BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR THE APPLICATION OF A PROSPECTING RIGHT WITHOUT BULK SAMPLING SITUATED ON THE REMAINDER OF THE FARM KUILENBURG 96, IN THE MAGISTERIAL DISTRICT OF SUTHERLAND

FOR
SACO MINING (PTY) LTD

DMR REF. NO. NC 12953 PR

Compiled by: Engedi Minerals and Energy

Physical Address: 15 Barnes Street, Westdene, Bloemfontein, 9301

Postal Address: P.O. Box 22372, Extonweg, 9313

Telephone: 051 430 1748 Cell: 079 3626 046 Fax: 086 556 2568

Email address: info@engedime.com

Contact Person: Mr. Tshimangadzo Mulaudzi

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: SACO MINING (PTY) LTD
REFERENCE NUMBER: NC 12953 PR
PROJECT NAME: Kuilenburg 96

DATE: 22 JUNE 2022
TEL NO: 076 453 7871
CELL NO: 076 453 7871
FAX NO: 086 556 2568
POSTAL ADDRESS: P.O Box 8936, Edenglen
PHYSICAL ADDRESS: P.O Box 8936, Edenglen

TABLE OF CONTENTS

ABBREVIATIONS USED IN THIS REPORT

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

1.1 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 prospecting right if among other the prospecting “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 term so 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.

1.2 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;

(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

PROJECT DETAILS

Name of Project:	Remainder of the Farm Kuilenburg 96
Prospecting right:	NC 12953 PR
Name of Applicant:	Saco Mining (Pty) Ltd
Responsible person:	MI-YI KIM
Physical Address:	P.O Box 8936, Edenglen
Postal Address:	P.O Box 8936, Edenglen
Telephone:	076 453 7871

Environmental Consultant (EAP):	Mr. T Mulaudzi
Responsible Person:	Mr. T Mulaudzi
Physical Address:	15 Barnes Street, Westdene, Bloemfontein, 9301
Postal Address:	P.O. Box 22372, Extonweg, 9313
Telephone:	051 4301748
Fax:	086 556 2568
E-mail:	info@engedime.com
Expertise of EAP:	Refer to Part A (3) (a) (ii) on the expertise of EAP

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1.3 Contact details of

a) Details of EAP

i. Details of the EAP

Name of the Practitioner: Tshimangadzo Mulaudzi
Tel No.: 051 430 1748
Fax No.: 086 556 2568
Email address: info@engedime.com

ii. Expertise of the EAP

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

Tshimangadzo Mulaudzi holds an Honours Degree in Mining and Environmental Geology from the University of Venda. Has since been working as an environmental geologist and environmental practitioner. He has 5 years' experience in Environmental Science, 5 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 Mulaudzi has been carrying out Environmental Impact Assessment Procedure since 2012, in 2012, he joined a large prospecting 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 prospecting consulting business by assisting the large to small scale prospecting companies to obtain prospecting right, prospecting rights, prospecting permits, technical co-operate permits, reconnaissance permits, exploration rights, production rights, integrated water use license, and environmental authorisation among other licenses. Mulaudzi has five years working experience in environmental management, geology and public participation process.

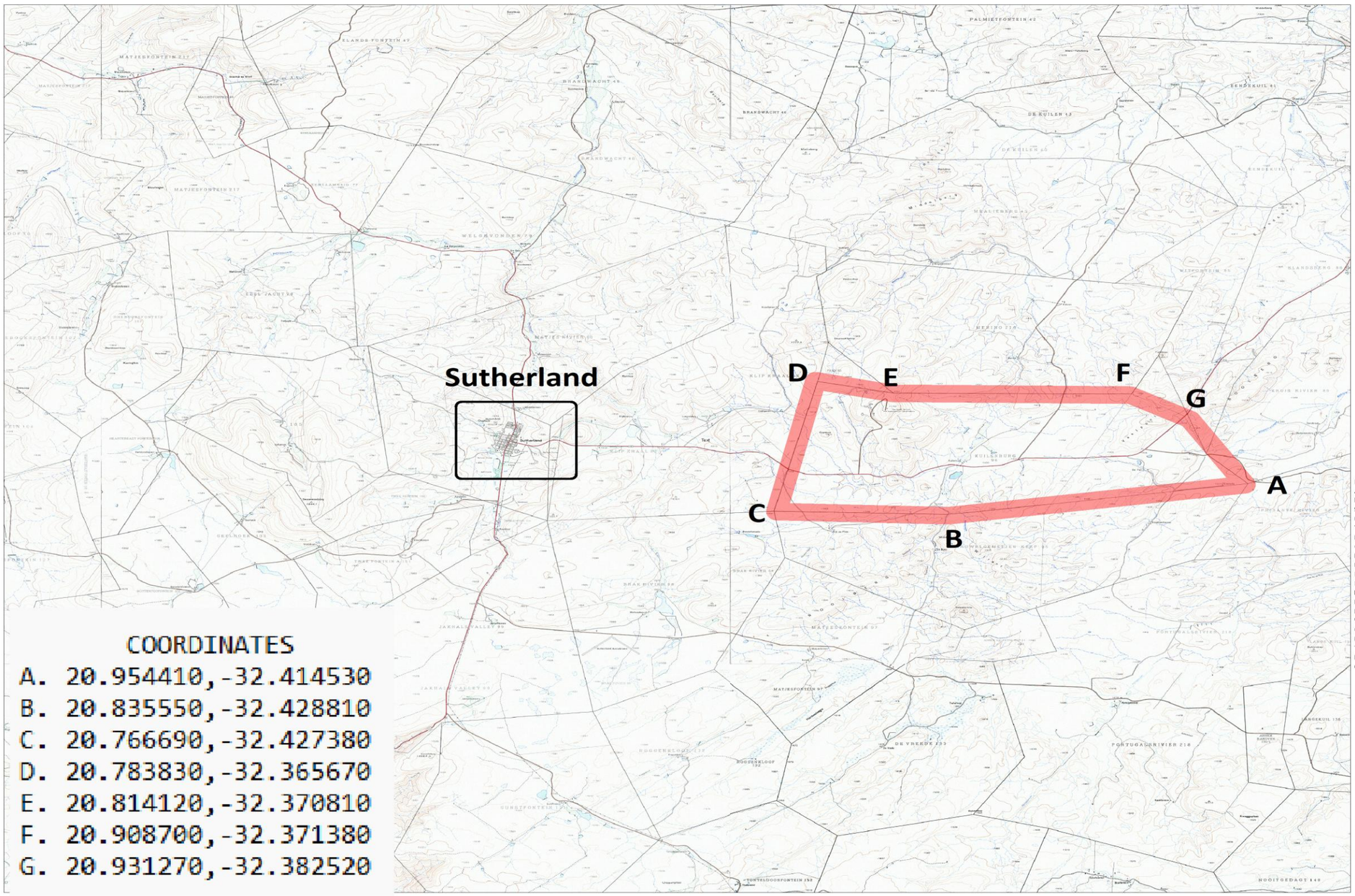
b) Location of the overall Activity

Farm name:	Kuilenburg 96
Application area (Ha):	97077 Ha
Magisterial district:	Sutherland
Distance and direction from nearest town:	Approximately 50-80 km west of Sutherland Town
21 digit Surveyor General Code for each farm portion:	C07200000000009600000

c) Locality map

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

Locality Map of the Remainder of the Farm Kuilenburg 96



COORDINATES

A. 20.954410,-32.414530
B. 20.835550,-32.428810
C. 20.766690,-32.427380
D. 20.783830,-32.365670
E. 20.814120,-32.370810
F. 20.908700,-32.371380
G. 20.931270,-32.382520

0 2,5 5 10 15 20 Kilometers

Prepared by Engedi Minerals and Energy

d) 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)

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 diamond 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, orthophotos, 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 thruthing 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 occur. 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 meter (4 m^2) 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 diamond drill holes at maximum depth of 100m. 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 essays at a South African National Accreditation System (SANAS) accredited laboratory. Samples will be analysed

PHASE 3

Preliminary economic assessment

A preliminary economic assessments 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 on the results of Phase 2 drilling; a minimum of five is

