

**BASIC ASSESSMENT REPORT AND ENVIRONMENTAL  
MANAGEMENT PROGRAMM REPORT FOR THE APPLICATION  
OF A PROSPECTING RIGHT WITHOUT BULK SAMPLING  
SITUATED ON THE FARM MODDERFONTEIN 461, IN THE  
ADMINISTRATIVE DISTRICT OF NAMAQUALAND, NORTHERN  
CAPE**

**FOR**

**DUHO MINING (PTY) LTD**

**DMR REF. NO. NC 12521 PR**



**COMPILED BY: ENGEDI MINERALS AND ENERGY (PTY) LTD**

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**mineral resources**

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

## **BASIC ASSESSMENT REPORT**

### **AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

**NAME OF APPLICANT:** DUHO MINING (PTY) LTD

**PROJECT NAME:** MODDERFONTEIN 461

**DATE:** 1 SEPTEMBER 2020

**CELL NO:** 076 453 7871

**FAX NO:** 086 675 6889

**POSTAL ADDRESS:** PO Box 8936, Edenglen

**PHYSICAL ADDRESS:** N/A

**FILE REFERENCE NUMBER SAMRAD:** NC 30/5/1/1/2/ 12521 PR

**ABBREVIATIONS USED IN THIS REPORT**

<b>DMR</b>	:	Department of Mineral Resources
<b>DRPW</b>	:	Department of Roads and Public Works
<b>DWS</b>	:	Department of Water and Sanitation
<b>ECO</b>	:	Environmental Control Official
<b>EIA</b>	:	Environmental Impact Assessment
<b>EMP</b>	:	Environmental Management Programme
<b>NC</b>	:	Northern Cape
<b>IAPs</b>	:	Interested and Affected Parties
<b>LOM</b>	:	Life of Mine
<b>MPRDA</b>	:	Minerals and Petroleum Resources Development Act
<b>NEMA</b>	:	National Environmental Management Act
<b>SAHRA</b>	:	South African Heritage Resources Agency

## 1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002, as amended), the Minister must grant a prospecting or mining right if among other the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorization can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Program report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3) (b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17(1) (c) the Competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the Competent Authority to the submission of applications.

**It is therefore an instruction** that the prescribed reports required in respect of applications for an environmental authorization for listed activities triggered by an application for a right or a permit submitted in the exact format of, and provide all information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorization being refused.

**It is furthermore an instruction that** the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

## 2. Objective of the basic assessment process

The objective of the basic assessment process is to, through a consultative process –

- (a) Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) Identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) Describe the need and desirability of the proposed alternatives;
- (d) Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within the sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
  - i. The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
  - ii. The degree to which these impacts –
    - a. Can be reversed
    - b. May cause irreplaceable loss of resources; and
    - c. Can be managed, avoided or mitigated;
    - d.
- (e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –
  - i. Identify and motivate a preferred site, activity and technology alternative;
  - ii. Identify suitable measures to manage, avoid or mitigate identified impacts; and
  - iii. Identify residual risks that need to be managed and monitored.

## PART A

### SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

#### 3. Contact details of

##### a. Details of

##### i. Details of the EAP

Name of the Practitioner: Tshimangadzo Mulaudzi

Tel No.:079 362 6046

Fax No.:086 556 2568

Email address:[mulaudzit@engedime.com](mailto:mulaudzit@engedime.com)

##### ii. Expertise of the EAP

##### 1) The qualifications of the EAP (with evidence)

Tshimangadzo hold an Honours Degree in Mining and Environmental Geology from the University of Venda. He has since been working as an environmental geologist and environmental practitioner. He has 5 years' experience in Environmental Science, 3 years' experience in Geology, and 5 years' experience in public participation.

##### 2) Summary of the EAP's past experience (in carrying out the Environmental Impact Assessment Procedure)

Tshimangadzo has been carrying out Environmental Impact Assessment Procedure since 2012, managing a construction company called Tshedza Concrete Art in Limpopo Province, Makhado town.

In 2014, he joined a large mining consulting company in Kimberly called Breeze Court Investments 47 (Pty) Ltd (Geologist and Mining Consulting firm). This is where Mr Mulaudzi acquired in-depth experience and know how in the mining consulting business by assisting the large to small scale mining companies to obtain prospecting right, mining rights, prospecting rights, technical co-operate permits, reconnaissance permits, exploration rights, production rights, integrated water use license, and environmental authorisation among other licenses. Tshimangadzo has five years working experience in environmental management, geology and public participation process.

**b. Location of the overall Activity.**

**Table 1: The Location of the Proposed Activity.**

<b>Farm name:</b>	Modderfontein 461
<b>Application area (Ha):</b>	3 373 Ha
<b>Magisterial district:</b>	Namaqualand
<b>Distance and direction from nearest town:</b>	<p>Approximately:</p> <ul style="list-style-type: none"> <li>• 6 km north-east of Kamieskroon</li> <li>• 13.7 km north-west of Leliefontein</li> <li>• 52 km south of Springbok</li> </ul>
<b>21 digit Surveyor General Code for each farm portion:</b>	See Table 2 below.

**Table 2: Details of the Proposed Site.**

<b>FARM NAME</b>	<b>FARM PORTION</b>	<b>21 SG CODE</b>
Modderfontein 461	Portion 1	C0530000000004610001
	Portion 2	C0530000000004610002
	Portion 3	C0530000000004610003
	Portion 4	C0530000000004610004
	Portion 5	C0530000000004610005
	Portion 6	C0530000000004610006
	Portion 7	C0530000000004610007
	Portion 8	C0530000000004610008
	Portion 9	C0530000000004610009

**Locality map** (show nearest town, scale not smaller than 1:250 000)

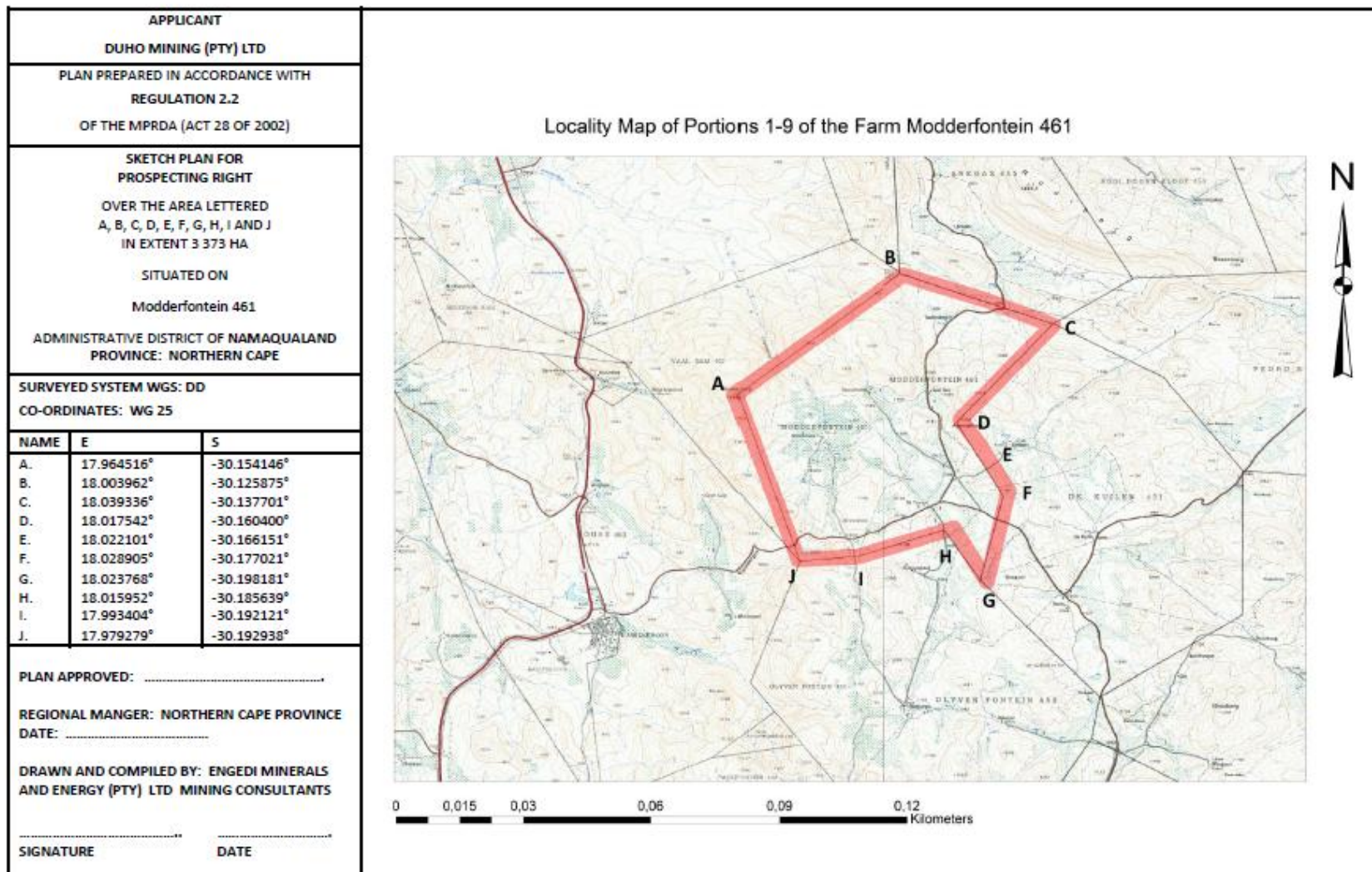
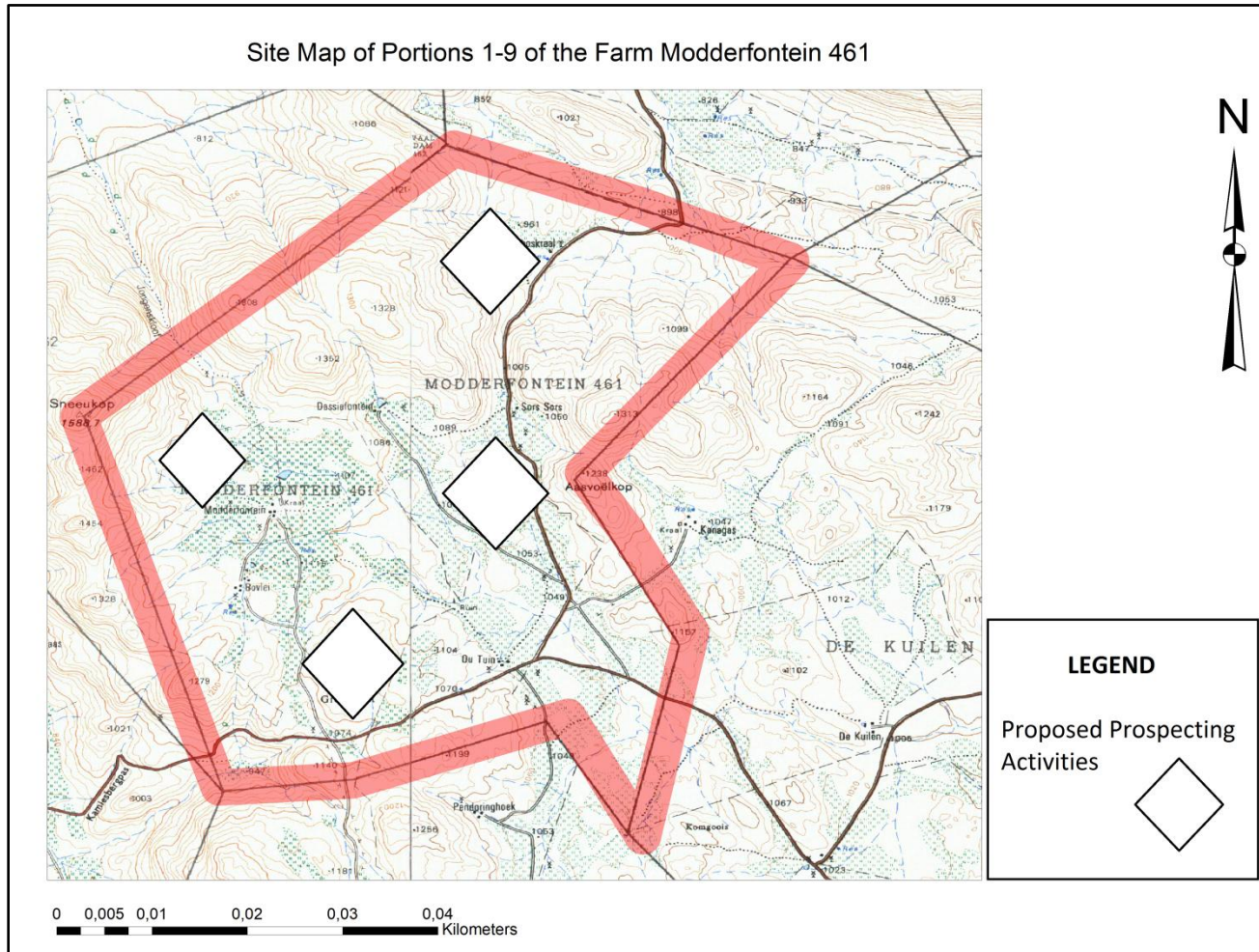


Figure 1: The locality Map.



### c. Description of the scope of the proposed overall activity

(Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site)



**Figure 2: The area where the listed activated will take place.**

**i. Listed and specified activities**

**Table 3: Listed and specified activities**

<b>NAME OF ACTIVITY</b>  (E.g. For prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route <b>etc...</b>  E.g. for mining – excavation, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and pitting and trenching, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, <b>etc...</b> )	<b>AERIAL EXTENT OF THE ACTIVITY</b>  (Ha or m2)	<b>LISTED ACTIVITY</b>  (Mark with an X where applicable or affected)	<b>APPLICABLE LISTING NOTICE (GNR 544, GNR 545 OR GNR 546)</b>
Establishment of prospecting site camps comprising of the drill site with sumps and parking for the drill rig, parking, equipment storage, geologist logging area, water storage, waste bins and portable toilets.	3 365 Ha	X	GNR 324 (previously GNR 984 & 544) – Listing Notice 1 Activity No. 20

- ii. **Description of the activities to be undertaken** (Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

### **This application is for a Prospecting Right**

#### *Summary:*

Prospecting activities will be conducted in phases as discussed below. The level of work to be completed during each phase will depend on the results of the preceding phase. The prospecting operation will commence with review of all available literature from which a mapping programme will be designed. During mapping, test pits will be excavated to confirm the occurrence of lithologies associated with the mineralized reefs. Mapping and pitting will be followed by discovery drilling of a few tantalum, niobium, lithium, mica, and rare earths core boreholes aimed at establishing the occurrence and depth of the mineralized ore body. Thereafter, a preliminary economic assessment will be conducted.

Should the assessment positive, further drilling will be conducted to define the resource. The final stage will be a pre-feasibility study to determine whether it will be economic to mine the resource.

### **Phase 1**

#### Literature review

Initial Phase 1 work will include the collection and interpretation of all available data and the compilation of a Geographic Information Systems (GIS) database. The information to be collected will include aerial photos, ortho-photos, aeromagnetic data, topo-cadastral maps, geological maps, results of historic exploration programmes, and any other published literature and maps. The desktop study will aid in compiling a preliminary geological model of the area to be utilized in the planning geological mapping and sighting of drill holes.

#### Mapping

Mapping will involve ground truthing the occurrence of the ore body within the proposed prospecting area; as shown in published geological maps. The Main Zone will be the target zone as it overlies the Critical Zone in which the ore body occurs. Mapping is completed that

meaningful structural and geological data may be derived from it and to confirm that the desktop study is accurate.

### Test pitting

Test pitting will be conducted simultaneously with mapping to confirm the presence of Main Zone lithologies. The depth of test pits are likely to vary as all pits will be dug until natural outcrops are exposed. About five test pits each four square meters (4 m<sup>2</sup>) in size will be excavated.

## **Phase 2**

### Discovery drilling and sampling

The results of the Phase 1 will be used to assist in the ideal location of ten tantalum, niobium, lithium, mica, and rare earths drill holes at maximum depth of 1000 m. Initially, only four of the ten planned boreholes will be drilled. The objective of the initial drilling will be to confirm the occurrence of the Critical Zone within the proposed prospecting area. As a result of the known structural complexity of the area in which the proposed prospecting areas is located, initial boreholes will be widely spaced in order to increase the understanding of the overall geology. The expected depth of the Critical Zone will be guide by initial geological interpretation preexisting data, mapping and test pitting.

### Sample analysis

The drill core will be sampled where a mineralized section is intersected. The core will be split into two halves, with one half of the core taken for assay purposes and the other half being retained. Each sample will be measured and weighed and the sample lengths will be recorded before dispatch for assays at a South African National Accreditation System (SANAS) accredited laboratory. Samples will be analyzed.

## **Phase 3**

### Preliminary economic assessment

A preliminary economic assessment is a study conducted to determine whether a project has the potential to be viable. At this stage, the mineralization, regardless of its quantity and

quality, is always considered to be a mineral resource. This study is generally based on industry standards rather than derived from detailed site-specific data.

#### **Phase 4**

##### Resource drilling and sampling

Subsequent to Phase 2 drilling, the results will be used to design a systematic drilling programme aimed at delineating a Mineral Resource on the Proposed Prospecting Area. The number of boreholes will depend greatly of the results of Phase 2 drilling; a minimum of five is planned thus far. This programme will be more focused more on parts on which the ore body were intersected.

#### **Phase 5**

##### Pre-feasibility study

The pre-feasibility and feasibility studies are more detailed. By the time a decision is made to proceed with a pre-feasibility study, a preliminary mineral resource report has been finalized and an ore body model demonstrating its shape, tones, and grade is available. A resource cannot be converted to a reserve unless it backed up by at least a pre-feasibility study. Their results will show with more certainty whether the project is viable. At this point, the mineral resources, or a portion thereof, becomes a mineral reserve.

The activities associated with the Prospecting Work Programme (PwP.) will be scheduled over a period of 5 years.

#### d. Policy and Legislative Context

**Table 4: Legislation Applicable to the Application.**

<p><b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b></p> <p>(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</p>	<p><b>REFERENCE WHERE APPLIED</b></p>	<p><b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT</b></p> <p>(E.g. in terms of the National Water Act a Water Use License has/has not been applied for)</p>
<p>National Environmental Management Act (NEMA), No. 107 of 198, as amended</p>	<p>Section 24</p>	<p>In terms of the National Environmental Management Act, an application for an Environmental Authorisation has been applied for.</p>
<p>Regulation 982. National Environmental Management Act (Act No. 107 of 1998): Environmental Impact Assessment Regulations, 2014</p>	<p>Regulation 19</p>	<p>In terms of the NEMA EIA Regulations a Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) were prepared to submit to the competent authority.</p>
<p>Regulation 983. National Environmental Management Act (Act No. 107 of 1998): Listing</p>	<p>Regulation 20</p>	<p>In terms of NEMA EIA Regulations R.983, Listing notice 1, the activity triggers regulation 21 which refers to</p>

notice 1: List of activities and competent authorities identified in terms of sections 24(2) and 24D		a prospecting right application and therefore needs an Environmental Authorizations to proceed as well as follow procedures as prescribed in regulation 19 of R.982 (EIA Regulations, 2014).
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	Section 16	In terms of the MPRDA, any person who wishes to apply for a prospecting right must lodge the application in the prescribed manner.
Mineral and Petroleum Resources Development Amendment Act (Act No. 49 of 2008)	Section 12	In terms of the MPRDA, any person who wishes to apply for a prospecting right must simultaneously apply for an environmental authorisation and must lodge the application to requirements contemplated by competent authority.

- e. Need and desirability of the proposed activities.** (Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location)

Exploration work is very important in coming up with a decision to open a mine. The planned surface work including drilling is important to be done on rocks that have potential to host the minerals to be explored.

Prospecting activities are needed to:

1. Confirm and obtain additional information concerning potential targets through non-invasive activities (e.g. desktop studies and ground geophysical surveys) and invasive (e.g. drilling) activities.
2. Assess if the resource can be extracted through future prospecting in an environmentally socially and economically viable manner.

Should prospecting activities prove that there are feasible minerals to allow for prospecting, a new mine may be developed which would generate extensive employment opportunities in an area where employment is needed.

- f. Motivation for the overall preferred site, activities and technology alternative.**

The study area has been transformed to some degree. Alternative land uses for the site would include grazing, farming activities. However, the study area is mineralised by cobalt, nickel, and copper which will be utilised to improve social and economic environments. Through implementing good practice environmental management measures and mitigation measures, it will ensure that both human and environment benefit from the development.

No location alternatives are applicable to this project since the tantalum, niobium, lithium, mica, and rare earths and other minerals as stated above is contained in the proposed prospecting area. Locating the development to another area will result in the minerals possibly not being found and the economy and society not benefitting from future proposed prospecting activities.



**Full description of the process followed to reach the proposed preferred alternatives within the site.**

NB!!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

**i. Details of the development footprint alternatives considered.**

With reference to the site plan provided below and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- a. The property on which or location where it is proposed to undertake the activity;
- b. The type of activity to be undertaken;
- c. The design or layout of the activity;
- d. The technology to be used in the activity;
- e. The operational aspects of the activity; and
- f. The option of not implementing the activity

No alternatives are applicable to this project since the cobalt, nickel, and copperas stated above are contained in the proposed prospecting area. Locating the development to another area will result in the ore possibly not being found and the economy and society not benefitting from future proposed prospecting activities.

- ii. Details of the Public Participation Process Followed** (Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attend public meetings. Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land).

**Definitions:**

**'consultation'** means a two way communication process between the applicant and the community or interested and affected party wherein the former is seeking, listening to, and considering the latter's response, which allows openness in the decision making process.

**'community'** means a group of historically disadvantaged persons with interest or rights in a particular area of land on which the members have or exercise communal rights in terms of an agreement, custom or law: Provided that, where as a consequence of the provisions of the Act negotiations or consultations with the community are required, the community shall include the members or part of the community, directly affected by prospecting or mining, on land occupied by such members or part of the community.

**'Interested and affected' parties** include, but are not limited to; –

- Host Communities
- Landowners (Traditional and Title Deed owners)
- Traditional Authority
- Land Claimants
- Lawful land occupier
- The Department of Land Affairs,
- Any other person ( including on adjacent and non-adjacent properties) whose socio-economic conditions may be directly affected by the proposed prospecting or mining operation
- The Local Municipality,
- The relevant Government Departments, agencies and institutions responsible for the various aspects of the environment and for infrastructure which may be affected by the proposed project.

