



DRAFT BASIC ASSESSMENT REPORT

PROPOSED PROSPECTING RIGHT APPLICATION FOR COAL, PSEUDOCOAL & TORBANITE, OIL SHALE ORE ON RE OF BYMEKAAR 783 HT, RE OF VANMEKAAR 810 HT & PORTION 1 – 9, 12, 13, 15, 17, 20, 22, 23 & 24 OF VREDE 154 HU WITHIN THE MAGISTERIAL DISTRICT OF VRYHEID, KWAZULU-NATAL PROVINCE (DMR REFERENCE NUMBER KZN 30/5/1/1/2/11298 PR)



JANUARY 2023



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT
And
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

DRAFT

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).

NAME OF APPLICANT: MAKHONYA MINERALS AND RESOURCES (PTY) LTD
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FILE REFERENCE NUMBER SAMRAD: KZN 30/5/1/2/11298PR

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 un-interpreted information and that it unambiguously represents the interpretation of the applicant.

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;
 - (ba) may cause irreplaceable loss of resources; and
 - (ca) 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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ACRONYMS AND DESCRIPTIONS

ACRONYMS	DESCRIPTION
AIPs	Alien Invasive Plants
CBA	Critical Biodiversity Area
DBAR	Draft Basic Assessment Report
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Ecological Support Area
FBAR	Final Basic Assessment Report
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
KZN	KwaZulu-Natal
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act
PHRAG	The Provincial Heritage Resources Authority Gauteng
SAHRA	South African Heritage Resources Association
WULA	Water Use License Application
BAR	Basic Assessment Report

PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. INTRODUCTION

The Applicant, Makhonya Minerals and Resources (Pty) Ltd, has appointed Thevha Sustainable Services (Pty) Ltd to apply for prospecting right on Remaining Extent of BYMEKAAR 783 HT, Remaining Extent of VANMEKAAR 810 HT & Portion 1 – 9, 12, 13, 15, 17, 20, 22, 23 & 24 of VREDE 154 HU within the Magisterial District of Vryheid, KwaZulu-Natal Province. The proposed prospecting site is in Ward 23 of the Abaqulusi Local Municipality under the jurisdiction of the Zululand District Municipality (Figure 1).

The geographic coordinates of the prospecting area can be noted on Table 1 below.

Table 1: Geographic Coordinates of the prospecting area

PROSPECTING BOUNDARY CO-ORDINATES		
ID	LATITUDE	LONGITUDE
A	-27.677050	30.979360
B	-27.660126	31.008452
C	-27.663094	31.033052
D	-27.667136	31.044175
E	-27.695807	31.030618
F	-27.695875	31.029822
G	-27.694997	31.027998
H	-27.694886	31.027493
I	-27.695581	31.024124
J	-27.696917	31.020559
K	-27.701068	31.020066

However due to the location of the coal seam, proximity of the residential areas and environmental sensitivities, the site has been further reduced and thus reducing the development footprint. Therefore, the reduced prospecting area only covers Portion 8 of Farm VREDE 154 HU.

The proposed activity includes prospecting without bulk sampling for coal.

The proposed prospecting activities have been separated into four (4) phases as detailed below;

- **Phase 1:** Desktop Studies- to establish the status of the area using historical data
- **Phase 2:** Ground geophysical surveys will be conducted over selected target areas on a 200m x 200m grid using a gravimeter. Ground surveys are used to outline the hosting lithology. Detailed reserve and quality determinations will then be possible through computer based modelling, and qualitative and quantitative calculations.
- **Phase 3:** Geochemical surveys- Geochemical surveys will be used in this region to determine the position of ore bodies. This entails the soil sampling on a line spacing of 200m.
- **Phase 4:** Drilling is done in phases, as outlined elsewhere, over anomalous target areas, using reconnaissance lines or a grid of 100m or 400m x 400m holes will be approximately >50m deep depending on the local depth. The drill holes will be sent to the laboratory for assay. The drilling contractors in supervision of the field geologist will initially drill 5 boreholes for preliminary drilling.

1.1 Location of the overall activity

FARM NAME:	Re of BYMEKAAR 783 HT, Re of VANMEKAAR 810 HT & Portion 1 – 9, 12, 13, 15, 17, 20, 22, 23 & 24 of VREDE 154 HU
APPLICATION AREA (HA)	Approximately 1681 hectares
MAGISTERIAL DISTRICT:	Zululand, Vryheid
DISTANCE A N D DIRECTION FROM NEAREST TOWN	The project is located approximately 16.80km North of Vryheid

21	DIGIT	SURVEYOR	N0HU00000000015400001, N0HU00000000015400002
	GENERAL CODE FOR EACH		N0HU00000000015400003, N0HU00000000015400004
	FARM PORTION		N0HU00000000015400005, N0HU00000000015400006
			N0HU00000000015400007, N0HU00000000015400008
			N0HU00000000015400009, N0HU00000000015400012
			N0HU00000000015400013, N0HU00000000015400015
			N0HU00000000015400017, N0HU00000000015400020
			N0HU00000000015400022, N0HU00000000015400023
			N0HU00000000015400024, N0HT00000000078300000