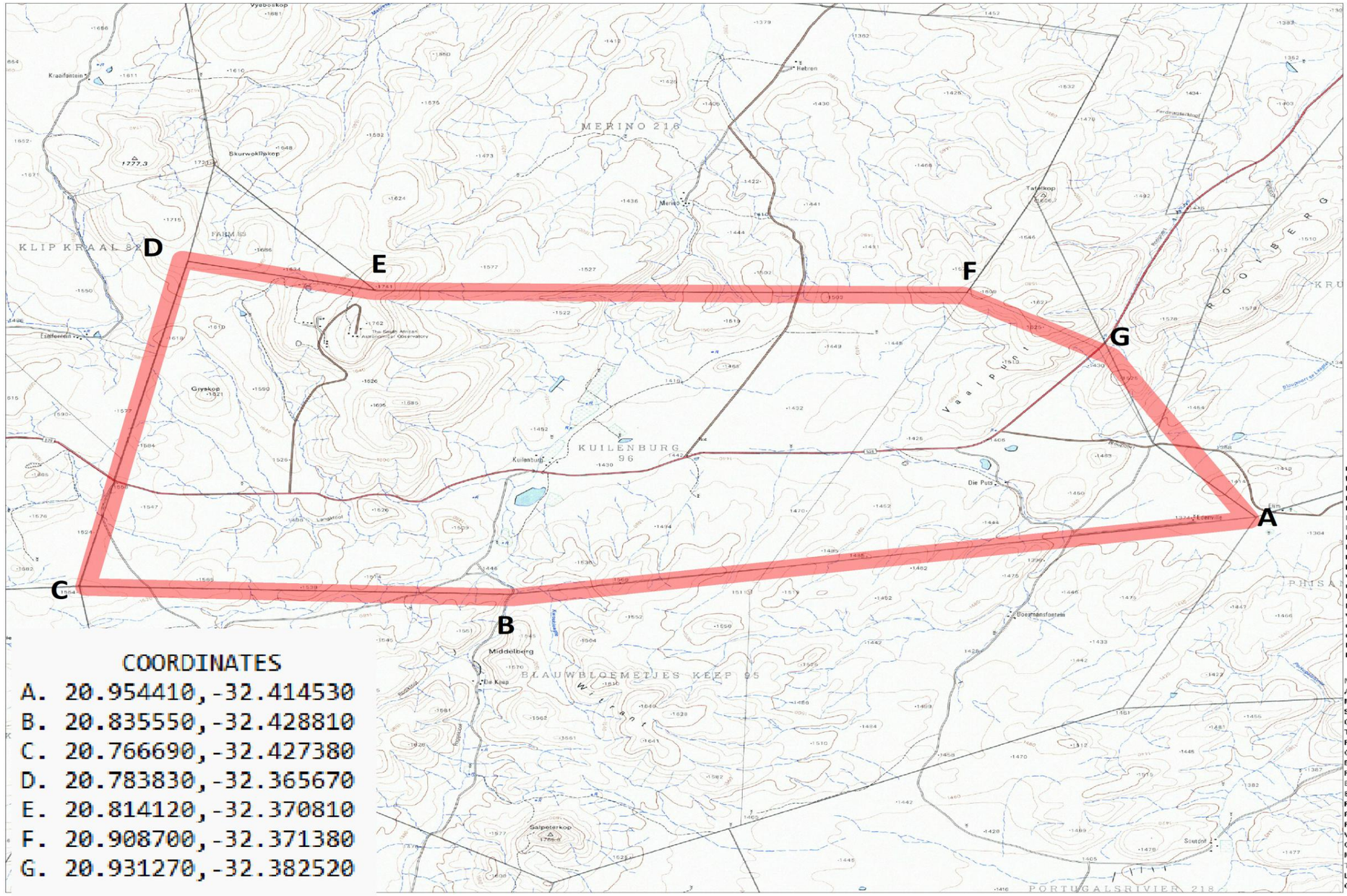
planned thus far. This programme will be more focused on parts on which the ore body were intersected.

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, tonnes and grade is available. A resource cannot be converted to a reserve unless its 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 Resource, or a portion thereof, becomes a mineral reserve. The activities associated with the Prospecting Work Programme will be scheduled over a period of 5 years.

Layout Map of the Remainder of the Farm Kuilenburg 96



COORDINATES

A. 20.954410,-32.414530
B. 20.835550,-32.428810
C. 20.766690,-32.427380
D. 20.783830,-32.365670
E. 20.814120,-32.370810
F. 20.908700,-32.371380
G. 20.931270,-32.382520

0 1 2 4 6 8 Kilometers

Prepared by Engedi Minerals and Energy

e) Listed and specified activities

NAME OF ACTIVITY **E.g. for prospecting** – drill site, 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.**)	**Aerial extent of the Activity (Ha or m^2)**	**LISTED ACTIVITY (**Mark with an **X** where applicable or affected**)**	**APPLICABLE LISTING NOTICE (*GNR 324, GNR 325 OR GNR 327)***
Establishment of prospecting site camps comprising of the drill site with sumps and parking, equipment storage, geologist logging area, water storage, waste bins and portable toilets.	9000 m^2	X	Listing Notice 1, Activity No. 20

i. 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)

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 diamond 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, orthophotos, 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 thruthing 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 occur. 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 meter (4 m^2) 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 diamond drill holes at maximum depth of 100m. 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 essays at a South African National Accreditation System (SANAS) accredited laboratory. Samples will be analysed

PHASE 3

Preliminary economic assessment
A preliminary economic assessments 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 on the results of Phase 2 drilling; a minimum of five is planned thus far. This programme will be more focused 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, tonnes and grade is available. A resource cannot be converted to a reserve unless its 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 Resource, or a portion thereof, becomes a mineral reserve. The activities associated with the Prospecting Work Programme will be scheduled over a period of 5 years.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (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)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
National Environmental Management Act (NEMA), No. 107 of 1998, as amended	Section 24	In terms of the National Environmental Management Act, an application for an Environmental Authorisation has been applied for.
Regulation 982. National Environmental Management Act (Act No. 107 of 1998): Environmental Impact Assessment Regulations, 2014	Regulation 19	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.
Regulation 983. National Environmental Management Act (Act No. 107 of 1998): Listing notice 1: List of activities and competent authorities identified in terms of sections 24(2) and 24D	Regulation 20	In terms of NEMA EIA Regulations R.983, Listing notice 1, the activity triggers regulation 21 which refers to 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	Section 23	In terms of the MPRDA, any person who wishes to apply for a prospecting right must

2008)		simultaneously apply for an environmental authorisation and must lodge the application to requirements contemplated by competent authority.

f) 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*)

The need for the proposed development is of paramount importance as it is going to assist the Karoo Hoogland local community in terms of poverty alleviation through job creation, black economic empowerment in terms of the prospecting charter which will contribute to the nation's visions of job creation.

g) Motivation for the overall preferred site, activities and technology alternative

The proposed prospecting site is preferred because:

1. It contains the right quality of Diamonds bearing material required for the recovering of Diamonds;
2. The prospecting site still has good high grade Diamonds;
3. The site is close to the processing plant, thus minimizing transportation costs; and
4. The area was cleared for previous mine support structures, hence preferred than opening a new area which could entail cutting down some trees.
5. There won't be a need to start excavating on virgin ground since the recovering will only be focused on the material along the historic rail line skeletons.

h) 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 Diamonds is contained in the proposed area. Locating the development to another area will result in the Diamonds possibly not being found and the economy and society not benefitting from proposed prospecting activity.

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 prospecting, 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 prospecting operation
- The Sutherland 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
- Northern Cape Department of Rural, Environment and Agricultural Development;
- Chief Director: Department of Rural Development and Land Reform (Northern Cape);
- Namakwa District Municipality – Municipal Office;
- Karoo Hoogland local municipality- Municipal office;
- Department of Water and Sanitation;
- Other relevant parties or departments.

The identified I&APs were provided with information regarding the applied proposed prospecting activity. The final location of the planned prospecting will be decided in consultation with the landowners during prospecting. 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 per email.

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 prospecting 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 (Pty) Ltd was appointed by **Saco 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 27 (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 email explaining the project and the background information will be sent to all other I&APs introducing the project. Specifically, the Northern Cape Department of Mineral Resources 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.

1.4 THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects).

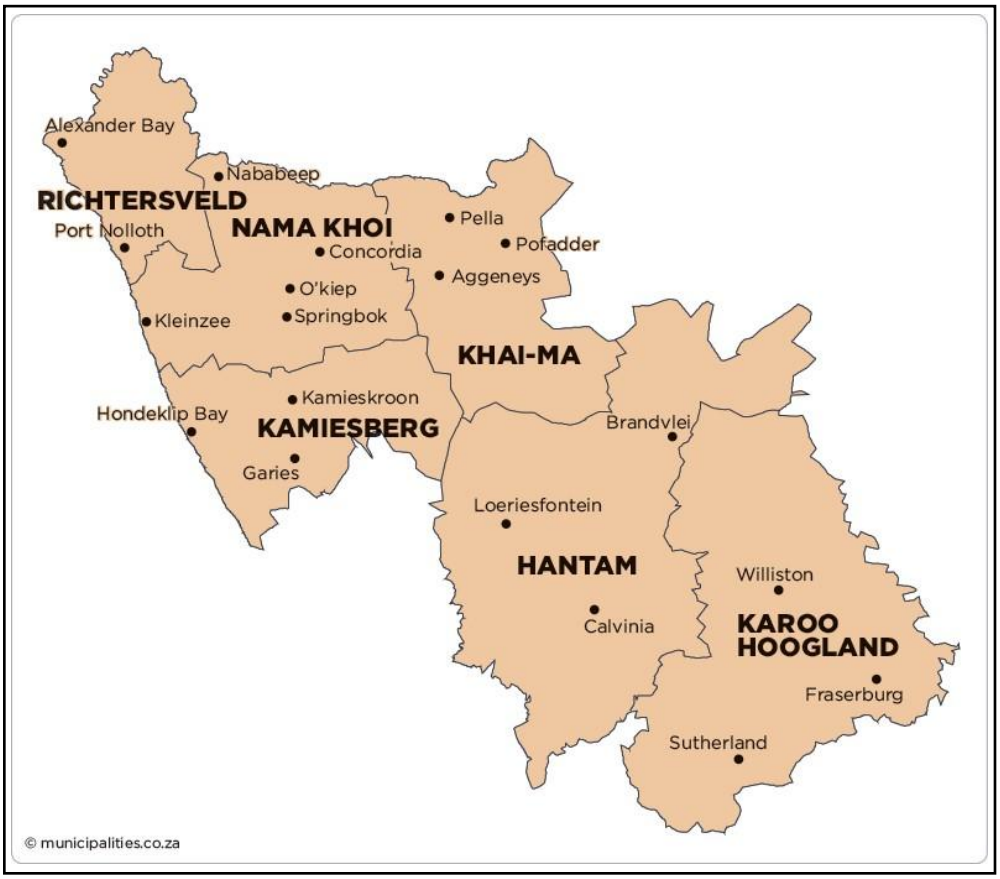
a) Type of environment affected by the proposed activity

