACTITIONER

Stephan manages a dynamic team of environmental practitioners and graduates at Environmental Compliance Consultancy. The firms' core objective is to improve the national standard of environmental compliance by developing local capacity. To date Stephan and his team have successfully completed over 30 projects for various industries, including mining, energy, infrastructure, conservation and tourism.



## Stephan Bezuidenhout

Managing Director  
+264 81 262 7872

### References

*Feel free to ask the boss :)*

**SALOME BEESLAAR**  
Environmental Practitioner  
Pr.Sci.Nat: 400385/14

**ESCA COETZEE**  
Environmental Scientist  
Sasol Technology

**PHIL BARKER**  
Pipeline Construction Superintendent  
Worley Parsons

*Or ask those who have worked for me?*

**Michael Moreland**  
Environmental Scientist  
CSP Solar Energy Projects

### Professional Associations

- South African Institute of Ecologists and Environmental Scientists (SAIE&ES)
- Environmental Assessment Practitioners Association of Namibia (EAPAN#172).
- Member of FSC Environmental Chamber
- Executive Committee Member of Namibian Chamber of Environment

### Fun Facts:

- Keen fisherman
- Passionate Hunter & Conservationist
- 21ft vessel certified skipper
- Summated Kilimanjaro
- Have survived scorpion stings and snakebites!
- Did I mention I love camping?

### ▪ Words I live by:

‘Do what makes you happy  
the rest will follow’

### Experience & Work History

Over the past two years he has mentored over eight interns (of which most still work closely with him) building their careers in environmental management, conservation and rangeland management.

Examples of projects successfully completed include:

- **Abengoa Solar SA Paulputs CSP (Pty) Ltd. 150 MW CSP Tower** Environmental Assessment Practitioner during EIA Process  
Northern Cape Province, South Africa
- **Abengoa Solar SA, Xina Solar One (200 MW) CSP Trough** Environmental Control Officer during construction phase. Northern Cape Province, South Africa
- **Abengoa Solar SA, Khi Solar One (50 MW) CSP Tower.** Environmental Control Officer during commissioning and rehabilitation phases. Northern Cape Province, South Africa for Abengoa Solar
- **Isondlo Project Support (IPS) (Pty) Ltd.** Soil Remediation and commissioning report of NGALA Camp. Gauteng, South Africa
- **Berekisanang Empowerment Farm.** Annual external Water Use Licence audit and 70 hectare agricultural development. Northern Cape, South Africa.

### Environmental Coordinator

ROMPCO PIPELINE – Worley Parsons  
Mozambique and South Africa

Stephan was employed by the Procurement, Management and Construction (PMC) consultant, Worley Parsons to manage the environmental aspects of the proposed linear development. Stephan managed a team of 12 positions for the duration of the project ensuring compliance of National and best practice such as IFC standards.



## Emerita Lyapaka Ashipala Environmental Graduate

Hello! :)



### ABOUT ME

**Name**

Emerita Lyapaka Ashipala

**Born**

15 February 1994

**Phone**

+264 81 701 6851

**Email**

emerita@eccenvironmental.com

**Website**

www.eccenvironmental.com



### Education & Qualifications

Glasgow Caledonian  
University, UK  
2017 - 2018

*Master's Degree in Environmental Management (Oil & Gas) (Distinction)*

University of Namibia  
2013 -2016

*Bachelors in Environmental Biology*



### Experience & Work History

#### Environmental Graduate

Current

Working with Environmental Compliance Consultancy  
Providing professional consulting services to clients in Namibia with particular focus on:

- Drafting EIA adverts and NTS documents
- Assisting in the development of scoping reports and
- Environmental Management Plans for exploration projects

#### Intern

Community-Based Natural Resource Management (CBNRM) Project, GIZ Namibia

Roles and Responsibilities:

- Managed a high-volume workload within a deadline-driven environment.
- Responsible for weekly press review.
- Compilation and analyses of data collected from field for baseline study of projects.
- Assists in project management activities.
- Ensure work ethics is compliant with approved codes and standards.
- Even/workshop assistance planner.
- Engaged in clients and stakeholders' meetings.
- Provides overall project management support throughout the entire life cycle of projects.

#### Team Leader (*Ad hoc Registration Official*)

Electoral Commission of Namibia

Roles and Responsibilities:

- Kit operator
- Printing of registration cards
- Responsible for keeping order and safe guarding of all equipment



## Emerita Lyapaka Ashipala Environmental Graduate

### References

*Feel free to ask the boss :)*

**JESSICA MOONEY**

Environment & Safety Specialist

**STEPHAN BEZUIDENHOUT**

Managing Director

*Or ask those who have worked with me?*

**Prof Jim Baird**

Programme Leader

Glasgow Caledonian University

j.baird@gcu.ac.uk



### Experience & Work History

#### Undergraduate Internship

South African Science Of Climate Change and  
Adaptive Land Management (SASCCAL), Namibia  
*Role and Responsibilities:*

- Compilation of news in all regions, for newsletter publication
- Using qGIS to digitise map drawings
- Organising various task research portfolios