The following I&APs were contacted:

- Land owner/s
- Northern Cape Department of Economic Development, Tourism, Environmental Affairs, and Small Business;
- Chief Director: Department of Rural Development and Land Reform (Northern Cape);
- Nama Khoi Local Municipality– Municipal Office;
- Namakwa District Municipality– Municipal Office;
- Department of Water and Sanitation; and
- Other relevant parties or departments.

The identified I&APs were provided with information regarding the applied proposed prospecting. The final location of the planned excavations will be decided in consultation with the landowners during mining. All comments from the identified I&APs will be noted and taken into consideration.

After the directly affected land owner has been identified, these parties were consulted telephonically, per email or personally (whichever method is most convenient for the party concerned).

The public participation process mainly comprises engagement with Interested and Affected Parties (I&APs) and is of utmost importance in any environmental assessment process. The public participation process, *inter alia*, involves the following:

- Inform, raise awareness, educate and increase understanding of a broad range of environmental issues that might be arise with the proposed extension in the size of mining operation.
- Establish lines of communication between stakeholders, I&APs and the project team.
- Provide opportunity to all parties for the exchange of information and expression of views and concerns.
- Obtain contributions of stakeholders and I&APs and ensure that all views, issues, concerns and queries raised are fully documented.

- Identify all the significant issues associated with the proposed extension of project.

**Engedi Minerals and Energy** was appointed by **Duho Mining (Pty) Ltd** as the independent consultant to conduct the public participation process as part of the Basic Assessment Report and Environmental Management Programme Report. As stipulated in Section 16 (5) (b) of the MPRDA (Act 28 of 2002) as amended by the MPRDA (Act 49 of 2008) and Regulations, Interested and Affected Parties (I&APs) need to be notified and consulted with, as part of a prospecting right application and extension thereof.

The public participation process aims to provide I&APs with objective information in order to assist them to:

- Raise issues of concern and make suggestions for enhanced benefits;
- Contribute local knowledge and experience;
- Verify that their issues have been captured;
- Verify that their issues have been considered; and
- Comment on the findings of the EMP.

An e-mail explaining the project and the background information will be sent to all other I&APs introducing the project. Specifically, the Northern Cape Department of Economic Development, Tourism, Environmental Affairs, and Small Business responded that **Engedi Minerals and Energy (Pty) Ltd** does not need to send them any information as the BAR and EMPr will be provided to them from the DMR once the BAR and EMPr is submitted.

The draft BAR and EMPr was made available for all the registered I&APs. The draft BAR and EMPr was made available to inform the I&APs of the activities, background information of the area, the possible impacts and mitigation measures and other relevant information, and to request input and comment on it.

Public Participation activities for the Application Process are summarized below together with the relevant reference for proof.

**Table 5: Public Participation Activities.**

ACTIVITY	DETAILS	REFERENCE IN REPORT
Placing of newspaper advertisement	An advert was placed in the Die Plattelander – English (09 October 2020). A meeting with the I&APs could not take place under the strict Covid-19 Regulations, therefore, Engedi's e-mail address was made available on the newspaper advert, as well as on the notices placed in and around the proposed site. The community could request a consultation form.	<b>Appendix D<sub>1</sub></b>  Proof of Advertisement
Putting up of site notices	English site notices were placed at the Project site and visible public venues on 11 August 2020. We have received objections from the land owner and surrounding land owners, however, their concerns have been addressed in this document and they have been notified via e-mail on the 12 <sup>th</sup> of October 2020. We await further communication.	<b>Appendix D<sub>2</sub></b>  Proof of Site Notices
Stakeholder consultations	The information documentation	<b>Appendix D<sub>3</sub></b>

	detailed above was distributed to identified stakeholders of e-mail.	Consultations with Authorities
Stakeholder consultations	Once the site notices were placed, comments from the farm owner and neighbouring farm owner were received.	<b>Appendix D<sub>4</sub></b> Comments from I&AP

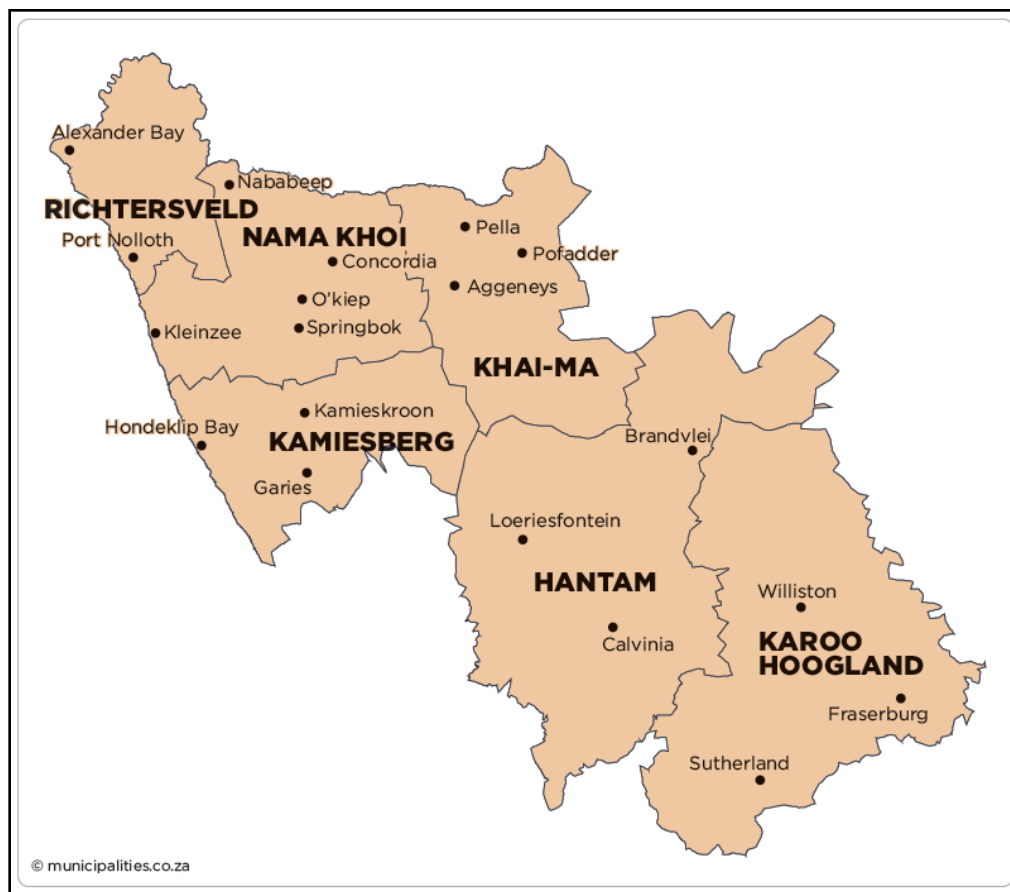
- i. **The Environmental attributes associated with the alternatives.** (The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects).

### 1. Baseline Environment

- (a) **Type of environment affected by the proposed activity** (its current geographical, physical, biological, socio-economic, and cultural character).

#### The environment on site relative to the environment in the surrounding area

The magisterial district of Namakwa is situated in the Northern Cape Province. The Northern Cape is the largest province in South Africa and it shares its border with Namibia and Botswana. The proposed site for prospecting is situated within the Namakwa District Municipality and within the Nama Khoi Local Municipality. The proposed site within the district covers approximately 3 373 hectares.



**Figure 3: The location of Springbok within the Namakwa District Municipality and within the Nama Khoi Local Municipality.**

The Namakwa District Municipality can be described as an arid region receiving some of the lowest average rainfall levels in the country. Water scarcity and soil salinity represent the main challenges facing agriculture in the district. In some areas, salinity levels are so high that salt mining operations have been established. The two rivers that are running through the district are the Orange River towards the northern boundary as well as the Oliphants/Doring River system.

### 1.1 Climate

Springbok had dry periods throughout the year with temperatures reaching over 30 degrees Celsius. The month of May is said to be the wettest month in the area and January the driest month.

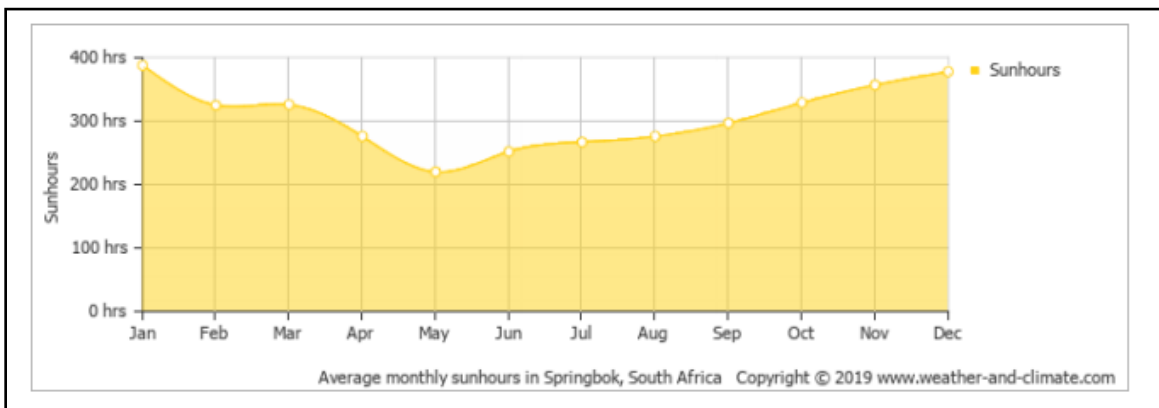


Figure 4: Graph indicating the average Temperatures for the Prieska region.

### 1.2 Geology and Soils

Soils within this region are typically of the Ag land form: "red-yellow apedal, freely drained soils (Red, high base status soils, and < 300 mm deep). These shallow (< 300 mm), red, freely-drained, apedal soils occur in arid to semi-arid areas associated with low rainfall (< 500 mm per annum) and are underlain by hard to weathered rock.

### 1.3 Biological Environment

The Nama Khoi Local Municipality is a unique and diverse environment owing in large part to the presence of four distinct biogeographical regions within its boundaries. The Orange River



valley lies to the north and is characterized by very dry desert conditions. In the west the Local Municipality is composed of coastal plains which transition into granite hills that straddle the escarpment, before transforming into low lying Bushmanland plains to the East of Springbok. Thus, rainfall patterns range from consistent winter rainfall in the west to more unreliable summer rainfall to the east with a variability of between 50 mm to 350 mm between the low-lying areas and the less arid peaks.

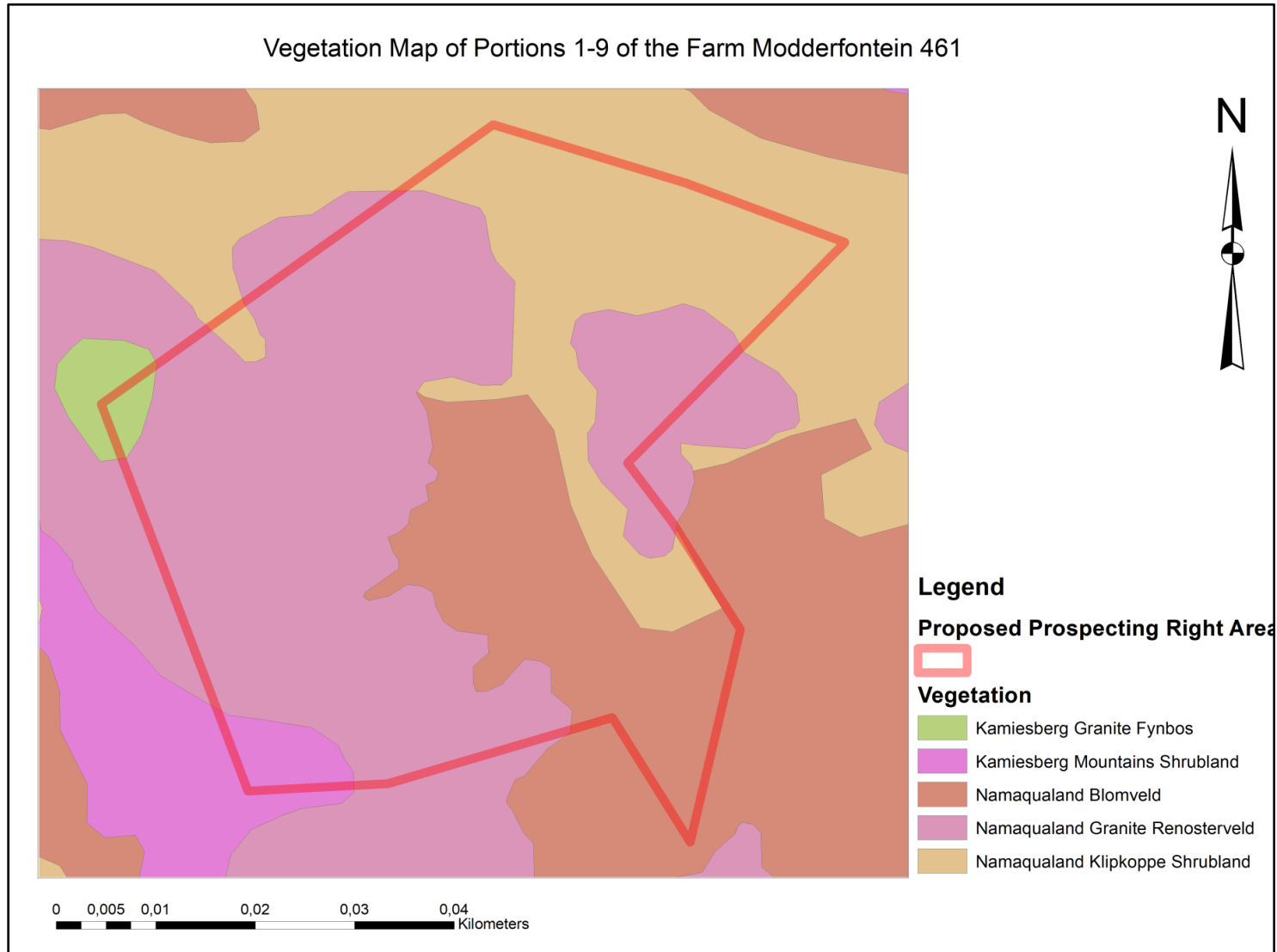
#### **1.4.1. Vegetation**

The study area falls within the Nama-Karoo Biome, a large, landlocked region within South Africa. The Nama-Karoo is the third largest biome in South Africa, extending across 248 247 km<sup>2</sup> in the western region of the country, stretching into south-eastern Namibia. The flora of the Nama Karoo biome is not rich in relation to other biomes within South Africa. This biome does not contain areas of high occurrence of endemics, or centres of endemism, and rather has a very low local endemism (Mucina and Rutherford, 2006). This biome contains three dominant families (Asteraceae, Fabaceae and Poaceae), common with flora of other arid or semi-arid areas. The Nama Karoo biome is characterized by dwarf shrubs which are generally less than 1 metre in height, intermixed with grasses, succulents, geophytes and annual forbs occurring on extensive plains.

Small trees are found to occur only along drainage lines or rocky outcrops (Mucina and Rutherford, 2006). There are three bioregions found within the Nama-Karoo biome, namely the Bushmanland Bioregion, the Upper Karoo Bioregion and the Lower Karoo Bioregion. The Bushmanland Bioregion has the highest annual temperature and low mean annual rainfall. The region is dominated by arid shrublands and grasslands. The Upper Karoo Bioregion has a higher mean annual rainfall, lower mean annual temperatures and is the largest of the three bioregions. This bioregion comprises of montane shrublands in areas of higher elevation and dwarf shrubland, grassy dwarf shrubland and dispersed succulent dwarf shrubland in areas of vast plains.

The Lower Karoo Bioregion is located south of the Great Escarpment and is the smallest of the three bioregions. This bioregion comprises grassy shrubs, arid shrubland and riparian woodland (Mucina and Rutherford, 2006). Vegetation within the region is mostly karoo shrubland, with sparse areas of grass and low trees. Land use practices within the region, particularly grazing

for livestock, have degraded large areas of many properties to exposed sand patches, where grass previously occurred.



### 1.4.2. Fauna

Amphibians and reptiles are well represented in sub-Saharan Africa. Distribution patterns are, however, uneven in southern Africa both in terms of species distribution and in terms of population numbers (du Preez & Carruthers, 2009). Three key determinants of species distribution are climate, centers of origin and range restrictions. The eastern coast of South Africa has the highest amphibian diversity and endemism, while reptile diversity is generally highest in the north eastern extremes of South Africa and declines to the south and west (Alexander and Marais, 2010). A review of the historical records of the Animal Demography Unit and the IUCN database indicate that there are thirteen amphibian species and thirteen reptile species of conservation concern that may occur in the region.

The amphibian species of conservation concern likely to occur in the area include the common rain frog or Bushveld rain frog (*Brevicepsadspersus*), the Northern Pygmy Toad (*Bufofenoulheti*), the Eastern olive toad (*Bufogarmani*), the Hallowell's toad, also known as the flat-backed toad or the striped toad (*Bufomaculatus*), the Marbled snout-burrower (*Hemisusmarmoratus*), the Angola river frog or common river frog (*Afranaangolensis*), the Müller's platanna (*Xenopusmuelleri*), the Grey foam tree frog or Southern foam tree frog (*Chiromantisxerampelina*), the Segal Running Frog (*Kassinasegalensis*), the Banded rubber frog (*Phrynomantisbifasciatus*), the Anchieta's ridged frog or plain grass frog (*Ptychadenaanchietae*), the Common sand frog (*Tomopternaryptotis*) and the Marbled sand frog (*Tomopternamarmorata*). These amphibian species are all listed as Least Concern.

The reptile species of conservation concern expected to occur in the region are all listed as Least Concern. These include the Peters' Ground Agama (*Agama armata*), the Rhombic Egg-eater (*Dasypeltisscabra*), the Zimbabwe Flat Lizard (*Platysaurus intermedius*), the Black Mamba (*Dendroaspispolylepis*), the Zimbabwe Flat Gecko (*Afroeduratransvaalica*), the Tiger Gecko (*Pachydactylustigrinus*), the Common Barking Gecko (*Ptenopus garrulous*), the Yellow-throated Plated Lizard (*Gerrhosaurusflavigularis*) the Bushveld Lizard (*Helioboluslugubris*), the Sundevall's Writhing Skink (*Mochlussundevallii*), the Limpopo Dwarf Burrowing Skink (*Sceloteslimpopoensis*), the Rainbow Skink (*Trachylepismargaritifer*) and the Variable Skink (*Trachylepisvaria*).

Large game makes up less than 15% of the mammal species in South Africa and a much smaller percentage in numbers and biomass. In developed and farming areas, this percentage is greatly reduced, with the vast majority of mammals present being small or medium-sized. The Animal Demography Unit historical records indicate that there are no mammal species of conservation concern likely to occur within the QDS in which the project area falls in, however according to the IUCN Red Data Book of the Mammals of South Africa there are two (2) mammal species likely to occur within the region, namely, the Black Rhinoceros (*Dicerosbicornis*) and the River Rabbit (*Bunolagusmonticularis*), both listed as Critically Endangered. The Black Rhinoceros occurs in arid and semi-arid regions of the Northern and Western Cape and therefore is relatively likely to occur within the general area. As far as we are aware it does not occur within the project site boundary. The River Rabbit enjoys desert habitats within temperate climates and are found within the Nama Karoo. Even though these are likely to occur within the greater region, it is unlikely to occur within the boundaries of the project area.

Historical records indicate that there are likely to be 97 bird species of conservation concern that could occur in the region. Of these species, only the Martial Eagle (*Polemaetusbellicosus*) and the Bateleur (*Terathopiusecaudatus*) are listed as Near Threatened. The remaining species are listed as Least Concern. A full list of bird species likely to occur in the study area is provided in Appendix 4. The Important Bird Areas of Southern Africa (IBA) directory was compiled in 1998 and identified that within South Africa there are 122 IBAs containing 59 threatened and 64 near-threatened bird species. All these IBAs were objectively determined using established and globally accepted criteria. An IBA is selected on the presence of the following bird species in a geographic area: bird species of global or regional conservation concern; assemblages of restricted-range bird species; assemblages of biome-restricted bird species; concentrations of numbers of congregatory bird species. The objective of the IBA Programme is to conserve species of conservation concern through conservation of habitats which the species occupy and use. The site does not fall within the boundaries of any IBA.

### 1.4.3. Conservation areas

According to the National Environmental Management: Protected Areas (Act No 57 of 2003) the declaration of protected areas is:

- To protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected area;
- To preserve the ecological integrity of these areas;
- To conserve biodiversity in these areas;
- To protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa;
- To protect South Africa's threatened or rare species;
- To protect an area which is vulnerable or ecologically sensitive;
- To assist in ensuring the sustained supply of environmental goods and services;
- To provide for the sustainable use of natural or biological resources;
- To create or augment destinations for nature based tourism;
- To manage the inter-relationship between natural environment biodiversity, human settlement and economic development;
- Generally to contribute to human, social, cultural, spiritual and economic development; and
- To rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.

The study area is not in close proximity to any conservation area.

### 1.4 Surface water

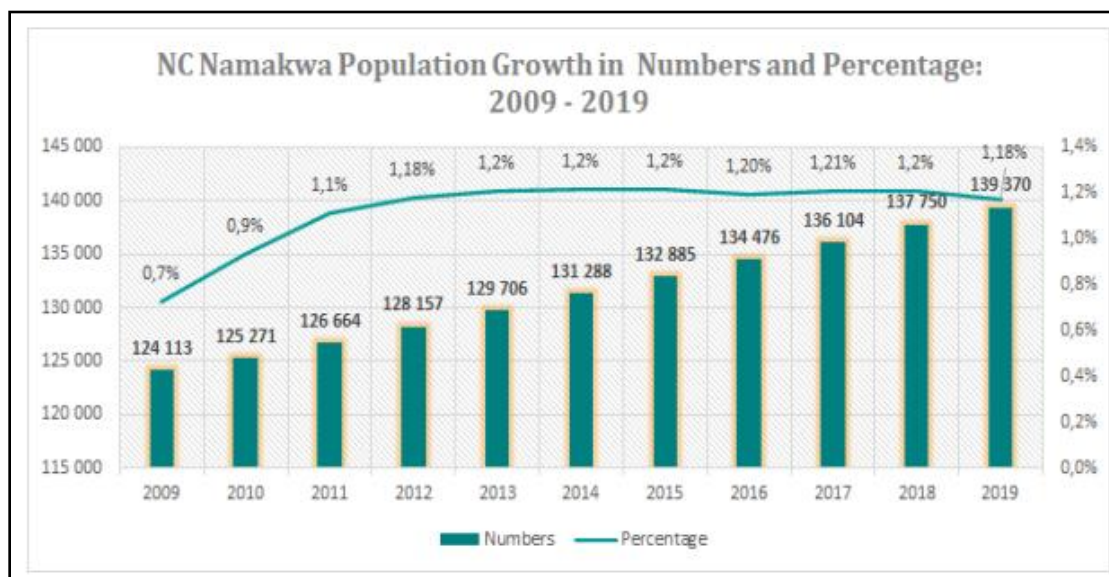
The South African National Biodiversity Institute (SANBI) compiled a National Wetland Inventory, which aims to map and classify (i.e. type) the major wetlands and water bodies in the country at a coarse spatial scale. A wetland classification system is required for application to the National Wetland Inventory, so that different types of wetlands can be distinguished for management and conservation purposes. This classification system is intended to be used throughout the country for a number of different applications, largely with a view to facilitating common usage of terminology amongst wetland scientists and managers. However, at the same time, it is envisaged that further refinements to the classification system may be

necessary in the future, to address problems that may be encountered in its application by a wide range of different users for a number of different purposes. As such, the classification system presented in this report should not be seen as the final word but, rather, as a “living” work in progress that will be continuously improved. This system also identifies and classifies various rivers and their tributaries.

