



DRAFT BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) REPORT

Prospecting Right Application on Portion 5 of the Farm Gunsfontein No. 29, within the Magisterial District of Sutherland, Northern Cape Province (DMRE Ref: NCS 30/5/1/3/3/2/1 (13386) PR).

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mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT
And
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT 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).

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FILE REFERENCE NUMBER SAMRAD: NCS 30/5/1/3/3/2/1 (13386) PR)

FILE REFERENCE NUMBER SAMRAD: NCS 30/5/1/3/3/2/1 (13386) PR)

1. IMPORTANT NOTICE

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

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

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

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the 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 Authorisation 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 uninterpreted information and that it unambiguously represents the interpretation of the applicant.

2. Objective of the basic assessment process

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

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within 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—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) 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.

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DOCUMENT CONTROL

Document Title	Basic Assessment Report and Environmental Management Programme Report for the proposed prospecting of minerals on Portion 5 of the Farm Gunsfontein No. 29 situated within the Magisterial District of Sutherland, Northern Cape Province.	
Client Name	African Exploration Mining and Finance Corporation Soc Ltd	
Application Reference	DMRE REF: NCS 30/5/1/3/3/2/1 (13386) PR)	
Status	Draft Report	
Date	Monday, 05 June 2023	
Environmental Assessment Practitioner	Lutendo Ndou (Pr. Sci. Nat & EAPASA)	
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DOCUMENT OUTLINE

Part A	Scope of work and Basic Assessment Report
Part B	Environmental Management Programme

EXECUTIVE SUMMARY

The purpose of this document is to provide supporting environmental insights to an application for a Prospecting Right on Portion 5 of the Farm Gunsfontein No. 29 Situated within the Magisterial District of Sutherland, Northern Cape Province. The site covers a total area extent of approximately 443.221 hectares and is located about 34 km northwest of Sutherland Town and 35 km south west of Middelpols. The proposed prospecting activity will include the following non-invasive activities; Review of Historical and newly acquired data, Geochemical Survey, Geochemical Survey, Geophysical Survey. Drilling will be the only invasive activity employed.

It is worth noting that the proposed activity will comply with the undertaking of activities that are considered as listed activities in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) as amended. An application for a Prospecting Right was submitted to the Department and this basic environmental assessment is undertaken in support of the environmental authorisation application for the proposed project. In view of the above, African Exploration Mining and Finance Corporation Soc Ltd has appointed Matavha Environmental (Pty) Ltd as an independent Environmental Assessment Practitioner to undertake and manage the environmental authorisation application.

The public participation process (PPP) and stakeholder engagement process, as part of the Environmental Authorisation process was conducted in terms of Section 41 of NEMA: 5 EIA regulation 326 of 2017 which provides clear guidelines for PPP and stakeholder engagement during the Basic Assessment process. One of the general objectives of environmental management is to ensure an “adequate and appropriate opportunity for public participation in decisions that may affect the environment”. The PPP is primarily aimed at affording Stakeholders and Interested and Affected Parties (I&APs) an opportunity to gain an understanding of the project. In addition, to afford an opportunity to inform and consult with the landowners, I&APs and to provide them with the necessary information about the proposed project. Thus, they can make informed decisions as to whether to proceed or decline and to weigh the consequences of the project.

Before an EAP submits a final report, an opportunity must be provided to registered I&AP's to comment on the report prior to the submission of the final report to the competent authority for approval. Stakeholders and I&AP's are therefore invited to participate in the public review of the Draft BAR from **06 June to 07 July** (period of 30 days). Copies were delivered to the identified stakeholders. After the public review period, the report will be updated with all the comments received during public consultation .

This document provides a basic assessment study with identified environmental impacts, mitigation measures and Environmental Management Plan (EMP) for the proposed Prospecting Right application. This document focuses on providing an insight of the proposed activities and their potential impact on the receiving environment, and how the identified potential impacts will be managed. This document is compiled in line with the NEMA:EIA Regulation 326 of 2017.

PART A

SCOPE OF ASSSSMENT AND BASIC ASSESSMENT REPORT

2. Contact Person and correspondence address

a) Details of:

i) Table 1: Details of the EAP

Name of The Practitioner	Lutendo Ndou
Tel No	072 688 7758
Fax No	086 618 1421
e-mail address	Lutendo@matavha.com

ii) Expertise of the EAP

The expertise of the EAP is provided below. Copies of the relevant CV, Qualifications and Professional Registrations are included in Appendix E. **Comprehensive CV of EAP has been attached as Appendix E.**

(1) The qualifications of the EAP

(With evidence). **Comprehensive CV of EAP has been attached as Appendix E.**

Bachelor of Earth Sciences (Honors) in Mining and Environmental Geology (Qualification attached)

(2) Summary of the EAP's past experience.

(In carrying out the Environmental Impact Assessment Procedure)

Mr Ndou is an Environmental Specialist of over 6 years' experience of consulting on a private and mining sector. His experience ranges from Wetland Assessments, Land Contamination Assessment and Remediation, Climate Change Lecturer and Advisor, Dust Monitoring, Air Quality Management, Waste Management (both hazardous and general waste) Environmental Health & Safety (HSE), Environmental Auditing (ECO), and Environmental Impact Assessment, to Geotechnical and Dolomite stability Studies. Mr. Ndou is a registered EAP with EAPASA registration number: 2019/410.

b) Location of the overall Activity

Table 2: Project Location Details

Farm Name:	Gunsfontein No.29
Application area (Ha)	443.221 Ha
Magisterial district:	Sutherland District Municipality
Distance and direction from nearest town	The proposed area is situated about 34 km north west of Sutherland Town and 35 south west of Middelpols.
21-digit Surveyor General Code for each farm portion	C0720000000002900000

c) Locality map

(Show nearest town, scale not smaller than 1:250000).

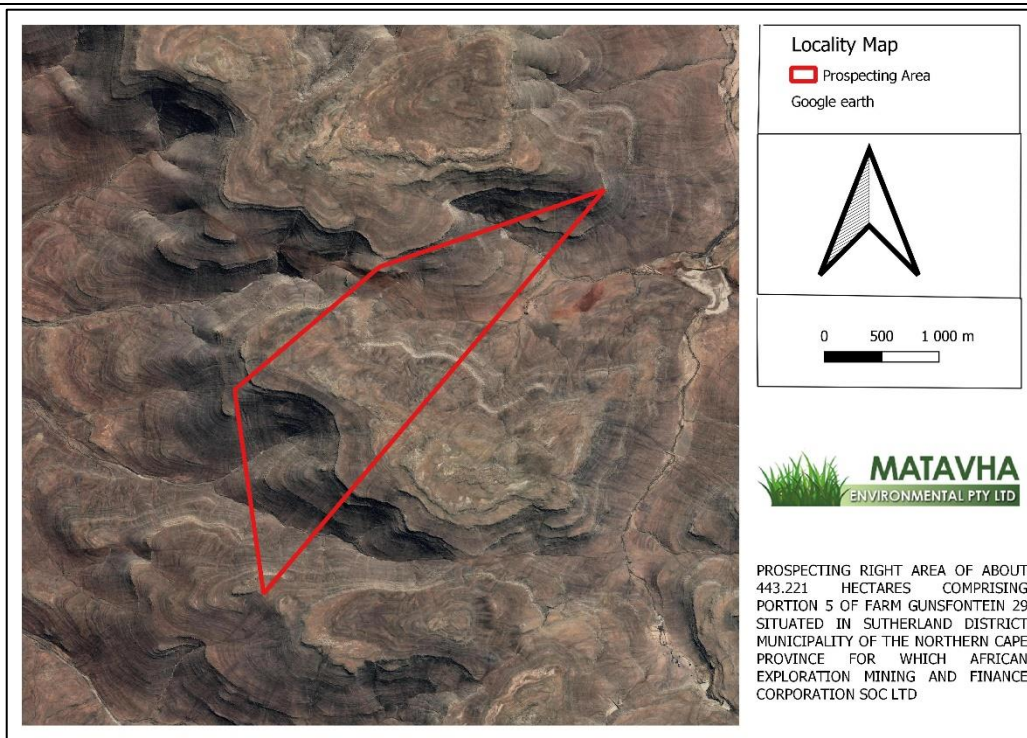


Figure 1: Locality Map Aerial View

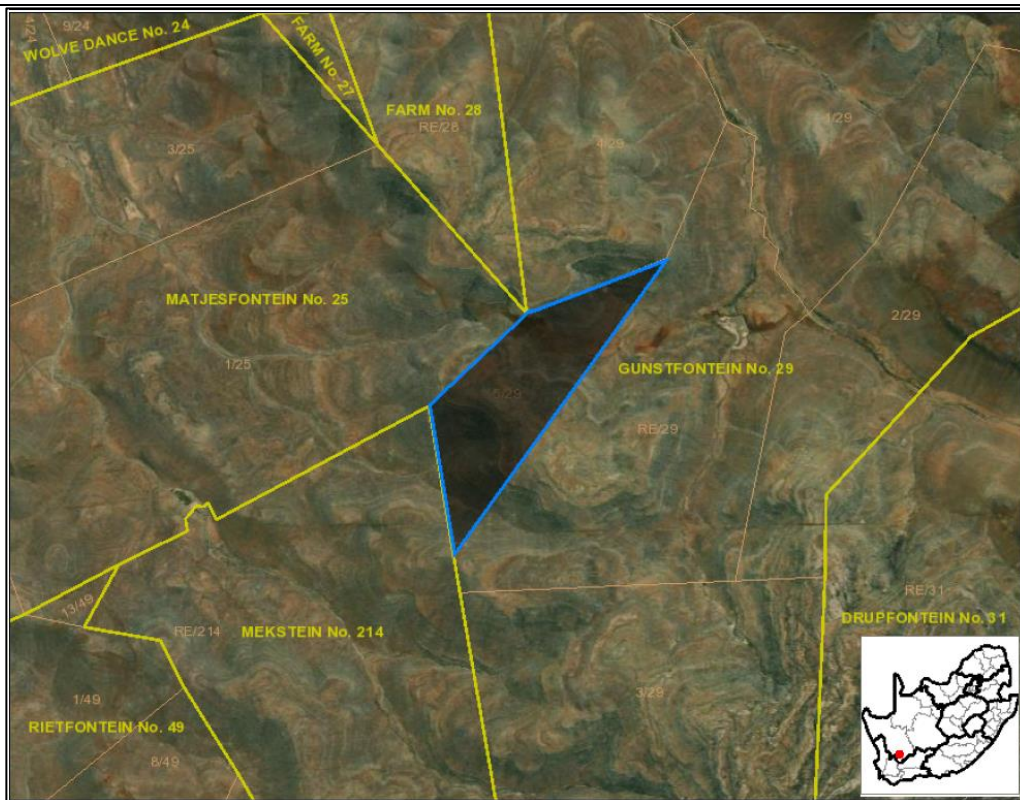


Figure 2: Aerial View Locality Map

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

The Prospecting activity on Portion 5 of the Farm Gunsfontein No. 29 Situated within the Magisterial District of Sutherland, Northern Cape Province. The proposed type of mineral to be prospected is Molybdenum; Uranium and the site covers a total area extent of approximately 443.221 hectares and is located about 34 km northwest of Sutherland Town and 35 south west of Middelpols. Drilling will be the only invasive activity employed and the proposed prospecting activity will include the following non-invasive activities;

- Review of Historical and newly acquired data,
- Geochemical Survey, and
- Geophysical Survey

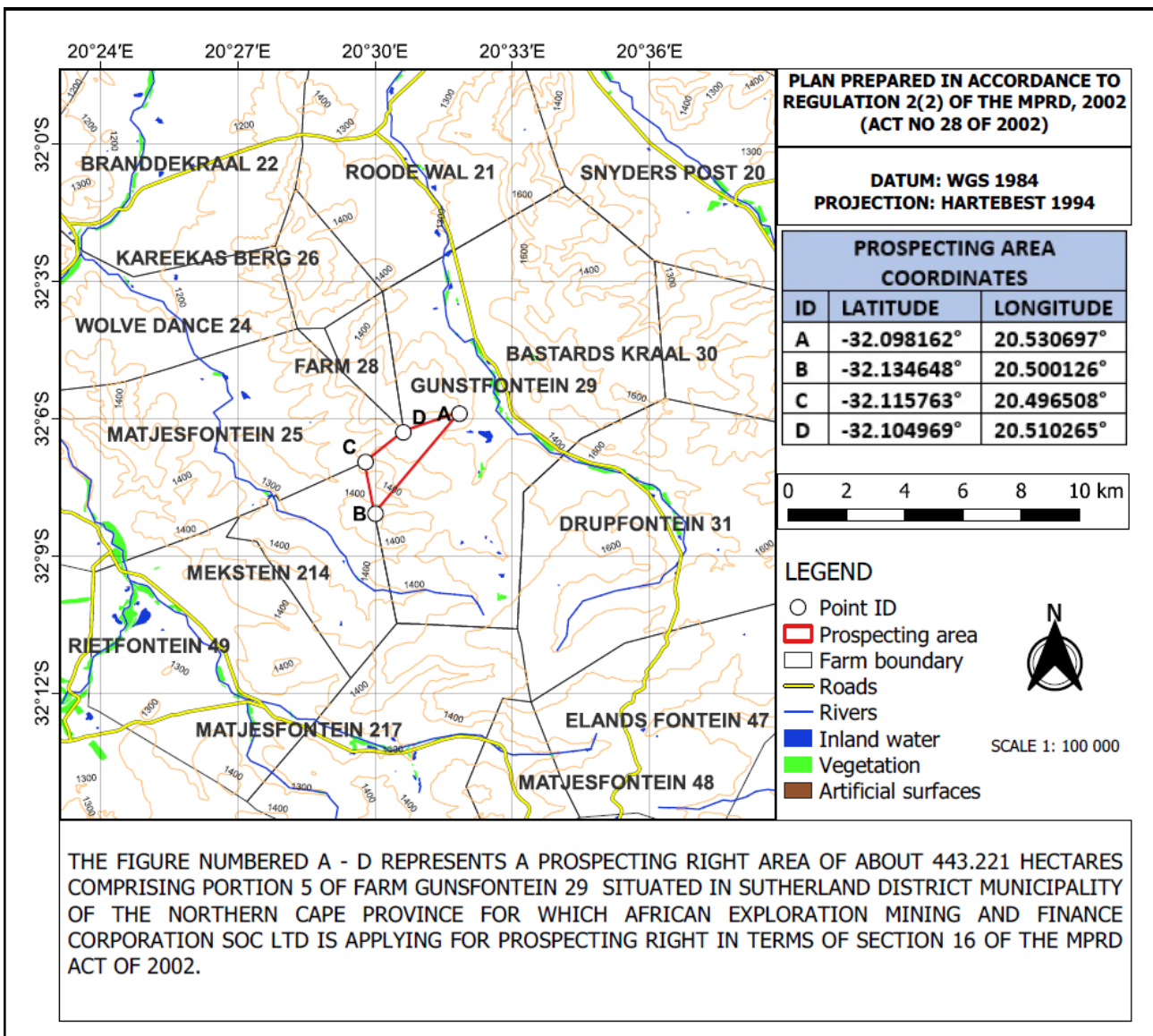


Figure 3: Proposed Prospecting Plan

(i) Listed and specified activities

NAME OF ACTIVITY (E.g., For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. for mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)
Prospecting	37 491.568691 ha	X	GNR 327, Listed activity. 20
Drilling	0.3 Ha	X	GNR 327, Listed activity. 20
Site camp	80 m ²	X	GNR 327, Listed activity. 20
Ablution facilities	10 m ²	X	GNR 327, Listed activity. 20
Accommodation	30 m ²	X	GNR 327, Listed activity. 20
Equipment storage	50 m ²	X	GNR 327, Listed activity. 20
Sample storage	40 m ²	X	GNR 327, Listed activity. 20
Temporal Site offices	40 m ²	X	GNR 327, Listed activity. 20
Access roads	100 m ²	X	GNR 327, Listed activity. 20

(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

The proponent is intending to prospect for a mineral commodity of uranium and molybdenum. The prospect area is situated within the Sutherland Magisterial District of the Northern Cape Province. The number of boreholes to be drilled initially is 10. Prospecting for above-mentioned minerals is a dynamic and result driven operation which proceeds in phases, the outcome of which cannot be predicted or predetermined.