### Fun Facts:

- *I am an adventurous*
- *Passionate on learning more about Oil and Gas*

### Words I live by:

*“Be willing to go all out, in pursuit of your dream. Ultimately it will pay off. You are more powerful than you think you are.”*



# Jessica Mooney

## Environment & Safety Specialist

Hello! :)



### ABOUT ME

**Name**

Jessica Mooney

**Born**

24 October 1984

**Phone**

+264 81 653 1214

**Email**

Jessica@eccenvironmental.com

**Website**

www.eccenvironmental.com

*Contact me!*

### How to reach me!

+264 81 653 1214 

Jessica.mooney7 

+264 81 653 1214 

Jessica Mooney 



### Education & Qualifications

Federation University  
Australia  
2003-2006

Bachelor of Applied Science -Environmental Management

Additional  
Qualifications

Management Systems Leadership  
ICAM - Incident Cause Analysis Method  
Certificate II in Metalliferous Mining core safety and risk management  
Certificate III in Mine Emergency Response & Rescue  
Level 3 – HLTFA402B Apply Advanced first Aid  
Emergency Rope Rescue  
Level 2 - 21593VIC First Aid level 2  
Bonded Asbestos Removal >10m2  
Leading and Managing People –  
Brisbane North Institute of TAFE



### Experience & Work History

Current

#### Environment and Safety Specialist

Environmental Compliance Consultancy  
Providing professional consulting services to clients in Namibia with particular focus on approvals, ECCs, reporting and compliance.

- ECC Approvals
- Mine Closure Plans
- Rehabilitation
- Pipeline projects
- Cultural Change programmes
- IMS (ISO14001 and 18001)

#### Group HSE Manager

Weatherly Mining Namibia  
An exciting role covering the breadth of two operational underground mines (Otjihase and Matchless) and the construction of a new open pit mine (Tschudi) working for Weatherly Mining in Namibia, Africa.

- Managed company's SHEQ portfolio
- Full scale construction of new greenfield mine into operational copper mine
- Reduced LTIFR by 90% from 23.1 to 2.4 in 22 months!
- Implemented integrated management system
- Approvals, ECC renewals and EMPs
- Established the first mining environmental forums in Namibia
- Implemented SAFE COPPER cultural change programme



# Jessica Mooney

## Environment & Safety Specialist

### References

*Feel free to ask the boss :)*

**MR CRAIG THOMAS**  
Managing Director  
Weatherly Mining

**MR COLIN BULLEN**  
Managing Director  
Imerys (client)

Group Manager Lihir Gold

**MR NICK CURREY**  
Director at Sustainable Mining Strategies

*Or ask those who have worked for me?*

**Ms Asteria Salmon**  
Worked as Control Room Operator  
WMN

**Mr. Hermanus Lamprecht**  
Paramedic Safety Officer

### Professional Associations

- Chamber of Mines Namibia
- Women on Boards
- The Chamber of Minerals and Energy of Western Australia Industry Member – Mining, Minerals and Resources

### Fun Facts:

- I can deadlift 135kg
- To keep fit I Olympic weight lift
- I run ultra Marathons & the longest run yet the fish river Canyon 65km
- I am one of 6 children - do you think that means 4 of us suffer middle child syndrome?

### Words I live by:

‘The journey will bring you happiest, not the destination’



### Experience & Work History

#### Environmental Consultant

Ensolve Pty Ltd - Australia

In February 2013 an opportunity came about to launch my own business, Blue Wren Environmental Services.

During this time I have worked alongside Ensolve Pty Ltd to deliver several environmental projects including:

- A mine closure project taking an operating mine site into the rehabilitation and closure phase. This project involved the full development of a mine closure plan, facilitation of the government approvals, stakeholder engagement and technical environmental studies to inform the mine closure plan
- Sustainability reporting in accordance with the Global Reporting Initiative
- Rehabilitation of historic exploration sites and obtaining associated government approvals for relinquishment of bonds.

#### Site Environmental Manager

Panoramic Resources – Australia

- Brought the site into full compliance with the Environmental Licence within 1 year.
- Managed projects relating to the expansions of the current mine tailings dams including obtaining approvals under the Mining Act 1978 and Environmental Protection Act 1986.
- Managed the environmental and community aspects of three operations; Savannah Nickel Mine, Copernicus Nickel Mine (currently in care and maintenance) and the operations at Wyndham Port
- Responsible for the environment, sustainability and social reporting portfolio
- Developed productive working relationships with local government environmental agencies and non-government agencies, which assisted with the approvals process.
- Developed strategies for the recruitment and retention of local Indigenous personnel

#### Environmental Systems Coordinator

Lihir Gold Limited – Australia

Working on site to provide technical environmental and community advice to ensure all regulatory and licence obligations were met or exceeded

- Regulatory Approvals (State and Federal Government)
- Environment and social aspects of the international cyanide management code
- Operational budgeting and bond management for mine closure
- Compliance with the legislative framework
- Community engagement