There are no water resources located close to the proposed development.

## 1.5 Socio-economic setting

The Namakwa District Municipality has the lowest population of all districts in the Northern Cape, although it is geographically the largest. With a population of 139 370 people, the Namakwa District housed 0.2% of South Africa's total population in 2019. Compared to Northern Cape's average annual growth rate (2.05%), the growth rate in Namakwa's population at 1.17% was about half than that of the province.



In 2018, the Namakwa District Municipality's population consisted of 7.32% African (9 670), 8.96% White (11 800), 83.06% Coloured (110 000) and 0.65% Asian (862) people.

Namakwa District Municipality's male/female split in population was almost equal with 49.96% males and 50.04% females in 2019. In total there were 69 700 (50.04%) females and 69 600

(49.96%) males. This is different from the Northern Cape Province where the female population counted 681 000 which constitutes 50.61% of the total population of 1.34 million.

The number of formally employed people in Namakwa District Municipality counted 31 400 in 2018, which is about 86.74% of total employment, while the number of people employed in the informal sector counted 4 800 or 13.26% of the total employment. Informal employment in Namakwa increased from 3 420 in 2008 to an estimated 4 800 in 2018. Namakwa's share of the total number of unemployed people in Northern Cape Province is 9.36% (12 000 people unemployed in Namakwa). This represents an increase of 1 760 (1.7%) from 10 200 in 2008.

With a GDP of R 10.5 billion in 2018 (up from R 6.49 billion in 2008), the Namakwa District Municipality contributed 10.65% to the Northern Cape Province GDP of R 98.6 billion in 2018 increasing in the share of the Northern Cape from 11.85% in 2008. In 2018, the Namakwa District Municipality achieved an annual growth rate of -0.54% which is a slightly lower GDP growth than the Northern Cape Province's -0.31%, and is lower than that of South Africa, where the 2018 GDP growth rate was 0.79%.

In 2018, the mining sector is the largest within Namakwa District Municipality accounting for R 3.4 billion or 35.6% of the total GVA in the district municipality's economy. Although the Namakwa District Municipality was a fairly constant district without many changes over the last few years, the district suddenly came into the limelight with the massive expansion in the mining sector in the Khai Ma Local Municipality. Apart from the growing mining interest in the district, the Boegoebay Port is also a potential catalytic project that could potentially uplift the Namakwa District Municipality in various ways including demographically, developmental, economic and infrastructure wise. Should this development be implemented the NDM will also become more significant from a national perspective and could potentially lure further investment. Unfortunately due to the global economic climate, the mining sector is estimated to grow the slowest with an average annual growth rate of - 3.60%. The mining development in the District can benefit from the new mining and renewable energy project if planned efficiently. Diversification and the development of a competitive manufacturing sector is a must with agriculture and mining as focus areas. In terms of access to basic services all the local municipalities are outperforming national, barring the slight underperformance of the provision of electricity in Karoo Hoogland and Hantam.

In the primary sector, agriculture is expected to grow faster at an average of 2.72% annually from R 726 million in Namakwa District Municipality to R 830 million in 2023. Most of the Orange River's water is being used for the irrigation of high-value crops. Groundwater is also widely used for agricultural, municipal, and industrial land use. The main agricultural commodities produced in Namakwa District Municipality include small stock, lucerne, vegetables, and grapes. Sheep farming is practised on a small scale in Namakwa District Municipality from which wool and mutton products are produced. Niche opportunities for agro-processing have been identified in the form of high-value aquaculture (such as abalone).

Namakwa District Municipality had a total tourism spending of R 735 million in 2018 with an average annual growth rate of 10.3% since 2008 (R 275 million). Northern Cape Province had a total tourism spending of R 4.39 billion in 2018 and an average annual growth rate of 7.7% over the period. Total tourism spending in South Africa increased from R 153 billion in 2008 to R 296 billion in 2018 at an average annual rate of 6.8%. In Namakwa District Municipality the tourism spending as a percentage of GDP in 2018 was 7.00%. Tourism spending as a percentage of GDP for 2018 was 4.45% in Northern Cape Province, 6.06% in South Africa.

The sector that contributes the second most to the GVA of the Namakwa District Municipality is the community services sector at 16.1%, followed by the trade sector with 11.8%. The sector that contributes the least to the economy of Namakwa District Municipality is the electricity sector with a contribution of R 136 million or 1.42% of the total GVA.

Springbok should be promoted as the highest order settlement in the Municipality and its image should subsequently be improved as an attractive tourist town, retail and light industry and transport service centre. Springbok can therefore be the economic heartbeat of the municipal area.

The Provincial SDF identified Springbok as a growth area with high urban potential which implies that infrastructure investment and spending should ideally focus on these areas with potential. It is proposed that Springbok should form part of functional rural region 3 (including Springbok, Bergsig, Okiep, Matjieskloof, Nababeep, Bulletrap, Concordia and Carolusberg).



In order to steer development and growth, it is essential to prepare and implement an Urban Design and landscaping framework for Springbok and surrounds that address amongst others: Building appearance (protecting and where necessary reinstating historic buildings,); Street furniture; Sidewalks; Cycle lanes; Parks, squares and street markets; Public transport interchanges; and Tree planting and landscaping.

The Urban Design Framework should also include (as proposed in the Provincial Spatial Development Framework):

- The CBD, Voortrekker, Inry and Sinagoge Streets and should be linked;
- Bergsig via Inry, Dr Izak van Niekerk, Klip Streets, back over the neck to the Hospital, along Sinagoge Street to Voortrekker Street;
- The mission area at Matjieskloof should also be investigated to see if it has tourism appeal like missions on the Western Cape mission route such as Genadendal, Mamre and Elim.

Inry Street should be upgraded and a sectoral Spatial Development Plan (SDP) prepared to enable it to develop as an activity street linking Bergsig and the CBD separately from the N7.

There should be an investigation of the potential link between Bergsig and the CBD via extensions of Klip Street (Bergsig) and Sinagoge Street CBD including a Sectoral SDP. If viable these areas should be planned as an integrated CBD/Tourism precinct. If this investigation suggests that strengthening these links is feasible this project should be motivated for a National Treasury Neighbourhood Development Program Grant (NDPG).

Land for housing that may be required to address backlogs and future growth should be located in infill land that promotes the compaction and integration of the settlement.

The tantalum, niobium, lithium, mica, and rare earths and copper beneficiation priority and tourism skills institute projects identified in the LED strategy (2007) would be best located in Springbok. The Industrial area precinct should be investigated as a suitable location for these activities.

Pedestrian sidewalks, cycle lanes where appropriate and tree planting should be installed along the roads linking Matjieskloof and Bergsig to the CBD to investigate the hosting of a major town festival in Springbok or Steinkopf such as art, culture and music during the peak flower season, as well as regular monthly festivals to provide recreation and entertainment to local residents and also to attract visitors to the area.

Additional high-quality educational facilities (and employment of teachers and trainers) should be expanded and developed as a key priority. This can insure a proper educational opportunity to all people provided that affordable and safe accessibility and accommodation for learners in the region is provided. The feasibility of a tertiary educational facility should also be investigated.

The upgrading of the existing airport in Springbok can potentially increase the regional, national and international accessibility of the area. Infill and densification should hence be promoted surrounding the upgraded airport. Potentially high wind energy generation zones have been identified around Springbok. These areas should be investigated for the development of wind farms.

In granting the mining permit for the proposed area the Applicant may be able to assist in some of the urgent needs of the area/ town as indicated by the Nama Khoi Local Municipality.

#### **1.6.8 Cultural/Heritage Environment**

The historical significance of the Springbok area which indicates that before the Blue Mine in Springbok there was previously mined in South Africa. We therefore question the acknowledgment and that it should be enjoyed as an inheritance area, as it is only the first Post-Colonial commercial mine in South Africa but not the first. According to research and correspondence from SAHRA the proposed development was never formally been earmarked as a heritage site.

However, the Applicant is comfortable linking themselves to a range of conditions to ensure that through the proposed mining activities, they will:

- Create an attraction that will include a centre that the community will be able to visit the history of the Blue Mine, the role it played in developing mining in the area, the role of the Khoi San in Copper Mining etc.
- A tourism attraction will be after we have stopped mining activities.
- The Applicant will not be using explosives or equipment that will make noise as the community is close to the mine area.
- Use mining materials that are environmentally friendly.
- Children's amusement park or other activities can be developed that can be utilized by the surrounding communities after mining has stopped.

The area is currently looking unpleasant and is dangerous for the people of the town as well as tourism who want to visit it. The Applicant will appoint a Landscape Architect to make suggestions that can be considered and recommended by the various stakeholders, which will then be used as a guideline in the area of mine and rehabilitation so that it will eventually look better and much more functional as it currently looks. By the nature of the case we will allocate an amount to make the above possible.

The granting of the Prospecting Right will create jobs in an area where it is very scarce. Not only at the proposed mine but also at the Plant in Okiep. The Applicant is minimizing the use of machinery to create the maximum number of jobs and minimize noise and inconvenience to any party. Their interests as a previously disadvantaged Klein Myner Company's interests should also be considered. The socioeconomic impact our operations will have in the larger Nama Khoi area will also support the viability of the other small mine permit areas we also applied for. The Applicant is further prepared if their proposals are not sufficient to engage with the relevant Heritage Representatives as well as the owners of the land to discuss a consensus win - win agreement for all.

**Description of the current land uses**

The study area has been transformed to some degree. Alternative land uses for the site would include grazing, farming activities.

**Description of specific environmental features and infrastructure on the site**

The prospecting activities are not expected to affect any existing infrastructure, beyond requiring the use of existing farm access roads. As the invasive activities of this application include drilling of the resources that may occur in open land, these areas will not be disturbed. A safe 100 m buffer will be placed around existing infrastructure and no drilling activities will take place within this buffer area.

**Environmental and current land use map** (Show all environmental and current land use features)

It should be noted that while the whole of the prospecting right application area of 3 373 hectares are depicted on the maps, way less than that amount of space will be disturbed as a result of invasive prospecting activities.



- iii. **Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of impacts, including the degree to which these impacts** (Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impact of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of these impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources and can be avoided, managed or mitigated).

**Potential impact of each main activity in each phase, and corresponding significance assessment**

*Table 6*

NO	ACTIVITY	IMPACT	DURATION	INTENSITY	PROBABILITY	SIGNIFICANCE RATING	
1	Site Preparation	Loss of vegetation	3	5	10	80	High
		Habitat Destruction	3	5	10	80	High
		Visual scarring	3	4	8	56	Medium
		Soil erosion	3	4	6	42	Low
2	Excavations	Dust emissions	2	5	8	56	Medium
		Surface disturbances	4	4	10	80	high
		Drainage interruption	4	4	10	80	high
		Slope	4	3	3	42	low

		instability					
		Noise	2.5	5	10	75	high
		Visual Scarring	3	4	8	56	medium
		Soil erosion	3	4	6	42	low
3	Blasting (if done)	Fly rock	2.5	5	10	75	high
		Noise and vibrations	2.5	5	10	75	high
		Dust	2.5	5	10	75	high
4	Stockpiles	Dust	2	5	8	56	medium
		Surface disturbances	3	5	10	80	high
		Drainage disruption	2.5	5	10	75	high
5	Loading, Hauling and transportation	Dust	2	5	10	70	medium
		Increased risk of accidents	2	4	4	16	low
		Noise	2.5	5	10	75	high
		Soil contamination from oil/fuel leaks	3	3	6	36	low

**Potential cumulative impacts**

Since there may be agricultural or mining activities, the expected cumulative impact will be noise and dust.

**Potential impact on heritage resources**

No heritage sites may be present on the site, which may be disturbed and/or damaged during mining.

**Potential impacts on communities, individuals or competing land uses in close proximity**

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case.)

Expectations could be created that numerous job and business opportunities will become available during prospecting. All Interested and Affected Parties (I&APs) need to be informed throughout the prospecting process.

**Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties**

The draft BAR and EMPr was made available to the interested and affected parties for comment and input. The list of potential impacts was included in the draft BAR and EMPr.

**Confirmation of specialist report appended (Refer to guideline)**

Both Heritage and Ecological studies were conducted for this BAR and EMPr. The baseline information contained herein is based on a desktop study and one site visit.



- iv. **Methodology used in determining and ranking nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;** (Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which they initial site layout needs revision).

#### **Criteria of assigning significance to potential impacts**

The significance of the impacts was determined through the consideration of the following criteria:

**Table 7: Criteria of assigning significance to potential impacts.**

Probability:	Provides a description of the likelihood/probability of the impact occurring
Extent:	Describes the spatial scale over which the impact will be experienced
Duration:	The period over which the impact will be experienced
Intensity:	The degree/order of magnitude/severity to which the impact affects the health and welfare of humans and the environment
Significance:	Overall significance of the impact on components of the affected environment and whether it is a negative or positive impact

The impacts were individually described and assessed using the criteria drawn from the Environmental Impact Assessment (EIA) Regulations, published by the DEA in terms of the NEMA (Act 107 of 1998).

The significance of each impact is assessed using the following formula (before and after mitigation):

$$\text{Significance Point (SP)} = (\text{Probability} + \text{Extent} + \text{Duration}) \times \text{Intensity}$$

The maximum value is 150 SP. The impact significance will then be rated as follows:

**Table 8**

SP > 75	Indicates <b>high</b> environmental significance	An impact that could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates <b>moderate</b> environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP < 30	Indicates <b>low</b> environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.
<b>Probability (P)</b>		
None (N)	1	The possibility of the impact occurring is none, due either to the circumstances, design or experience (0%).
Possible (P)	2	The possibility of the impact occurring is very low, due either to the

		circumstances, design or experience (25%).
Likely (L)	3	There is a possibility that the impact will occur to the extent that provisions must therefore be made (50%).
Highly likely (H)	4	It is most likely that the impacts will occur at some stage of the development and plans must be drawn up before carrying out the activity (75%).
Definite (D)	5	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on (100%).
<b>Extent (E)</b>		
Footprint (F)	1	The impact area extends only as far as the activity which occurs within the total site area.
Site (S)	2	The impact could affect the whole site or a significant portion of the site.
Regional (R)	3	The impact could affect the area including the neighboring farms, the transport route and/or the adjoining towns.
National (N)	4	The impact could have an effect that expands throughout the country.
International (I)	5	Where the impact has international ramifications that extend beyond the boundaries of the country.
<b>Duration (D)</b>		
<i>The period over which the impact will be experienced</i>		

Temporary (T)	1	0 – 3 years (or confined to the construction period).
Short term (S)	2	3 – 10 years (or confined to the construction and part of the operational period).
Medium term (M)	3	10 – 15 years (or confined to the construction and whole operational period).
Long term (L)	4	For the whole life of mine (including closure and rehabilitation period).
Permanent (P)	5	Beyond the anticipated lifetime of the project.
<b>Intensity (I)</b>		
Insignificant (I)	2	Will have a no or very little impact on the health and welfare of humans and environment
Low (L)	4	Will have a slight impact on the health and welfare of humans and environment
Moderate (M)	6	Will have a moderate impact on the health and welfare of humans and environment
High (H)	8	Will have a significant impact on the health and welfare of humans and the environment
Very high/ don't know (V)	10	Will have a severe impact on the health and welfare of humans and the environment

v. **Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;**

The preferred location is the only location plan currently under investigation. Due to the location and presence of the potential mineral resources, the initial site layout is the only alternative considered; however, as prospecting progresses through the aforementioned phases, the preliminary site layout may be slightly adjusted. The final locations of the drill holes can only be established once the geophysical survey has been completed in the noninvasive; Phase 1, of the activity and once agreements has been discussed and signed with the relevant landowners, and this can only be done once the PR right has been approved.

Until such time the preliminary layout remains the preferred layout. The identified potential impacts range from air pollution such as dust, noise pollution, soil pollution, waste pollution, water pollution, Fauna and Flora impacts, Visual impacts and socio-economic impacts. All these will be properly managed. None of these impacts will be significant since the proposed prospecting activities will be of small scale, short term, mitigation measures will be adhered to and concurrent rehabilitation will take place. Please refer to table 3 and table 4 which reviews the significance of impacts by taking the proposed mitigation measures into consideration.

vi. **The possible mitigation measures that could be applied and the level of risk.**

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

**MANAGING SOIL IMPACTS**

These measures are targeted at managing soil erosion, soil contamination, compaction of soil and removal of topsoil

- The area that is stripped of vegetation should be kept to an absolute minimum
- Contractor shall at all times carefully consider what machinery is appropriate to the task while minimizing the extent of environmental damage and unnecessary

movements should be prohibited

- The topsoil, including the existing grass cover is to be shallowly ripped (only the depth of the topsoil) before removal. This is to ensure that organic plant material, and the natural seed base is included in the stripping process. The soil is to be stored and the soil stockpiles shall not be higher than 2 m or stored for a period longer than one year. The slopes of soil stockpiles shall not be steeper than 1 vertical to 2.5 horizontal.
- Topsoil shall be stored separately from subsoil and other overburden material.
- No vehicles shall be allowed access onto the stockpiles after they have been placed.
- Stockpiles shall not be allowed to become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation.
- The contractor shall apply soil conservation measures to the stockpiles to prevent erosion.
- Ensure regular maintenance of equipment to prevent diesel and hydraulic spillages.
- Where possible ensure low work surface gradients so that run-off flows at a controlled rate so as to minimize channeling and soil erosion during high rainfall.
- At the end of operations, all disturbed areas shall be re-vegetated.

### **LOSS OF VEGETATION**

- No protected species must be removed without a permit. A final walkthrough must be done by an ecologist to ensure that the areas where vegetation is to be cleared do not have protected species.
- Clearance of vegetation should be restricted to the absolute minimum required to facilitate access and undertake proposed prospecting activities. Disturbance of topsoil and vegetation rootstock must be minimized as far as possible.

- Any declared category 1 invasive species identified should be cleared.
- Rehabilitation strategies following operational activities must ensure that appropriate indigenous plant species are used and should be done as per rehabilitation plan

#### **DUST AND VEHICLE FUMES**

- Avoid unnecessary excessive vehicle movement.
- Limit vehicle speeds on unsurfaced roads.
- Rehabilitate disturbed areas with vegetation as soon as operation is completed.
- Maintain equipment and vehicles in good working order to avoid excessive .emissions
- Proposed prospecting working floors should be sprayed with water from time to time to reduce dust emission during operations
- Use rubber curtains/other material to limit dust during screening should be considered.
- Spray roads, material stockpiles and screening areas with water if dust becomes problematic.
- No fires should be allowed on the proposed prospecting site.

#### **BLASTING (if done)**

- All blasting and handling of blasting materials should be done in accordance with the Explosives Act and the Mine Health and Safety Act.
- A risk assessment has to be that takes into account the safety of the people, infrastructure and the surrounding environment. A pre and post blasting survey should be done.

- A blasting time schedule shall be distributed to all surrounding villages indicating the time and date for blasting activities. It is recommended that blasting takes place during daylight hours.
- At all times blasting shall be carried out that ground vibration, air blast and scatter are kept within such limits as to avoid damage to adjacent structures/machinery etc already placed at the works.
- Any fly rock should be cleared after blasting.

### **WASTE DISPOSAL**

- All personnel must be instructed to dispose of waste in a proper manner in the correct designated areas.
- Suitable receptacles shall be available at all times and conveniently placed for the disposal of waste.
- No waste shall under any circumstance be disposed of in the veld. No burning of waste is permitted on site and the proposed prospecting area should be protected from illegal dumping of waste.
- All used oils, grease or hydraulic fluids shall be placed in appropriate impervious containers and these receptacles will be removed from the site on a regular basis for disposal at a registered or licensed disposal facility or sent for recycling/reuse with a registered facility.
- Spills should be cleaned up immediately by removing the spillage together with the polluted soil and by disposing of them at a recognized facility. In areas where the spills are some, an absorbent agent can be used and the area treated
- Contaminated materials and residues from machinery maintenance and other sources contaminated with hazardous waste should be stored in proper containers that avoid seepage to ground.
- The “reduce, reuse, recycle” waste management philosophy will be used where



possible.

- Only authorized registered waste disposal contractors should be hired for collection of waste for all waste streams

### **SOCIAL IMPACTS**

- Effective two-way public disclosure and public consultation should be implemented to allay community perceptions. There should be an opportunity provided for the resolution of grievances or complaints received and recorded from individuals in the community.
- Community should be adequately informed of activities being done at the proposed prospecting that are likely to affect them.
- Labour recruitment should occur in a manner that is objective, transparent, and wherever possible, provide opportunities for people from the local area.
- The activities of contractors, consultants, and company employees should be routinely reviewed to ensure good community relations are being maintained. The project proponent should use its influence as employer to encourage responsible behavior among employees

### **STABILITY OF EXCAVATIONS**

- Excavations shall take place only within the approved demarcated proposed prospecting area and appropriate barriers should be put as necessary.
- The proposed prospecting operator shall ensure that a place of work, whether temporary or permanent in or near the excavation has a structure and solidity appropriate to its use is operated, supervised and maintained, so as to withstand the environmental forces anticipated and be safe.
- The proposed prospecting operator shall ensure that material is not placed, stacked or used at the proposed prospecting near the edge of any excavation, where it is likely to endanger people at work and equipment or where it is likely to cause collapse of the side of the excavation.