The program could be stopped at any stage during the prospecting operation if the results are negative or non-economical. Prospecting activities to be undertaken include non-invasive (e.g. desktop studies and ground geophysical surveys) and invasive (e.g. drilling) techniques.

DESCRIPTION OF THE PROSPECTING METHODOLOGY

Non-Invasive Activities

- **Desktop study**

Desktop study will include compilation of existing and historical geological information to enable focus and targeting of ongoing activities. It will be subjected to detailed geological, facies and sedimentological interpretations by integration into a three-dimensional software package (typically DataMine™). Advanced studies may follow on from the initial phases of prospecting depending on the results obtained and could include metallurgical and rock mechanics studies, resource estimations, environmental impact assessments, socio-economic studies, culminating in a pre-feasibility study if successful.

- **Field mapping**

Field mapping will be conducted to map lithological units and structures and to identify any features related to deposits being applied for.

- **Geochemical Survey:**

Geochemical survey will be carried out to identify any anomalous concentrations of uranium and molybdenum in the prospecting area. The surveys will entail studies of soil samples and may be extended to samples taken selectively from the material historically derived. All samples will be sent to a suitable laboratory for comprehensive analyses.

- **Geophysical Survey:**

Geophysical survey or procurement of public and private geophysical data that exists over the project area will be carried out to locate geophysical anomalies associated with deposits of metals being applied for. Surveys would include radiometric and other appropriate surveys. Analysis will be assigned to a competent and well-established firm of specialist geophysicists.

- **Resource evaluation**

Should potential targets be identified by any of the activities outlined above, the focus of the project will be to define a Mineral Resource as defined by the SAMREC Code.

- **Other methods:**

Electronic data capture of all information into a GIS (ArcView™) system with three dimensional modelling in DataMine™. Aerial photographs and satellite imagery are available from which useful spatial and topographical data

may be obtained in respect of mapping prospective sites. If warranted the more costly techniques of aerial magnetometry &/or seismology may be considered, although the nature of the terrain will make the latter difficult to mount.

Invasive Activities

Excavations - No excavations will be dug.

Trenching - No trenching will be conducted.

Pitting - No pits will be dug.

- **Drilling**

The implementation of trenching and/or drilling will be determined based on the results from initial exploratory work. Either technique will be implemented at spacing grid capable of providing an Inferred Mineral Resource. This resource is defined at a low degree of confidence but is sufficient to be used to complete a scoping study and to evaluate the economic feasibility of the project to advise the decision to continue to feasibility study work. Drilling will be the most important method of prospecting. Diamond core drilling method will be used and the anticipated hole diameter is typically 47.5mm to 65mm.

Mineralisation may be present from surface up to a depth of 1000m, however all drilling shall be undertaken to a maximum depth of 500 meters. An independent and experienced drilling contractor will be used to complete the drilling in accordance with industry best practice and in compliance with the Mine Health and Safety Act. Borehole sites will be GPS located and pegged. The site will be inspected and photographed prior to any disturbance. No topsoil will be removed. After each drill hole is complete, logged and sampled, the borehole collar will be surveyed by an independent surveyor using a high accuracy differential GPS.

Thereafter the drill sumps will be filled in, the drill area rehabilitated and photographed according to the procedures as stipulated in the Environmental Management Plan. The rehabilitation process will be closely monitored to ensure that standards are not compromised. A drill site is only considered rehabilitated when the project geologist has signed a standard drill pad rehabilitation checklist. Reverse Circulation drilling is the most cost effective method for testing and assessing the deposit with Percussion techniques being offered as an alternative should circumstances so require. Initially 10 such boreholes are proposed. Up to 20 diamond drill holes are suggested to recover core in support laboratory analysis. Laboratory assay will proceed concurrently with drilling.

- **Sampling and Analyses/Test Work**

The boreholes will be logged and sampled where mineralisation has been identified. Samples will be submitted for analyses to determine the average metal content. Each sample is logged, halved, bagged, and numbered in the field by the geologist and field assistants. The bagged samples are then sent for analyses and the other half sample stored for future test work.

- **The Construction phase.**

As this activity mainly entails Prospecting, the Construction Phase is not relevant. A small drill camp will be set up on site and Enviro-loo ablution facilities placed in close proximity to it. The drill camp will be located at an environmentally secure position/s agreed upon by the applicant, the landowner/s, and the Environmental Control Officer (ECO) and cannot be determined at this stage of the process. No permanent structures will be erected.

- **The Prospecting (Operational) phase**

In terms of this application, non-invasive prospecting activities would be carried out by the applicant within the prospecting study area once the right has been approved. The identified target areas shall be visited by use of vehicles along existing farm access as far as practically possible. Dense/intact land parcels would be accessed by foot. During this phase, it is anticipated that there will be limited site clearance. The equipment which will be used are 4x4 vehicles in the initial phase. During the invasive drilling stage a drilling rig and TLB will be used. The invasive prospecting phase of the project will involve the actual drilling, and survey. Drilling will increase noise and can create dust.

Employees operating the drilling equipment will use personal protective equipment (PPE) such as ear plugs to minimize exposure to the noise from machinery, dust masks, hard hats, safety boots, etc. Working hours (drilling) will be limited to between 6am and 6pm. A total of 10 holes will be drilled to a depth of approximately 500m and 1000m respectively. All activities will be done in accordance with industry best practice and in compliance with the Mine Health and Safety Act.

- **The Decommission/Rehabilitation phase.**

Decommissioning phases involve rehabilitation of the area to the state in which it was prior to prospecting and disturbance. All equipment will be removed from the site. All the stockpiled soil will be backfilled into the sumps and boreholes. Any rock cores and any temporary ablution facilities that were erected will be removed. Rehabilitation measures are described in more detail later in this report.

e) Policy and Legislative Context

<p>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</p> <p>(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process</p>	<p>REFERENCE WHERE APPLIED</p>	<p>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</p> <p>(E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)</p>
<p>The South African Constitution</p> <p>The South African Constitution (Act 108 of 1996) constitutes the supreme law of the country and guarantee the right of all people in South Africa. Furthermore, the Bill of Rights (Chapter 2- Section 24 (a) (b) under the South African Constitution (Act 108 of 1996) emphasize that “Everyone has the right (b) to have the environment protected, for the benefit of present and future generations, through reasonable</p>	<p>Applied at potential impacts identification as well as mitigation measures and public participation</p>	<p>Rights of all personnel who are directly or indirectly involved in the project has been respected and their concerns attended to during public consultation</p>
<p>Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</p>	<p>The project requires a Prospecting Right authorisation from DMRE</p>	<p>Prospecting Right application was lodged with the (SAMRAD) DMRE</p>
<p>Astronomy and Geographic Advantage Act, 2007 (Act No. 21 of 2007)</p>	<p>Sutherland Central Astronomy Advantage Area (AAA)</p>	<p>The Astronomy Geographic Advantage Act 21 of 2007 aims: to provide for the preservation and protection of areas within the Republic that are uniquely suited for optical and radio astronomy</p>
<p>National Environmental Biodiversity Act</p> <p>The National Environmental Management Biodiversity Act (NEM:BA), 2004 (Act No.10 of 2004), provides for: (i) the management and conservation of South Africa’s biodiversity within the framework of the National Environmental Management Act, 1998; (ii) the protection of species and ecosystems that warrant national protection; (iii) the sustainable use of indigenous</p>	<p>Impact Assessment</p>	<p>Impacts on the biodiversity have been identified and mitigation has been provided</p>

<p>biological resources; (iv) the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources; (v) the establishment and functions of a South African National Biodiversity Institute;</p>		
<p>National Heritage Resources Act The National Heritage Resources Act (NHRA), 1999 (Act No. 25 of 1999) provides for the management of national heritage resources to set norms and maintain national standards for the management of heritage resources in South Africa, and to protect heritage resources of national significance, so that heritage resources may be bequeathed to future generations. Section 35(4) of the NHRA related to archaeology, palaeontology, and meteorites, and states that: no person may, without a permit: (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite; (b) destroy, damage, excavate or remove from its original position, collect or own any archaeological material or paleontological material or object or meteorite; (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object; (d) Bring onto or use any equipment which assists in the detection or recovery of metals or archaeological and paleontological material or objects.</p>	<p>Impact Assessment</p>	<p>An Archaeological and Heritage Impact Assessment study has been conducted by an independent specialist</p>
<p>NEMA Environmental Impact Assessment (EIA) Regulations, 2014.</p>	<p>This BA and EMP to be conducted.</p>	<p>An Application for Environmental Authorisation will be submitted to the Northern Cape DMRE with the Prospecting Right application lodgement on SAMRAD.</p>
<p>National Water Act (Act 36 of 1998)</p>	<p>Water Use License</p>	<p>Section 21 of the NWA recognises different forms of water uses including non-consumptive water uses (such as the disposal of</p>

		waste in a manner which may detrimentally impact the altering of watercourses or a water resource) and consumptive (such as the storing and taking of water) and are subject to a Water Use License Application (WULA) process.
Mine Health and Safety Act, 1996 (Act No. 29 of 1996);	Health and Safety Policy	Risk Impact Assessment conducted
National Environmental Management: Waste Act. The NWA (Act No. 36 of 1998).	Provisions of the waste act were consulted to determine whether a waste license was required for any aspect of the proposed development.	The project activities do not trigger a waste management license but proper waste management measures will be addressed in the EMPr.
National Environmental Management: Air Quality Act, 2004 (Act no.39 of 2004);	Objectives of the NEM: AQA are to protect the environment by providing reasonable legislative and other measures to: -Prevent air pollution; and -Promote conservation and secure ecologically sustainable development.	Dust Control Regulations promulgated in November 2013 may require the implementation of a dust management plan.
National Environmental Management Act, 1998 (107/1998 as amended) (“NEMA”)	The procedure for obtaining an environmental authorisation requires either a basic	This Basic Assessment Report is being submitted to DMRE in compliance with the regulation since the proposed project trigger activities in Listing Notice 1.

	<p>assessment (activities in Listing Notice 1 and 3) or S&EIR (activities in Listing Notice 2) process to be undertaken to inform the application for authorisation.</p>	
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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).

South Africa is one of the major countries in terms of uranium resources and production, being ranked as the world's tenth-largest producer of uranium. According to the Karoo Hoogland Integrated Development Plan (2022/2027), the mining industry within the municipality has the potential to become an employer in years to come, considering the huge uranium deposits in the area. Moreover possibilities of uranium mining have been identified, mainly in the southern part of the municipality.

- **Revenue and Expenditure**

South Africa's total mineral reserves are estimated at \$2.4 trillion to \$3 trillion , with the mining sector contributing 7.53% of GDP. The sector brings in an annual income exceeding R330 billion and accounts for 20% of all investment in the country. Out of the R441 billion in expenditure which the mining industry generates, R407 billion is spent locally, further stimulating the economy. A successful prospecting of the reserves in Sutherland will further enhance the revenue of the country and mainly that of the Northern Cape Province which has a very high unemployment rate.

- **Employment**

According to the Mining Intelligence Database, currently the mining and related industries not only employ over one million people which results in spending about R78 billion in wages and salaries but is the largest contributor by value to Black Economic Empowerment (BEE). Most importantly, mining provides job-mining opportunities for unskilled and semi-skilled people. Although the prospecting activities will not require a large number of employees, a successful prospecting project will eventually lead to the realisation of mining activities which will require a large number of both skilled and unskilled labour.

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

The proposed prospecting site area is located on Portion 5 of the Farm Gunsfontein No. 29, within the Magisterial District of Sutherland, Northern Cape Province. It was identified as the preferred and only viable site alternative based on the following:

- **Preferred Site**

The geological formation of the site area for the proposed prospecting activity is characterized by the Adelaide and Tarkstad subgroups of the Beaufort Group which belongs to the Karoo Supergroup. Uranium mineralization is found in the fluvatile Upper Permian Beaufort Group in Karoo Basin mainly confined to a sandstone-rich unit. This is a good indicator of the presence of the mineral commodities proposed to be prospected for in this site.

Furthermore, the project site is located within the Karoo Hoogland Local Municipality, and according to the Namakwa District Municipality Environmental Management Framework and Strategic Environmental Management Plan, 2011, the proposed site location is suitable for the proposed prospecting activity as the community can benefit from the results of the prospecting activity. The rate of unemployment within the area is very high, and successful prospecting would result in mining activities that can assist create large employment opportunities for the residents.

- **Activities**

Geochemical survey- Geochemical surveys warrant for systematic collection and chemical analysis of a wide variety of naturally occurring materials.

Geophysical surveys - These are preferred to give an outline of the geological setting of the area. The activities will aid in locating the borehole points and areas to avoid.

Establishment of a site camp- To enable easy and safer storage and use of equipment and location for temporary site offices. No large trees (> 20cm stem) or vegetation of significance (as will be identified by the ECO) will be removed for the purposes of prospecting as the borehole positions can be altered as and when a need arises.

- **Technology**

One of the main benefits of diamond drilling is its ability to produce high-quality core samples. This makes it an ideal method for obtaining detailed geological information, such as rock quality, structure, and mineralization. The proposed method of exploration which will be mainly drilling of planned boreholes allows easy access of drill rigs to the site. No bulk sampling is proposed, this will minimise the footprint of the disturbance as well as the resultant impact on the receiving environment.

The environmental impact assessment process assessed the feasibility of the proposed alternative to identify fatal flaws that are deemed as severe as to prevent the activity continuing, or warrant another site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programs proposed in this document be implemented, no fatal flaws could be identified that prevents the activity from being conducted. In light of the above, an EMPR of the prospecting activity was compiled to incorporate the project related mitigation measures and

monitoring programs identified during this assessment process. The preferred development option was subsequently finalized and is depicted on the attached site plan (Appendix A).

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 as Appendix A 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.

Feasible and reasonable alternatives have to be identified for a development as required by the NEMA EIA Regulations and applicable to the EIA process. Each alternative has to be accompanied by a description and comparative assessment of the advantages and disadvantages that such development and activities will pose on the environment and socio economy. Where no feasible and/or reasonable alternatives could be identified and investigated in terms of a comparative assessment during the Basis Assessment phase, the BAR will then not contain a section with any alternatives.

Alternatives forms a vital part of the initial assessment process through the consideration of modifications in order to prevent and/or mitigate environmental impacts associated with a particular development. Alternatives are to be amended when the development's scope of work is amended. It is vital that original as well as amended alternative identification, investigation, and assessment together with the generation and consideration of modifications and changes to the development and activities are documented. The EIA Regulations (amended 2017) defines alternatives as the different means of meeting the general purpose and requirements of the activity.

Although an array of alternatives could be investigated for each project, such alternatives will not necessarily be applicable to each project and/or project phase. However, there must always be effort to seek alternatives that maximises efficient and sustainable resource utilisation and minimise environmental impacts.

The site plan provided as Appendix A outlines the location of the site as well as the surrounding environment, and the following buffers will be applied to the site;

- No drill site will be positioned within 100m of a structure.
- No drill site will be positioned within 100m of a water course.
- Where possible existing access roads will be utilized to access the drill sites

a) The property on which or location where it is proposed to undertake the activity.

No alternatives have been investigated in terms of location due to the geological formation of the area as well as the potential availability of resources which supports the proposed prospecting project.

b) The type of activity to be undertaken

It is mandatory that prior to undertaking mining activities, prospecting should be conducted so that investments can be made on a proven site. The prospecting activity provides the economic value of the minerals in the underground. From prospecting activities estimation can be made of the total mining cost and also the mine lifetime can be determined.

c) The design or layout of the activity

There are other possible layout design possibilities, but the current design is the most efficient for this type of prospecting activity.

d) The technology to be used in the activity.