(Its current geographical, physical, biological, socio-economic, and cultural character)

1.4.1 Baseline Environment

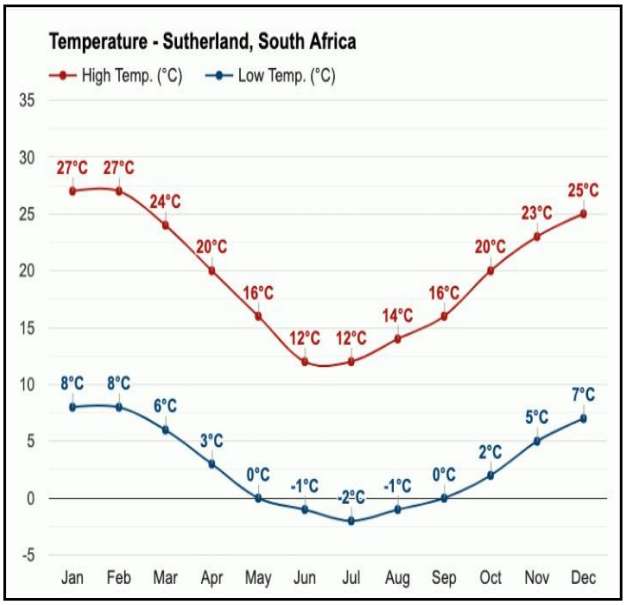
Location

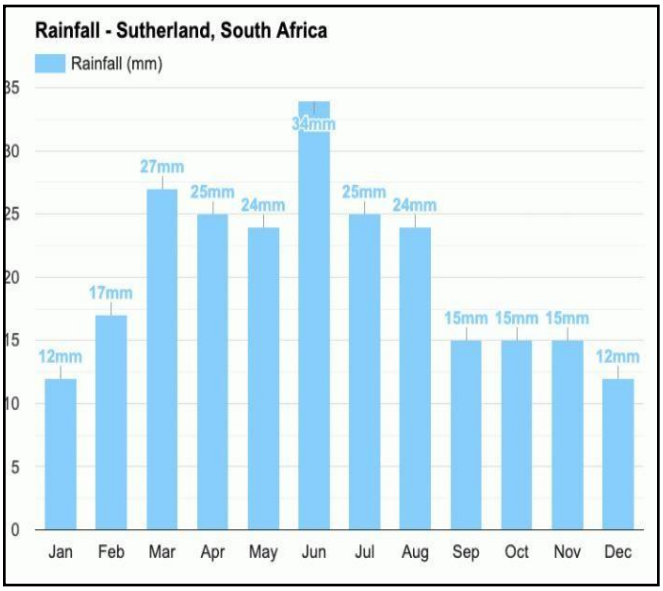
The magisterial district of Namakwa is situated in the Northern Cape Province. The Northern Cape is the largest province in South Africa and it shares its border with Namibia and Botswana. The proposed site for prospecting is situated within the Namakwa District Municipality and within the Karoo Hoogland Local Municipality. The proposed site within the district covers approximately 18 072 hectares.



Climate

Sutherland lies on 1458 m above sea level. The prevailing climate in Sutherland is known as a local steppe climate. There is not much rainfall in Sutherland all year long. The climate here is classified as BSk by the Köppen-Geiger system. The average annual temperature is 12.0 °C (Figure 4) in Sutherland. About 243 mm of precipitation falls annually (Figure 5).





Topography and Elevation

The altitude ranges from about 150 to 550 m.

Geology and Soils

The geology of the Roggeveld is relatively simple, being composed of horizontal sediments of Beaufort Group (Adelaide Subgroup) sandstones and mudstones of the Karoo Supergroup. Landscapes dominated by this geology are typically “layered”, comprising a series of tablelands interspersed by “steps” of harder sandstone. Intrusions of mid-Jurassic dolerite are common. These dolerites are virtually at the western and southern limits of their occurrence in this region, co-inciding largely with the Great Escarpment. Their resistance to erosion, compared to the sediments they have intruded, renders them prominent features of the landscape. They have thus no doubt played an essential role in protecting the Roggeveld Escarpment from more rapid erosion, and many of the highest points on the Roggeveld are capped with dolerite.

The Roggeveld region is notorious for its dolerite clays, which are particularly treacherous in winter, when large areas of hillslope covered by of soils 20–50 cm deep that appear dry but are in fact saturated from the continuous movement of water through the soil. On the flat plateaux, extensive areas are covered in reddish sandy-clays derived from horizontal shale, sandstone and mudstone strata that have been deeply weathered *in situ*. These soils can be as deep as 1 m, are also typically associated with high seasonal groundwater levels and the irregular drainage systems that characterise the flattest parts of the plateau. These areas usually host an abundance of geophytes.

Soils derived from dolerite flats are fertile, neutral to alkaline, reddish-brown, clay soils. The remainder of the soils in the area, such as on dolerite outcrops, among tors and on other shallow stony ground, are lithosols, while colluvium and regolith occupy the steeper mountain slopes. Alluvial boulder piles, and beige alluvium deposits up to 3 m deep occupy the broader valleys at the base of the Great Escarpment.

2.4.1 Biological Environment

Vegetation

The study area falls within the Succulent Karoo Biome, a landlocked region within South Africa.

The Succulent Karoo forms part of the Greater Cape Floristic Region, and is home to a total of around 6 350 species of vascular plants, of which nearly 2 440 (40%) are endemic to the biome,

therefore meaning that they are found nowhere else on earth. Many plant species in the Succulent Karoo are notable habitat specialists, occupying very specific habitat niches. One of the most famous plant species from the Succulent Karoo are the „halfmens" of the Richtersveld

Roggeveld Karoo

The vegetation is dominated by dwarf, succulent shrubs, of which the Vygies (*Mesembryanthemaceae*) and Stonecrops (*Crassulaceae*) are particularly prominent. Mass flowering displays of annuals (mainly Daisies *Asteraceae*) occur in spring, often on degraded or fallow lands. Grasses are rare, except in some sandy areas, and are of the C3 type. The number of plant species mostly succulents - is very high and unparalleled elsewhere in the world for an arid area of this size.

Roggerveld Shale Renosterveld

This vegetation type is dominated by a species of grey-coloured plant called the renosterbos. However, the *Proteas*, *Ericas* and *Restios* - typical of fynbos habitats, tend to occur in very low abundance in renosterveld. There are few endemics to renosterveld vegetation alone, many of the species occurring in fynbos as well. However, species endemic to the Cape Floristic Region comprise about one-third of renosterveld plant species, and many of these belong to families which are not considered to be of "Cape affinity".

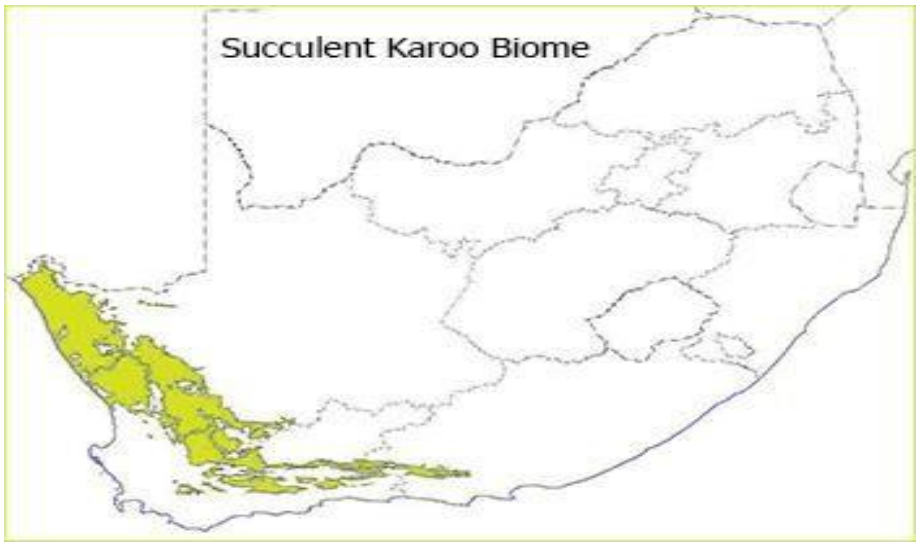
Typical renosterveld plants include:

- **Grasses**
  - *Themeda triandra*
- **Shrubs and small trees**
  - renosterbos, karee, wild rosemary, wild olive.
- **Perennials**
  - geophytes from the iris, amaryllis, hyacinth, orchid and other plant families.