- Excavations should be routinely inspected. If cracks occur in any structure they need to be investigated to ascertain if there is a risk to safety
- Overburden rocks and coarse material shall be placed concurrently in the excavations or stored adjacent to the excavation, if practicable, to be used as backfill material once the mineral or gravel has been excavated.
- An appropriate drainage provisions must be constructed as necessary to accommodate the surface water movement. If the water table is reached during excavations appropriate pumping facilities should be provided.
- Excavated areas should be kept in a safe and stable manner. No unstable block should be present. Reshaping of the proposed prospecting may need to be done to ensure that this objective is reached. The profiling should be done to match the surrounding landscape
- The proposed prospecting should be finished in such a manner that it is self-draining
- Top soil should be put back on the surfaces and the areas revegetated.

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### **VISUAL IMPACTS**

- The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material removed from the excavation must be dumped into the excavation.
- Once excavation parts that can be filled have been refilled with overburden, rocks and coarse natural materials, the borrow pit shall be profiled with acceptable contours and erosion control measures, the topsoil previously stored shall be returned to its original depth over the area. The profiling shall be done to match the surrounding landscape as far as is reasonable possible.
- The area shall be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to

propagate the locally or regionally occurring flora.

- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, there may be need for the soil to be analyzed and any deleterious effects on the soil arising from the borrow pit, be corrected and the area be seeded with an indigenous vegetation seed mix that matches the surrounding flora.

### **EQUIPMENT USED ON SITE**

- Only well-maintained vehicles and equipment should be operated onsite and all machinery should be serviced regularly during the proposed prospecting operation.
- The maintenance of vehicles and some equipment used for any purpose during the proposed prospecting operation will take place only in the maintenance workshops which are not located on the borrow pit. No vehicle may be extensively repaired in any place other than in the maintenance yard
- A maintenance schedule should be prepared in order to ensure that equipment is in its best form so as to not cause unnecessary pollution such as noise, emissions and makes effective use of energy.
- Equipment used in the proposed prospecting process must be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.
- Machinery or equipment used on the proposed prospecting area must not constitute a pollution hazard. No equipment leaking oil should be used. Drip tray should be used to prevent pollution.

### **NOISE**

- Construction activities required outside normal working hours must be approved by the Project Manager, and where necessary, advance warning provided to adjacent residents.

- Noise levels exceeding 85dB shall only be permitted where approved and with appropriate advanced warning to adjacent residents (minimum of 2 days) being provided.
- Noise that could cause a major disturbance should only be carried out during daylight hours and with advance warning provided as above.
- Adequate ear protection should be provided to employees in noisy areas
- No amplified music shall be allowed at the site.
- Construction vehicles and plant to be in good working order.

vii. **Motivation where no alternative sites were considered**

No location alternatives are applicable to this project since the cobalt, nickel, and copper is contained in the proposed prospecting area. Locating the development to another area will result in the ore possibly not being found and the economy and society not benefitting from future proposed prospecting and possible prospecting activities. The proposed site for the proposed prospecting is located within an area which is already severely disturbed as a result of zinc prospecting activities.

viii. **Statement motivating the alternative development location within the overall site.** (Provide a statement motivating the final site layout that is proposed.)

Each phase is dependent on the preceding phase and results thereof. The preferred location is thus the only location assessed. It should be noted that prospecting is a “locality bound” industry (it has to take place where the resources are) thus no alternative locations for prospecting can be assessed. However, alternative locations for infrastructural components of the project that are not locality bound can be considered. In this case however, the only infrastructural component of the proposed project is the location of the site camp. This location for this will be dependent upon landowner negotiations and thus as a result cannot be determined prior to the prospecting right being granted. Until such time the preliminary layout remains the preferred layout. The preliminary locations have however allowed for safe buffers around sensitive identified features.

- i. **Full description of the process undertaken to identify, assess and rank the impacts and risks of the activity will impose on the preferred site (In respect to the final site layout plan) through the life of the activity.** (Including (i) a description of all the environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

An activity mapping exercise was conducted for the proposed activity, then potential environmental impacts were identified. The Department of Environmental Affairs (DEA) impact assessment matrix was used. The impact with medium to high significance requires mitigation/control measures, the following are the possible impacts the project will have on the environment:

- Dust generated during excavation, loading, transportation and offloading of gravel and dust generated by movement of vehicles from prospecting site to construction site causing air pollution.
- Noise generated by machinery during gravel prospecting and vehicles while transporting gravel from prospecting site to construction site
- Vegetation destruction due to clearing of the site for prospecting purposes.
- Ecosystem disturbance due to vegetation clearing.
- Erosion causes by removal of vegetation and stripping of top soil to extract the gravel
- Visual impact due to prospecting activities, pits will be enlarged and machinery around the site will disturb the natural visual landscape.
- Exposure of children to open pit filled with water resulting in drowning and death
- Open pits a danger to animals falling in and breaking limbs
- Improper disposal of waste resulting in land pollution
- Fuel and oil leakages causing ground and surface water pollution

All impacts were identified by a combination of the following:

- Desktop analysis
- Consultation process with landowners and I&APs
- A site visit

- j. **Assessment of each identified potentially significant impact and risk** (This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered and affected parties).

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
<p>(E.g. For prospecting – drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route <b>etc...</b>)</p> <p>E.g. For mining – excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and pitting and trenching, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, <b>etc...</b>)</p>	<p>(Including the potential impacts for cumulative impacts)</p> <p>(E.g. dusts, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...)</p>		<p>(In which impact is anticipated)</p> <p>(e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)</p>	<p>(If not mitigated)</p>	<p>(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...)</p>	<p>(If mitigated)</p>
<p>Site Establishment activities (fencing, signage, access formation, etc)</p>	<p>Loss of vegetation</p>	<p>Visual character, Land use</p>	<p>Pre-mining</p>	<p>Medium</p>	<p>Remedy through rehabilitation, Limit footprint</p>	<p>Low</p>

	Habitat Destruction	Visual character	Pre-mining	Medium	Remedy through rehabilitation, Limit footprint	Low
	Visual scarring	Visual character	Pre-mining	Medium	Remedy through rehabilitation	Low
	Soil erosion	Visual character, Land use	Pre-mining	Medium	Remedy through rehabilitation, Limit footprint, Control through storm water control	Low
Clearance of area for mining	Visual scarring	Visual Character	Operational Phase	Medium	Remedy through rehabilitation	Low
	Destruction of flora and habitat	Visual Character, Land use	Operational Phase	Medium	Remedy through rehabilitation, Limit footprint and removal of vegetation	Low
	Loss of agricultural potential	Land use management	Operational Phase	Low	Control through soil conservation techniques  Limit footprint of the proposed prospecting as far possible to limit	Low

					loss of agricultural land	
	Soil erosion	Land use	Operational Phase	Medium	Control through soil conservation techniques, Stop through appropriate storage of topsoil	Low
Excavation	Dust emissions	Air quality	Operational Phase	Medium	Control through dust control measures	Low
	Drainage disruption	Drainage	Operational Phase	Medium	Control through storm water controls	Low
	Slope instability	Topography	Operational Phase	Low	Control through slope management controls Low	Low
	Noise	Noise	Operational Phase	Low	Control through noise control measures	Low



	Visual Scarring	Visual Character	Operational Phase	Medium	Remedy through rehabilitation of already worked areas	Low
	Soil erosion	Land use	Operational Phase	Low	Remedy through the rehabilitation of already worked areas, Control through slope control, Stop through appropriate storage of topsoil	Low
	Destruction of heritage resource	Heritage issues	Operational Phase	Low	Avoidance	Low
Drilling & blasting (if done)	Noise and vibrations	Noise	Operational Phase	Medium	Control through blast control measures	Low
	Dust	Air quality	Operational Phase	Low	Control through dust control measures	Low
	Fly rock	Safety	Operational Phase	Low	Control through blast control	Low

					measures	
Waste Disposal and Material storage	Soil contamination	Land degradation	Operational Phase	Low	Avoidance	Low
	Water pollution	Water	Operational Phase	Low	Avoidance	Low
	Increased risk of fire	Safety	Operational Phase	Low	Avoidance	Low
Material handling, hauling and transportation	Dust	Air quality	Operational Phase	Low	Control through dust control measures	Low
	Increased risk of accidents	Safety	Operational Phase	Low	Stop through site management protocols	Low
	Noise	Noise	Operational Phase	Low	Control through noise control measures	Low
	Soil contamination from oil/fuel leaks	Land degradation	Operational Phase	Low	Stop through operational control measures e.g. drip	Low

					trays and use of well serviced machinery	
Removal of infrastructure & equipment and re- shaping of proposed prospecting	Noise	Noise	Decommissioning and closure	Low	Control through noise control measures	Low
	Dust	Air quality	Decommissioning and closure	Low	Control through dust Control measures	Low
	Soil contamination from oil/fuel	Land degradation	Decommissioning and closure	Low	Stop through operational Control measures, e.g. drip trays and use of well serviced machinery	Low
	Disruption of surface drainage	Water movement	Decommissioning and closure	Low	Control through storm water controls, remedy through rehabilitation	Low
Community and labour relations management	Community conflicts and tensions	Community relations	Operational	Low	Control through Site Management	Low

					protocols	
	Increase risk of fire	Fire risk	Operational	Low	Control through Site Management protocols	Low
	Reduced security on area	Safety Issues	Operational	Low	Control through Site Management protocols	
	Improved employment Improved skills	Community relations Community relations	Operational	Low	Control through Site Management protocols	Low

**k. Summary of specialist reports**

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form)

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT  (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
Baseline desktop archaeological assessment	Included in report attached		<b>Appendix E</b>
Baseline desktop ecological assessment	Included in report attached		<b>Appendix F</b>

\*Attach copies of Specialist Reports as appendices.

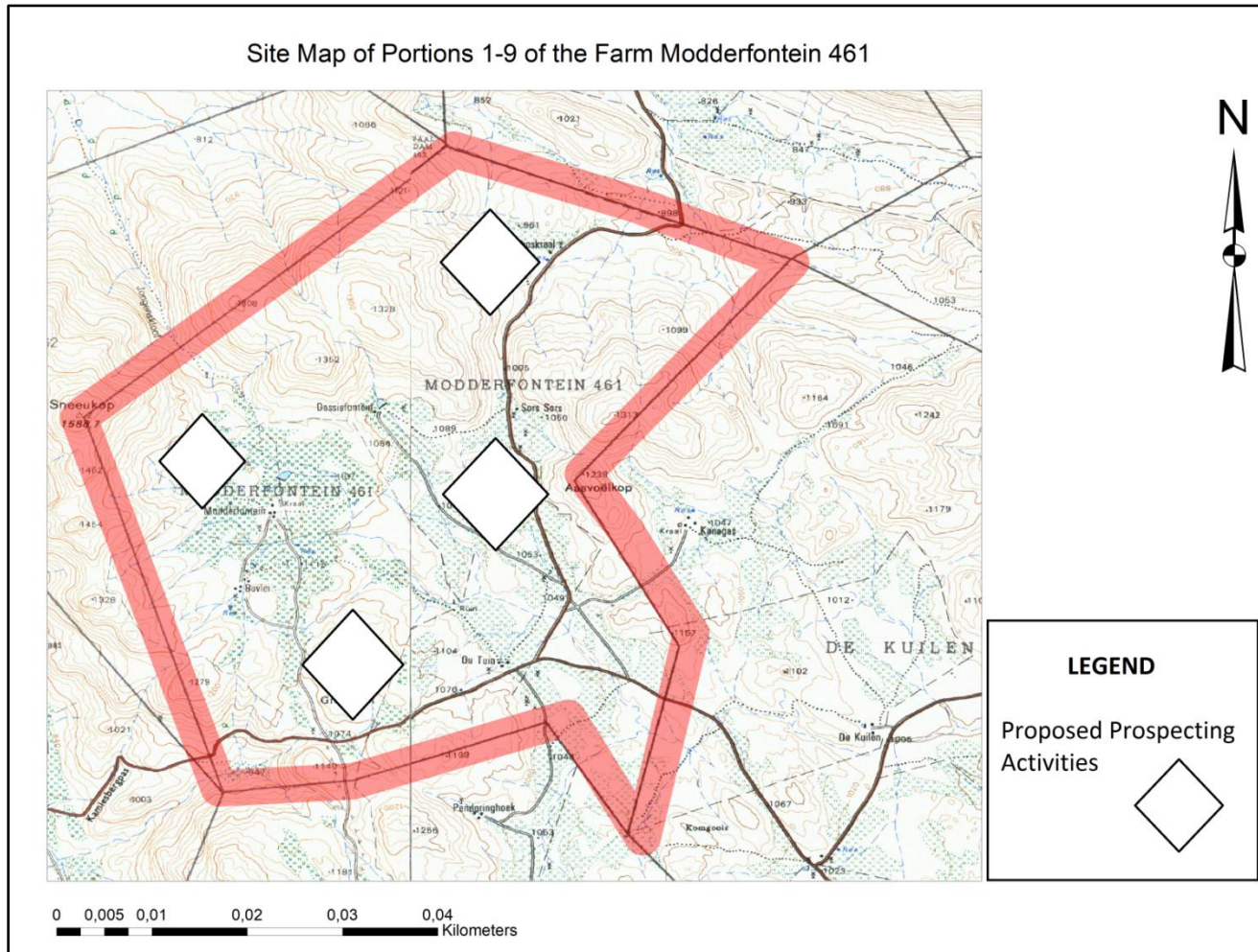
**I. Environmental impact statement**

**i. Summary of the key findings of the environmental impact assessment;**

If suggested mitigation measures are implemented and due to the small scale short term nature of the prospecting activities and the fact that the area will be rehabilitated back to its original state (i.e. agricultural land/grazing areas), it is unlikely that the proposed development will create any long-term negative impacts of high significance. On the contrary, the development will allow for business for local service companies and job creation in the short term. The majority of the negative impacts identified can be mitigated to low significance.

- ii. **Final Site Map** (Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers)

**Attach as Appendix C**



**iii. Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;**

The identified potential impacts for the preferred alternative range from air pollution such as dust, noise pollution, soil pollution, waste pollution, water pollution, Fauna and Flora impacts, Visual impacts and socio-economic impacts. All these will be properly managed. None of these impacts will be significant since the proposed prospecting activities will be of small scale, short term, mitigation measures will be adhered to and concurrent rehabilitation will be practiced.

**m. Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;**

**Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorization**

Air pollution

- Dust abatement by wetting down exposed areas at drill and camp sites where required.
- Vehicles will stay on the approved or available tracks as far as practically possible.
- Low speed limits will be set to avoid the creation of dust (40km/hr).
- All the equipment and vehicles will be equipped with the manufactures stock standard exhaust systems which will minimize the amount of emissions and noise from their engines.
- No burning of waste will be allowed on site.
- Fire extinguishers and other fire safety equipment will be available.
- Drilling locations as set out by the final layout plan will be adhered to.
- Excavations and other clearing activities will only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighboring areas.
- Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.

### Noise pollution

- The activities will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislations regarding noise control.
- Employees will be supplied with ear plugs. All prospecting vehicles will be maintained in a road worthy condition.
- All work will be limited to daylight hours i.e. between 6am and 6pm.

### Waste pollution

- Scavenger proof bins will be made available to avoid windblown litter.
- Bins will be emptied on a regular basis.
- No burying and/or burning of waste is allowed.
- All waste bins and domestic waste will be removed from site on a regular basis.

### Water pollution

- Prospecting activities will not be conducted within 32 m of a watercourse or drainage line or within 500 m of a wetland. Should this become a requirement, the relevant permits will have to be obtained from DWS prior to drilling taking place. All preliminary drill hole locations are placed to NOT occur within these buffer zones.
- Limited amounts of water (approximately 5000 liters / day) will be used during drilling. Water will be trucked to site.
- Enviro-loo ablution facilities will not be placed within 32 m of any water body.
- No construction footprint will be placed inside or within 32 m of any water body or within 500 m of a wetland.

### Hazardous materials

- Use and /or storage of materials, fuels and chemicals which could potentially leak into the ground will be controlled in a manner that prevents such occurrences.
- All storage tanks containing hazardous materials will be placed in bunded containment areas with sealed surfaces.
- The bund wall will be high enough to contain 110% of the total volume of the stored hazardous material with an additional allocation for potential high runoff storm water events.



- Any hazardous substances will be stored at least 100 m from any of the water bodies on site.
- Contaminated wastewater will be managed by the Contractor to ensure existing water resources on the site are not contaminated. All wastewater from general activities in the camp will be collected and removed from the site for appropriate disposal at a licensed commercial facility.

#### Soil pollution

- Dust abatement by wetting down exposed drill site and camp areas where required.
- Stockpiles will be below the 1.5 m height restriction.
- The use of oil drip trays under drilling equipment to ensure no spillage of oils and fuels onto the ground.
- Where possible, no major vehicle repairs will be done on site.
- Oils and fuel will be stored on bunded areas to avoid spillages.
- Any spillages which may occur will be investigated and immediate action will be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, this will be recorded and reported to the environmental personnel, Department of Water and Sanitation (DWS), DMR and any other relevant authorities. In such cases the contaminated soil will be excavated and disposed at a suitably licensed and registered landfill.
- An emergency plan for spillages will be available on site.
- Storm water runoff in and around drill holes will be controlled.
- Wind screening and storm water control will be undertaken to prevent soil loss from the site.
- All erosion control mechanisms will be regularly maintained.
- Re-vegetation of disturbed surfaces will occur immediately after the construction and prospecting activities are completed.
- Rehabilitation will be undertaken progressively.

#### Fauna and flora

- Only demarcated areas for drilling will be cleared to the minimum level required for access and adjacent and/or other areas will not be disturbed. No trees will be removed.

- Place temporary facilities on already disturbed land as far as possible to limit impacts on vegetation.
- No firewood harvesting will be allowed.
- No fires will be made on site. Cooking will only be allowed on gas-stoves at designated areas.
- No hunting will be allowed.
- All equipment will be removed from site.
- No cigarette butts may be disposed of on the relevant properties.
- Rehabilitation will be done in such a manner that the site is in the original state prior to prospecting.

#### Rehabilitation

- Prior to rehabilitation of the site, all remnants of foreign debris shall be removed from the site.
- All holes will be covered first with subsoil and then with topsoil (minimum of 10cm deep). Topsoil will be spread to the original depth (30cm where possible).
- As topsoil will contain all cleared vegetation, no additional treatment will be required.
- The soil must cover all the roots and be well firmed down to a level equal to that of the surrounding in situ material.
- Control weeds by means of extraction, cutting or other approved methods.
- Monitoring will be undertaken once a month or until rehabilitation has been deemed successful.
- Follow up inspections will be conducted every two months to remove upcoming seedlings of alien vegetation.
- Continued monitoring throughout the life of the project will be required as the risk of alien plant species invasion is never eliminated.
- A single permanent marker will be required to mark the location of the drill hole for future reference. The siting of such a marker shall be cleared with the landowner.
- All rehabilitation referred to in this environmental management programme will be done concurrent to prospecting operations as set out in the MPRDA. Best practice methods will be used.
- Continuous monitoring of possible soil erosion will be required.

### Cultural/Heritage

- The applicant will before commencing any prospecting activity, ascertain whether the designated site does not include a heritage site.
- Any heritage sites/artifacts found will be reported to SAHRA.
- National heritage sites will not be destroyed, damaged, excavated, altered, or defaced without a permit.
- Demolishing of buildings older than 60 years is subjected to approval - National Heritage Resources Act, 1999 (Act No 25 of 1999).
- Invasive activities will not be allowed within 100m from farm houses.
- Local museums as well as the South African Heritage Resource Agency (SAHRA) will be informed if any artifacts are uncovered in the affected area and mitigation measures recommended by SAHRA should be followed.
- The contractor will ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken.
- Any discovered artifacts will not be removed under any circumstances. Any destruction of a site will only be allowed once a permit is obtained and the site has been mapped and noted.
- All health and safety aspects will be adhered to.

### Hunting and livestock areas

- Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities.
- Site activities will be restricted to daylight hours between 6am and 6pm.
- Vehicles will remain on the existing tracks.
- Prospecting activities will be fenced off and will not be conducted within 100 m of pens or stalls.

### Socio-economic

- Local labour and service companies will be used where possible.
- Prospecting Rights do not supersede property rights hence the applicant will comply with all reasonable requirements to minimize the impact of prospecting on landowners and agricultural activities

- All relevant mitigation measures as set out in Table 16 above.

### Environmental Training

All site personnel will have a basic level of environmental awareness training. Topics covered should include;

- What is meant by “Environment”
- Why the environment needs to be protected and conserved
- How construction and prospecting activities can impact on the environment
- What can be done to mitigate against such impacts
- Awareness of emergency and spills response provisions
- Social responsibility during construction and prospecting e.g. being considerate to local residents

The need for a “clean site” policy also needs to be explained to the workers.

- n. Aspects for inclusion as conditions of Authorization.** Any aspects which must be made conditions of the Environmental Authorization.

EMPr must be on site

- The contractor and key personnel must get an understanding of the EMPr.
- An Environmental Control Officer must be appointed to ensure that environmental controls are being implemented, and quarterly reports must be forwarded to the Competent Authority (DMR among others).
- The proponent and contractor must be made aware that they are responsible for rehabilitating the environment they damage to the pre-state of which they found it to be.
- Upon getting done with the prospecting activity, closure report must be submitted to the competent authority

**o. Description of any assumptions, uncertainties and gaps in knowledge**

(Which relate to the assessment and mitigation measures proposed)

Specialists were engaged, however, some impacts could have been missed.

**p. Reasoned opinion as to whether the proposed activity should or should not be authorized**

**i. Reasons why the activity should be authorized or not.**

Based on the analysis and findings as discussed throughout the report, there is no reason why the project should not be authorised. There are no environmental fatal flaws and all impacts can be effectively mitigated. The spatial extent of disturbance related to this activity is minimal and short term. The implementation of effective rehabilitation will ensure that the site is returned back to its original state and that the impacts are reversed. In addition to this the activity should be authorised in order for a better understanding of the mineral potential in the area to be obtained. Once a deposit is defined, a better understanding of its economic value will be achieved and this will then provide a better platform for making an informed decision about the potential for mining operations in this area.