No alternative technology has been considered for the prospecting activities.

e) The operational aspects of the activity

African Exploration Mining and Finance Corporation SOC Ltd intends to make use of standard prospecting methods that enable safe work which has the lowest risk of causing health risks or environmental degradation.

f) The option of not implementing the activity

Not undertaking the prospecting activity will lead to sterilisation of resources as well as the loss of potential socio-economic benefits that will arise with this opportunity.

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 attended 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.

The public participation process was undertaken in accordance with any guidelines applicable to public participation as contemplated in section 24J of the Act read with chapter 6 of the EIA regulation, 7th April 2017. In light of the above, the site notice, background information document, as well as notification letters related to the proposed project were provided to potential interested and affected parties (I & APs) for the application. The Public Participation Process conducted has the following objectives:

- a) To inform I&APs, as well as stakeholders, of the proposed prospecting activity;
- b) To provide an opportunity for I&APs to register their details and concerns.
- c) To provide an opportunity for I&APs and stakeholders to raise issues or concerns and make suggestions;
- d) To promote transparency and an understanding of the Application and its consequences; and
- e) To serve as a structure for liaison and communication with I&APs and stakeholders.

The following activities were undertaken as part of the public participation process to notify any I & APs of the Application.

- **Newspaper Advertisement**

A newspaper advertisement, informing all Interested & Affected Parties (I&APs) residing in and the surrounding communities within the jurisdiction of Sutherland Magisterial District about the intention of African Exploration Mining and Finance Corporation SOC Ltd to acquire a prospecting right with DMRE. The newspaper publication was done through **Die Burger** newspaper, published on the 23rd of May 2023 and I&APs were informed to register any comments or concerns that they might have, regarding the proposed project by contacting the Environmental Assessment Practitioner (EAP), via email or request additional information via the telephone. The identified newspaper was deemed sufficient as its distribution covers all the areas within the jurisdiction of Sutherland Magisterial District Municipality and extends throughout the Northern Cape Province.

The Copy of the newspaper advert as published on Die Burger Newspaper is attached as Appendix D2 of this report for ease of reference.

- **Site Notice**

Five sets A2 sized (English and Afrikaans) laminated site notices informing I &APs about the project information were developed, laminated, and erected at the boundary of the proposed site on the 12th of May 2023. Further notices were placed within the vicinity of the proposed project site at strategic locations where it was deemed to be visible to the community. The site notice provided notification and the details of the application along with the contact details of the EAP, and further requesting I& APs to register their comments . A copy and proof of the site notice placed is attached as Appendix D1 of this report.

- **Notification Letters/ Background information document (BID)**

Notification letters and background information document were prepared and distributed to surrounding properties/ community. A copy of the Notification letter and BID distributed to the community is attached as Appendix D3 respectively for ease of reference.

- **Register of I&APs**

A register of I&APs was compiled in respect of the proposed development. The register was populated with the details of those who are likely to be impacted by the proposed development taking consideration of the door to door walk about. Door to door register is attached as Appendix D6.

Summary of issues raised by I&As

(Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.	Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
<u>AFFECTED PARTIES</u>				
Landowner/s	X			
Lawful occupier/s of the land				
Landowners or lawful occupiers on adjacent properties				
Municipal councillor	X			
Municipality	X			
Organs of state (Responsible for infrastructure that may be affected Roads Department,				
Eskom, Telkom, DWA				

Communities					
Dept. Land Affairs					
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					
<u>OTHER AFFECTED PARTIES</u>					
<u>INTERESTED PARTIES</u>					

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

1. Baseline Environment

a) Type of environment affected by the proposed activity.

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

This section covers the physical environment of the Sutherland District Municipality area of jurisdiction looking at the climate, topography & water resources, biodiversity & conservation, geology & soils, land cover, air quality, noise, heritage resources, socio-economic status as well as the Sutherland Central Astronomy Advantage area as summarised below:

- **Climate:** The prevailing climate in Sutherland is known as a local steppe climate and there is not much rainfall in this area all year long. The climate is classified as BSk by the Köppen-Geiger. The average annual temperature in Sutherland is 13.7 °C and about 333 mm of precipitation falls annually. This place is located in the southern hemisphere; therefore summer begins at the end of December and ends in March. The driest month in Sutherland is September with just only 15 mm of precipitation. In March, the precipitation reaches its highest, with an average of 42 mm. January is the warmest month with an average of 20.4 °C, and at 6.5 °C on average, July is the coldest month of the year. The precipitation varies 27 mm between the driest month and the wettest month. The variation in annual temperature is around 13.9 °C.

The month with the highest relative humidity is June at 61.14 % and the month with the lowest relative humidity is November at 35.55 %. The month with the rainiest days is March with 5.50 days and September is the month with the fewest rainy days with just 3.17 days. In Sutherland, the month that is graced with the most daily hours of sunshine is December. This month sees an average of 11.79 hours of sunshine. In total, there are 365.34 hours of sunshine throughout December. The month with the fewest daily hours of sunshine in Sutherland is January with an average of 11.79 hours of sunshine a day. In total there are 365.34 hours of sunshine in January. In Sutherland, the sun shines for an average of 3458.77 hours per year. That comes out to 113.8 hours of sunshine each month.

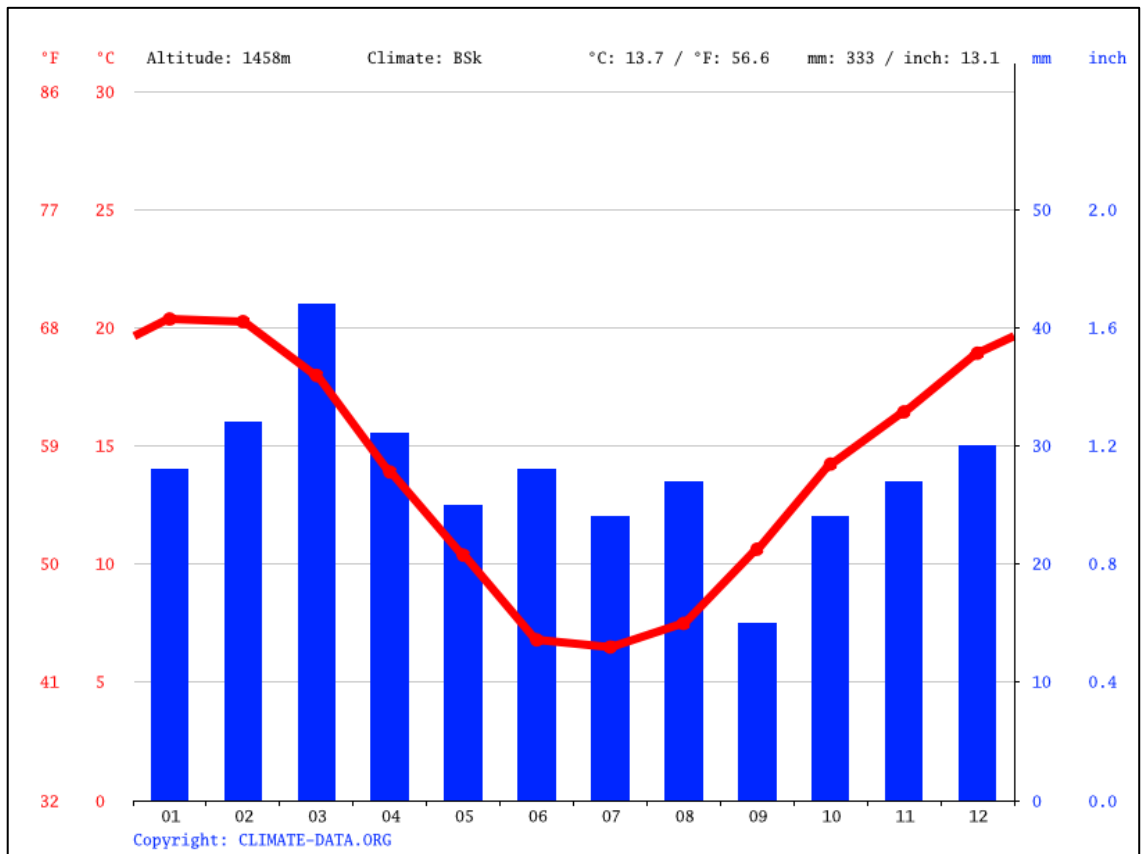


Figure 4: Climate Graph

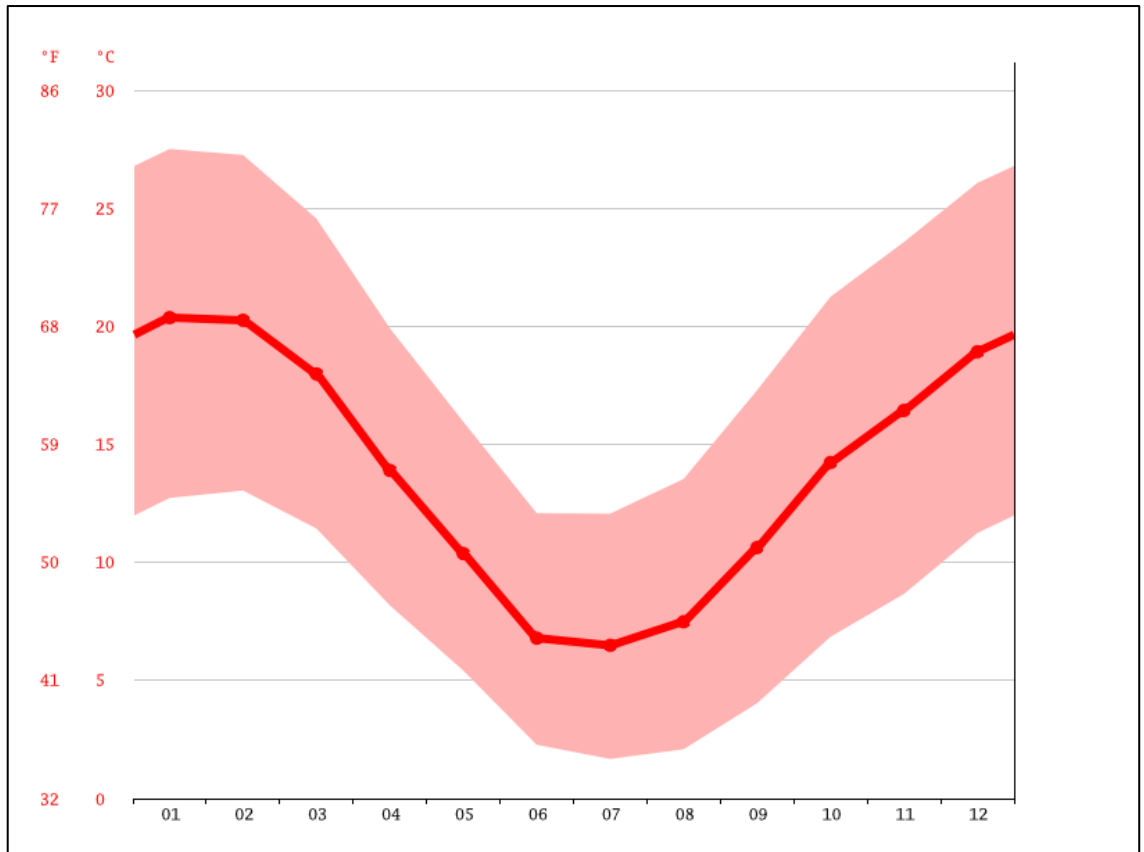


Figure 5: Sutherland Average Temperature

- Topography and Water Resources:** The site area is dominated by the Namaqualand region, famous for its spring flowers. This area is hilly to mountainous and consists of granites and metamorphic rocks. The site area falls within both quaternary catchment D51B and D52B (See figure 6 below). The major river system is the Orange (or Gariep) River Basin, draining the interior of South Africa westwards into the Atlantic Ocean. The principal tributary of the Orange is the Vaal River, which flows through part of the Northern Cape from the vicinity of Warrenton.