Uses

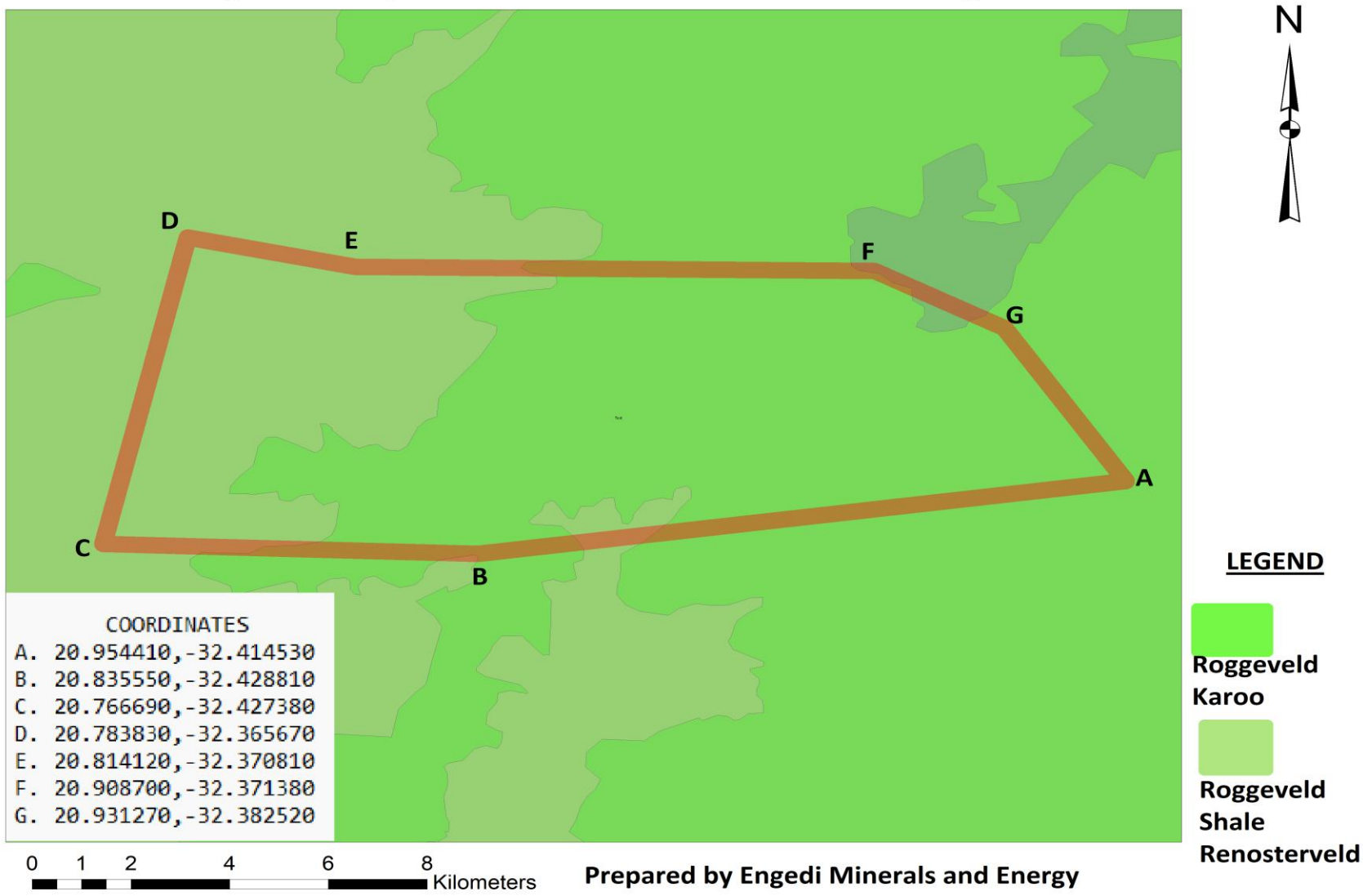
- Originally, the San and Khoi used renosterveld plants for food, medicine and grazing. Because of their relatively small populations, they did not cause a great deal of damage to this ecosystem.

- Many renosterveld trees and shrubs produce berries, which attract fruit-eating birds (e.g. bulbuls, Cape white-eyes) and other animals (e.g. geometric tortoises, chacma baboons).
- During spring, renosterveld flowers attract a wide variety of pollinators, like bees, flies, beetles and sunbirds



.

Vegetation Map of the Remainder of the Farm Kuilenburg 96



Conservation areas

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

3.4.1 Surface water

The study area falls within the Olifants-Doorn Water Management Area (WMA). The Olifants/Doorn WMA is located on the west coast of South Africa, extending from about 100 km to 450 km north of Cape Town. The south-western portion mainly falls within the Western Cape Province, and the north-eastern section falls within the Northern Cape Province.

Catchments

Orange River

Water Management Area

Lower Orange Water Management Area.

The geographic extent of the Lower Orange WMA largely corresponds to that of the Northern Cape. It is situated in the western extremity of South Africa and borders on Botswana, Namibia and the Atlantic Ocean. Climate over the region is harsh semi-desert to desert. Rainfall is minimal, ranging from 400 mm/annum to a low of 20 mm/annum and is characterised by prolonged droughts. With the exception of sparse and highly intermittent runoff from local tributaries and occasional inflows from the Fish River in Namibia, the Lower Orange WMA is totally dependent on flow in the Orange River from upstream WMAs. Because of the low rainfall, groundwater resources are limited, although this source is well used for rural water supplies.

Rivers and dams

Orange River

4.4.1 Socio-economic setting

Population

The total population is Karoo Hoogland Municipality (2016)
“

Total	35 938

Population Groups	Percentage
Coloured	67.80%
African	25.30%
White	6.69%
Asian	0.21%

Age Structure (2016)

Population Age	Percentage
Population under 15	26.2%
Population 15 to 64	67.8%
Population over 65	6.0%

Dependency ratio

Population	Percentage
Per 100 (15-64)	47.5%

Sex Ratio

Population	Percentage
Males per 100 females	100.0%

Education

	2016	2011
No schooling	9.7%	16.7%
Matric	20.4%	16.8%
Higher education	8.9%	5.4%

The statistics above represent the level of education of the population above the age of 20. It is of significance, because it shows an increase in matric and higher education qualifications of 3.6% and 3.5% respectively from 2011 to 2016, while the figure for people with no schooling decreases with 7.0%.

Household Dynamics

	Percentage
Households	10 191
Average household size	3.5%
Female headed households	36.4%
Formal dwellings	82.0%
Housing owned	50.3%

Employment

	2018/19	2017/18	2016/17	2015/16	2014/15
Employment					
Employment Costs (R'000)	62 755	56 005	48 916	48 250	42 340
Remuneration of councilors (R'00)	1 001	4 622	4 122	3 740	3 626
Total Employee Positions	186	214	226	195	195
Total Vacant Employee Positions	1	8	0	1	1
Total Vacancy Percentage	0.54%	3.74%	0.00%	0.51%	0.51%

b) Description of the current land uses

Mining and Agriculture.