**ii. Conditions that must be included in the authorization**

EMPr must be on site;

- The contractor and key personnel must get an understanding of the EMPr
- An Environmental Control Officer must be appointed to ensure that environmental controls are being implemented, and quarterly reports must be forwarded to the Competent Authority.
- The proponent and contractor must be made aware that they are responsible for rehabilitating the environment they damage to the pre-state of which they found it to be.
- Upon getting done with the mining activity, closure report must be submitted to the competent authority.

**q. Period for which the Environmental Authorisation is required**

The authorisation is required for the duration of the prospecting right which is an initial 5 years plus a potential to extend the right by an addition to this at 3 years. In addition to this the period should allow for a further 2 years for the application period. Thus a total of 10 years.

**r. UNDERTAKING**

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment Report and the Environmental Management Programme report.

<p>Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises BAR and EMPr compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Basic Assessment Report and Environmental Management Programme as proposed.</p>	
<p><b>Full Names and Surname</b></p>	<p>Tshimangadzo Mulaudzi</p>
<p><b>Identity Number</b></p>	<p>8803265731082</p>

- s. Financial provision** State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

This financial provision assessment focused on the existing and proposed mining activities and was calculated by means of the Department of Mineral Resources' (DMR) standard method for assessment of mine closure. The cost for rehabilitation and closure of the proposed site according to the DMR Guideline is R 60 908.71 for the full LoM.

**i. Explain how the aforesaid amount was derived.**

The closure cost assessment is done in accordance with the requirements of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended and associated regulations. These Regulations provide that the holder of a Prospecting right must make full financial provision for rehabilitation of negative environmental impacts. The methodology used was based on the Department of Mineral Resources (DMR) "Guideline Document for the Evaluation of the Quantum of Closure-related Financial Provision provided by a Mine" (DME, 2005), as per the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA).

The financial provision must guarantee the availability of sufficient funds to undertake the following:

- Rehabilitation of the adverse environmental impacts of the listed or specified activities;
- Rehabilitation of the impacts of the prospecting or mining activities;
- Decommissioning and closure of the operations;
- Remediation of latent or residual environmental impacts which become known in the future;
- Removal of building structures and other objects; and
- Remediation of any other negative environmental impacts.

The closure cost assessment has been developed in line with these requirements. The DMR Guideline format makes use of a set template for which defined rates and multiplication factors are used. The multiplication and weighting factors which ultimately define the rate to be used are determined by amongst others the topography, the classification of the mine according to mineral prospected, the risk class of the mine and its proximity to build up or urban areas.

The DMR Guideline Document for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine (DME, 2005), classifies a mine according to a number of factors which allows one to determine the appropriate weighting factors to be used during the quantum calculation.

The following factors are considered:

- The mineral prospected;
- Environmental sensitivity of the prospecting area;
- Type of prospecting operation; and
- Geographic location.

The financial provision for the Life of Mine of Modderfontein Mine is calculated to be R 60 908.71 based on the DMR method of calculation. The total cost includes contingencies, Preliminary and General (P&Gs) and is inclusive of VAT at 15%.

Table 17 presents the detailed forecast of the expected increase in financial provision as Duho Mining (Pty) Ltd continues to progress through the construction phase into the operational phase in Year 2020. Duho Mining (Pty) Ltd annually conducts a reassessment of their financial provision based on actual disturbances and it is recommended that this forecast be updated as the progress against the planned construction schedule can be verified.



Table 17: The calculated quantum.

CALCULATION OF THE QUANTUM								
Applicant: Evaluators:		Duho Mining (Pty) Ltd – NC 10521 PR Engedi Minerals and Energy (Pty) Ltd			Location: Date:		NAMAQUALAND Sep-20	
No.	Description	Unit	A	B	C	D	E=A*B*C*D	
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	17	1	1	0	
2 (A)	Demolition of steel buildings and structures	m2	0	241	1	1	0	
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	356	1	1	0	
3	Rehabilitation of access roads	m2	0.01	43	1	1	0.43	
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	419	1	1	0	
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	229	1	1	0	
5	Demolition of housing and/or administration facilities	m2	0	483	1	1	0	
6	Opencast rehabilitation including final voids and ramps	ha	0.05	253019	1	1	12650.95	
7	Sealing of shafts adits and inclines	m3	0	130	1	1	0	
8 (A)	Rehabilitation of overburden and spoils	ha	0.03	168679	1	1	5060.37	
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	210087	1	1	0	
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	610192	1	1	0	
9	Rehabilitation of subsided areas	ha	0.15	141244	1	1	21186.6	
10	General surface rehabilitation	ha	0.01	133622	1	1	1336.22	
11	River diversions	ha	0	133622	1	1	0	
12	Fencing	m	0.02	152	1	1	3.04	
13	Water management	ha	0	50807	1	1	0	
14	2 to 3 years of maintenance and aftercare	ha	0.2	17782	1	1	3556.4	
15 (A)	Specialist study	Sum	0			1	0	
15 (B)	Specialist study	Sum				1	0	
Sub Total 1							43794.01	
1	Preliminary and General		5255.2812	<b>weighting factor 2</b> 1			5255.2812	
2	Contingencies			4379.401			4379.401	
Subtotal 2							53428.69	
VAT (15%)							7480.02	
<b>Grand Total</b>							<b>R 60 908.71</b>	

ii. **Confirm that this amount can be provided for from operating expenditure.**

(Confirm that the amount is anticipated to be an operating cost and is provided for as such in the Financial and Technical Competence Report (Ftat) or Prospecting Work Programme as the case may be).

Financial provision has been made available through the company's cash reserves. The reserves provide for sufficient funds for premature and planned closure of the prospecting operation. The quantum for financial provision for rehabilitation will be re-assessed on an annual basis and arrangement to fund shortfalls will be made.

t. **Specific information required by the Competent Authority**

i. **Compliance with the provisions of sections 24(4)(a) and (b) read with section 24(3)(a) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA report must include the:**

1. **Impact on the socio-economic conditions of any directly affected person.** (Provide results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial tantalum, niobium, lithium, mica, and rare earths prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix** .

Safety of people even animals if the open pits are not fenced off and guarded. If water accumulates after rain, there is a risk of drowning and death. The open pits are also a risk to animals falling in and breaking limbs. The high vehicle movement to and from the drilling and pitting site a risk to accidents. Socio-economic impact will be due the job creation and revenue generation for the Nama Khoi Local Economic Development.

2. **Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.** (Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial tantalum, niobium, lithium, mica, and rare earths prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

No historical or cultural sites were identified. In case any human remains are excavated during operation, work should be stopped and a report made to the police and SAHRA for removal of the human remains.

- u. **Other matters required in terms of sections 24(4) (a) and (b) of the Act.** (the EAP managing the application must provide the competent authority with detailed, written proof of an investigation required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix B**).

The proposed drilling activities requested as part of this authorisation is the only current viable manner in which a mineral deposit can be identified and used to generate a South African Mineral Reporting Codes (SAMREC) compliant resource which is a minimum requirement to determine whether it is viable to invest in a future mine.

**PART A: APPENDIXES**

**APPENDIX A:****THE CURRICULUM VITAE OF THE EAP/ECO****CURRICULUM VITAE****OF**

Tshimangadzo Mulaudzi

P.O Box 29567

Danhof

93120

Contacts: 0793626046 / 072 901 0990

E-mail: mulaudzit@engedime.com

Date of Birth: 26 March 1988

Nationality : South African

Languages : Speak and write (English and  
Tshivenda).

ID : 8803265731082

ender : Male

Driver's license: Code 10 (C1)

Health status : Excellent

**EDUCACTIONAL QUALIFICATION**

Institution : Litshovhu High School

Qualification : Grade 12 (Senior Certificate)

Major subject passed : Mathematics, Physical Science, Biology, Agric,  
English and Tshivenda all in Higher Grade.

Year : 2006

Institution : University of Venda

Qualification : BSc (Honours). Mining and Environmental Geology

Subject passed : See attached Academic Record

Year : 2011

**SUMMARY**

I am a Candidate in a possession of a BSc (Hons) in Mining and Geology with vast variety of experience in Geological, Geochemical, Geophysical Exploration, and Managing of a Manufacturing

team. Currently I am working as a Consultant Geologist at Breeze Court Investments 47 (Pty) Ltd and i have gained experience in Map Production (Using ArcGis), Identification of Minerals, and Applications for (Prospecting Right, Mining Right, and Prospecting right on DMR Samrad online portal), Petroleum applications ( Compilation of EMP, EIA, Progress report, Environmental Performance Assessment, Closure application, and Mineral Laws Administration (knowledge of MPRDA, 2002, NWA, 1998, NEMA, 1998, NHRA, 1999, MHSA, 1996, Mining Charter, 2010 and Freedom Charter, 1955.).

I have also worked with the small scale miners in the region of Northern Cape, Free State and Northern Cape helping them with the application for Prospecting right, prospecting right and also attend the site inspection with the officials from Department Mineral Resources to help the small scale miners to comply with the legislation of the department.

I served at the Makhado Municipality for two (2) years under Local Economic Development as an Intern (**In Mining, Environmental and Geology Sectors**) and was attending seminars on Local Economic Development issues, interacting with the stake holders and helping the Small Micro Medium Enterprises (SMME's) to get funds from the sponsors.

#### EMPLOYMENT HISTORY

Job title	:	<b>Trainee Mine Geologist</b>
Name of organization	:	Agnes gold mine
Period	:	June 2010 – June 2011 (1 year)
Experiences and skills	:	Face mapping, stope observing, continuous sampling, Geological data capturing, Report writing and Geological mapping.
Job title	:	<b>Chief production, quality, and safety officer</b>
Name of Organization	:	Tshedza concrete art
Period	:	January 2012 – January 2013 (1 year, 1 month)
Experiences and skills	:	Managing high quality production and enforcing safe working Environment for workers
Job title	:	<b>LED Intern (in Mining, Environmental and Geology)</b>
Name of Organization	:	Makhado Local Municipality (Northern Cape)
Period	:	February 2013 – December 2014 (11 Months)

Experiences and skills	:	To formulate and implement measures and procedures to Facilitate for the development of SMME's. Implement Measures, processes, and procedures to attract the Investors, Facilitate and implement job creation projects and initiatives. Formulate, review and update LED plans in alignment with the Province and District Municipality. Facilitate and create Partnership with regard to service provider, trade exhibitions, Corporate and SMME's.
Job title	:	<b>Consultant Environmental Geologist and GIS specialist</b>
Name of organization	:	Breeze court investment (Pty) Ltd Geol& Min Consultants
Period	:	January 2014 – January 2015
Experiences and skills	:	Map Production (Using ArcGis), Identification of Minerals, and Applications for (Prospecting Right, Mining Right, and Prospecting right on DMR Samradonline portal), Technical Cooperation Permit, Reconnaissance Permit, Exploration Right, Production right (Petroleum applications) Compilation of EMP, EIA, Environmental Authorisation, Progress report, Environmental Performance Assessment, Closure application, and Mineral Laws Administration (Broad knowledge of MPRDA, 2002), Assisting small scale miners in the region of Northern Cape, Northern Cape, and Free State with application for Prospecting right and Prospecting right, help them with compliance in terms of the MPRDA, 2002. Also do the site inspection with the officials from Department of Mineral Resources, and help the miners and management to comply with the statutory while operating and always work in a safe working conditions and enforce also that the act of one employee must be safer towards another employee to achieve zero harm.
Job title	:	<b>Consultant Environmental Geologist and GIS specialist</b>
Name of organization	:	Engedi Minerals and Energy (Pty) Ltd
Period	:	February 2015 – Present
Experiences and skills	:	Map Production (Using ArcGis), Identification of Minerals, and Applications for (Prospecting Right, Mining Right, and Prospecting right on DMR Samradonline portal), Technical Cooperation Permit, Reconnaissance Permit, Exploration Right, Production right (Petroleum applications) Compilation of EMP, EIA, Environmental Authorisation, Progress report, Environmental Performance Assessment, Closure application, and Mineral Laws Administration (Broad knowledge of MPRDA, 2002), Assisting small

scale miners in the region of Northern Cape, Northern Cape, and Free State with application for Prospecting right and Prospecting right, help them with compliance in terms of the MPRDA, 2002. Also do the site inspection with the officials from Department of Mineral Resources, and help the miners and management to comply with the statutory while operating and always work in a safe working conditions and enforce also that the act of one employee must be safer towards another employee to achieve zero harm.

### Knowledge of Legislations and Acts

Constitution of the Republic of South Africa No.108 of 1996  
 Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)  
 Mineral and Petroleum Resources Development Act Amendments bill 15 of 2013  
 Mineral and Petroleum Resources Development Act Regulations  
 National Water Act, 1998 (Act 36 of 1998)  
 Mine Health and Safety Act, 1996 (Act 29 of 1996)  
 National Heritage Resources Act, 1999 (Act 25 of 1999)  
 National and Environmental Management Act, 1998 (Act 107 of 1998)  
 Public Finance Management Act, 1999 (Act 1 of 1999) and Act 29 of 1999 as Amended  
 2014 Environmental Impact Assessment Regulations  
 Mining Charter, 2010  
 Freedom Charter, 1955  
 Municipal System Act, 2000 (Act 32 of 2000)  
 Municipal Structure Act, 1998 (Act 117 of 1998) and as amended in Act 20 of 2002.

### COMPETENCIES

Ability to relate with people,  
 Ability to work independently and as a team,  
 Determination to succeed,  
 Strong leadership skills,  
 Proactive, resourceful, well organized and able to meet deadlines, and  
 Ability to communicate effectively

### EXTRAMURAL ACTIVITIES AND INTERESTS



I love reading newspapers, business literatures, watching discovery channels, News, writing and Public speaking, these help me share my ideas and opinion and to get my message across, and I love learning new things every day and I am eager to learn

## REFERENCES

Name : Mr P. Makoela  
 Name of organization : Agnes gold mine (Pty) Ltd  
 Position : Head of department of geology section  
 Contacts : 087 351 8304 (W), 076 311 7791 (C)

Name : Mr R.P. Mamphaga  
 Name of organization : Tshedza concrete art (Pty) Ltd  
 Position : Managing director  
 Contacts : 011 024 1167 (W), 082 857 3204 (C)

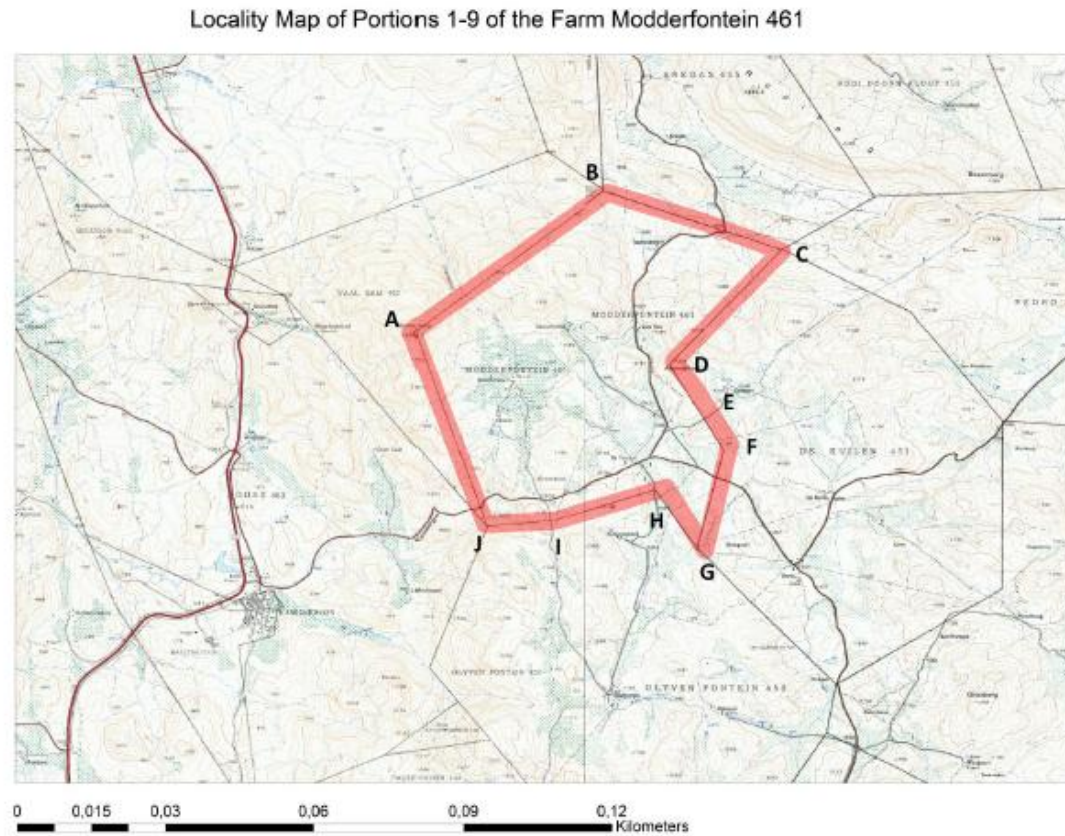
Name : Mr P. Netshivhuyu  
 Name of organization : Makhado Local Municipality  
 Position : Supervisor  
 Contacts : 072 718 3220(C)

Name : Mr A.J. Davids  
 Name of organization : Breeze Court Investments (Pty) Ltd  
 Position : Consultant Environmental Geologist  
 Contacts : 082 707 3239 (C)

**APPENDIX B:**

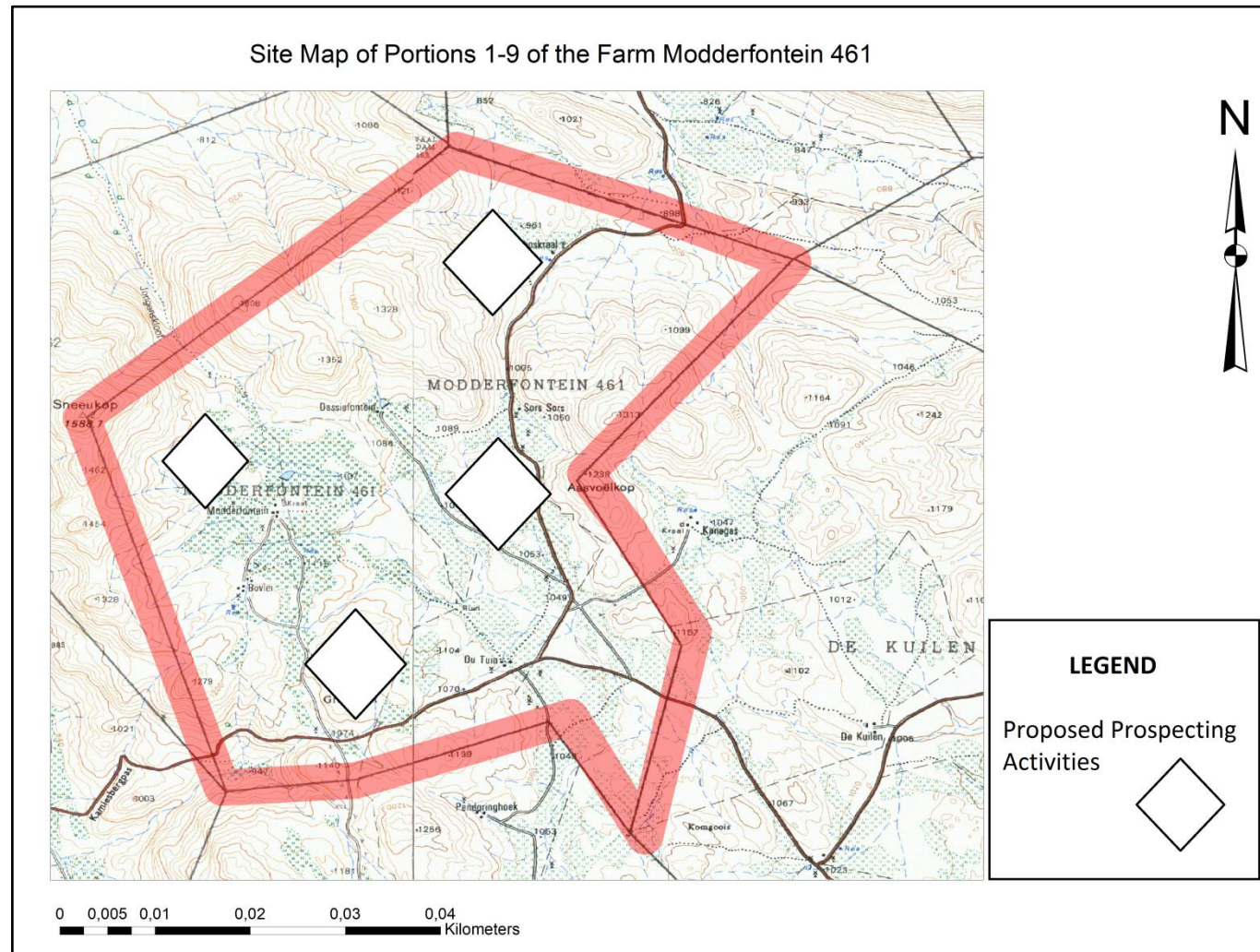
**LOCALITY MAP**

<b>APPLICANT</b>		
DUHO MINING (PTY) LTD		
PLAN PREPARED IN ACCORDANCE WITH REGULATION 2.2 OF THE MPRDA (ACT 28 OF 2002)		
<b>SKETCH PLAN FOR PROSPECTING RIGHT</b>  OVER THE AREA LETTERED A, B, C, D, E, F, G, H, I AND J IN EXTENT 3 373 HA  SITUATED ON  Modderfontein 461  ADMINISTRATIVE DISTRICT OF NAMAQUALAND PROVINCE: NORTHERN CAPE		
SURVEYED SYSTEM WGS: DD CO-ORDINATES: WG 25		
<b>NAME</b>	<b>E</b>	<b>S</b>
A.	17.964516°	-30.154146°
B.	18.003962°	-30.125875°
C.	18.039336°	-30.137701°
D.	18.017542°	-30.160400°
E.	18.022101°	-30.166151°
F.	18.028905°	-30.177021°
G.	18.023768°	-30.198181°
H.	18.015952°	-30.185639°
I.	17.993404°	-30.192121°
J.	17.979279°	-30.192938°
PLAN APPROVED: .....		
REGIONAL MANGER: NORTHERN CAPE PROVINCE DATE: .....		
DRAWN AND COMPILED BY: ENGEDI MINERALS AND ENERGY (PTY) LTD MINING CONSULTANTS		
SIGNATURE		DATE



## APPENDIX C:

## THE SITE PLAN





APPENDIX D<sub>1</sub>:

## PROOF OF ADVERTISEMENT

BYLAAG	[DIE PLATTELANDER - NUUS VIR ALMAL OP DIE N-7 & N-14]	09 Oktober 2020	09 Oktober 2020	[DIE PLATTELANDER - NUUS VIR ALMAL OP DIE N-7 & N-14]	BYLAAG		
<p><b>NOTICE – DMR REF. NO. NC 12521 PR</b></p> <p>APPLICATION FOR PROSPECTING RIGHT WITHOUT BULK SAMPLING TO PROSPECT FOR TANTALUM, NIOBIUM, LITHIUM, MICA, AND RARE EARTHS SITUATED ON THE FARM MODDERFONTEIN NO. 461 IN THE ADMINISTRATIVE DISTRICT OF NAMAQUALAND, NORTHERN CAPE.</p> <p>Notice of public participation process is hereby given of the interest of DUHO MINING (PTY) LTD to prospect for Tantalum, Niobium, Lithium, Mica, and Rare Earths on the above mentioned property. An application for a prospecting right without bulk sampling and Environmental Authorisation was simultaneously lodged in terms of Section 26 of the Mineral Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) read together with Chapter 4 of the 2014 Environmental Impact Assessment Regulation, and it has been accepted and acknowledged by the Department of Mineral Resources, Northern Cape Province.</p> <p>In terms of the 2014 Environmental Impact Assessment Regulation, Listing notice 1, activity no. 20 promulgated in terms of Section 20(5) and 44 of the national Environmental Management Act (Act No. 107 of 1998 as amended), read together with Chapter 6 of Environmental Impact Assessment regulation, 2014. The landowner or lawful occupier of the land, as well as any interested and affected parties must be notified and consulted regarding the proposed operation. The Basic Assessment Report (BAR) must be submitted to the Department of Mineral Resources and the copies of the BAR is available at the Local Library for reviewing and comments. You're hereby invited to address any comment to support / objection to the proposed operation to ENGEDI MINERALS AND ENERGY (PTY) LTD on / or before the 9 NOVEMBER 2020. Please feel free to contact the undersigned on the following contact details:</p> <p>Physical address: 23 Barnes Street, Langebaan building, 80enfontein, 8901 Email: info@engediems.com Phone: 052 439 1748 Fax: 056 556 2568</p> <p>If no correspondence is received from you within the stated period, it will be accepted that you have no objections against the proposed prospecting activities. Much Blessings, T. Mulatozi (Consultant)</p>	<p><b>BOEDEL WYLE HERMANUS JOSIAS LOUW</b></p> <p><b>BOEDEL NO: 001803/2020</b></p> <p>In die boedel van wyle Hermanus Josias Louw, ID No. 4710305012080, oorlede 13 Februarie 2020 van Uniestraat 27, Simonsig, Springbok, 8240, boedel nommer 001803/2020.</p> <p>In terme van Art 29 (1) van die Boedelwet (Wet No. 66 van 1965) word krediteure en debiteure in bogemelde boedel versoek om hulle vorderinge in te lewer en hul skuld te betaal by die kantoor van die ondergetekende binne 30 (dertig) dae vanaf 9 Oktober 2020.</p> <p><b>DIPPENAAR ELLIS BK</b> <b>Posbus 120</b> <b>Van Riebeeckstraat 65</b> <b>Springbok</b> <b>8240</b></p> <p>Tel 027-718-1077</p>	<p><b>BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS</b> DMR REFERENCE NO.: NC30/5/1/3/2/10815MP</p> <p><b>BASIC ASSESSMENT FOR THE PROPOSED MINING PERMIT APPLICATION FOR SAND ON A SHA PORTION OF PORTION 14 OF THE FARM MESKLIP 259</b> <b>MAGISTERIAL DISTRICT NAMAQUALAND,</b> <b>NORTHERN CAPE PROVINCE.</b></p> <p>On behalf of the Applicant, <b>Heba Vergruisers CC</b>, notice is hereby given of the commencement of the Public Participation Process and the availability of the Draft Basic Assessment Report (DBAR) and Draft Environmental Management Programme Report (EMPr) for the proposed Mining operation for Sand an Industrial mineral on the property as mentioned above. The Basic Assessment process is undertaken in terms of the Minerals and Petroleum Resources Development Act, Act 28 of 2002, the National Environmental Management Act, Act 107 of 1998 and Environmental Impact Assessment Regulations (EIA) of 2014 (as amended).</p> <p><b>EIA Regulations Listed Activities:</b> As set out in Listing Notice 1 (GN No. R. 327, 2017)</p> <ul style="list-style-type: none"> <li>• <b>Activity 21:</b> Any activity including the operation of that activity which requires a mining permit in terms of section 27 of MRPDA, including - associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing.</li> <li>• <b>Activity 22:</b> The decommissioning of any activity requiring a closure certificate in terms of section 43 of the MRPA.</li> <li>• <b>Activity 27:</b> The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.</li> <li>• <b>Activity 28:</b> Commercial or industrial developments where such land was used for agriculture on or after 01 April 1998 and where such development: (i) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare</li> </ul> <p>In addition to EA, a Water Use General Authorisation is required to be obtained from the Department of Water Affairs and Sanitation (DWS), as the applicable Water Use activities listed in the National Water Act (Act No. 36 of 1998) are:</p> <ul style="list-style-type: none"> <li>• Section 21(c) related to impeding or diverting the flow of water in a watercourse, and</li> <li>• Section 21(i) related to altering the bed, banks, course or characteristics of a watercourse.</li> </ul> <p>An application for a General Authorisation in terms of GN 509 of 2016 for Section 21(c) and (i) is submitted with the Draft Basic Assessment Report to DWS.</p> <p><b>Opportunity to participate / Invitation to comment:</b> Interested and/or Affected Parties should request copies of the documents or submit written comments on or before <b>10 November 2020</b> to the contact details below:</p> <p>Heba Vergruisers CC NC30/5/1/3/2/10815MP PO. Box 255, Springbok, 8240; Email: dmr.comments@vodamail.co.za</p>	<p><b>BOEDEL - KENNISGEWING</b></p> <p>Boedel wyle <b>JOHAN MARIUS NOLTE</b> Geboortedatum: <b>18 SEPTEMBER 1950</b> Identiteitsnommer: <b>500918 5007 08 1</b> Oorlewende eggenote: <b>ALWYNA JACOBINA NOLTE</b> Adres: <b>DU FLESSISSTRAAT 22, SPRINGBOK</b> Boedelnommer: <b>002763/2019</b></p> <p>Die Eerste en Finale Likwidasie- en Distribusierekening in bogemelde boedel sal oor 'n tydperk van een-en-twintig dae van die <b>9de dag van OKTOBER 2020</b> ter insae lê in die <b>Kantoor van die Meester van die Hooggeregshof, KIMBERLEY</b> en in die kantoor van die <b>Landdros te SPRINGBOK</b>.</p> <p><b>GETEKEN te SPRINGBOK op 29 SEPTEMBER 2020</b></p> <p><b>SCHREUDERS</b> <b>Prokureurs vir Eksekuteur</b> <b>ANICO GEBOU</b> <b>Voortrekkerstraat</b> <b>Posbus 15</b> <b>SPRINGBOK</b> <b>8240</b></p>	<p><b>BOEDEL - KENNISGEWING</b></p> <p>Boedel wyle <b>BEATRIX HENDRINA NOLTE</b> Geboortedatum: <b>28 AUGUSTUS 1925</b> Identiteitsnommer: <b>250828 0005 08 3</b> Oorlewende eggenote: <b>N.V.T.</b> Adres: <b>PRESIDENTSTRAAT 2, SPRINGBOK</b> Boedelnommer: <b>002508/2018</b></p> <p>Die Eerste en Finale Likwidasie- en Distribusierekening in bogemelde boedel sal oor 'n tydperk van een-en-twintig dae van die <b>9de dag van OKTOBER 2020</b> ter insae lê in die <b>Kantoor van die Meester van die Hooggeregshof, KIMBERLEY</b> en in die kantoor van die <b>Landdros te SPRINGBOK</b>.</p> <p><b>GETEKEN te SPRINGBOK op 29 SEPTEMBER 2020</b></p> <p><b>SCHREUDERS</b> <b>Prokureurs vir Eksekuteur</b> <b>ANICO GEBOU</b> <b>Voortrekkerstraat</b> <b>Posbus 15</b> <b>SPRINGBOK</b> <b>8240</b></p>	<p><b>GOEIE DAG ALMAL</b></p> <p>Ek Kan regtig nie dit meer vir myself hou nie.... my naam is Suzanne van upington.</p> <p>Ek is so gelukkig in my nuwe huis wat ek gekry het nadat ek finansiële hulp vanaf prophet maama Grace ontvang het. Sy is so vriendelik en het baie bygedra tot my lewe.</p> <p>Prophet maama Grace help ook met verhoudings, geld in my bankrekening, lenings, huis skoonmaak en beskerming.</p> <p>Bel/ WhatsApp prophet maama Grace <b>0795579335</b></p>	<p><b>BOEDEL - KENNISGEWING</b></p> <p>Boedel wyle <b>JOHAN MARIUS NOLTE</b> Geboortedatum: <b>18 SEPTEMBER 1950</b> Identiteitsnommer: <b>500918 5007 08 1</b> Oorlewende eggenote: <b>ALWYNA JACOBINA NOLTE</b> Adres: <b>DU FLESSISSTRAAT 22, SPRINGBOK</b> Boedelnommer: <b>002763/2019</b></p> <p>Die Eerste en Finale Likwidasie- en Distribusierekening in bogemelde boedel sal oor 'n tydperk van een-en-twintig dae van die <b>9de dag van OKTOBER 2020</b> ter insae lê in die <b>Kantoor van die Meester van die Hooggeregshof, KIMBERLEY</b> en in die kantoor van die <b>Landdros te SPRINGBOK</b>.</p> <p><b>GETEKEN te SPRINGBOK op 29 SEPTEMBER 2020</b></p> <p><b>SCHREUDERS</b> <b>Prokureurs vir Eksekuteur</b> <b>ANICO GEBOU</b> <b>Voortrekkerstraat</b> <b>Posbus 15</b> <b>SPRINGBOK</b> <b>8240</b></p>	<p><b>SY STERK GEBEDEDE HET MY LEWE VERANDER.</b> <b>DANKIE GRANDMA EN PROF TOM</b> <b>0732013046*</b></p> <p>My naam is Mbigali van Uppington, maar ek woon tans in die Wes-kaap. Ek het baie swaar gekry wat styd sonder geld. Ek het gaan geluk gehad nie en so baie ander dokters het my af teleurgestel. Ek en my familie het toe prof en maama Tom gekontak sy het onmiddellik sterk gebede gedoen en ons met geluk geseën.</p> <p>Ons besit nou suksesvolle besighede, talke huise en geld is glad nie meer 'n probleem nie. Al ons skuld is vereffen.</p> <p>Almal wat nie so gelukkig is nie, sukkel met uitbetalings en hartseer besede, kan haar kontak aangesien sy met dit ook kan help. Sy werk help ook met Lotto, Kasino, geluk, om jou plan te beskerm en met salaris verhoging, kortak, huile gevee, prof en maama sal jou nie teleurstel nie. Al jou lewens probleme kan in minste opgelos word.</p> <p>Ek wou regtig net vir prof en maama dankie sê vir die goeie werk wat hulle aan die publiek lewer.</p> <p><b>BEL OF WHATSAPP GRANDMA EN PROF TOM @</b> <b>0732013046</b></p>

**NOTICE – DMR REF. NO. NC 12521 PR**

**APPLICATION FOR PROSPECTING RIGHT WITHOUT BULK SAMPLING TO PROSPECT FOR TANTALUM, NIOBIUM, LITHIUM, MICA, AND RARE EARTHS SITUATED ON THE FARM MODDERFONTEIN NO. 461 IN THE ADMINISTRATIVE DISTRICT OF NAMAQUALAND, NORTHERN CAPE.**

Notice of public participation process is hereby given of the intent of **DUHO MINING (PTY) LTD** to prospect for Tantalum, Niobium, Lithium, Mica, and Rare Earths on the above mentioned property. An application for a prospecting right without bulk sampling and Environmental Authorisation was simultaneously lodged in terms of Section 16 of the Mineral Petroleum Resources Development Act, 2002 (Act No 28 of 2002) read together with Chapter 4 of the 2014 Environmental Impact Assessment Regulation, and it has been accepted and acknowledged by the Department of Mineral Resources, Northern Cape Province.

In terms of the 2014 Environmental impact Assessment Regulation, Listing notice 1, activity no. 20 promulgated in term of Section 20(5) and 44 of the national Environmental Management Act (Act No 107 of 1998 as amended), read together with Chapter 6 of Environmental Impact Assessment regulation, 2014. The landowner or lawful occupier of the land, as well as any interested and affected parties must be notified and consulted regarding the proposed operation. The Basic Assessment Report (BAR) must be submitted to the Department of Mineral Resources and the copies of the BAR is available at the Local Library for reviewing and comments. You're hereby invited to address any comment to support / objection to the proposed operation to **ENGEDI MINERALS AND ENERGY (PTY) LTD** on / or before the **9 NOVEMBER 2020**. Please feel free to contact the undersigned on the following contact details:

*Physical address: 15 Barnes Street, Langebaan building, Bloemfontein, 9301*

*Email: [info@engedime.com](mailto:info@engedime.com)*

*Phone: 051 430 1748*

*Fax: 086 556 2568*

If no correspondence is received from you within the stated period, it will be accepted that you have no objections against the proposed prospecting activities.

Much blessings, T. Mulaudzi (Consultant)

**BOEDEL WYLE HERMANUS****JOSIAS LOUW****BOEDEL NO: 001803/2020**

In die boedel van wyle Hermanus Josias Louw, ID No. 4710305012080, oorlede 13 Februarie 2020 van Uniestraat 27, Simonsig, Springbok, 8240, boedel nommer 001803/2020.

In terme van Art 29 (1) van die Boedelwet (Wet No. 66 van 1965) word krediteure en debiteure in bogemelde boedel versoek om hulle vorderinge in te lewer en hul skuld te betaal by die kantoor van die ondergetekende binne 30 (dertig) dae vanaf 9 Oktober 2020.

**DIPPENAAR ELLIS BK****Posbus 120****Van Riebeeckstraat 65****Springbok****8240****Tel 027-718-1077**



**APPENDIX D<sub>2</sub>:**  
**PROOF OF SITE NOTICES**



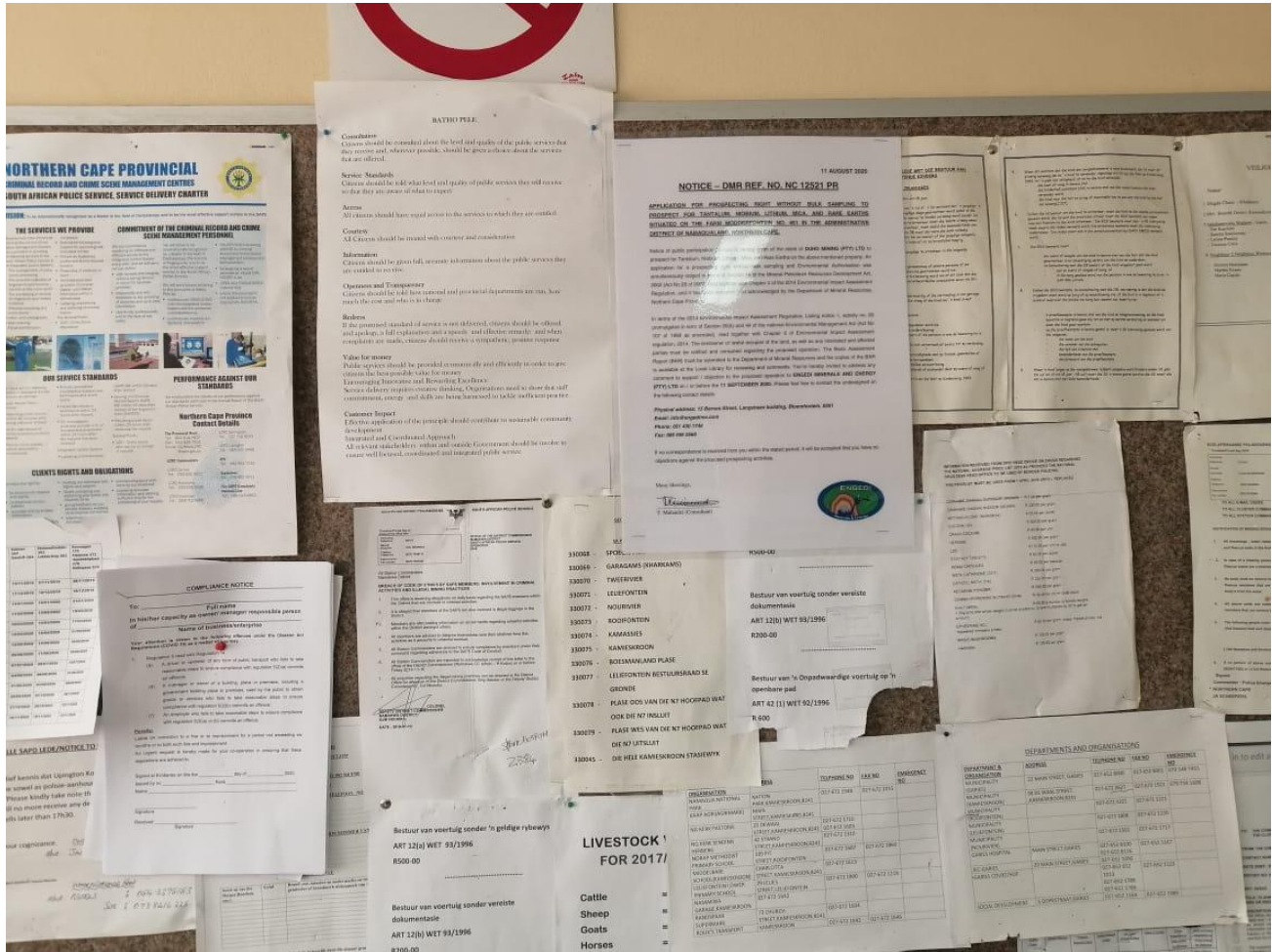


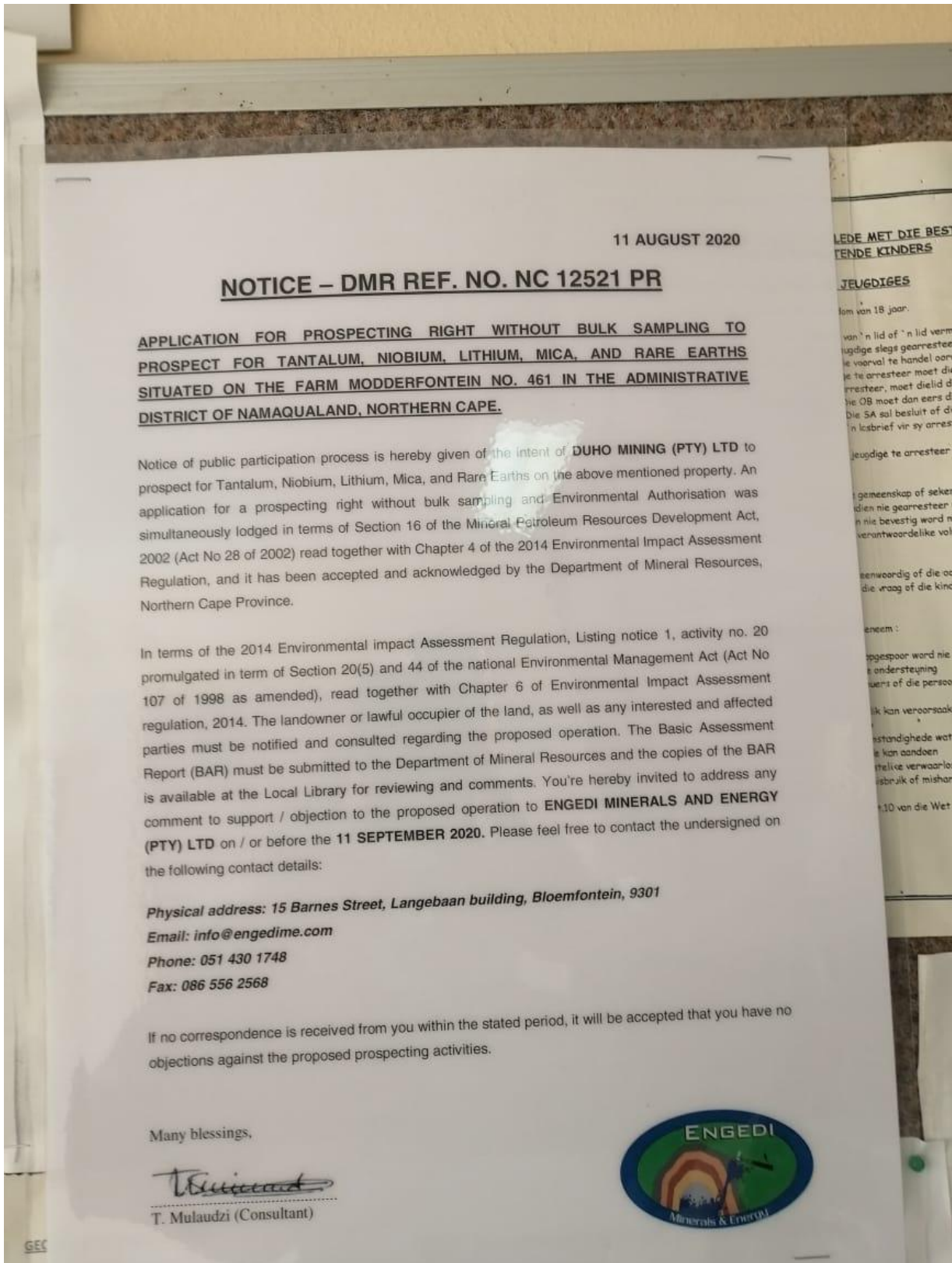
**Figure 5: Notice at the site of prospecting activities.**











**Figure 6: The Notice placed at the local Police Station.**

**APPENDIX D<sub>3</sub>:**

**CONSULTATIONS WITH AUTHORITIES**

**Consultation with Nama Khoi Local Municipality**

**Consultation Process for a Prospecting Right without Bulk Sampling application in terms of Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for Duho Mining (Pty) Ltd-**  
 rose@engedime.com

Sent: Fri 2020/10/09 11:08 AM  
 To: 'municipal.manager@namakhoi.gov.za'  
 Cc: 'mulaudzit'

Message | Duho Mining\_Draft BAR\_NC 12521 PR.pdf (4 MB)

Good afternoon Madam,

An application for Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for a Prospecting Right has been lodged with the Department of Mineral Resources (Northern Cape). In terms of Chapter 6 of the National Environmental Management Act (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014, it is imperative that we consult with the identified Interested and Affected Parties.