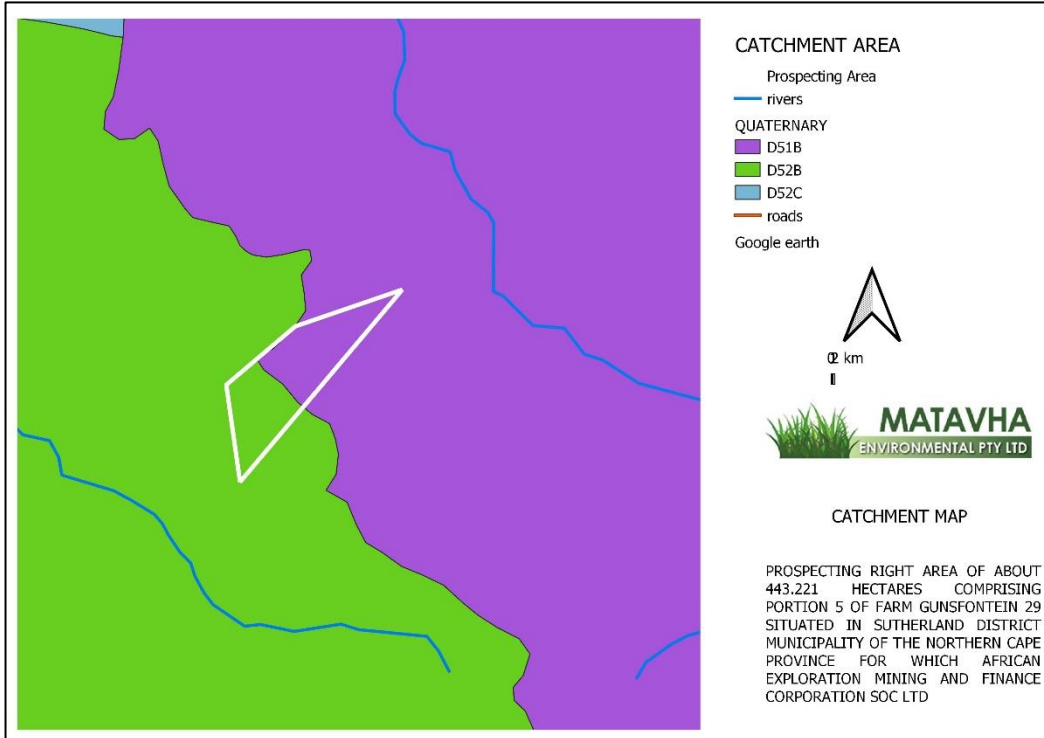


Figure 6: Catchment Management Area Map

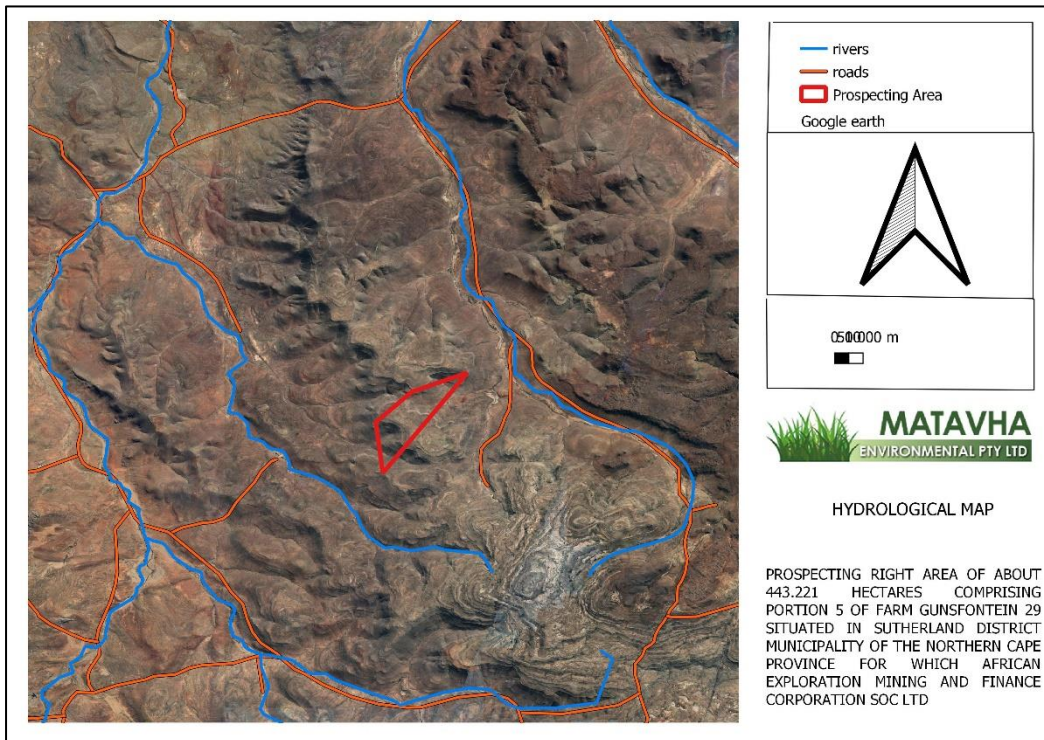


Figure 7: Hydrological Map

- Biodiversity and Conservation:** The proposed prospecting site area falls within the Succulent Karoo Biome (See Figure 8 and 9 below). The Succulent Karoo Biome is primarily determined by the presence of low winter rainfall and extreme summer aridity. Dwarf, succulent bushes, particularly the Vygies (*Mesembryanthemaceae*) and Stonecrops (*Crassulaceae*), predominate in the vegetation. Except in a few sandy places, grasses are uncommon. Due to a shortage of water, the region's potential for agriculture is limited. Due to the scarcity of grasses and the poor carrying capacity, large supplemental feeds are necessary. Due to approximately 200 years of grazing, the ecosystem has lost a significant amount of soil through sheet. Less than 0.5% of the area of the Succulent Karoo Biome has been formally conserved.
- The biome has a high number of rare and Red Data Book plant species. According to the Department of Forestry, Fisheries and Environment (DFFE) Screening Tool, the proposed site area has low Terrestrial Biodiversity sensitivity (Refer to Appendix C attached). The Succulent Karoo is home to a total of around 6 350 species of vascular plants, of which nearly 2 440 (40%) are endemic to the biome. The dominant floral species observed across this habitat unit included Ancient Rosemary, *Nolina texana*, *Dipcadi Crispus*, Succulent shrubs, and those not dominant are *Brunsvigia* and *Sarcocalulon crassicaule*. Based on the findings of the Terrestrial Biodiversity Impact Assessment conducted for the proposed activity, flora species that were recorded on site are presented in Table 3, below.

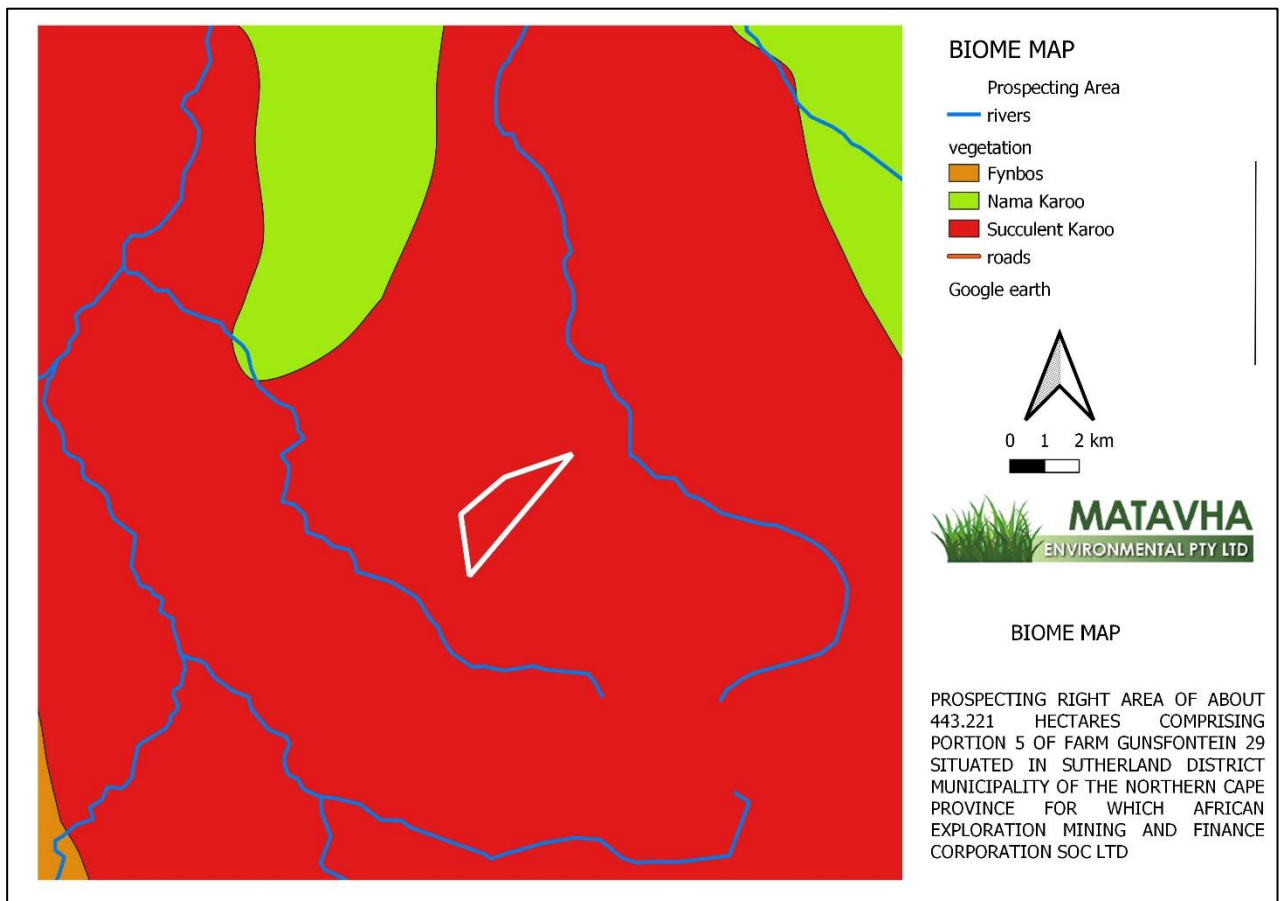


Figure 8: Biome Map (a)

Table 3: Some of the recorded plant species on site



Nolina texana



Tetraema mongolica.



Westringia rosemary



Sympegma regelii



Crassula muscosa



Brunsvigia

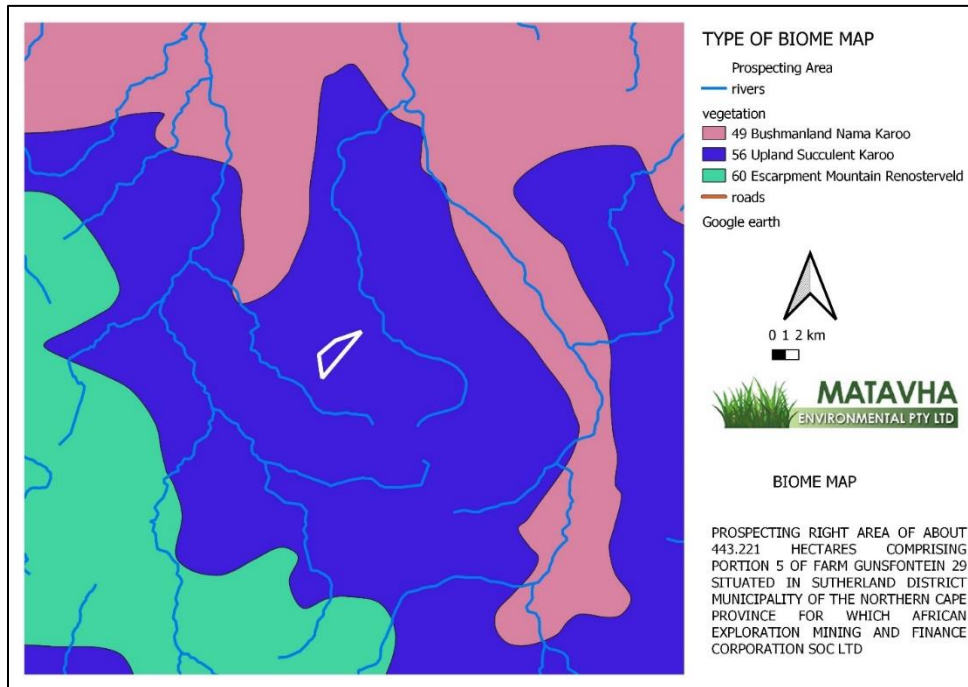


Figure 9: Biome Map (b)

- Geology and Soils:** The site is situated on a rocky mountainous steep slope. Mudstone, siltstone, and sandstone from the Karoo Supergroup and the Beaufort Group make up the project area's subsurface geology. The Adelaide Subgroup of the lower Beaufort Group, which is a member of the Karoo Supergroup sedimentary basin, contains flat-lying sandstones, siltstones, and shales that make up the country rock. The formation is located in the Tapinocephalus Assembly Zone, which is dated to the Middle Permian (Cole et al., 2016).
- Heritage:** Sutherland was established on the farm De List as a center for wool producing district of the Roggeveld approximately 350 km from Cape Town. It forms part of the Karoo Hoogland Municipality which includes Williston (145 km away) and Fraserburg (110 km). Sutherland is located in the Karoo within the Northern Cape province of South Africa and the wider Karoo landscape has a long history of occupation spanning from the Early Stone Age (ESA) dating to a period of about 1.5 million years to the Holocene period or the Later Stone Age. Rock engravings are widespread over the Karoo landscape. These engravings are found on ironstones. Later Stone Age material can be found across the Karoo corridor. The evidence that is mostly present in this part of Karoo includes stone artifacts that include flakes, and scrapers among other implements indicating the presence of hunter-gatherers during the Late Holocene period. Sutherland falls within known fossil-bearing deposits, characterised by its own set of fauna. The Beaufort Group (or Karoo Supergroup) - comprising the shales, mudstones and siltstone that make up much of the Karoo geology - contains a vast depository of fossil remains of both plants and early mammal-like reptiles. A paleontology and Heritage study was conducted in the proposed site area and the following results were noted:

Archaeology

The study did not yield any archaeological materials within the prospecting area. Based on the field study results and field observations, the receiving environment for the proposed prospecting site is rated low to medium potential to yield previously unidentified archaeological sites during prospecting. Literature review also revealed that no Stone Age sites are shown on a map contained in a historical atlas of this area.

Burial grounds and Graves

The field survey did not identify any graves or burial grounds within the proposed prospecting site. The possibility of encountering previously unidentified burial sites is low within the proposed prospecting site, however, should such sites be identified during exploration, they are still protected in terms of Section 36 of NHRA.

Public Monuments and Memorials

The study did not record any public memorials and monuments within the proposed prospecting site. As such the Prospecting Right Application may be approved without any further investigation and mitigation in terms of Section 27 & of the NHRA.

Buildings and Structures

There are no buildings or structures within the proposed prospecting site. Therefore, the proposed prospecting may be approved without any further investigations in terms of Section 34 of the NHRA.

- **Socio-Economic:** The Karoo Hoogland Local Municipality is situated in the most Southern part of the Northern Cape and falls within the jurisdiction of the Namakwa District Municipality. The Karoo Hoogland is predominantly rural in nature with a high unemployment rate resulting in high poverty levels. The population has increased from 12 387 persons in 1996 to 13 069 persons in 2016. The three main towns in Karoo Hoogland are Williston, Fraserburg and Sutherland which are respectively 499 km, 592 km, and 539 km from Springbok. Karoo Hoogland Municipality is divided into 4 Wards with Sutherland falling within ward 4 of the municipality. There is an estimate of 2204 households in the area serviced by the Municipality. A large number of residents are still dependent on government grants and the unemployment rate is quite high.

The Karoo Hoogland population can be regarded as having a high dependency ratio with 10.6% of the population over the age of 65 and 24.5% are under 15 years. The Karoo Hoogland gender distribution is 47, 8% males and 52, 2% females. The Karoo Hoogland IDP, 2017-2022 highlighted that the mining industry in Karoo Hoogland has potential to become an employer in years to come, considering the huge uranium deposits. Possibilities of uranium mining have been identified, mainly in the southern part of the municipality however there is no mining and quarrying taking place in Karoo Hoogland LM as of yet.

The IDP further states that there are mining opportunities in the area but feasibility studies need to be done to ensure it does not interfere with the other activities in the area (such as the telescope and astronomy activities).

- **Sutherland Central Astronomy Advantage Area:** One of the major attractions in Sutherland is the South African Astronomical Observatory (SAAO) center for optical and infrared astronomy in South Africa. This is a facility which belongs to the National Research Foundation under the Department of Science and Technology. The South African Large Telescope is close to Sutherland and has become an international known astronomy destination. This has made Sutherland develop into a research and visitors destination. The Karoo Array Telescope (MeerKAT) project is a world-class radio telescope built by the Department of Science and Technology and the National Research Foundation near the towns of Carnarvon and Williston. The South African Astronomical Observatory (SAAO) is the national centre for optical and infrared astronomy in South Africa.

The Minister responsible for Science and Innovation promulgated the Sutherland Central Astronomy Advantage Area (SCAAA) regulations in 2019 under Government Gazette No. 42492, Notice No. 805. The SCAAA consists of all land in the Northern Cape Province within an annulus of inner radius 3 kilometers and outer radius 75 kilometers centered on the dome of the Southern African Large Telescope (SALT) located at 32° 22' 33 "S and 20° 48' 38 "E. The Minister also promulgated a declaration to prohibit certain mining activities within the Sutherland Central Astronomy Advantage Area. The location of the proposed prospecting site area falls within the SCAAA 75 kilometres outer radius and an application to the Astronomy Management Authority (AMA) will be made since the intended activity is not mining, but rather prospecting of minerals and might not necessarily result in mining. The program could be stopped at any stage during the prospecting operation if the results are negative or non-economical since this is a dynamic and result driven operation which proceeds in phases and the outcome of which cannot be predicted or predetermined.

b) Description of the current land uses.

Land use of the study area form the basis for the visual character of the region, resulting in a typical Karoo landscape which is predominately a mountainous or hilly landscape covered primarily in natural cover, limited rural activities (grazing and game farming), and isolated farmsteads. The site area is distant, with limited human influence. The terrain is largely untouched and natural.

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

The site is currently vacant, rocky, mountainous with scattered vegetation.

d) Environmental and current land use map.