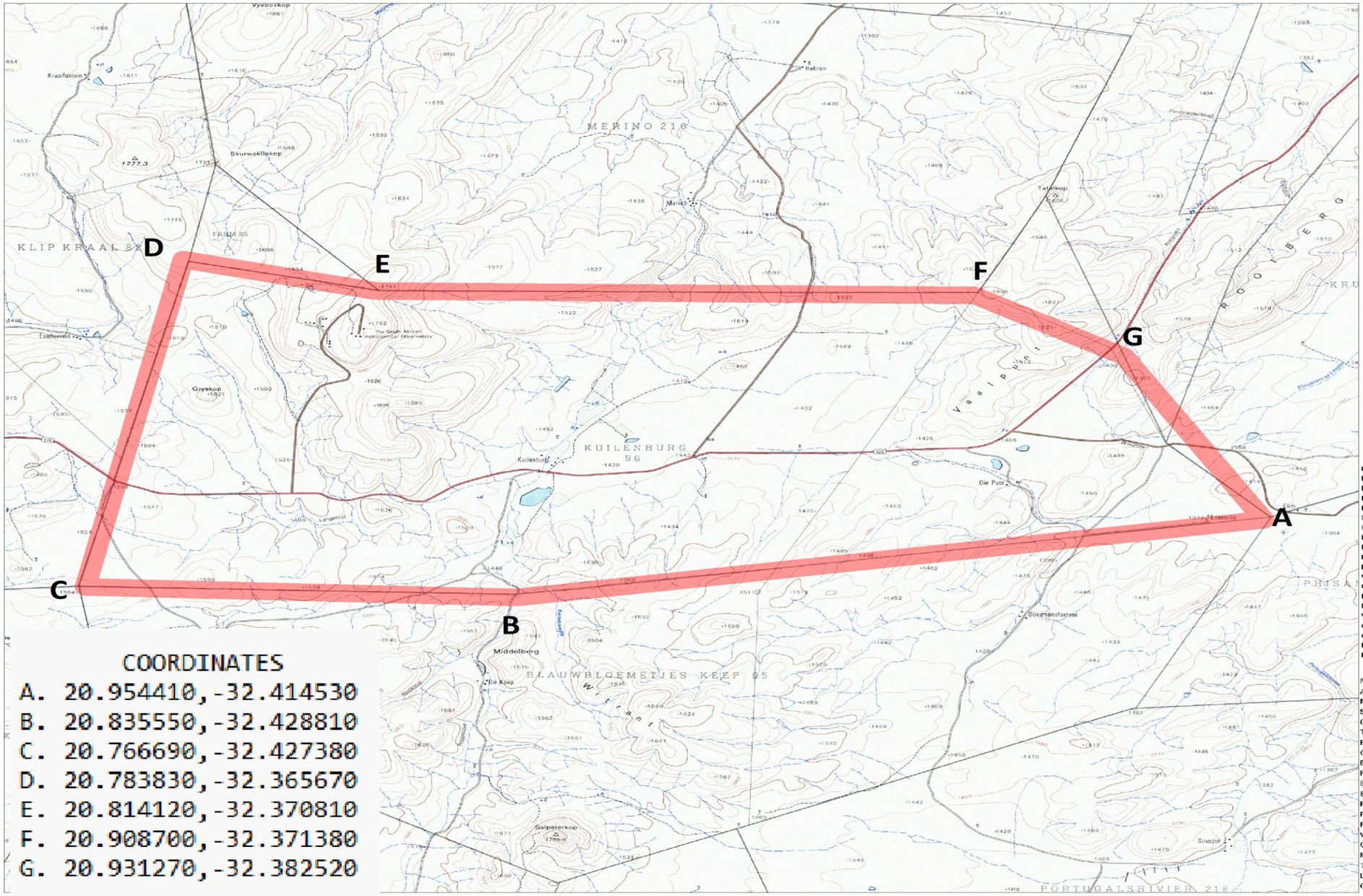
c) Description of specific environmental features and infrastructure on the site

Mining and Agriculture. Vegetation also available for grazing.

d) Environmental and current land use map

(Show all environmental and current land use features)

Layout Map of the Remainder of the Farm Kuilenburg 96



COORDINATES

A. 20.954410,-32.414530
B. 20.835550,-32.428810
C. 20.766690,-32.427380
D. 20.783830,-32.365670
E. 20.814120,-32.370810
F. 20.908700,-32.371380
G. 20.931270,-32.382520

0 1 2 4 6 8 Kilometers

Prepared by Engedi Minerals and Energy

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

No	Activity	impact	Duration	intensity	Probability	Significance Rating	
1	Site Preparation	Loss of vegetation	3	2	10	40	Low
		Habitat Destruction	3	2	10	58	Medium
		Visual scarring	3	4	8	56	Medium
		Soil erosion	3	4	6	42	Low

- **Potential cumulative impacts**

Since they are other prospecting company around, the cumulative impact will be noise and dust.

- **Potential impact on heritage resources**

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

- **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.

- **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 specialis**t **report appended**

(Refer to guideline)
No specialist 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:

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):

Significance Point (SP) = (Probability + Extent + Duration) x Intensity

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

SP > 75	Indicates **high** 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 **moderate** 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 **low** 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.

Probability (P)		
None (N)	1	The possibility of the impact occurring in 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%).
Extent (E)		
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 neighbouring 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.
Duration (D)		
The period over which the impact will be experienced		
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.
Intensity (I)		

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;**

No alternatives were considered. The summary of identified positive and negative risks is as follows.

Negative Impacts:

- Visual Impacts
- Noise Impacts
- Air Quality Deterioration
- Disruption of surface drainage
- Safety and Security Impacts
- Land Degradation

Positive impacts:

- Creation of employment opportunities
- Training and skills development opportunities

e) 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
- 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.
- 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.

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 recognised 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.

VISUAL IMPACTS

- 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 prospecting. 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 is best form so as to no 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.

f) Motivation where no alternative sites were considered

No location alternatives are applicable to this project since the Diamonds are contained in the proposed prospecting area. Locating the development to another area will result in the Diamonds not being found and the economy and society not benefitting from future proposed possible prospecting activities. The proposed site for the proposed prospecting is located within an area which is already severely disturbed as a result of agricultural activities and previous prospecting practice compare to the breaking down of a new virgin ground.

g) Statement motivating the alternative development location within the overall site

(Provide a statement motivating the final site layout that is proposed.)

The prospecting of the site is motivated by the need to improve life of the community of Karoo Hoogland Local Municipality, which is currently faced with poverty due to high unemployment rate and through this project poverty will be alleviated. The proposed prospecting site is preferred as it is situated on the rightful spot for Diamonds prospecting reflecting to the previous prospecting which was taking place thereby.

h) 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 where identified. The 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 by movement of vehicles from prospecting site to construction site causing air pollution.
- Noise generated by machinery during Diamonds prospecting and vehicles while transporting Diamonds from prospecting site to construction site.
- Visual impact due to prospecting activities, prospecting will be enlarged and machinery around the site will disturb the natural visual landscape.
- Exposure of animals to open drilled sites filled with water resulting in drowning and death.
- Improper disposal of waste resulting in land pollution.
- Fuel and oil leakages causing ground and surface water pollution.

i) 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 **E.g. For prospecting –** prospecting, drilling, 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.)**	**POTENTIAL IMPACT** (Including the potential impacts for cumulative impacts) (E.g. dusts, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	**ASPECTS AFFECTED**	**PHASE In which impact is anticipated** (e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)	**SIGNIFICANCE** **If not mitigated**	**MITIGATION TYPE** (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.)	**SIGNIFICANCE If mitigated**
Site Establishment activities (fencing, signage, access formation, etc)	Loss of vegetation	Visual character, Land use	Pre-prospecting	Medium	Remedy through rehabilitation, Limit footprint	Low

	Habitat Destruction	Visual character	Pre-prospecting	Medium	Remedy through rehabilitation, Limit footprint	Low
	Visual scarring	Visual character	Pre-prospecting	Medium	Remedy through rehabilitation	Low
	Soil erosion	Visual character, Land use	Pre-prospecting	Medium	Remedy through rehabilitation, Limit footprint, Control through storm water control	Low
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 trays and use of well serviced machinery	Low
Removal of infrastructure & equipment and re-shaping of proposed drilling	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	Land degradation	Decommissioning and closure	Low	Stop through operational Control	Low

	from oil/fuel				measures, e.g. drip trays and use of well serviced machinery	
	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 protocols	Low
	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

j) Environmental impact statement

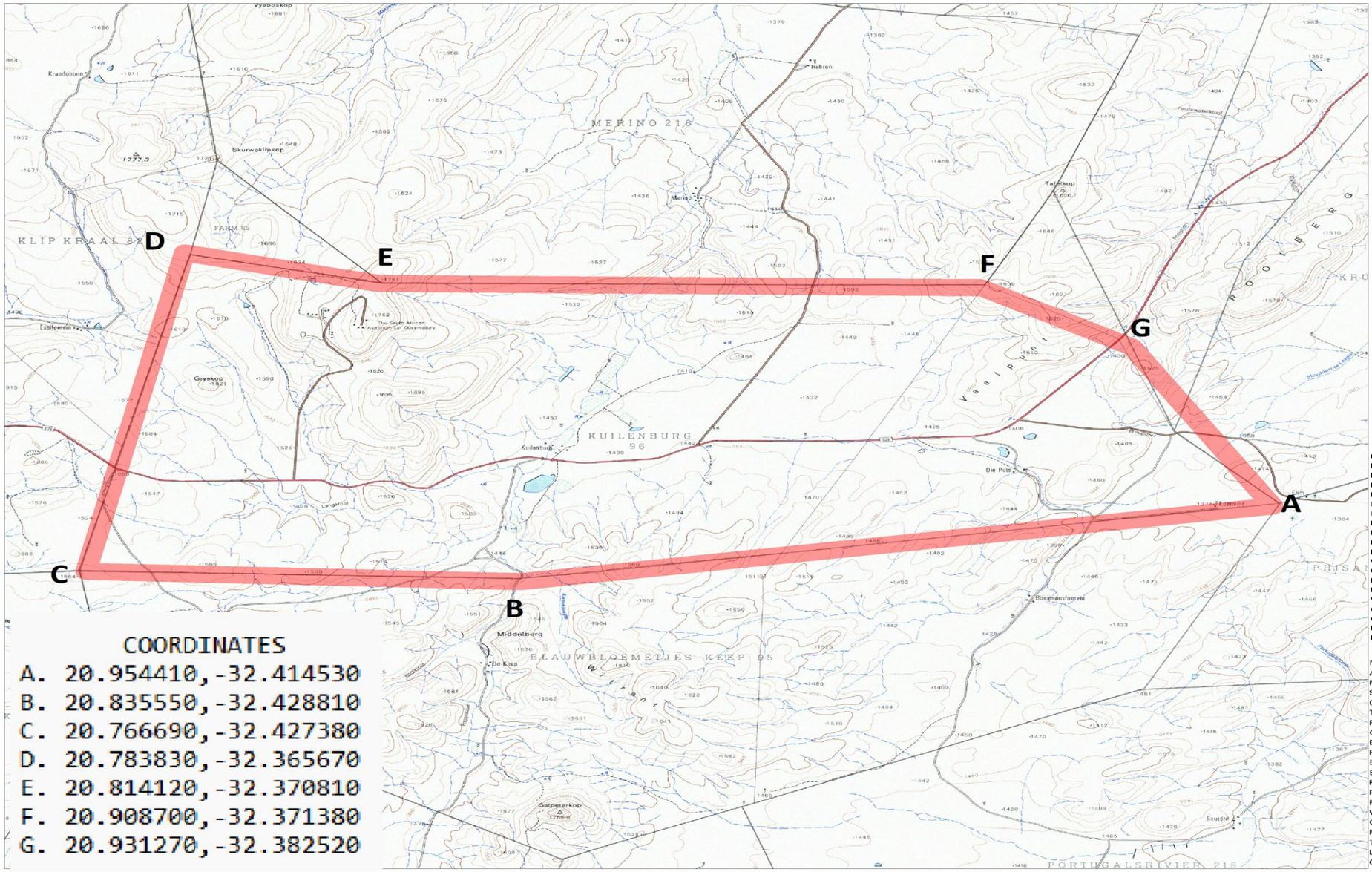
i. Summary of the key findings of the environmental impact assessment;