Please kindly see the attached copy of a draft Basic Assessment Report (BAR) for your attention, as you are one of the stakeholders that administer the law regarding matters affecting the Nama Khoi Local Municipality, where the proposed site is located.

We ask that you review this document and provide any comments regarding the proposed Prospecting Right application.

Thank you.

Kind regards,

**Kelebohile Rose Seboko | Environmental Consultant**  
 Engedi Minerals and Energy (Pty) Ltd

## Consultation with Namakwa District Municipality

**Consultation Process for a Prospecting Right without Bulk Sampling application in terms of Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for Duho Mining (Pty) Ltd-**  
 rose@engedime.com

Sent: Fri 2020/10/09 11:09 AM  
 To: 'chrisf@namakwa-dm.gov.za'  
 Cc: 'mulaudzit'

Message | Duho Mining\_Draft BAR\_NC 12521 PR.pdf (4 MB)

Good afternoon Sir,

An application for Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for a Prospecting Right has been lodged with the Department of Mineral Resources (Northern Cape). In terms of Chapter 6 of the National Environmental Management Act (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014, it is imperative that we consult with the identified Interested and Affected Parties.


Please kindly see the attached copy of a draft Basic Assessment Report (BAR) for your attention, as you are one of the stakeholders that administer the law regarding matters affecting the Namakwa District Municipality in the proposed site.

We ask that you review this document and provide any comments regarding the proposed Prospecting Right application.

Thank you.

Kind regards,

**Kelebohile Rose Seboko | Environmental Consultant**  
 Engedi Minerals and Energy (Pty) Ltd

15 Barnes Street, Westdene, Langebaan Building Bloemfontein, South Africa *****		Cell: 079 362 6046 (+27) 076 763 8486 (+27) Fax: 086 556 2568 (+27)
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## Consultation with Northern Cape Department of Agriculture and Rural Development

**Consultation Process for a Prospecting Right without Bulk Sampling application in terms of Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for Duho Mining (Pty) Ltd-**  
 rose@engedime.com

Sent: Fri 2020/10/09 11:10 AM  
 To: 'dmatlhaku@agric.ncape.gov.za'  
 Cc: 'mulaudzit'

Message | Duho Mining\_Draft BAR\_NC 12521 PR.pdf (4 MB)

Good morning,

An application for Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for a Prospecting Right has been lodged with the Department of Mineral Resources (Northern Cape). In terms of Chapter 6 of the National Environmental Management Act (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014, it is imperative that we consult with the identified Interested and Affected Parties.


Please kindly see the attached copy of a draft Basic Assessment Report (BAR) for your attention, as you are one of the stakeholders that administer the law regarding matters affecting the Agricultural affairs in the proposed site.

We ask that you review this document and provide any comments regarding the proposed Prospecting Right application.

Thank you.

Kind regards,

**Kelebohile Rose Seboko | Environmental Consultant**  
 Engedi Minerals and Energy (Pty) Ltd

15 Barnes Street, Westdene, Langebaan Building Bloemfontein, South Africa		Cell: 079 362 6046 (+27) 076 763 8486 (+27) Fax: 086 556 2568 (+27)
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**Consultation with Department of Rural Development and Land Reform**

**Consultation Process for a Prospecting Right without Bulk Sampling application in terms of Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for Duho Mining (Pty) Ltd-**  
 rose@engedime.com

Sent: Fri 2020/10/09 11:10 AM  
 To: 'kgalalelo.marintlwane@drdlr.gov.za'  
 Cc: 'mulaudzit'

Message | Duho Mining\_Draft BAR\_NC 12521 PR.pdf (4 MB)

Good morning Sir/Madam,

An application for Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for a Prospecting Right has been lodged with the Department of Mineral Resources (Northern Cape). In terms of Chapter 6 of the National Environmental Management Act (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014, it is imperative that we consult with the identified Interested and Affected Parties.

Please kindly see the attached copy of a draft Basic Assessment Report (BAR) for your attention, as you are one of the stakeholders that administer the law regarding matters affecting the Land Claims in the proposed site.

We ask that you review this document and provide any comments regarding the proposed Prospecting Right application.


Thank you.

Kind regards,

**Kelebohile Rose Seboko | Environmental Consultant**  
 Engedi Minerals and Energy (Pty) Ltd

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15 Barnes Street, Westdene,  
 Langenhoven Building




Cell: 079 362 6046 (+27)  
 076 769 8406 (+27)

## Consultation with Northern Cape Department of Environment and Nature Conservation

**Consultation Process for a Prospecting Right without Bulk Sampling application in terms of Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for Duho Mining (Pty) Ltd-**  
 rose@engedime.com

Sent: Fri 2020/10/09 11:12 AM  
 To: 'lhanser@ncpg.gov.za'  
 Cc: 'mulaudzi'

Message |  Duho Mining\_Draft BAR\_NC 12521 PR.pdf (4 MB)

Good morning Sir/Madam,

An application for Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for a Prospecting Right has been lodged with the Department of Mineral Resources (Northern Cape). In terms of Chapter 6 of the National Environmental Management Act (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014, it is imperative that we consult with the identified Interested and Affected Parties.


Please kindly see the attached copy of a draft Basic Assessment Report (BAR) for your attention, as you are one of the stakeholders that administer the law regarding matters affecting environmental affairs in the proposed site.

We ask that you review this document and provide any comments regarding the proposed Prospecting Right application.

Thank you.

Kind regards,


**Kelebohile Rose Seboko | Environmental Consultant**  
 Engedi Minerals and Energy (Pty) Ltd

15 Barnes Street, Westdene, Langebaan Building Bloomfontein, South Africa		Cell: 079 362 6046 (+27) 076 763 8486 (+27) E: 006 556 3560 (+27)
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## Consultation with Department of Water Affairs (Northern Cape)

**Consultation Process for a Prospecting Right without Bulk Sampling application in terms of Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for Duho Mining (Pty) Ltd-**  
 rose@engedime.com

Sent: Fri 2020/10/09 11:11 AM  
 To: 'mokoantle@dws.gov.za'  
 Cc: 'mulaudzi'

Message |  Duho Mining\_Draft BAR\_NC 12521 PR.pdf (4 MB)

Good morning Sir/Madam,

An application for Section 16 of the Mineral and Petroleum Resources Development Act (Act. 28 of 2002) for a Prospecting Right has been lodged with the Department of Mineral Resources (Northern Cape). In terms of Chapter 6 of the National Environmental Management Act (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014, it is imperative that we consult with the identified Interested and Affected Parties.


Please kindly see the attached copy of a draft Basic Assessment Report (BAR) for your attention, as you are one of the stakeholders that administer the law regarding matters affecting the water affairs in the proposed site.

We ask that you review this document and provide any comments regarding the proposed Prospecting Right application.

Thank you.

Kind regards,

**Kelebohile Rose Seboko | Environmental Consultant**  
 Engedi Minerals and Energy (Pty) Ltd

15 Barnes Street, Westdene,

Cell: 079 362 6046 (+27)



<b>APPENDIX D<sub>4</sub>:</b>
<b>COMMENTS FROM I&amp;APs</b>

**APPENDIX E:**

**BASELINE DESKTOP ARCHAEOLOGICAL ASSESSMENT**

**APPENDIX F:**

**BASELINE DESKTOP ARCHAEOLOGICAL ASSESSMENT**

## PART B

### ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

#### 1) Draft environmental management programme.

- a. Details of the EAP,** (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

Tshimangadzo has been carrying out Environmental Impact Assessment Procedure since 2012, managing a construction company called Tshedza Concrete Art in Limpopo Province, Makhado town, Madabani village.

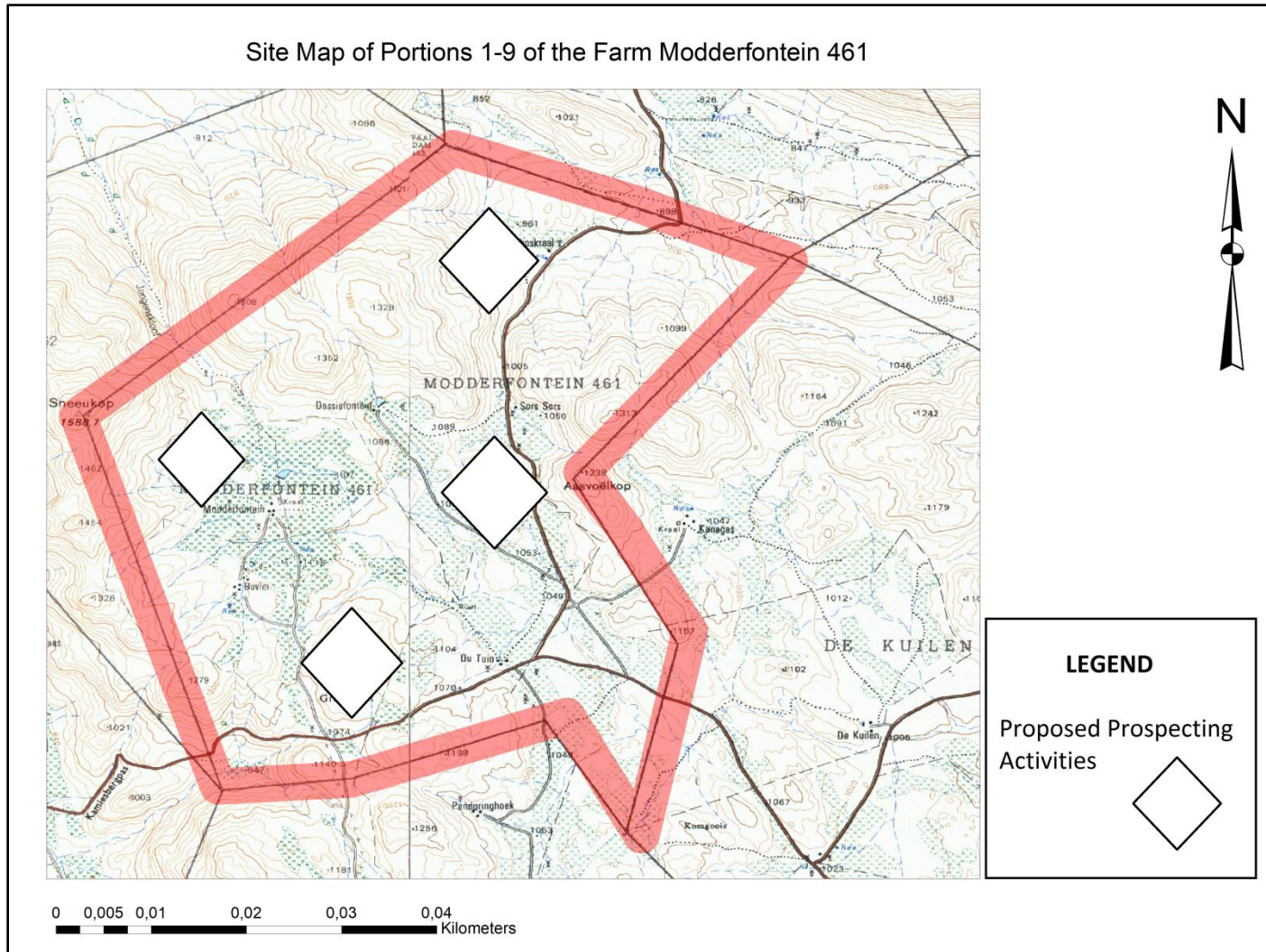
In 2014, he joined a large mining consulting company in Kimberly called Breeze Court Investments 47 (Pty) Ltd (Geologist and Mining Consulting firm). This is where Mr. Mulaudzi acquired in-depth experience and know how in the mining consulting business by assisting the large to small scale mining companies to obtain prospecting right, mining rights, prospecting rights, technical co-operate permits, reconnaissance permits, exploration rights, production rights, integrated water use license, environmental authorisation among other licenses.

Tshimangadzo has five years working experience in environmental, geology and public participation.

- b. Description of the Aspects of the Activity** (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).

I, Tshimangadzo Mulaudzi, hereby confirm that the requirements to describe the aspects of the activity that are covered by the draft environmental management programme are already included in PART A, section 1(h) herein.

- c. **Composite Map** (Provide a map (**Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers)



#### **d. Description of Impact management objectives including management statements**

- i. **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)

The closure objectives provided below are to ensure that the closure of the site is compliant with the legislature and that the environment will be left in a state which is sustainable and not harmful.

Closure objectives include but are not limited to:

- To ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002.
- To ensure that the prospecting footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment.
- To ensure that the goals which were specified in the rehabilitation section of this report have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with proposed prospecting are eliminated or minimized to acceptable standards.
- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighboring communities.

The objective of closure and rehabilitation for this area will be to leave the area in a functional state and returned to its pre-prospecting condition i.e. agricultural land (hunting and livestock grazing).

**ii. Volumes and rate of water use required for the application.**

The drilling activities will use between 2 000 L per day which falls within “small industrial user” where the use is less than twenty cubic metres per day for prospecting. Therefore the water that will be used for the prospecting activities will be sourced on agreement from an existing authorized water user (e.g. local municipality).

The department responsible for water resources shall be consulted with regards to any water related agreement with either the land owner or local municipality prior to drilling. No water will be abstracted in terms of section 21(a) of National Water Act, 1998 (Act no. 36 of 1998).

**iii. Has a water use license been applied for?**

A water use license has not been applied for. This is based on the limited amount of water required and the fact that no abstraction will be done. In addition, no drilling will take place within 32 m of any watercourse or within 500 m of a wetland.

#### iv. Impacts to be mitigated in their respective phases

##### Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p><b>(E.g. For prospecting –</b> drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route <b>etc...etc...etc</b></p> <p><b>E.g. For mining –</b> excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and pitting and trenching, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, <b>etc...etc...etc</b>)</p>	<p>(Of operation in which activity will take place.</p> <p>State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure)</p>	<p>(volumes, tonnages and hectares or m<sup>2</sup>)</p>	<p>(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard Rehabilitation, therefore state either –</p> <ul style="list-style-type: none"> <li>• Upon cessation of the individual activity</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>• Upon cessation of mining, bulk sampling or alluvial tantalum, niobium, lithium, mica, and rare earths prospecting as the case may be.</li> </ul>



<p>Site Establishment activities (fencing, signage, access formation, etc.)</p>	<p>Start-up</p>	<p>± 0.1ha</p>	<p>See appendix</p>	<p>Issues of compliance with standards will be incorporated into the day to day business activities at the proposed prospecting. The work methods used the monitoring and measures done and the review processes will be aimed at ensuring that legal thresholds as set out in the environmental standards are complied with.</p> <p>This will include compliance with standards as per COLTO 1998, the standards as per Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, National Water Act regulations.</p> <p>COLTO 1998 Refers to - Standard Specification for Road and Bridge Works for State Road Authorities by the South African Committee of Land Transport Officials.</p>	<p>During start up, operational phase</p>
<p>Clearance of area for mining</p>	<p>Start up &amp; Operational Phase</p>	<p>5ha</p>	<p>See appendix</p>	<p>The work methods used, the monitoring and measurements done and the review processes will be aimed at ensuring that legal thresholds as set out in the environmental standards are complied with. This will include compliance with standards as per COLTO 1998, the standards as per</p>	<p>During start up, operational phase as necessary</p>

				Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, and Conservation of Agricultural Resources Act	
Excavation of material	Operational	5ha	See appendix	Management of legal compliance will be incorporated into normal business activities. This means that particular responsibilities need to be clearly defined for the identification of relevant issues and delivery of compliance. This will help to ensure that adequate resources are available to support these activities. Environmental standards as set out in COLTO 1998, Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations and Water Act regulations.	Operational Phase
Drilling & blasting (if done)	Operational	As needed	See appendix	This will be achieved by clearly outlining the environmental standards to be achieved and the Thresholds which are not to be exceeded in the management system used at the site. This will include compliance with standards as per COLTO 1998, Explosive Act regulations, Mine Health and Safety Act Regulations and the Hazardous Substances Act	Operational Phase (when necessary)

Waste Disposal and Material storage	Operational	Undetermined	See appendix	The waste management hierarchy and the proximity principle will be used in ensuring that the environmental standards as set out in COLTO 1998 and the National Environmental Management Waste Act regulation and National Water Act regulation, are complied with.	Operational Phase
Material handling, hauling and transportation	Operational	Undetermined	See appendix	Issues of compliance with standards will be incorporated into the day to day business activities at the proposed prospecting to ensure that legal thresholds as set out in the environmental standards are complied with. This will include compliance with standards as per COLTO 1998, the standards as per Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, National Water Act regulations, Mine Health and Safety Act regulations.	Operational phase
Removal of infrastructure & equipment	Decommissioning and closure	Affected areas	See appendix	The recommendations will incorporate factors that include the elimination or the minimization of negative impacts in the work methodologies used during decommissioning so as to comply with the standards as per COLTO 1998, Mining and Petroleum	At decommissioning

				Resources Development Act regulations, Mine Health and Safety Act regulations and the National Environmental Management Act.	
Re-shaping of proposed mining	Decommissioning and closure	5h	See appendix	Considerations with the elimination or at least the minimization of any future impacts from the proposed prospecting and the long term stability of the facility and any concerns in relation to the long term liability for the proposed prospecting and its aesthetics will be incorporated in order to ensure compliance with standards as set out in COLTO 1998, Mine Health and Safety Act regulations, National Environmental Management Act and National Water Act regulations.	Closure period
Community and labour relations management	Operational	N/A	See appendix	Will comply with standards as per COLTO 1998, Basic Conditions of Employment Act regulations, Employment equity Act, Labour Relations Act and Skills Development Act	During Operational Phase
Revegetation of disturbed areas	Closure	5ha	See appendix	The future impacts from the proposed prospecting and the long term stability of the area, any concerns in relation to the long term liability for the facility and its aesthetics will be taken into account to	During Operational Phase in sections where mining has been completed and during closure

				ensure compliance with the environmental standards as set out in COLTO 1998, the National Environmental Management Act, Conservation of Agricultural resources Act, National Environmental Management Biodiversity Act regulations.	
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- e. **Impact Management Outcomes** (A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph)

<b>ACTIVITY</b> (whether listed or not listed)  (E.g. Excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and pitting and trenching, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc)	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc...etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b>  In which impact is anticipated  (e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through  (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc...etc...)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc...etc...etc...)
Site Establishment activities (fencing, signage, access formation, etc.)	Loss of vegetation	Visual character, land use	Start-up	Remedy through rehabilitation  Limit footprint	Impact managed effectively, Rehabilitate to a self-sustaining environment
	Habitat Destruction	Visual character, land use	Start up	Remedy through rehabilitation  Limit footprint	Impact reduced
	Visual scarring	Visual	Start up and	Remedy through rehabilitation	Impact managed

		character	operational		effectively
	Soil erosion	Visual character, land use	Start up and operational	Remedy through rehabilitation, Storm water control. Limit footprint, Control through storm water control	Impact avoided
Clearance of area for mining	Visual scarring	Visual Character	Operational Phase	Remedy through rehabilitation  Limit footprint and removal of vegetation.	Impact managed to acceptable levels, residual impact reduced
	Destruction of flora and habitat	Visual Character, land use	Operational Phase	Remedy through rehabilitation	Impact reduced to a satisfactory level, Rehabilitate to an end land use similar to that prior to the activity  (depending on the end land use objectives)
	Loss of agricultural potential	Land use management	Operational Phase	Use soil conservation techniques  Limit Foot print	Impact managed to ensure suitable soil fertility levels, Rehabilitate to an end land use similar to that prior to the activity.
	Soil erosion	Visual character, land use	Start up and operational	Remedy through rehabilitation,  Storm water control	Impact avoided

Excavation	Dust emissions	Air quality	Operational Phase	Control with dust control measures	Particulates reduced to acceptable levels
	Drainage disruption	Drainage	Operational Phase	Control with Storm water controls	Good surface water run-off established
	Slope instability	Topography	Operational Phase	Control with slope management controls	Stable surfaces established
	Noise	Noise	Operational Phase	Control with Noise control measures	Noise reduced to acceptable levels
	Visual Scarring	Visual Character	Operational Phase	Rehabilitation	Impact managed effectively, residual impact reduced
	Soil erosion Land	Land use	Operational Phase	Rehabilitation, use slope management control	Impact levels avoided
	Destruction of heritage	Heritage issues	Operational Phase	Avoidance	Impact Avoided
Drilling & blasting (if done)	Noise and vibrations	Noise	Operational Phase	Control with blast control measures	Noise levels reduced to acceptable levels
	Dust	Air quality	Operational Phase	Control with dust control measures Control with blast control	Particulates reduced to acceptable levels
	Fly rock	Safety, Land	Operational Phase	Control with blast control measures	Fly rock minimized



		degradation			
Waste Disposal and Material storage	Soil contamination	Land degradation	Operational Phase	Avoidance, Operational control measures	Impact Avoided
	Water pollution	Water	Operational Phase	Avoidance, Operational control measures	Impact Avoided
	Increased risk of fire	Safety	Operational Phase	Avoidance, Operational control measures	Impact avoided or managed to low levels
	Dust	Air quality	Operational Phase	Dust Control measures	Particulates reduced to acceptable levels
	Increased risk of accidents	Safety	Operational Phase	Site management protocols	Accidents avoided or reduced to low levels
	Noise	Noise	Operational Phase	Noise control measures	Noise reduced to acceptable levels
	Soil contamination from oil/fuel leaks	Land degradation	Operational Phase	Operational control measures	Impact managed to suitable soil fertility levels
Removal of infrastructure & equipment and re-shaping of proposed prospecting	Noise	Noise	Decommissioning and closure	Control with noise control measures	Noise levels reduced to acceptable levels
	Dust	Air quality	Decommissioning and closure	Control with dust control measures	Particulates reduced to acceptable levels
	Soil contamination from	Land	Decommissioning	Control with operational control	Impact managed to

	oil/fuel	degradation, water pollution	and closure	measures	suitable soil fertility levels, pollution of water avoided
	Disruption of surface drainage	Water movement	Decommissioning and closure	Control with storm water controls	Free drainage achieved
	Community conflicts and tensions	Community relations	Operational	Control using site management protocols	Reduction in complaints and incidences of conflict
	Increased risk of fire	Fire risk	Operational	Control using site management protocols	Fires avoided and risk reduced
	Reduced security on area	Safety Issues	Operational	Control using site management protocols	Improvement in security and elimination of theft incidences
	Improved employment	Community relations	Operational	Control using site management protocols	Increase in number of people employed
	Improved skills	Community relations	Operational	Control using site management protocols	Improvement in skills level

f. **Impact Management Actions** (A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