(Show all environmental, and current land use features)

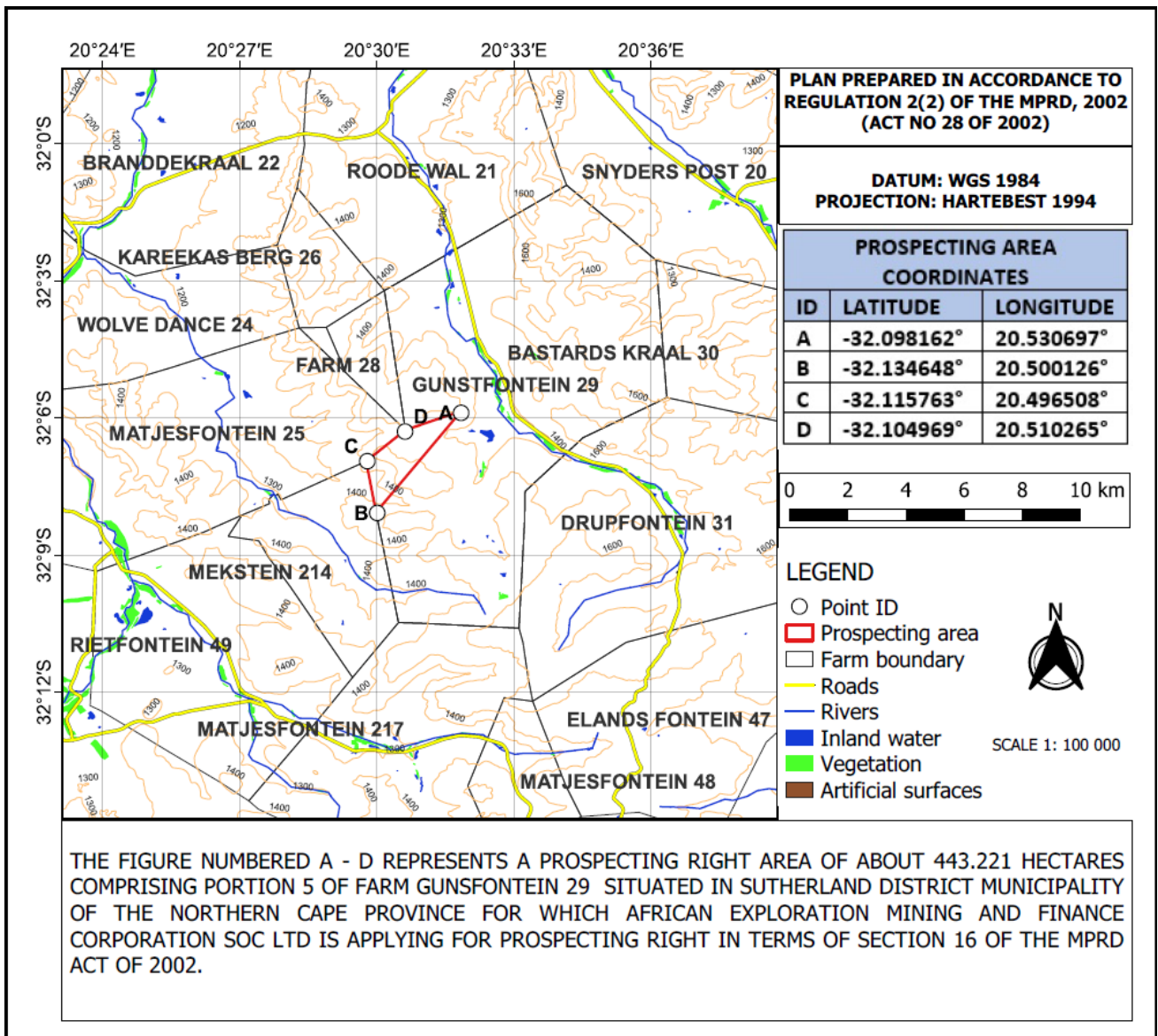


Figure 10: Land Use Map

v) Impacts and risks identified including the nature, significance, consequence, extent, duration, and probability of the 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 impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the 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).

The proposed project is anticipated to have a range of impacts on the biophysical and socio-economic environment. The EIA process will thus be undertaken to determine these impacts and evaluate the significance of these impacts to effectively minimize and mitigate such impacts. The EMP will be developed to outline project specific mitigation, monitoring, and remediation measures to ensure that the proposed project complies to environmental legal systems and best practice guidelines during all phases of the proposed project.

The potential impacts are listed for each primary action in each stage. The significance rating was decided utilizing the technique as clarified beneath vii). For each effect, the impact rating mentioned below was determined before considering the suggested mitigation interventions. The degree of mitigation shows the potential for partial, complete or no mitigation of the effect found.

SITE ESTABLISHMENT

- Loss of Biodiversity

Rating: Negligible

Degree of Mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Significance
2	1	1	Disturbance of the natural ecosystem	2	8

- Soil Contamination

Rating: Negligible

Degree of Mitigation: Fully mitigated

Severity	Duration	Extent	Consequence	Probability	Significance
2	1	1	Loss of soil fertility	2	8

- Water exploitation

Rating: Negligible

Degree of Mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Significance
2	1	1	Water shortages	4	16

- Employment Opportunity

Rating: High

Degree of Mitigation: Not mitigated

Severity	Duration	Extent	Consequence	Probability	Significance
8	3	2	Employment of local community	5	65

GEOPHYSICAL SURVEY

- Loss of Biodiversity

Rating: Low

Degree of Mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Significance
6	1	1	Disturbance on the natural ecosystem	4	32

- Noise nuisance generated by prospecting activities.

Rating: Negligible

Degree of Mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Significance
2	1	2	Disturbance on the surrounding farmsteads	2	10

DRILLING ACTIVITY

- Soil and Geology disturbance

Rating: Moderate

Degree of Mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Significance
8	3	1	Contamination of Groundwater & Ground Instability	4	48

- Groundwater Contamination

Rating: Moderate

Degree of Mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Significance
6	4	2	Shortage of water for local supply	4	48

- Soil Contamination

Rating: Low

Degree of Mitigation: Fully Mitigated

Severity	Duration	Extent	Consequence	Probability	Significance
6	3	1	Loss of Biodiversity	2	20

- Soil Compaction

Rating: Moderate

Degree of Mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Significance
8	4	1	Soil Infertility	4	52

- Noise Nuisance

Rating: Moderate

Degree of Mitigation: Fully Mitigated

Severity	Duration	Extent	Consequence	Probability	Significance
8	1	2	Community disapproval	5	55

DECOMMISSIONING

- Waste Generation

Rating: Low- Moderate

Degree of Mitigation: Fully Mitigated

Severity	Duration	Extent	Consequence	Probability	Significance
8	3	1	Littering	4	48
8	4	2	Water Contamination	2	28
8	4	1	Soil Contamination	2	26

vi) Methodology used in determining and ranking the 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 the initial site layout needs revision).

Methodology for the assessment of the potential environmental, social, and cultural impacts:

DEFINITIONS AND CONCEPTS:

Environmental significance: The concept of significance is at the core of impact identification, evaluation and decision making. The concept remains largely undefined and there is no international consensus on a single definition. The following common elements are recognized from the various interpretations:

- Environmental significance is a value judgement.
- The degree of environmental significance depends on the nature of the impact.
- The importance is rated in terms of both biophysical and socio-economic values.
- Determining significance involves the amount of change to the environment perceived to be acceptable to affected communities.

The impacts anticipated to occur as a result of the proposed prospecting activity will be evaluated to determine their significance.

Impact: The positive or negative impacts on human well-being and / or the environment.

Consequence: The intermediate or final outcome of an event or situation OR it is the result, on the environment, of an event.

Frequency: The number of occurrences of a defined event in a given time or rate.

Probability: The likelihood of a specific outcome measured by the ratio of a specific outcome to the total number of possible outcomes.

Environment: Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation (ISO 14004, 1996).

METHODOLOGY

The significance of the impacts was determined through a synthesis of the criteria below:

1. Probability (Describes the likelihood of the impact actually occurring)

Improbable: The possibility of the impact occurring is very low, due to the circumstances, design, or experience.

Probable: There is a probability that the impact will occur to the extent that provision must be made, therefore.

Highly Probable: It is most likely that the impact will occur at some stage of the development.

Definite: The impact will take place regardless of any prevention plans, and there can only be relied on mitigatory actions or contingency plans to contain the effect.

2. Duration (The lifetime of the impact)

Short term: The impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.

Medium term: The impact will last up to the end of the phases, where after it will be negated.

Long term: The impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.

Permanent: Impact that will be non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

3. Extent (The physical and spatial size of the impact)

Site: The impact could affect the whole, or a measurable portion of the above mentioned properties.

Local: The impacted area extends only as far as the activity, e.g. footprint

Regional: The impact could affect the area including the neighboring residential areas.

4. Severity (Does the impact destroy the environment, or alter its function)

Low: The impact alters the affected environment in such a way that natural processes are not affected.

Medium: The affected environment is altered, but functions and processes continue in a modified way.

High: Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

5. Significance (an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required).

Negligible: The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.

Low: The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.

Moderate: The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.

High: The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

Table 4: Impacts weights

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Extent	Site	1
	Local	2
	Regional	3
Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration + Extent + Severity) x Probability	
	Negligible	<20
	Low	<40
	Moderate	<60
	High	>60

The significance of each activity was rated without mitigation measures and with mitigation measures for all the phases of the prospecting activities. The findings of the impact assessment have been consolidated in the sections below. The impacts have been classified as impacts on the biophysical environment and impacts on the socio-economic environment. The impacts are further classified in terms of the phase of the development in which they are likely to occur, namely the establishment phase, the operational phase, and the decommissioning phase (where applicable).

vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

POSITIVE IMPACTS

- Creation of Employment Opportunities

The prospecting activities will be undertaken over a large area covering an area more than 400 hectares and while no significant short term positive impacts are associated with the prospecting activities, in the event that a viable reserve is

confirmed, there would be high degree of positive impacts such as employment of large number of local residents, socioeconomic balance of the local community and on the National and Provincial scale mining does contribute highly to the Gross Domestic Product (GDP).

NEGATIVE IMPACTS

- Noise -The movement of the drilling vehicle and drilling activities will generate noise; however, the noise level will be within tolerable ranges.
- Waste generation – Empty tins of oil and general waste from the camping site
- Underground water contamination – The drilling activities will be several kilometres deep depending on the burial depth of the mineral bodies. There are possibilities of encountering underground aquifers and contaminate the ground water.
- Littering – As already highlighted that the activities will generate wastes, poor or improper management of the wastes will create littering problems affecting the visual stance of the area.
- Soil contamination – There is a possibility of contamination of the soil from oil leaks and the camping site.
- Soil compaction – From the movement of drilling and site vehicles

viii) 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).

Measures to manage Noise.

- The Drilling activities and movement of vehicles into the site should be carried out during the day. The working hours should be between 7:00 a.m. to 17:00
- There are no occupants in close proximity to the site however directly affected, adjacent landowners will be informed of the planned activities.

Heritage Impact Management

- Should any unknown heritage sites be identified during the drilling activities, all activities shall cease immediately and the SAHRA will be contacted, and an appropriate Heritage Impact Assessment will be undertaken on the site.

Influx of Labour to site

- Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.
- If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.

Visual Impact

- Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed.
- The portable ablution facilities, water tanks and any other infrastructure should be acquired with consideration for colour, natural earth, green and mat black options which will blend in with the surrounding area must be favoured.
- Waste management system will be implemented, and sufficient waste bins will be provided for on-site.

Water and Soil Impact Management

- Existing tracks and roads must be used as far as practicable to minimize the potential for soil erosion. In instances where access to drill sites is to be established, and if required, raised blade clearing will be undertaken with a view to maintain vegetation cover to limit soil erosion potential. Raised blade clearing involves setting the blade of a bulldozer above ground level and cutting off vegetation at the stem whilst leaving the root stock and topsoil intact.
- Soil disturbances are to be limited as far as practicable to minimize the potential for soil erosion.
- When establishing the drill pad, topsoil including the remaining vegetation, will be stripped, and stockpiled up-slope of the pad.
- The stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad. Stockpiled topsoil will be used during rehabilitation activities.
- Topsoil will be stockpiled to a maximum height of 1.5m with a side slope of not more than 1:3.
- Oils and lubricants will be stored within secondary containment structures.
- Topsoil should be handled only twice, when removing and during rehabilitation.
- The movement of the vehicles should be restricted to minimise soil compaction.
- In the event that vehicle maintenance is undertaken on site, drip trays and / or UPVC sheets will be used to prevent spills and leaks into the soil.
- Waste separation will be undertaken at source and separate receptacles will be provided (i.e., general wastes, recyclables, and hazardous wastes).
- Receptacles will be closed (i.e., fitted with a lockable lid) to eliminate the possibility of access by animals overnight.
- Wastes will be removed and disposed of at an appropriately licensed landfill and recyclables will be taken to a licensed recycling facility.
- Drill holes must be permanently capped as soon as is practicable.

ix) Motivation where no alternative sites were considered.

- There is no alternative site considered, the proposed site is the most suitable for the proposed prospecting activity as the area lies over the mineral rich geological supergroup which is the Transvaal Supergroup.

- There is a sufficiently open area with no settlements or any economic activities that could possibly create conflicts with the landowners.

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

As it is clear from the information provided, each of the phases is dependent on the results and success of the preceding phase. The location and extent of drilling will be determined based on information derived from the geophysics surveys. Drill sites will be selected to avoid watercourses where practicable.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. (Including (i) a description of all 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.)

In order to identify the potential impacts associated with the proposed prospecting activities the following steps were undertaken:

- The stakeholder consultation process will be undertaken in a manner to be interactive, providing landowners and identified stakeholders with the opportunity to provide input into the project. This is a key focus, as the local residence has capabilities of providing site specific information, which may not be available in desktop research material. Stakeholders are requested to provide their views on the project and any potential concerns which they may have. All comments and concerns are captured and formulated into the impact assessment.
- A detailed desktop investigation was undertaken to determine the environmental setting in which the project is located.
- A site visit was conducted. The site visit was to ensure that the information gathered as part of the desktop investigation reflects the current status of the land.
- The ratings of the identified impacts were undertaken in a quantitative manner as provided in Impact Assessment Section. The ratings were undertaken in a manner to calculate the significance of each of the impacts.
- The identification of management measures is done based on the significance of the impacts and measures that have been considered appropriate and successful, specifically as Best Practical and Economical Options.

(j) Assessment of each identified potentially significant impact and risk.

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

NAME OF ACTIVITY (E.g., For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. For mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g., dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.... 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, stormwater control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation.	SIGNIFICANCE if mitigated
Desktop Study	None Identified	N/A	Planning Phase	N/A	No mitigation Proposed	Insignificant
Identification of legislative requirements	Commencement of activities without all the required licenses and permits	Policy and legal Requirements	Planning Phase	Low (-ve)	The applicant must ensure that all relevant legislations and regulations have been adhered to before commencement of the project.	Insignificant
Camp site camp establishment	Removal of vegetation at the camp site and the access roads	Flora and Fauna	Planning Phase	Moderate (-ve)	<ul style="list-style-type: none"> The size of the construction camp should be kept to a minimum. 	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated		SIGNIFICANCE if mitigated
Camp site camp establishment	Compaction of soil at the camp site and the access roads	Geology and Soils	Planning Phase	Moderate (-ve)	<ul style="list-style-type: none"> • The camp site must be established away from the natural drainage areas. • The contractor must attend to the drainage of the camp site to avoid standing water and / or sheet erosion. • Temporary chemical toilets must be provided by a company approved by the Engineer. These toilets must be made available for all site staff. The construction of “long drop” toilets is forbidden. • Under no circumstances may open areas or the surrounding bush be used as a toilet facility. • Bins and / or skips shall be provided for disposal of waste within the camp. • Bins should have liner bags 	Low (-ve)

					<p>for efficient control and safe disposal of waste.</p> <ul style="list-style-type: none"> Recycling and the provision of separate waste receptacles for different types of waste should be encouraged. 	
NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Camp site camp establishment	Conflict with local residents	Socio-Economic	Planning Phase	Moderate (-ve)	The number of employees required, and the employment methods should be communicated.	Low (+ve)
	Conflict over employment preferences and lack of community support	Socio-Economic	Planning Phase	Moderate (-ve)	Employment should not be done at the camp sites or within the working site. All the employment procedures should be followed through the community leaders.	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Dangerous wild animals encounters	Injuries and potential death (worst case scenario)	Health and Safety	Operational Phase	Low (-ve)	Repellents for snakes should be spread on the pathways	Low (-ve)
					All site personnel must have a working cell phone to communicate in case of emergency	
Set-up of Geophysical Survey Equipment	Clearing of Vegetation	Flora and Fauna	Geophysical survey	Low (-ve)	Areas that have already been cleared should be preferred over heavily dense areas. Where possible existing access roads must be used	Low (-ve)
Preparation of drilling sites and access roads	Loss of Vegetation	Flora and Fauna	Drilling Phase	Low (-ve)	Search and rescue mission should be undertaken for species on drilling site	Low (-ve)
	Contamination of surface water	Hydrology		Low (-ve)	Machinery used near surface water should be given extra care such that no chemical and oil leaks occur	Low (-ve)
	Soil contamination	Soil & Geology		Low (-ve)	The drill bits must be maintained in good condition to prevent leakages of oil when in the	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Preparation of drilling sites and access roads	Ground & Surface Water contamination	Hydrology	Drilling Phase	Moderate (-ve)	Aquifer detection methods should be applied before drilling can be undertaken.	Low (-ve)
Drilling Activities	Ground & Surface Water contamination	Hydrology Waste Management	Drilling Phase	Moderate (-ve)	The mud generated from the drilling activities must be contained, and contaminated mud must be handled separately, treated, or disposed of at an appropriate landfill	Low (-ve)
	Waste Generation				Skips and marked bins must be provided at the site for waste separation.	
Drilling Activities	Waste Generation	Waste Management	Drilling Phase	Moderate (-ve)	Wastewater must not be released into the natural streams prior treatment	Low (-ve)
		Health and Safety			The mechanical wastes must be stored separately from other areas in a waste skip and must be	