In general, it is recognized that the proposed prospecting activities has the potential to pose various risks to the environment as well as to the residents or businesses in the surrounding area. Therefore, it is important that these possible risks and key issues are identified during the draft phase of the BAR compilation. These impacts, issues and risks will be addressed in consultation with the I&APs, through an internal process based on similar developments.

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**

Layout Map of the Remainder of the Farm Kuilenburg 96



COORDINATES

A. 20.954410,-32.414530
B. 20.835550,-32.428810
C. 20.766690,-32.427380
D. 20.783830,-32.365670
E. 20.814120,-32.370810
F. 20.908700,-32.371380
G. 20.931270,-32.382520

0 1 2 4 6 8 Kilometers

Prepared by Engedi Minerals and Energy

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

No alternatives were considered. The summary of identified positive and negative risks is as follows.

Negative Impacts:

- Visual Impacts
- Noise Impacts
- Air Quality Deterioration
- Disruption of surface drainage
- Water pollution
- Safety and Security Impacts
- Land Degradation

Positive impacts:

- Creation of employment opportunities
- Training and skills development opportunities

k) 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 authorisation

The objectives of impact management are to avoid and/or minimize negative impacts of a proposed development to ensure minimal impact on the environment.

The mitigation measures are detailed in the EMPr which must be provided to the contractor at tendering stage, implemented and monitored.

It is therefore recommended that an Environmental Control Officer be appointed to monitor and audit the project during prospecting activities to ensure adherence to the recommendations of the EMPr.

l) 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 ensuring that all the disturbed environmental features are rehabilitated to the pre prospecting state.

m) Description of any assumptions, uncertainties and gaps in knowledge

(Which relate to the assessment and mitigation measures proposed)

No specialist were engaged hence some impacts could have been missed.

n) Reasoned opinion as to whether the proposed activity should or should not be authorized

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

The project will have an advance community development and to fulfill the Integrated Development Plan and mandate of the Karoo Hoogland local municipality to provide services to the community in terms of job creation.

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 prospecting activity, closure report must be submitted to the competent authority.

o) Period for which the Environmental Authorisation is required

The Environmental Authorisation is required for the duration for which a prospecting right is being applied for a period of 5 years.

p) 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.

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.	
Full Names and Surname	**TSHIMANGADZO MULAUDZI**
Identity Number	**8803265731082**

q) Financial provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation. The amount will be R 70 620.60

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

The financial provisions were derived in order to ensure that the amount of money required for rehabilitation and remediation of environmental impacts and associated damage as well as close-out is provided for and adequately calculated. The money would cover decommissioning and final closure of the operation; and post closure management of residual and latent environmental impacts. The amount was based on an assessment of the expected operational activities that will take place, the level of disturbance damage expected, the sensitivity of the area and the amount of work that is required to bring the site back to a self-sustaining ecosystem again. Consideration on how much it will cost to get labour, material and equipment used for the rehabilitation were also considered.

Calculation of the quantum of the financial provision required to manage and rehabilitate the environment has been worked out.

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.

r) 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 prospecting, bulk sampling or Diamonds 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.**

   The safety of the people including animals if the prospecting operations are not fenced off and guarded. If water accumulates after rain, there is a risk of drowning and death. The open prospecting are also a risk to animals falling in and breaking limps. The high vehicle movement to and from the drill site is a risk to accidents. Socio-economic impact will be due the job creation and revenue generation for the Karoo Hoogland local municipality 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 prospecting, bulk sampling or Diamonds 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 where identified by the previous miners. 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.

s) 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**).

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1.5 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).

Mulaudzi has been carrying out Environmental Impact Assessment Procedure since 2012, in 2012, 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, mining permits, technical co-operate permits, reconnaissance permits, exploration rights, production rights, integrated water use license, and environmental authorisation among other licenses.

Mulaudzi has five years working experience in environmental management, geology and public participation process.

b) Description of the Aspects of the Activity

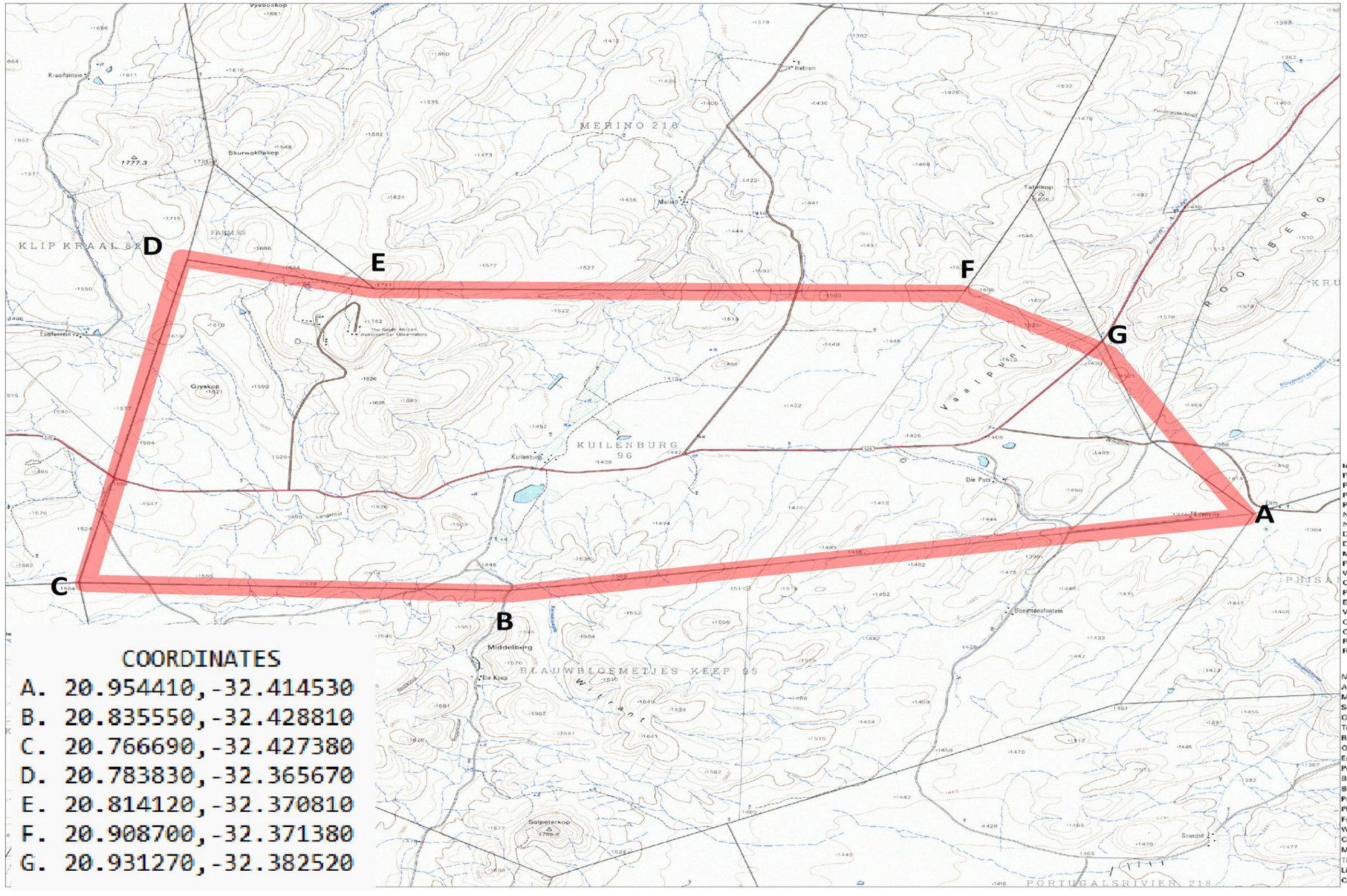
(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).