<b>ACTIVITY</b> (whether listed or not listed)  (E.g. Excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and pitting and trenching, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc)	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc...etc...)	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through  (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc...etc...)	<b>TIME PERIOD FOR IMPLEMENTATION</b>  Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required.  With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard Rehabilitation, therefore state either – <ul style="list-style-type: none"> <li>• Upon cessation of the individual activity</li> </ul> Or  Upon cessation of mining, bulk sampling or alluvial tantalum, niobium, lithium, mica, and rare earths prospecting as the case may be.	<b>COMPLIANCE WITH STANDARDS</b>  (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities).
Site Establishment activities (fencing, signage, access formation,	Loss of vegetation	Remedy through rehabilitation	Start-up	Issues of compliance with standards will be incorporated into the day to day business activities at the proposed

etc.)				prospecting. The work methods used the monitoring and measures done and the review processes will be aimed at ensuring that legal thresholds as set out in the environmental standards are complied with. This will include compliance with standards as per COLTO 1998, the standards as per Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, National Water Act
	Habitat Destruction	Limit footprint	Start-up	
	Visual scarring	Remedy through rehabilitation	Start up and operational	
	Soil erosion	Limit footprint	Start up and operational	
Clearance of area for mining Excavation	Visual scarring	Remedy through rehabilitation	Operational Phase	The work methods used, the monitoring and measurements done and the review processes will be aimed at ensuring that legal thresholds as set out in the environmental standards are complied with. This will include compliance with standards as per COLTO 1998, the standards as per Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, and Conservation of Agricultural Resources Act.
	Destruction of flora and habitat	Remedy through rehabilitation	Operational Phase	
	Loss of agricultural potential	Soil conservation techniques, Limit footprint of the proposed prospecting	Operational Phase	
	Soil erosion	Remedy through	Operational Phase	

		rehabilitation, Storm water control		
	Dust emissions	Control with dust control measures	Operational Phase	
Drilling & blasting (if done)	Drainage disruption	Control with Storm water controls	Operational Phase	Management of legal compliance will be incorporated into normal business activities. This means that particular responsibilities need to be clearly defined for the identification of relevant issues and delivery of compliance. This will help to ensure that adequate resources are available to support these activities. Environmental standards as set out in COLTO 1998, Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act
	Slope instability	Control with slope management controls	Operational Phase	
	Noise	Control with Noise control measures	Operational Phase	
	Visual Scarring	Rehabilitation	Operational Phase	
	Soil erosion	Rehabilitation, use slope management control	Operational Phase	
	Destruction of heritage resource	Avoidance	Operational Phase	
	Noise and vibrations	Control with blast control measures	Operational Phase	
Waste Disposal and Material storage	Dust	Control with dust control measures Control with blast control measures	Operational Phase	This will be achieved by clearly outlining the environmental standards to be achieved and the thresholds which are not to be exceeded in the management system used at the site. This will include compliance with standards
	Fly rock	Control with blast control	Operational Phase	

		measures		as per COLTO 1998, Explosive Act regulations, Mine Health and Safety Act Regulations and the Hazardous Substances Act
	Soil contamination	Avoidance, Operational control measures	Operational Phase	
Material handling, hauling and transportation	Water pollution	Avoidance, Operational control measures	Operational Phase	The waste management hierarchy and the proximity principle will be used in ensuring that the environmental standards as set out in COLTO 1998 and the National Environmental Management Waste Act regulation and National Water Act regulation, are complied with.
	Increased risk of fire	Avoidance, Operational control measures	Operational Phase	
	Dust	Control with dust Control measures	Operational Phase	
Removal of infrastructure & equipment and re-shaping of proposed prospecting	Increased risk of accidents	Site management protocols	Operational Phase	Issues of compliance with standards will be incorporated into the day to day business activities at the proposed prospecting to ensure that legal thresholds as set out in the environmental standards are complied with. This will include compliance with standards as per COLTO 1998, the standards as per Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, National Water Act regulations, Mine Health and Safety Act regulations
	Noise	Control with noise control measures	Operational Phase	
	Soil contamination from oil/fuel leaks	Control with operational control measures	Operational Phase	
	Noise	Control with noise control measures	Decommissioning and closure	
Community and labour relations management	Dust	Control with dust control measures	Decommissioning and closure	The recommendations will incorporate factors that include the elimination or the minimization of negative impacts in the work
	Soil contamination from	Control with operational	Decommissioning and	

	oil/fuel	control measures	closure	methodologies used during decommissioning so as to comply with the standards as per COLTO 1998, Mining and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations and the National Environmental Management Act.
	Disruption of surface drainage	Control with storm water controls	Decommissioning and closure	
	Community conflicts and tensions	Control using site management protocols	Operational	
Site Establishment activities (fencing, signage, access formation, etc.)	Increased risk of fire	Control using site management protocols	Operational	The future impacts from the proposed prospecting and the long term stability of the area, any concerns in relation to the long term liability for the facility and its aesthetics will be taken into account to ensure compliance with the environmental standards as set out in COLTO 1998, the National Environmental Management Act, Conservation of Agricultural resources Act and National Environmental Management Biodiversity Act regulations
	Reduced security on area	Control site management protocols	Operational	
	Improved employment	Control site management protocols	Operational	
	Improved skills	Controls site management protocols	Operational	
	Loss of vegetation	Remedy through rehabilitation	Start-up	

## **g. Financial Provision**

### **1. Determination of the amount of Financial Provision.**

#### **a. Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation**

The closure objectives provided below are to ensure that the closure of the site is compliant with the legislature and that the environment will be left in a state which is sustainable and not harmful.

Closure objectives include but are not limited to:

- To ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002.
- To ensure that the prospecting footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment.
- To ensure that the goals which were specified in the rehabilitation section in this report have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with proposed prospecting are eliminated or minimized to acceptable standards.
- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighboring communities.

The objective of closure and rehabilitation for this area will be to leave the area in a functional state and returned to its pre-prospecting condition i.e. agricultural land. The extent of the proposed site is approximately 3 373 hectares. Based on the anticipated amount of drill holes (i.e. 25 phased over a 5 year period), storage area, the total disturbed extent equates to approximately 3 000 hectares.



- b. Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.**

Yes it is confirmed.

- c. Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.**

***Rehabilitation plan***

The exact location and extent of the prospecting activities, including the need for construction of new access tracks, will be determined once all available information has been evaluated. It is therefore not possible to include a rehabilitation plan showing the areas and aerial extent of the main mining activities, including the anticipated prospected area at the time of closure. The extent of the proposed mining area is however shown in.

The following environmental controls will be implemented during mining to aid or reduce rehabilitation:

- The environment will be returned to its original state, as far as possible. No physical infrastructure will be left on the site.
- Vegetation cleared from each excavations development will be stored within / adjacent to the excavations site for final rehabilitation.
- Topsoil will be stripped within the excavations site, to a depth of 300mm, and placed separately within the excavations site. All topsoil removed will be appropriately protected from erosion for use during rehabilitation.
- Where vegetation has been removed, they shall be re-established systematically where they used to be.
- The area will be level and even, and in a natural state containing no foreign debris or other materials and to ensure ecological, hydrological and topographical integrity.

- All excavations created will be capped and sealed. Where necessary, excavations will be labelled for future use and for reference purposes.
- Mining activities will be restricted to the designated prospecting sites and agreed upon access tracks. No further disturbances will be permitted.
- Following rehabilitation the site will blend suitably with the surrounding environment.

#### ***Rehabilitation of excavations.***

- Progressive rehabilitation will be undertaken during prospecting (Concurrent rehabilitation). Each excavations and associated disturbed areas will be rehabilitated when excavations is completed at each excavations site.
- Once the excavations has been refilled with rocks and coarse natural materials and profiled with acceptable contours and erosion control measures, the topsoil will be replaced across the disturbed area and shaped to allow a free draining surface. No ponding on the disturbed area will be allowed.
- Cleared vegetation will be used as brush-cut packing on the disturbed areas after rehabilitation to prevent erosion while natural vegetation re-establishes. NO alien plant material will be used for this purpose.
- In cases where native vegetation has been removed or damaged and where re-vegetation is required, species endemic to the area will be re-established.
- An inspection will be held after rehabilitation to determine alien and invasive species growth and the necessary corrective action will be implemented.

#### ***Closure objectives and their extent of alignment to the pre-prospecting environment***

The following closure objectives will be applicable for rehabilitation:

- Disturbed land will be rehabilitated to a stable and permanent form suitable for subsequent land use.
- There will be no adverse environmental effect outside the disturbed area and the affected area will be shaped to ensure effective drainage and prevent ponding on site.

- The disturbed area will not require any more maintenance than that in or on surrounding land after mining is completed.

If the commitments in this BAR are adhered to and rehabilitation is undertaken as described above, it is not anticipated that there will be any long-term management or maintenance required for areas disturbed during prospecting.

**d. Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.**

Rehabilitation measures have been designed to meet closure objectives as stipulated in various sections of the report.

The objectives of rehabilitation and closure are:

- To ensure that vegetation clearing is done in an appropriate manner.
- To leave the site in a safe state for humans and animals, as it was originally.
- To remove all equipment, excess topsoil and any waste generated.
- To backfill drill holes adequately.
- Ensure that the water resource and underground water is not affected by prospecting or rehabilitation activities.

**Prospecting area establishment, access footpaths, roads and tracks**

- Ensure that the prospecting area is placed in an already disturbed area to limit vegetation disturbance. Ensure all equipment; fuel and waste have been removed from site.
- Place a natural barrier at the junction to the footpath/track/road being rehabilitated e.g. rocks to prevent further access.
- Loosen compacted soil on tracks when tracks are not needed again.
- Seeding to be done where required with appropriate seed.
- Daily site access will occur by the required vehicles.
- As far as possible, existing roads will be used. Consultation with the relevant landowner will be done where this is not possible.

- No new access roads will be constructed however should there be a need to establish access roads, these will be constructed in such a way that vegetation clearance is limited, and existing structures such as fence lines are followed as far as possible.
- No fences will be cut and all access gates will be left in their original state.

### **Drilling sites**

- Prior to drilling a photographic record of the site will be established.
- Drill sites will be selected based on geological information. These locations will be discussed with the relevant landowner.
- Drill sites will be marked with pegs that will be removed once the activity is complete. All drill sites will be screened for species of conservation concern.
- Vegetation removed must include the 1st upper 30cm, where possible, of soil and stockpiled (topsoil).
- Topsoil and subsoil will be separated. Topsoil will be used in the rehabilitation phase.
- Since the plant material removed from the site are to be mixed into the topsoil to supplement the organic nutrient content of the soil, no further soil conditioning in terms of fertilising is deemed necessary.
- All cleared invasive alien vegetation will be removed from site.
- If drilling is required in grazing areas, consultations will be held with the relevant landowners to discuss consent and compensation.
- Backfilling will be done via raking of the suitable material over the disturbed areas.
- Drill holes will be plugged, capped and marked.
- All litter will be removed from site and the surrounds.
- Severely compacted soil will be loosened / scarified to allow water and seed penetration.
- Enviro-loo ablution facilities will be used and will be removed and the contents disposed of at an approved facility.
- Fires are prohibited on site.
- Where possible, no major servicing of vehicles will be allowed on site.
- Photographs of the site; file information with dates and notes when first monitoring is due as imperative.

## **Waste Disposal**

- Scavenger proof waste bins will be available for waste disposal.
- All generated waste and litter will be removed from site on a weekly basis.
- Enviro-loo ablution facilities will be outsourced, maintained and serviced on a regular basis by a licensed service provider.
- All spills / leaks will be contained in an appropriate manner and removed from site to a licensed facility.

## **Rehabilitation**

- Prior to rehabilitation of the site, all remnants of foreign debris shall be removed from the site.
- All holes will be covered first with subsoil and then with topsoil (minimum of 10 cm deep). Topsoil will be spread to the original depth (30 cm where possible).
- As topsoil will contain all cleared vegetation, no additional treatment will be required.
- The soil must cover all the roots and be well firmed down to a level equal to that of the surrounding in situ material.
- Control weeds by means of extraction, cutting or other approved methods.
- Monitoring will be undertaken once a month or until rehabilitation has been deemed successful.
- Follow up inspections will be conducted every two months to remove upcoming seedlings of alien vegetation.
- A single permanent marker will be required to mark the location of the drill hole for future reference. The siting of such a marker shall be cleared with the landowner.
- All rehabilitation referred to in this environmental management programme will be done concurrent to prospecting operations as set out in the MPRDA. Best practice methods will be used.
- Continuous monitoring of possible soil erosion will be required.

- e. Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with applicable guideline.

CALCULATION OF THE QUANTUM								
Applicant:		Duho Mining (Pty) Ltd - NC 10521 PR			Location:		NAMAQUALAND	
Evaluators:		Engedi Minerals and Energy (Pty) Ltd			Date:		Sep-20	
No.	Description	Unit	A	B	C	D	E=A*B*C*D	
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	17	1	1	0	
2 (A)	Demolition of steel buildings and structures	m2	0	241	1	1	0	
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	356	1	1	0	
3	Rehabilitation of access roads	m2	0.01	43	1	1	0.43	
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	419	1	1	0	
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	229	1	1	0	
5	Demolition of housing and/or administration facilities	m2	0	483	1	1	0	
6	Opencast rehabilitation including final voids and ramps	ha	0.05	253019	1	1	12650.95	
7	Sealing of shafts adits and inclines	m3	0	130	1	1	0	
8 (A)	Rehabilitation of overburden and spoils	ha	0.03	168679	1	1	5060.37	
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	210087	1	1	0	
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	610192	1	1	0	
9	Rehabilitation of subsided areas	ha	0.15	141244	1	1	21186.6	
10	General surface rehabilitation	ha	0.01	133622	1	1	1336.22	
11	River diversions	ha	0	133622	1	1	0	
12	Fencing	m	0.02	152	1	1	3.04	
13	Water management	ha	0	50807	1	1	0	
14	2 to 3 years of maintenance and aftercare	ha	0.2	17782	1	1	3556.4	
15 (A)	Specialist study	Sum	0			1	0	
15 (B)	Specialist study	Sum				1	0	
Sub Total 1							43794.01	
1	Preliminary and General		5255.2812	<b>weighting factor 2</b> 1			5255.2812	
2	Contingencies			4379.401			4379.401	
Subtotal 2							53428.69	
VAT (15%)							7480.02	
<b>Grand Total</b>							<b>R 60 908.71</b>	

- f. Confirm that the financial provision will be provided as determined.

Yes, it is confirmed.

**Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including**

- g) Monitoring of Impact Management Actions.
- h) Monitoring and reporting frequency.
- i) Responsible persons.
- j) Time period for implementing impact management actions.
- k) Mechanism for monitoring compliance.

<b>SOURCE ACTIVITY</b>	<b>IMPACTS REQUIRING MONITORING PROGRAMMES</b>	<b>FUNCTIONAL REQUIREMENTS FOR MONITORING</b>	<b>ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)</b>	<b>MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS</b>
Site Establishment activities (fencing, signage, access formation, etc.)	Loss of vegetation, Habitat destruction, Visual scarring, Soil erosion	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.
Clearance of area for mining	Visual scarring, Destruction of flora and habitat, Loss of agricultural potential, soil erosion	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.

Excavation	Dust emissions, Drainage disruption, Slope instability, Visual Scarring, Soil erosion, Destruction of heritage resource	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.
Drilling & blasting (if done)	Noise and vibrations, Dust, Fly rock	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.
Waste Disposal and Material storage	Soil contamination, Water pollution, Increased risk of fire	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.
Material handling, hauling and transportation	Dust, Increased risk of accidents, Noise, Soil contamination	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.
Removal of infrastructure & equipment and re-shaping of proposed prospecting	Noise, Dust, Soil contamination, Disruption of surface drainage	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.



Community and labour relations management	Community conflicts and tensions, Increase risk of fire, Reduced security on area, Improved employment rates, Improved skills	Visual checks, monitoring incidences of non-compliance, recording of key parameters	Appointed Contractor	At start and as and when required. Record incidences of non-compliance monthly.
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**h) Indicate the frequency of the submission of the performance assessment/environmental audit report.**

The BAR and EMPr will be audited by an independent party on an annual basis to determine the level of compliance. The results of this audit will be used to improve environmental management procedures, where required. The audit report will also be submitted to the Department of Mineral Resources (DMR) upon completion.

**i) Environmental Awareness Plan**

**1. Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.**

Induction (including environmental awareness) training will be conducted on all people involved in the prospecting programme, including truck drivers, mine managers crew and relevant technical services, prior to the commencement of any work; according to the relevant legislation, **Engedi Minerals and Energy (Ltd) Pty** Standard Operational Procedures (SOPs) and this EMP. **Engedi Minerals and Energy (Ltd) Pty** will do in-house training, should it be necessary to its personnel on site. The mining contractor will be responsible for training its mining crew and supervisor.

**2. Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.**

**Description of solutions to risks**

*(Describe the manner in which the risk must be dealt with in order to avoid pollution or degradation of the environment)*

It is essential that people involved in the mining programme know how to respond in the event of an environmental emergency situation in order to avoid significant environmental degradation or injury to human health. Ideally such incidents should not occur. If people involved in the mining programme implement all management measures outlined in this EMPr, the likelihood of such incidents occurring is greatly reduced. However, despite the best intentions and the best environmental management practices, it is impossible to ensure that no incidents will ever occur during prospecting activities. Therefore, it is vital to ensure that all personnel are aware of the management measures to be undertaken in the event of an accident.

Two emergency incidents have been identified:

- Hydrocarbon spills.
- The outbreak of fire.

Emergency incident procedures are outlined below. An Environmental Officer will be appointed to the project to manage all environmental related aspects of the prospecting programme.

### ***Emergency planning***

- The site and all people involved in the prospecting mining programme are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993).
- Potentially hazardous areas are to be cordoned off and clearly marked at all times.
- No unauthorized firearms are permitted on site.
- Adequate emergency facilities (e.g. first aid kit) must be provided for the treatment of an emergency on site.
- Emergency contact numbers are to be displayed conspicuously.
- Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all personnel working on site (e.g. hard hats, safety boots, ear plugs, masks, etc.).
- All vehicles and equipment used on site must be operated by appropriately trained and/or licensed individuals in compliance with all safety measures.

### ***Management of fire risks***

- Each mining site will be cleared of vegetation.
- “No Smoking” signs must be prominently displayed.
- Fires will only be allowed within a facility especially constructed for the purpose of keeping warm and for cooking.
- No burning of refuse or vegetation is permitted.
- Fire equipment must be easily accessible.
- Fire equipment must be serviced, full and in good working order.

***Management of spills***

- Ensure that a proper spill-kit is available on site. The kit must include absorptive material that can handle all forms of hydrocarbon.
- Ensure that any hydrocarbon spills are cleaned up as soon as possible.
- At least one person on site must receive formal training in the use of the spill control kit.
- Equipment is to be required immediately upon developing leaks.
- A drip tray, a thin concrete slab or a PVC lining shall be used to prevent soil and water contamination.
- All spills on site must be reported to the Environmental Officer.
- Spread absorbent sand on areas where oil spills have occurred. Oil-contaminated soils are to be removed to a contained storage area and disposed of appropriately.
- Non-degradable waste must be collected and disposed of at a registered waste site.

***Incident reporting***

- The supervisor on site must take corrective action to mitigate an incident appropriate to the nature and scale of the incident, immediately after the occurrence of the incident.
- Residual environmental damage that remains after having taken corrective action must be rehabilitated.
- Change operating procedures where necessary to prevent recurrence of similar incident.
- All incidents must be recorded in an Environmental Incident Report, within 24 hours of the incident occurring. Additional documents, including photos must be appended to the incident report to provide a comprehensive record of the incident and the corrective and preventative action taken.
- All incidents will be investigated in collaboration with the Environmental Officer. The focus of these investigations shall not be to apportion blame to specific employees, but to ascertain the root cause of the incident and to prevent a recurrence of similar incidents.

## 1.6 Environmental awareness training

*(Describe the general environmental awareness training and training on dealing with emergency situations and remediation measures for such emergencies).*

A number of key elements must be addressed during an environmental awareness training session, since it is recognised that the majority of employees are generally not informed about the environment. The following key elements must be addressed:

- An explanation of the basic key concepts;
- The importance of the environment, including the management thereof;
- Examples of environmental degradation;
- The role that the employees have in protecting the environment;
- Examples of pollution;
- Simple, easy-to-follow rules to protect the environment; and
- South African laws which protect the environment.

All people involved in the mining programme must receive environmental awareness training, to ensure that they are aware of their responsibilities and are competent to carry out their work in an environmentally acceptable manner. The training must also contain all relevant sections of the EMPr and must be presented in a clear, understandable manner. Relevant sections of the EMPr include:

- Access, including use of roads, tracks, gates, etc.;
- Control measures required to manage excluded and exempted areas;
- The handling, storage and disposal of waste;
- Emergency response procedures;
- Control of alien and invasive plant species;
- Fire prevention;
- Sediment and erosion control;
- Control measures to be implemented with regards to the management of water, noise and dust; and
- Rehabilitation of excavations sites and access tracks.

This training may take the form of a PowerPoint presentation, information posters or pamphlets, and other easily accessible methods of information communication.

- j) **Specific information required by the Competent Authority** (Among others, confirm that the financial provision will be reviewed annually).

The BAR and EMPr will be audited by an independent party on an annual basis to determine the level of compliance. The results of this audit will be used to improve environmental management procedures, where required. The audit report will also be submitted to the Department of Mineral Resources (DMR) upon completion.

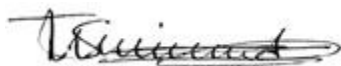
**DUHO MINING (PTY) LTD** will undertake rehabilitation to minimise negative impacts on the environment.

## 2) UNDERTAKING

The EAP herewith confirms:

- a) The correctness of the information provided in the reports
- b) The inclusion of comments and inputs from stakeholders and I&APs;
- c) The inclusion of inputs and recommendations from specialist reports where relevant ; and
- d) That the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.

X
X
X



**Signature of the environmental assessment practitioner:**

Engedi Minerals and Energy

**Name of company:**

14 October 2020

**Date:**

**-END-**