	Animals falling into drill holes				<p>disposed of at an appropriate landfill site.</p> <p>Equipment maintenance must be done off site, and where there is need to conduct it on site, it must be done on a bunded area</p> <p>Cleaning of equipment must be done on a bunded area.</p> <p>The drill holes must be capped overnight and when not in operation.</p> <p>Skips and marked bins must be provided at the site for waste storage and separation.</p>	
Drilling Activities	Noise Generation:	Health and Safety	Operational Phase	Moderate (-ve)	<p>All prospecting activities should be restricted to daylight hours.</p> <p>No heavy equipment should be utilised at night when ambient noise levels are low and noise travel further and has a higher impact.</p>	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Drilling Activities	Dust generation	Socio -economic	Drilling Phase	Moderate (-ve)	Wet dust suppression must be undertaken to manage dust emissions from vehicle movement and other activities	Low (-ve)
	Lowering of groundwater levels	Hydrology	Drilling Phase	Low (-ve)	Areas with shallow aquifers must be avoided	
	Removal of topsoil	Geology & Soils	Drilling Phase	Moderate (-ve)	Topsoil must be located away from the drainage lines	
					Contaminated soil must not be mixed with clean stockpiles	
	Removal of topsoil Spillages of hazardous chemicals	Geology & Soils Soil & geology; Hydrology	Drilling Phase	Moderate (-ve)	No chemicals should be placed near the topsoil stockpiles	Low (-ve)
					The stockpiles must not be more than 1,5m high	
					All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of / removed from the site	
Hazardous substances / materials are to be transported in sealed						

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Drilling Activities	Spillages of hazardous chemicals	Soil & geology; Hydrology Socio- Economic	Drilling Phase	Low (-ve)	containers or bags. Spillages must be attended to as soon as they occur. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site.	Low (-ve)
	Destruction of Heritage Resources			Low (-ve)	Any heritage features which might be on site must be marked a No-Go area.	
					Should any paleontological or cultural artefacts be discovered work at the point of discovery must stop, the location be clearly demarcated and SAHRA contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA	

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
Drilling Activities	Destruction of Heritage	Socio-Economic	Drilling Phase	Low (-ve)	The uncontaminated stockpiled materials must be used for backfilling	
	Resources Waste generation	Waste management			The hazardous substances on site must be stored in marked containers.	
Decommissioning of Site Camp	Contamination of the soil and water	Soil; Hydrology	Decommissioning phase	Negligible (-ve)	All the equipment must be transported out of the site	Low (-ve)
					The compacted soils must be loosened, and topsoil spread on top, and revegetation must be implemented as and when needed.	

The supporting impact assessment conducted by the EAP has been attached as an appendix, marked **Appendix H**.

k) Summary of specialist reports.

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

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Archaeological and Heritage Impact Assessment	<ul style="list-style-type: none"> • It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements. • It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed Prospecting Right Application. • From a heritage perspective supported by the findings of this study, the Prospecting Right Application is supported. However, the proposed prospecting should be approved under observation that prospecting does not extend beyond the area considered in this report/affect the identified heritage sites. • Should chance archaeological materials or human remains be exposed during prospecting on any section of the site, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in prospecting scheduling while recovering archaeological and any affected 	X	Section 1a (Baseline environment); v; vii; Section J

	<p>cultural heritage data as stipulated by the NHRA regulations.</p> <ul style="list-style-type: none"> • Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resources barriers to the Prospecting Right Application. SAHRA may approve the Prospecting Right Application as planned with special commendations to implement the recommendations here in made. 		
LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPOR	REFERENCE TO APPLICABLE SECTION OF REPORT
Terrestrial Biodiversity Impact Assessment	<ul style="list-style-type: none"> • Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further than that proposed for the project. Clearing of vegetation should be minimized and avoided where possible. • Any individual of the protected/threatened plants that was observed needs a relocation or destruction permit for any individual that may be removed or destroyed due to the development. Preferably, the plants should be avoided. • High visibility flags must be placed near any protected plants in order to avoid any damage or destruction of the species. If left undisturbed the sensitivity and importance of these species needs to be part of the environmental awareness program. • It must be made an offence for any staff to take/ bring any plant species into/out of any portion of the project area. No plant species whether 	X	Section 1a (Baseline environment); v; vii; Section J

	<p>indigenous or exotic should be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.</p> <ul style="list-style-type: none"> • All personnel and contractors to undergo Environmental Awareness Training • Existing access routes, especially roads, must be made use of. • Areas that are affected need to be re-vegetated with indigenous vegetation according to a habitat rehabilitation plan, to prevent erosion during flood and wind events and to promote the regeneration of functional habitat. • A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. • A fire management plan needs to be complied and implemented to restrict the impact fire would have on the surrounding areas. • A qualified environmental control officer must be on site when activities begin. • The areas to be disturbed must be specifically and responsibly demarcated to prevent the movement of staff or any individual into the surrounding environments, signs must be put up to enforce this. • Clearing and disturbance activities must be conducted in a progressive linear manner and over several days, so as to provide an easy escape route for all small mammals and herpetofauna. • The duration of the activities should be minimized to as short a term as possible, to reduce the period of disturbance on fauna. • Noise must be kept to an absolute minimum during the evenings and at night 		
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	<p>to minimize all possible disturbances to reptile species and nocturnal mammals.</p> <ul style="list-style-type: none"> • No trapping, killing, or poisoning of any wildlife is to be allowed and • Signs must be put up to enforce this. Monitoring must take place in this regard. • Outside lighting should be designed and limited to minimize impacts on fauna. All outside lighting should be directed away from highly sensitive areas. • Any holes/deep excavations must be dug and planted in a progressive manner and shouldn't be left open overnight. Should any holes remain open overnight they must be properly covered temporarily to ensure that no small fauna species fall in, and subsequently inspected prior to backfilling. • A habitat rehabilitation and revegetation plan must be developed and implemented to reduce the occurrence of bare soil areas as a result of excessive erosion. • Soil surfaces must be wetted as necessary to reduce the dust generated by the project activities. 		
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Attach copies of Specialist Reports as appendices **(Appendix I and J)**

g) Environmental impact statement

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

The key findings of the environmental impact assessment entail the following:

- The significance of potential environmental impacts can be reduced to Low with the implementation of mitigation measures and monitoring.
- Cumulative noise impacts are rated with a low significance after mitigation.
- The potential negative impacts on the socio-economic environment and livelihoods can be mitigated to Low significance.
- The prospecting activities may lower the ground water levels thus reducing the surface water recharge.
- There is a need for proper waste management for mud and other wastes generated during drilling activities and such wastes must not flow into the natural streams.
- It is expected that cumulative impacts on surface and groundwater quality and biodiversity will be major prior to mitigation. Mitigation measures for these potential impacts include; application of best-practice water management at the drill and camp site, rehabilitation after closure and continuous monitoring of surface and groundwater quality.

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. Attached as **Appendix A.**

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

The potential impacts associated with the project include:

- Job creation for approximately 7-10 employees indirectly contributing to the socio-economic status of the Sutherland Magisterial District area,
- Increased ambient noise levels resulting from geophysical surveys and increased traffic movement during all prospecting phases as well as drilling activities.
- Potential water and soil contamination from hydrocarbon spills and soil erosion which may impact on the environmental resources utilized by communities, landowners, and other stakeholders.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on ecosystem functioning.
- Increased vehicle activity within the area resulting in the possible destruction and disturbance of fauna and flora.
- Influx of persons (job seekers) to site as a result of increased activity

- Visual impacts created by drilling activities.

j) 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.

Objectives Management	Role	Outcomes Management
Dust Handling	<p>Site Manager to ensure compliance with the guidelines as stipulated in the Environmental Management Plan.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> • Control and manage the liberation of dust into the surrounding environment by the use of, water spraying and/or other dust control agents. • Limit speed on the access roads to 40km/h to prevent and manage the generation of excess dust. • Spray roads with water or an environmentally friendly dust-control agent that contains no PCB's if dust is generated above acceptable limits. • Assess effectiveness of dust suppression equipment daily.
Objectives Management	Role	Management Outcomes
Noise Handling	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMP.</p> <p>Compliance to be monitored by the Environmental Control Officer</p>	<ul style="list-style-type: none"> • Ensure that employees and staff conduct themselves in an acceptable manner while on site. • Ensure that all vehicles are equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act. • Plan the type, duration, and timing of the prospecting procedures with due cognisance of adjacent land users.

		<ul style="list-style-type: none"> Notify surrounding landowners in writing prior to prospecting activity
Management of health and safety risks	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMP.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> Inform the surrounding landowners and communities prior to the activities
Management Objectives	Role	Management Outcomes
Waste management	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMP.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> Ensure no waste pile is established within 100 m of the edge of any river channel or other water bodies. Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility. Clean spills by removing the spillage together with the polluted soil and by disposing of them at a recognised facility. File proof. Ensure the availability of suitable covered receptacles at all times and conveniently placed for the disposal of waste.
Management of access roads	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMP.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Prevent refuse from being dumped on or in the vicinity of the prospecting area. Biodegradable refuse to be handled as indicated above. Erosion of access road: restrict

		vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas.
Management Objectives	Role	Management Outcomes
Fauna and Flora	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMP.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> • Ensure no fauna is caught, killed, harmed, sold, or played with. • Instruct workers to report any animals that may be trapped in the working area. Ensure no snakes are set or nests raided for eggs or young. • Do not remove plants or trees without the approval by the ECO.

k) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The following list is recommended to form part of the EA:

- An EMPr must be implemented for the duration of the prospecting activities (see Part B);
- Prospecting activities must be limited to the extent of the layout plan;
- A map detailing the drilling locations should be submitted to the relevant landowners and the DWS and DMRE prior to the commencement of these activities;
- No activities may take place within 100m from any river;
- The drilling activities should be restricted to daytime;
- All wastes generated must be disposed of at an appropriate registered landfill and disposal certificate be kept on site.
- Clearing of vegetation should be kept to a minimum.
- A suitably qualified ECO must be appointed to monitor compliance with EA conditions and specifications of the EMPr during the operational phase of the project i.e., during site establishment and prospecting activities.
- A suitably qualified Environmental Officer must be appointed to ensure that the requirements of the EMPr are complied with throughout the duration of operation phase;
- Disturbed areas are to be rehabilitated, as close as possible, to the original state in terms of shaping, stabilisation and spreading of topsoil; and
- Ensure that the majority of the new temporary employment opportunities are sourced from the local community as much as possible.

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

(Which relate to the assessment and mitigation measures proposed)

Detailed site layout is not available due to the nature of the prospecting activities. The study is therefore undertaken as a holistic assessment of the overall site.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised.

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

It is the opinion of the EAP that the activity be authorised due to the following:

- The desktop studies have proven that the site is located on a mineralised zone, prospecting activities must be undertaken to confirm the reserves.
- It has also been noted that the mining sector is the pillar of South African economy and also provides employment opportunities for many.
- The option of not approving the activities will result in a significant loss to valuable information regarding the status of the mineral commodities present on this land.
- In addition to this, should economical reserves be present, and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost as well.
- With the implementation of the proposed mitigation measures the proposed prospecting activity is anticipated to have VERY LOW significance.
- All recommended mitigation measures are deemed feasible for implementation and the proposed project is deemed to be socially, environmentally, and economically acceptable.
- it is the opinion of Matavha Environmental that a positive decision could be made by the Minister of Mineral Resources and Energy (or delegated authority) regarding the approval of the proposed project.

ii) Conditions that must be included in the authorisation.

Recommendations for any aspects that must be included in the EA are presented in Section n above.

q) Period for which the Environmental Authorisation is required.

The Prospecting Right has been applied for a period of five years. The Environmental Authorisation should therefore allow for the five years of prospecting and one year for decommissioning and rehabilitation.

r) **Undertaking**

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

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. The undertaking has been provided at the end of the report.

s) **Financial Provision**

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

The site rehabilitation processes will require **R135 709,20** (VAT inclusive).

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

The financial provision for the environmental rehabilitation and closure of any mine/excavation and its associated operations forms an integral part of the MPRDA. Sections 41 (1) and, 41 (2), 41 (3) and 45 of the MPRDA deals with the financial provision for rehabilitation and closure. In 2012, the DMRE made an updated rate available for the calculation of the closure costs, where contractor's costs are not available, these apply. The "Guideline Document for the Evaluation of Financial Provision made by the Mining Industry" was developed in January 2005 in order to empower the personnel at regional offices to review the quantum determination for the rehabilitation and closure of mining sites. With the determination of the quantum for closure, it must be assumed that the temporary infrastructure had no salvage value (clean closure). The closure cost estimate (clean closure) was determined in accordance with the DMRE guidelines.

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 Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

Should the Prospecting Right be granted, **African Exploration Mining and Finance Corporation Soc Ltd** will make provision for the estimated closure cost by means of a Bank Guarantee or any other means available and accepted 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 the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling, or alluvial diamond 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 G). **-Prospecting work program and Financial Quantum has been attached as Appendix G**

A consultation method was enforced, the aim of that was to supply affected parties the chance to lift any potential concerns. No socio-economic conditions of the direct affected party are affected. Due to the location of the site little to non-negative impacts on the farmsteads were deemed to be of serious importance . The dust and noise impacts which will emanate from the prospecting space throughout the operational part might have a negative impact on the surrounding community if the mitigation measures proposed during this document are not enforced and managed on-site. However, since the site is quite segregated from the community with no houses within the 500 m radius these impacts are deemed to be of low significance. The prospecting operation will however also have a number of positive impacts such as job creation for approximately seven-ten workers.

2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond 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 and confirm that the applicable mitigation is reflected herein). **Heritage Impact Assessment has been attached as Appendix J of this Report.**

Heritage resources are, according to the National Heritage Resources Act 25 of 1999, any place or object of cultural significance. In one familiar aspect, heritage resources refer to buildings, monuments, landscapes, and artefacts. These resources are relatively permanent, though somewhat very tenuous, environmental features; if they are present, their integrity is highly susceptible to construction and ground disturbance activities like prospecting and mining activities.