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 any areas that should be avoided, including buffers)

Layout Map of the Remainder of the Farm Kuilenburg 96



Prepared by Engedi Minerals and Energy

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 following closure objectives will be applicable for rehabilitation:

- Return the disturbed area to an acceptable post prospecting state
- Ensure that all areas are stable, and there is no risk of erosion
- Prevent alien plant invasion on the site until the site is in a stable state
- Ensure that all areas are free draining and non-polluting

If the commitments in this EMPr 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.

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

About 20 cubic meter of water per annum will be used.

iii. Has a water use license been applied for?

The application will be lodged with the department of water affairs.

iv. Impacts to be mitigated in their respective phases measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES **E.g. For prospecting –** prospecting, drill site, 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)**	**PHASE** (Of operation in which activity will take place. State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure)	**SIZE AND SCALE of disturbance** (volumes, tonnages and hectares or m^2)	**MITIGATION MEASURES** (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	**COMPLIANCE WITH STANDARDS** (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)	**TIME PERIOD FOR IMPLEMENTATION** 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 – • Upon cessation of the individual activity Or • Upon cessation of prospecting as the case may be.
Site Establishment activities (fencing, signage, access formation, etc.)	Start-up	± 0.01ha	Dust Suppression Service equipment to reduce noise	Issues of compliance with standards will be incorporated into the day to day business activities at the proposed prospecting. The work	During start up, operational phase

			No loud music.	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 Prospecting and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, National Water Act regulations. COLTO 1998 Refers to - Standard Specification for Road and Bridge Works for State Road Authorities by the South African Committee of Land Transport Officials.	
Waste Disposal and Material storage	Operational	Undetermined	Dust control net or wetting of top to prevent the dust being blown away. Service of vehicles to control noise &exhaust fumes	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	Operational Phase

				with.	
Material handling, hauling and transportation	Operational	Undetermined	Dust control net or wetting of top to prevent the dust being blown away. Service of vehicles to control noise &exhaust fumes Speed control	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 Prospecting 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 phases	Affected areas.	Dust control measures Worker to wear dust mask Service equipment to reduce noise No loud music	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, Prospecting and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations and the	At decommissioning

				National Environmental Management Act.	
Re-shaping of proposed prospecting	Decommissioning and closure	± 0.04 ha	Dust control measures Worker to wear dust mask Service equipment to reduce noise No loud music	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	Prospecting will comply with the employees standards for prospecting	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	± 0.01 ha	Rehabilitation will be done concurrent to prospecting	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, National Environmental Management Biodiversity Act regulations.	During Operational Phase in sections where prospecting has been completed and during closure

e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph;

ACTIVITY (whether listed or not listed) **(E.g. Prospecting, drill site, 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.)**	**POTENTIAL IMPACT** **(E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)**	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated **(e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)**	**MITIGATION TYPE** **(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.)**	**STANDARD TO BE ACHIEVED** **(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)**
Site Establishment activities (fencing, signage, access	Loss of vegetation	Visual character, land use	Start-up	Remedy through rehabilitation Limit footprint	Impact managed effectively, Rehabilitate to a self-sustaining

formation, etc.)					environment
	Habitat Destruction	Visual character, land use	Start up	Remedy through rehabilitation Limit footprint	Impact reduced
	Visual scarring	Visual character	Start up and operational	Remedy through rehabilitation	Impact managed 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
Drill site	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 Land erosio n	Land use	Operational Phase	Rehabilitation, use slope management control	Impact levels avoided

	Destruction of heritage	Heritage issues	Operational Phase	Avoidance	Impact Avoided
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
Material handling, hauling and transportation	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 drill site	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	Land	Decommissioni	Control with operational	Impact managed to

	from oil/fuel	degradation, water pollution	ng and closure	control 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 and labour relations management	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).

ACTIVITY (whether listed or not listed) **(E.g. Prospecting, 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.)**	**POTENTIAL IMPACT** **(E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)**	**MITIGATION TYPE** **(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.)**	**TIME PERIOD FOR IMPLEMENTATION** 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 – • Upon cessation of the individual activity Or Upon cessation of prospecting, as the case may be.	**COMPLIANCE WITH STANDARDS** (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,	Loss of vegetation	Remedy through rehabilitation	Start-up	Issues of compliance with standards will be incorporated into

signage, access formation, etc.)				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. This will include compliance with standards as per COLTO 1998, the standards as per Prospecting 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	
Drill site	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
	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	complied with. This will include compliance with standards as per COLTO 1998, the standards as per Prospecting and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations, and Conservation of Agricultural Resources Act.
	Soil erosion	Remedy through rehabilitation, Storm water control	Operational Phase	
	Dust emissions	Control with dust 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 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
	Increased risk of fire	Avoidance, Operational control measures	Operational Phase	

	Dust	Control with dust Control measures	Operational Phase	Act regulation, are complied with.
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 Prospecting 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 methodologies used during decommissioning so as to comply with the standards as per COLTO 1998, Prospecting and Petroleum Resources Development Act regulations, Mine Health and Safety Act regulations and the National Environmental Management Act.
	Soil contamination from oil/fuel	Control with operational control measures	Decommissioning and closure	
	Disruption of surface drainage	Control with storm water controls	Decommissioning and closure	
	Community conflicts and tensions	Control using site management protocols	Operational	

b. 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 DPR acknowledges that a proposed prospecting is a temporary land use which results in areas of land being temporarily disturbed. Whilst steps are taken throughout the project life cycle to reduce negative environmental impacts as they occur, the specific closure objectives are as follows:

- To create a post prospecting environment that eliminates unacceptable health hazards and ensures public safety.
- To leave the site in a stable, non-polluting and tidy condition with no remaining plant or infrastructure that is not required for post prospecting operational use.
- To minimise or eliminate the downstream environmental impacts on the ecosystem due to interruption of drainage once the proposed prospecting operations cease.
- To establish a stable post-prospecting land surface which has been rehabilitated that also supports vegetation growth, is erosion resistant and has long term sustainability.
- To reduce the need for long-term monitoring and maintenance by establishing.

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 prospecting activities, including the anticipated prospecting 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 prospecting activities, including the anticipated prospecting area at the time of closure. The extent of the proposed prospecting area is however shown in.

The following environmental controls will be implemented during prospecting 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 prospecting development will be stored within / adjacent to the prospecting site for final rehabilitation.
- Topsoil will be stripped within the prospecting site, to a depth of 300mm, and placed separately within the prospecting 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, in a natural state containing no foreign debris or other materials and to ensure ecological, hydrological and topographical integrity.
- Prospecting 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 prospecting

- Progressive rehabilitation will be undertaken during prospecting (Concurrent rehabilitation). Each prospecting and associated disturbed areas will be rehabilitated when prospecting is completed at each prospecting site.
- Once the prospecting 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 prospecting 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.

The following closure objectives will be applicable for rehabilitation:

- Return the disturbed area to an acceptable post prospecting state.
- Ensure that all areas are stable and there is no risk of erosion,
- Prevent alien plant invasion on the site until the site is in a stable state, and
- Ensure that all areas are free draining and non-polluting.

The prospecting operations area is within the agricultural grazing land. The continuous rehabilitation program will attempt to restore the area to an acceptable standard as close to the baseline environmental state as possible to ensure safe use of the area for grazing purpose.

If the commitments in this EMPr 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. Thus the rehabilitation plan is compatible with the closure objectives.

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

Saco Mining - NC 12953 PR **Location:** **Sutherland**
Engedi Minerals and Energy (Pty) Ltd **Date:** **Jun-22**

Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
Demolition of steel buildings and structures	m2	0	271	1	1	0
Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
Rehabilitation of access roads	m2	0,10	49	1	1	4,9
Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
Demolition of housing and/or administration facilities	m2	0	542	1	1	0
Opencast rehabilitation including final voids and ramps	ha	0,1	284292	1	1	28429,2
Sealing of shafts adits and inclines	m3	0	146	1	1	0
Rehabilitation of overburden and spoils	ha	0,1	189528	1	1	18952,8
Rehabilitation of processing waste deposits and evaporatic ponds (non-polluting potential)	ha	0	236054	1	1	0
Rehabilitation of processing waste deposits and evaporatic ponds (polluting potential)	ha	0	685612	1	1	0
Rehabilitation of subsided areas	ha	0,001	158701	1	1	158,701
General surface rehabilitation	ha	0,01	150138	1	1	1501,38
River diversions	ha	0	150138	1	1	0
Fencing	m	10	171	1	1	1710
Water management	ha	0	57087	1	1	0
2 to 3 years of maintenance and aftercare	ha	0,001	19980	1	1	19,98
Specialist study	Sum	0			1	0
Specialist study	Sum				1	0
				Sub Total 1		50776,961

Preliminary and General	6093,23532	weighting factor 2 1	6093,23532
Contingencies	5077,6961		5077,6961
		Subtotal 2	61947,89
		VAT (15%)	8672,70
		Grand Total	**R 70 620,60**

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**

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
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.
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	Dust, Increased risk of accidents, Noise, Soil	Visual checks, monitoring incidences of non-compliance,	Appointed Contractor	At start and as and when required. Record incidences of

transportation	contamination	recording of key parameters		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.

l) 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.

m) 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 (Pty) Ltd** Standard Operational Procedures (SOPs) and this EMP. **Engedi Minerals and Energy (Pty) Ltd** will do in-house training, should it be necessary to its personnel on site. The prospecting contractor will be responsible for training its prospecting crew and supervisor.

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

1.6 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 prospecting 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 prospecting 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 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 prospecting 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 Control Environmental Officer (CEO).
- Spread absorbent diamonds (Alluvial) 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.

1.7 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 recognized 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 prospecting 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 prospecting 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.

n) 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.

Saco mining will undertake rehabilitation to minimise negative impacts on the environment.

THE CV AND DECLARATION OF OATH OF THE EAP

CURRICULUM VITAE

OF

Tshimangadzo Mulaudzi

P.O Box 22372

Extonweg

9313

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
Gender: 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 Mining Permit on DMR Samradonline 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 North West helping them with the application for Mining permit, 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.

EMPLOYMEMT HISTORY

Job title	:	Trainee Mine Geologist
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	:	Chief production, quality, and safety officer

Name of Organization : Tshedza concrete art

Period : January 2012 – January 2013 (1 year, 1 month)

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 : LED Intern (in Mining, Environmental and Geology) Name of Organization : Makhado Local Municipality (Limpopo) 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 : Consultant Environmental Geologist and GIS specialist

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 Mining Permit 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, North West, and Free State with application for Mining permit 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 : Consultant Environmental Geologist and GIS specialist 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 Mining Permit 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, North West, and Free State with application for Mining permit 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)

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Tshimangadzo Mulaudzi

Registration Number: 114576

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following fields(s) of practice (Schedule 1 of the Act)

Geological Science (Professional Natural Scientist)

Effective **20 March 2018** Expires **31 March 2021**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

15 Barnes Street, Westdene,
Langebaan Building
Bloemfontein, South Africa
9301

P.O.Box 29567
Danhof
9310

pride, determination, and resilience
Reg. No. 2015/153624/07

Cell: 079 362 6046 (+27)
076 763 8486 (+27)
Fax: 086 556 2568 (+27)

email: info@engedime.com
mulaudzit@engedime.com
www.engedime.com

8th of February 2021

UNDERTAKING AND DECLARATION UNDER OATH AS ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

As refer to the subject of the matter above;

I am hereby confirming that all the information contained in this report is true and correct And hereby declared that I, **Mr Tshimangadzo Mulaudzi,** of Identity number: **8803265731082**, I am an Environmental Geologist Consultants at Engedi Minerals and Energy (Pty) Ltd (Reg. No, 2015/153624/07), I am an Environmental Assessment Practitioner (EAP) and I am capable to compile Environmental reports in support of permits and rights application with Department of Mineral Resource (DMR) and Environmental authorisation with the Department of Environmental Affairs (DEA) and any relevant department including Department of Water and Sanitation amongst others.

This was done and signed at Bloemfontein on the 8th of Februa

SUID-AFRIKAANSE POLISIEDIENS
COMMUNITY SERVICE CENTRE
2021 -02- 0 8
BAYSWATER
SOUTH AFRICAN POLICE SERVICE

Yours sincerely

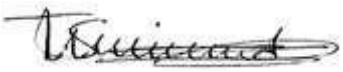
T. Mulaudzi
Engedi Minerals and Energy (Pty) Ltd (Consultant)

Ek sertifiseer dat bostaande verklaring deur my afgeneem is en dat die verklaarder erken dat hy/sy verstaan is met die inhoud van hierdie verklaring en dit begryp. Hierdie verklaring is voor my beëdig/bevestig en verklaarder se handtekening/duimafdruk is in my teenwoordigheid daarop aangebring.
I certify that the above statement was taken by me and that the deponent has acknowledged that he/she knows and understands the contents of this statement. This statement was sworn to/affirmed by the deponent's signature/mark/thumbprint was placed thereon in my presence.
te BAYSWATER op 2021-02-08 om 14:00
at on
(HANDTEKENING) KOMMISSARIS VAN EDE
(SIGNATURE) COMMISSIONER OF OATHS
VOLLE VOORNAME EN VAN IN DRUKSKRIF
FULL FIRST NAMES AND SURNAME IN BLOCK LETTERS
T.K. MALEFANE
99 WILCOKS STR
BESIGHEIDSADRES (STRAATADRES)
BUSINESS ADDRESS (STREET ADDRESS)
BLOEMFONTEIN
SAPS
RANGE
SA POLISIEDIENS
SA POLICE SERVICE

UNDERTAKING

The EAP herewith confirms

The correctness of the information provided in the reports	**X**
The inclusion of comments and inputs from stakeholders and I&APs;	**X**
The inclusion of inputs and recommendations from specialist reports where relevant; and	
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**



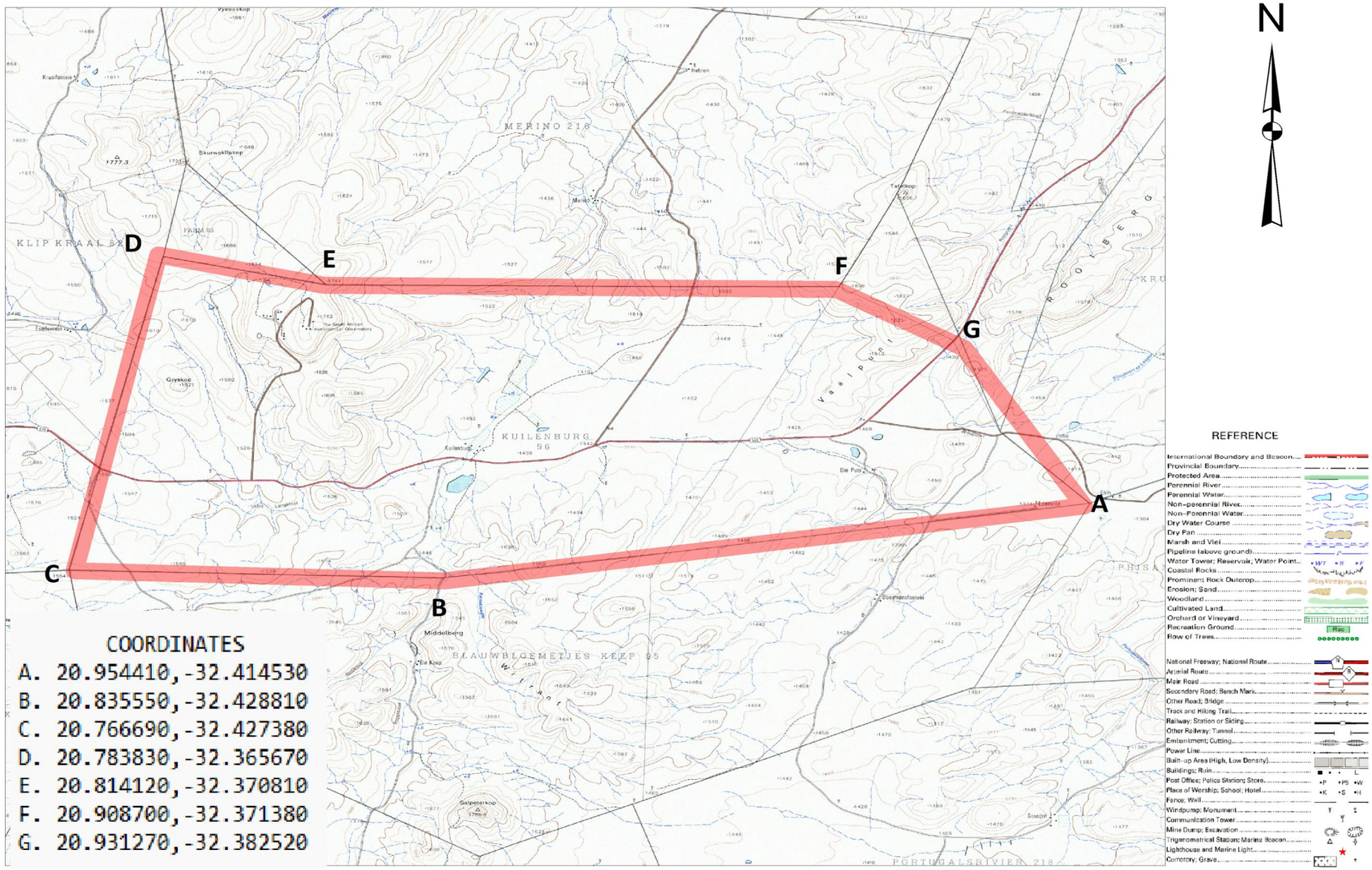
Signature of the environmental assessment practitioner:

Engedi Minerals and Energy (Pty) Ltd
Name of company:

22 June 2022
Date:

APPENDIX B
LAYOUT MAP

Layout Map of the Remainder of the Farm Kuilenburg 96



Prepared by Engedi Minerals and Energy

-END