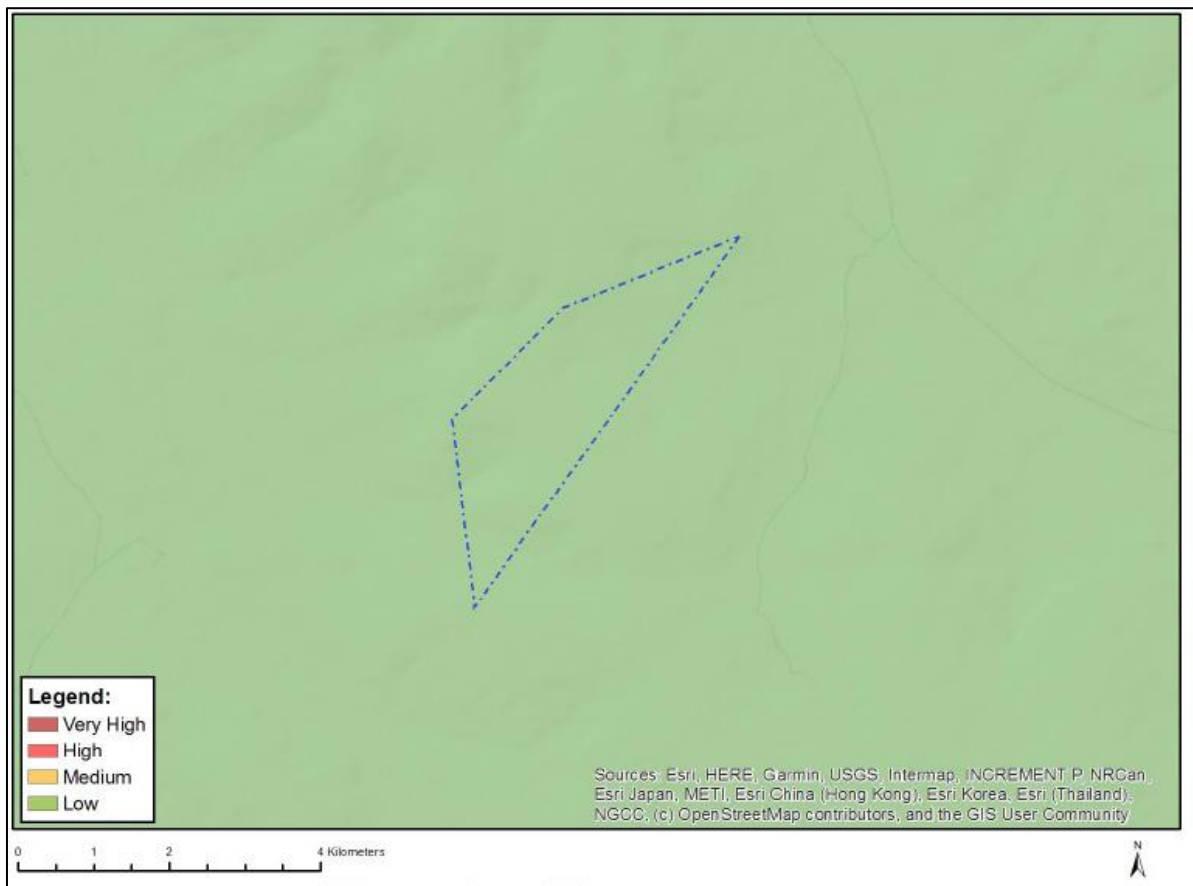


Figure 11: Map of Relative Archaeological and Cultural Heritage

With reference to the Map of Relative Archaeological and Cultural Heritage theme sensitivity above sourced from the DFFE Screening Tool Report, the proposed project area has a low Archaeological and Cultural Heritage combined sensitivity, and a specialist Archaeological and Heritage Impact Assessment undertaken depicted the following results:

- **Archaeology**

The study did not yield any archaeological materials within the prospecting area. Based on the field study results and field observations, the receiving environment for the proposed prospecting site is rated low to medium potential to yield previously unidentified archaeological sites during prospecting. Literature review also revealed that no Stone Age sites are shown on a map contained in a historical atlas of this area.

- **Burial grounds and Graves**

Human remains and burials are commonly found close to archaeological sites and abandoned settlements; they may be found in abandoned and neglected burial sites or occur sporadically anywhere because of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human burials on the landscape as these burials, in most cases, are not marked at the surface and might be concealed by dense vegetation cover. Human remains are usually identified when they are exposed through erosion, earth moving activities and construction. In some instances, packed stones cairns or bricks and headstones may indicate the presence of informal burials.

If any human bones are found during the course of prospecting work, then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out by the archaeologist. Where human remains are part of a burial, they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500) or Department of Health for graves younger than 60 years. The field survey did not identify any graves or burial grounds within the proposed prospecting site. The possibility of encountering previously unidentified burial sites is low within the proposed prospecting site, however, should such sites be identified during exploration, they are still protected in terms of Section 36 of NHRA.

- **Public Monuments and Memorials**

The study did not record any public memorials and monuments within the proposed prospecting site. As such the Prospecting Right Application may be approved without any further investigation and mitigation in terms of Section 27 & of the NHRA.

- **Buildings and Structures**

There are no buildings or structures within the proposed prospecting site. Therefore, the proposed prospecting may be approved without any further investigations in terms of Section 34 of the NHRA.

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 as 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 4).

No alternatives of the site were considered based on the following:

- The proposed prospecting area is targeted as historically, uranium and molybdenum seams occurrences are common in the area and a number of this has been exploited in the past.
- There is sufficient open area with no settlements or any economic activities that could possibly create conflicts with the land owners.
- There are no historical or heritage resources known to be on site.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

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

The details and expertise of EAP from Matavha Environmental (Pty) Ltd that acts as an EAP on this project, has been included in Part A Section 1(a).

- 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).

The aspects of the activity that are covered by the environmental management programme has been described and included in Part A, section (1)(h).

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)

Site plans and locality map are attached as Appendix A. **Composite Map has been attached as Appendix A2.**

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 decommissioning part can entail the rehabilitation of the prospecting site. Upon the end of the activities, the area is absolutely restored. The applicant can adjust to the minimum closure objectives as prescribed by DMRE and detailed below. As previously mentioned, each phase of prospecting activities is dependent on the success of the previous phase. The location and extent of drill sites can therefore not be determined at this stage. The closure objectives thus are as follows:

- Eliminate any safety risk associated with drill holes through adequate drill hole capping and backfilling.
- Remove and / or rehabilitate all pollution and pollution sources such as waste materials and spills;
- To loosen the hardened surfaces which were used temporary site camp or access roads and re-vegetate with indigenous species.
- Establish rehabilitated area which is not subjected to soil erosion which may result in the loss of soil, degradation of the environment and cause pollution of surface water resources;
- Restore disturbed area and re-vegetate these areas with indigenous vegetation to restore the ecological function of such areas as far as is practicable.

ii) Volumes and rate of water use required for the operation.

Water is required during drilling activities to cool down the drill bits and to also eliminate dust pollution. The estimated water use per day is 5000 liters per day. The volume of the water to be used does not require for a water use license application to be undertaken, however the Department of Water and Sanitation will be consulted for official correspondence.

iii) Has a water use licence has been applied for?

No water use activities will be undertaken during the proposed prospecting operation; hence no water use licence will be applied for. The Department of Water and Sanitation will be consulted as a project stakeholder

iv) Impacts to be mitigated in their respective phases.

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

ACTIVITIES	PHASE	SIZE AND SCALE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>(E.g., For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc</p> <p>E.g. For mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>(Of operation in which activity will take place.</p> <p>State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure).</p>	<p>SCALE of disturbance or (Volumes, tonnages, and hectares m²)</p>	<p>(Describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically, this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either: -. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>
<p>Desktop Study</p>	<p>Planning</p>	<p>None</p>	<p>None</p>	<p>Locate sensitive and protected areas such as rivers, graveyards, and protected areas</p>	<p>N/A</p>
<p>Geophysical Surveys</p>	<p>Planning</p>	<p>443.221 Ha</p>	<ul style="list-style-type: none"> Notify directly affected parties of the planned date the activities will be undertaken. Access control measures must be agreed. 	<ul style="list-style-type: none"> Locate sensitive and protected areas such as rivers, graveyards, and protected areas. Identified protected and 	<p>Throughout Geophysical Survey Phase</p>

			<ul style="list-style-type: none"> • Site camp must be demarcated before any activity can be undertaken. • Site Camp should be located more than 100m away from protected sites. • Vegetation clearing must be limited to the demarcated areas only. • Removed topsoil must be stockpiled for rehabilitation purpose. 	<p>sensitive areas will be demarcated and avoided.</p> <ul style="list-style-type: none"> • Health and Safety standards will be maintained. • Spillage kit control will be available on site. 	
ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Drill site Preparation	Drilling Phase	10 Boreholes	<ul style="list-style-type: none"> • Protected trees must be marked. • Oil and Fuel Spills must be attended to as soon as they occur. • Removed topsoil must be stockpiled 	<ul style="list-style-type: none"> • Protected areas will be clearly marked on a sensitivity map. • Health and Safety standards will be maintained. 	The mitigation will be implemented before the commencement of drilling activities and be continuous thereafter.

			<p>for rehabilitation purpose.</p> <ul style="list-style-type: none"> • Consultation with local farmers to communicate possible barricaded areas preventing cattle grazing. • Vehicle movement should be restricted to provided access roads. • The transported load must be safely secured to prevent accidental load falls. • Waste bins must be provided and clearly marked to promote waste separation. • The working area must be watered regularly to prevent dust generation. • Wastewater must be contained in site, treated, and released. 	<ul style="list-style-type: none"> • Spillage kit control will be available on site. 	
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ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Drilling activities	Drilling phase	10 Boreholes	<ul style="list-style-type: none"> • Geophysical methods should be used to detect positions of aquifers to avoid ground water contamination. • The drill bits and equipment must be in good working condition to prevent leakages of oils in the underground. • The drill holes must be capped when not in use to prevent debris flow of wastes and topsoil. • The drill holes must also be capped to eliminate health hazards. • Access by wild animals and livestock into the site must be limited. 	<ul style="list-style-type: none"> • Protected trees will be marked by tapes. • Sensitive areas will be clearly marked on a scaled map. • Waste management strategies will be implemented. • An open register for interested and affected parties will be maintained. • Noise will be limited within accepted threshold. • Drilling activities will be conducted within demarcated areas only. 	The mitigation will be implemented before the commencement of drilling activities and be continuous thereafter.

			<ul style="list-style-type: none"> • The drill site must be regularly watered to prevent dust generation. • There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed. • Drilling activities should be conducted during daytime to avoid noise during late hours. • The muddy water from the drilling activities must be contained on site. • Where muddy water has flown over access roads, the mud must be scrapped to prevent slippery road conditions. • The flow of muddy water should not be allowed to enter agricultural land as it will affect soil fertility. 		
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			<ul style="list-style-type: none"> • Use existing track and roads in all instances as far as is practicable. • A waste management system should be implemented, and sufficient waste bins will be provided for onsite. A fine system will be implemented to further prohibit littering and poor housekeeping practices. 		
Chemical and Fuel storage	Drilling activities	Less than 30m3	<ul style="list-style-type: none"> • The fuel stored on site should be placed on a raised bunded wall. • The chemical toilets must be emptied regularly by a certified company. • All hazardous wastes must be disposed of at an appropriate landfill and a certificate of disposal must be filed on site. 	Fuel and chemicals will be stored according to storage specifications	During drilling activities

			<ul style="list-style-type: none">• All general wastes must be disposed of at a registered general waste landfill site and disposal certificate must be filed on site.• All chemical storage containers must be clearly marked, and material handling sheet be provided.• The chemicals should be stored in sealed containers on a bunded surface.• Appropriate Personal Protective Equipment must be provided to staff working with hazardous chemicals.• Spillages must be attended to as soon as they occur.• Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated		
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			<p>on-site.</p> <ul style="list-style-type: none">• The ECO must determine the precise method of treatment of polluted soil.• This could involve the application of soil absorbent materials or oil-digestive powders to the contaminated soil.• Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment and stored in adequate containers until appropriate disposal.		
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ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Transporting equipment out of site	Closure Phase	Less than 20 ha	<ul style="list-style-type: none"> • Vehicle movement should be properly planned and communicated with other road users. • Local farmers must be alerted of trucks movement. • The dust roads must be watered prior movement of heavy trucks. • Existing access roads must be used. • Where large trucks have to pass across a river, it should be ensured that they have no leaks that could potentially contaminate the water. 	<ul style="list-style-type: none"> • The prospecting work will be completed within a specified period of 5 years. • Pollution control measures will be implemented. • Consultation with affected parties and landowners will remain continuous. 	During site closure when equipment is shipped out of site.

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Decommissioning of camp site	Site Closure	Less than 1 ha	<ul style="list-style-type: none"> • Control of waste handling • Consultation with affected parties • Rehabilitation of affected land 	<ul style="list-style-type: none"> • Measures will be taken to inform affected parties of noisy activities to be undertaken. • The site will be restored to its original state as far as practicable 	Throughout the decommissioning phase

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).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
(E.g., Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	(e.g., dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.... etc...)		In which impact is anticipated (e.g., Construction, commissioning, operational Decommissioning, closure, post closure)	(Modify, remedy, control, or stop) through (e.g., noise control measures, stormwater control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. <ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring • Remedy through rehabilitation. 	(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.

Desktop Study	No Impact	None	Planning	None	Protect sensitive areas on site
ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED

<p>Geophysical Surveys</p>	<p>Noise nuisance affecting nearby farmsteads.</p> <p>Loss of Vegetation when clearing for site camp area</p> <p>Soil contamination from possible chemicals and oil spills.</p> <p>Soil Compaction from the movement of vehicles into the site</p>	<p>Noise Generation</p>	<p>Planning</p>	<ul style="list-style-type: none"> • Control Deviation from approved PWP. • Control through limiting activities to daytime and an open and transparent channel of communication • Control of access into the prospecting site. • Control of waste disposal • Storm water control 	<ul style="list-style-type: none"> • Remain within the Noise Regulation Standards • Remain within the approved PWP.
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ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	Water contamination				
Drill site Preparation	Removal of protected and indigenous trees. Contamination of surface water. Restricted movement of animals	Water contamination Soil contamination Air quality deterioration Visual disturbances	Drilling Phase	<ul style="list-style-type: none"> • Water quality monitoring • Control of vegetation clearing • Controlling access into the site. 	<ul style="list-style-type: none"> • Remain within the approved Prospecting Work programme. • Protect sensitive areas. • Prevent contamination of environmental elements. • Create a risk and hazards free environment

	<p>Generation of dust from clearing activities</p> <p>Soil contamination from spillages of oils and fuel</p> <p>Soil compacted by heavy trucks transporting equipment to site.</p> <p>Site littering by generated wastes from clearing activities.</p>	<p>Health and Safety</p> <p>Loss of vegetation</p> <p>Soil erosion</p> <p>Stream sedimentation</p>			
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	<p>Accidents and injuries when trucks transporting equipment slides or sinks on poorly compacted soils.</p> <p>Soil erosion where vegetation has been cleared.</p>				
ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Drilling activities	Drilling phase	<p>Water contamination</p> <p>Air Pollution</p> <p>Stream sedimentation</p> <p>Increased surface flows</p>	Drilling Phase	<ul style="list-style-type: none"> • Controlling of access to the site • Controlling flow of storm water • Controlling dust generation • Rehabilitation of the site • Monitoring of water quality 	<ul style="list-style-type: none"> • Remain within the Prospecting Work Programme • Protect sensitive areas. • Protect sensitive areas. • Maintain consultation with landowners.

		Health and Safety risks			<ul style="list-style-type: none"> • Prevent contamination of natural elements • Eliminates health hazards
ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Chemical and Fuel storage	Spillages and leaks contaminating water and soil. Spread of pathogens affecting both humans and	Soil Contamination Water contamination Health and Safety risks	Drilling activities	<ul style="list-style-type: none"> • Control chemical storage • Control chemical spillages and leaks 	<ul style="list-style-type: none"> • Protect water resources. • Create a health hazard free environment.

	livestock Improper sewage removal methods resulting in contamination of soil and water				
Transporting equipment out of site	Soil compaction during movement of heavy trucks. Oil and fuel leaks from heavy trucks transporting drilling equipment. Water contamination from water flowing	Health and Safety Hazards Soil Compaction Water Contamination Air Pollution Control traffic movement	Closure Phase	<ul style="list-style-type: none"> • Site rehabilitation • Pollution Control • Traffic movement control • Monitoring of implemented control strategies 	<ul style="list-style-type: none"> • Remain within prospecting work programme. • Remain within noise control standards. • Remain within pollution control standards

	<p>from contaminated site.</p> <p>Loss of soil fertility.</p> <p>Health hazards during loading of the equipment on transporting trucks.</p> <p>Road accidents with other motorists or hitting animals on the access road.</p> <p>Noise nuisance from the trucks</p>	Site Rehabilitation			
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ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Decommissioning of camp site	<p>Contamination of soil stockpiles.</p> <p>Noise nuisance from demolition activities</p> <p>Dust Pollution from demolition activities</p> <p>Debris flow of general wastes into natural water drainages.</p>	<p>Water contamination</p> <p>Air pollution</p> <p>Noise pollution</p> <p>Health and Safety Hazards</p>	Site Closure	<ul style="list-style-type: none"> • General wastes must be collected and stored separately for disposal at a registered landfill. • Workers should wear protective clothing when performing demolition activities. • Where possible surfaces should be watered to prevent dust. • All equipment should be shipped out of site. • The temporary structures must be demolished and resulting wastes be removed 	<ul style="list-style-type: none"> • Ensure that the site is restored to its original state as far as practicable. • Remain within noise control standards. • Remain with pollution control standards

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.	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
<p>(E.g., Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>	<p>(e.g., dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>	<p>(Modify, remedy, control, or stop) through. (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p> <p>E.g.</p> <ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring <p style="text-align: center;">Remedy through rehabilitation.</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.</p> <p>Upon cessation of the individual activity or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>	<p>(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>
<ul style="list-style-type: none"> • Impact management Actions have been addressed in Table above. 				

g) Financial Provision

(1) Determination of the amount of Financial Provision.

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

The closure objectives entail removing the drill rig and any foreign material from the site; sealing and capping of the drill holes and landscaping any compacted areas where needed. Prospecting activities are to be undertaken in a manner which facilitates site rehabilitation and the restoration of existing land capabilities.

The primary objectives for rehabilitation include:

- a) The facilitation of the re-establishment of the land use and capability to as close as reasonable to the original conditions.
- b) Removal of all temporary infrastructure and material introduced to site,
- c) Removal of all wastes and their disposal
- d) Promotion of the rapid re-establishment of the natural vegetation and the restoration of the site ecology.

The disturbed areas shall be rehabilitated to ensure that:

- The biodiversity habitat is encouraging the new land use after the prospecting.
- Eliminate any safety risk associated with drill holes and sumps through adequate drill hole capping and backfilling.
- Environment and resources are not subjected to physical and chemical deterioration,
- The site is reversed to almost its original state.
- The after-use of the site is beneficial and sustainable in a long term.
- All socio-economic benefits are maximized.

The rehabilitation plan shall entail removal of all generated wastes, temporary infrastructure and materials, re-vegetation of disturbed and cleared areas, rehabilitation of access roads, ensuring the growth of the existing grasses and plants species and cleaning of spillages.

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

This Basic Assessment Report and Environmental Management Plan will be made available to each registered stakeholder for review and comment. All comments will be captured in the issues and response section and will be included into the final report.

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

Due to the nature of the activities, the impacts will be very limited and of short duration. The management plan is provided in such a manner as to ensure concurrent rehabilitation. The areas for drilling purposes will be the main area experiencing impacts. In this event the activities will be temporary in nature, and a detailed management plan has been provided to address potential impacts associated with these activities. The only rehabilitation that will specifically be required is borehole capping and re-vegetation:

- Borehole capping

Drill holes must be permanently capped as soon as it is practicable.

- Re- vegetation

It is recommended that a standard commercial fertilizer high in the standard elements is added to the soil before re vegetation where necessary, at a rate of 10 -20k g/ha (application rate to be confirmed based on input from a suitably qualified specialist). The fertilizer should be added to the soil in a slow-release granular form. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.

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

The decommissioning phase will entail the final rehabilitation of the prospecting site. Final landscaping, levelling and top dressing will be done.

Final Rehabilitation:

Final rehabilitation of the surface area shall entail landscaping, levelling, maintenance, and clearing of invasive plant species (where applicable). All equipment, plant and other items used during the prospecting period will be removed from site (section 44 of the MPRDA, 2002). Waste material of any description will be removed from the prospecting area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site. The management of invasive plant species will be done (if applicable) at irregular intervals during the life of the activity. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site if found. Final rehabilitation shall be completed within the period specified by the site manager. Due to the nature of the activities, the impacts will be very limited and of short duration. The management plan is provided in such a manner as to ensure concurrent rehabilitation. The areas for drilling purposes will be the main area experiencing impacts. In this event the activities will be temporary in nature, and a detailed management plan has been provided to address potential impacts associated with these activities.

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

Refer to Appendix L: Quantum of financial provision.

d) Confirm that the financial provision will be provided as determined.

Should the Prospecting Right be granted, **African Exploration Mining and Finance Corporation Soc Ltd** will make provision for the estimated closure cost by means of a Bank Guarantee or any other means available and accepted by the Competent Authority. AEMFC therefore Confirms that financial provision will be provided as determined.

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
Data Acquisition and Desktop Study	None identified	None.	N/A	N/A
Ground Geophysical surveys	Access into private farmsteads	<p>As soon as the extent of site activities are known. These must be communicated with directly affected landowners. The following procedures must be developed in conjunction with these landowners:</p> <ul style="list-style-type: none"> • Emergency Preparedness and Response Plan; and • Access control procedures and requirements. 	Prospecting Manager	<p>As soon as the extent of site activities are known, confirmation of the extent of site activities must be sent to Department of Mineral Resource and Energy before such activities can be undertaken.</p> <ul style="list-style-type: none"> • Proof of consultation with directly affected landowners and the outcome of such consultation to be submitted to the Department of Mineral Resources.

				<ul style="list-style-type: none"> • Continuous monitoring of compliance with the access control procedure will be undertaken.
Drilling	Soil erosion and / or compaction	All exposed areas, access roads, the drill pad and soil stockpiles must be monitored for erosion on a regular basis and specifically after rain events	Prospecting Manager	Weekly and after rain events
	Dust generation	If dust outfall is excessive and affects any sensitive receptors a monitoring programme must be initiated based on the input of a suitably qualified air quality specialist.	Environmental Manager.	<ul style="list-style-type: none"> • Monthly monitoring reports to be signed-off by the Environmental Manager. • Corrective action to be confirmed and signed-off by the Environmental Manager. • Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources and Energy.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	Oil spills/ leaks	<ul style="list-style-type: none"> • All spill incidents will be identified, and corrective action taken in accordance with an established spill response procedure. • Waste management practices will be monitored to prevent contamination and littering. 	<p>Prospecting Manager</p> <p>Environmental Manager</p>	<ul style="list-style-type: none"> • Monthly monitoring reports to be signed-off by the Environmental Manager. • Corrective action to be confirmed and signed-off by the Environmental Manager. • Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources. • Incident reporting will be undertaken as required in terms of the relevant legislation including, but not limited to, the: <ul style="list-style-type: none"> a) Mineral and Petroleum Resources Development Act 28 of 2002; and b) National Water Act 36 of 1998.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Post Closure Monitoring	Follow up inspections and monitoring of rehabilitation	<ul style="list-style-type: none"> • Inspection of all rehabilitated areas to assess whether any soil erosion is occurring and implement corrective action where required. • Confirm that the set target cover for all re-vegetated areas have been achieved after a period of 6 months and re-seed where required. • Identify any areas of subsidence around drill holes and undertake additional backfilling if required. 	Prospecting Manager/ Environmental Manager	<p>Monthly for a period of 6 months after rehabilitation activities are concluded.</p> <ul style="list-style-type: none"> • Monthly monitoring reports to be signed-off by the Environmental Manager. • Corrective action to be confirmed and signed-off by the Environmental Manager. • Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources. • Final impact and risk assessment report for site closure to be submitted to the Department of Mineral Resources for approval.

l) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

Annual performance assessments must be undertaken on the Environmental Management Plan. These reports must also include an assessment of the financial provision. The reports should be submitted to the DMRE.

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.

African Exploration Mining and Finance Corporation Soc Ltd will ensure that employees and the employees of contractors that will be working on site attend an induction course where the nature and characteristics of the project and the site are explained. The course will include key information abstracted from the EMPr pertaining to the potential environmental impacts, the mitigation measures that will be applied, as well as the monitoring activities that will be undertaken by personnel. The full EMPr document will also be made available to attendees. An Environmental Awareness and Risk Assessment Schedule has been developed (See Appendix K) and is outlined below. The purpose of this schedule is to ensure that employees are not only trained but that the principles are continuously re-enforced.

FREQUENCY	TIME ALLOCATION	OBJECTIVE
Induction (all staff and workers)	1 hour training on environmental awareness training as part of site induction	<ul style="list-style-type: none"> • Develop an understanding of what is meant by the natural environmental and social environment and establish a common language as it relates to environmental, health, safety, and community aspects. • Establish a basic knowledge of the environmental legal framework and consequences of non-compliance. • Clarify the content and required actions for the implementation of the Environmental Management Plan. • Confirm the spatial extent of areas regarded as sensitive and clarify

		<p>restrictions.</p> <ul style="list-style-type: none"> • Provide a detailed understanding of the definition, the method for identification and required response to emergency incidents.
Monthly Awareness Talks (all staff and workers)	30-minute awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses, and measures for the adaptation of mitigation and/or management practices.
Risk Assessments (supervisor and workers involved in task)	Daily task-based risk assessment	Establish an understanding of the risks associated with a specific task and the required mitigation and management measures on a daily basis as part of daily toolbox talks.

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

The Following documents will be used as reference for identifying and managing impacts:

- Approved Empr;
- Approved EA;

All employees must be provided with environmental awareness training to inform them of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. This should be in conjunction with the implementation of the EMPr. African Exploration Mining and Finance Corporation Soc Ltd and contractors will be responsible for the implementation of section 28 of NEMA at all times “duty of care” to mitigate any impacts in order to avoid pollution or degradation of the environment. Appropriate implementation of the recommended mitigation measures specified in the EMPr will be monitored through monthly site audits by an EAP and annual EMP audits undertaken by a third party.

• Environmental Awareness Training Content – Induction Training

The following environmental awareness training will be provided to all staff and workers who will be involved in prospecting activities.

- Description of the approved prospecting activities and content of the prospecting right;
- An overview of the applicable legislation and regulations as it relates to environmental, health, safety and community including (but not limited to):

- General Environmental Legal Principles and Requirements
 - Air Quality Management
 - Water and Wastewater Management
 - Hazardous Substances
 - The Appropriate Remediation Strategies & Deteriorated Water Resources
 - Biodiversity
 - Weeds and Invader Plants
 - Rehabilitation
 - Contractors and Tenants
 - Energy & Conservation
 - Heritage Resources
 - General Health and Safety Matters
 - Basic Conditions of Employment
 - Compensation for Occupational Injuries and Diseases
 - Smoking in the Workplace
 - Noise & Hearing Conservation
 - Handling, Storage, and use of Hazardous Substances
 - Weapons and Firearms
- **Content and implementation of the approved Environmental Management Plan**
 - Allocated responsibilities and functions.
 - Management and Mitigation Measures
 - Identification of risks and requirements adaptation
- **Sensitive environments and features**
 - Description of environmentally sensitive areas and features
 - Prohibitions of activities in or in proximity to such areas
 - Emergency Situations and Remediation
 - Methodology to identify areas where accidents and emergency situations may occur, communities and individuals that may be impacted.
 - An over view of the response procedures,
 - Equipment and resources

- Designate of responsibilities
- Communication, including communication with potentially Affected Communities
- Training schedule to ensure effective response.

- **Environmental Related Emergencies and Remediation**

The Company will operate on the principle that “prevention is better than cure” and so they will institute procedures to reduce the risk of emergencies taking place. These will include ensuring that all contracts specify that the contractor is required to comply with all the environmental measures specified in this EMP, environmental awareness training, on-going risk assessment and emergency preparedness.

Emergency telephone numbers: All employees shall have the telephone numbers of emergency services, including the local ambulance and firefighting service. All employees must be made aware of procedures to be followed during the environmental awareness training course.

Fire: The Company shall ensure that there is basic firefighting equipment available on site at all times. This should include at least two rubber beaters and at least one fire extinguisher. The Company shall advise the relevant authority of a fire as soon as one starts and shall not wait until the fire is out of control.

Hydrocarbon spills: The Company shall ensure that all employees are aware of the procedures to be followed for dealing with hydrocarbon spills. The Company shall ensure that the necessary materials and equipment for dealing with hydrocarbon spills and leaks is available on Site at all times. The Company shall ensure that there is always a supply of absorbent material readily available to absorb/ breakdown and where possible is designed to encapsulate minor hydrocarbon spillage. The quantity of such materials shall be able to handle a minimum of 200 l of hydrocarbon liquid spill.

In the event of a significant hydrocarbon spill, the following procedure is required:

- The source of the spillage shall be isolated.
- The spillage must be contained using sand berms, sandbags, pre-made booms, sawdust, or absorbent materials.
- The area shall be cordoned off, secured, and made safe.
- If a serious spill has occurred in a sensitive environment, then the Department of Forestry, Fisheries and Environment (DFFE) and Development Planning: Directorate Pollution & Waste Management must be notified.

Treatment and remediation of spill areas shall be undertaken to the satisfaction of the Project Manager. Remediation may include in-situ bioremediation using appropriate products and or the removal of the spillage together with the contaminated soil and the disposal at a recognised facility.

- **Development of procedures and checklists**

The following procedures will be developed and all staff and workers will be adequately trained in the content and implementation thereof.

Emergency Preparedness and Response

The procedure has been developed to specifically include risk identification, preparedness, response measures and reporting. The procedure includes spill and fire risk, preparedness, and response measures. The appropriate emergency control centers (fire department, hospitals) will be identified and the contact numbers obtained and made available on site. In the event that risks are identified which may affect adjacent landowners (or other persons), the procedure will be amended to include the appropriate communication strategy to inform such persons and provide response measures to minimize the impact.

Incident Reporting Procedure

Incident reporting will be undertaken in accordance with an established incident reporting procedure to (including but not limited to):

- Provide details of the responsible person including any person who: (i) is responsible for the incident; (ii) owns any hazardous substance involved in the incident; or (iii) was in control when the incident occurred;
- Provide details of the incident (time, date, location);
- The details of the cause of the incident;
- Identify the aspects of the environment impacted;
- The details corrective action taken, and
- The identification of any potential residual or secondary risks that must be monitored and corrected or managed.

- **Environmental Audit Checklist**

An environmental audit checklist will be established to include the environmental and social mitigation and management measures as developed and approved as part of the Environmental Management Plan. Non-conformances will be identified and corrective action taken where required.

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

African Exploration Mining and Finance Corporation Soc Ltd will update and review the quantum of the financial provision on an annual basis (as per Regulation 54(2) of the MPRDA). In addition, formal monitoring and performance assessment reviews of compliance will be undertaken annually.

2. UNDERTAKING

The EAP herewith confirms.

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



Signature of the environmental assessment practitioner:

Matavha Environmental (Pty) Ltd

Name of company:

Thursday, 08 June 2023

Date:

-END-

APPENDIX A: MAPS & SITE PLANS

APPENDIX B: PHOTOGRAPHIC REPORT

APPENDIX C: DFFE SCREENING TOOL REPORT

APPENDIX D: PUBLIC PARTICIPATION REPORT

APPENDIX E: CV OF EAP

APPENDIX F: EAPASA REGISTRATION CERTIFICATE

APPENDIX G: PROSPECTING WORK PROGRAMME

APPENDIX H: IMPACT ASSESSMENT

APPENDIX I: TERRESTRIAL BIODIVERSITY

APPENDIX J: HERITAGE IMPACT ASSESSMENT

**APPENDIX K: ENVIRONMENTAL AWARENESS AND RISK
SCHEDULE**

APPENDIX L: QUANTUM OF FINANCIAL PROVISIONS