1.2 Locality map

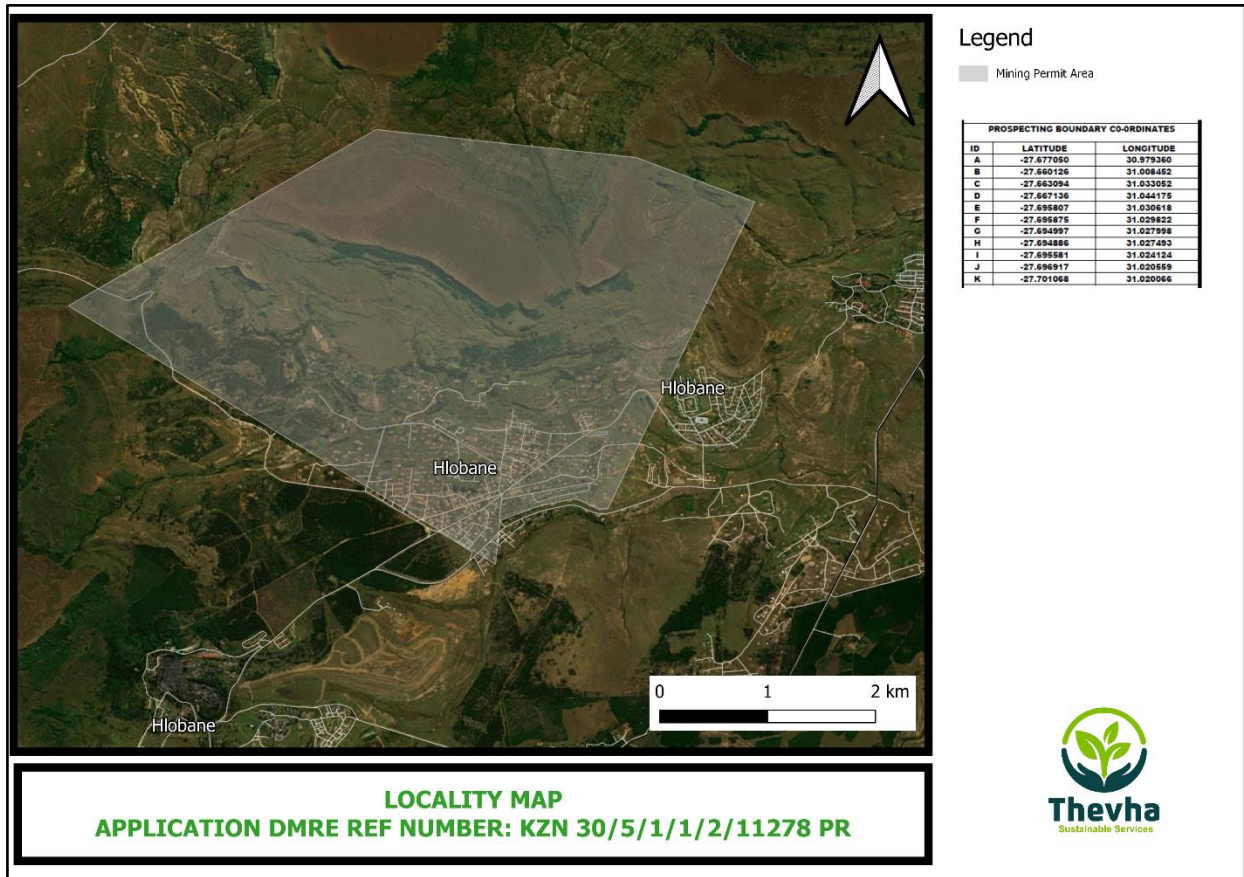


Figure 1: Locality Map

1.3 Details of the EAP

Name of The Practitioner:	 Thevha Sustainable Services (Pty) Ltd Vanessa Nkosi
Cell No:	076 376 2045
E-mail address:	info@thevasustainableservices.co.za

1.4 Expertise of the EAP

The qualifications of the EAP (with evidence).

BSc (Geology)	University of Pretoria
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The CV of the EAP has been included on Appendix A for further evaluation.

2. 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 Applicant, Makhonya Minerals and Resources (Pty) Ltd, has appointed Thevha Sustainable Services (Pty) Ltd to apply for prospecting right on Remaining Extent of BYMEKAAR 783 HT, Remaining Extent of VANMEKAAR 810 HT & Portion 1 – 9, 12, 13, 15, 17, 20, 22, 23 & 24 of VREDE 154 HU within the Magisterial District of Vryheid, KwaZulu-Natal Province. The proposed prospecting site is in Ward 23 of the Abaqulusi Local Municipality under the jurisdiction of the Zululand District Municipality.

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The Prospecting Work Programme (PWP) has been attached as **Appendix E** of this report.

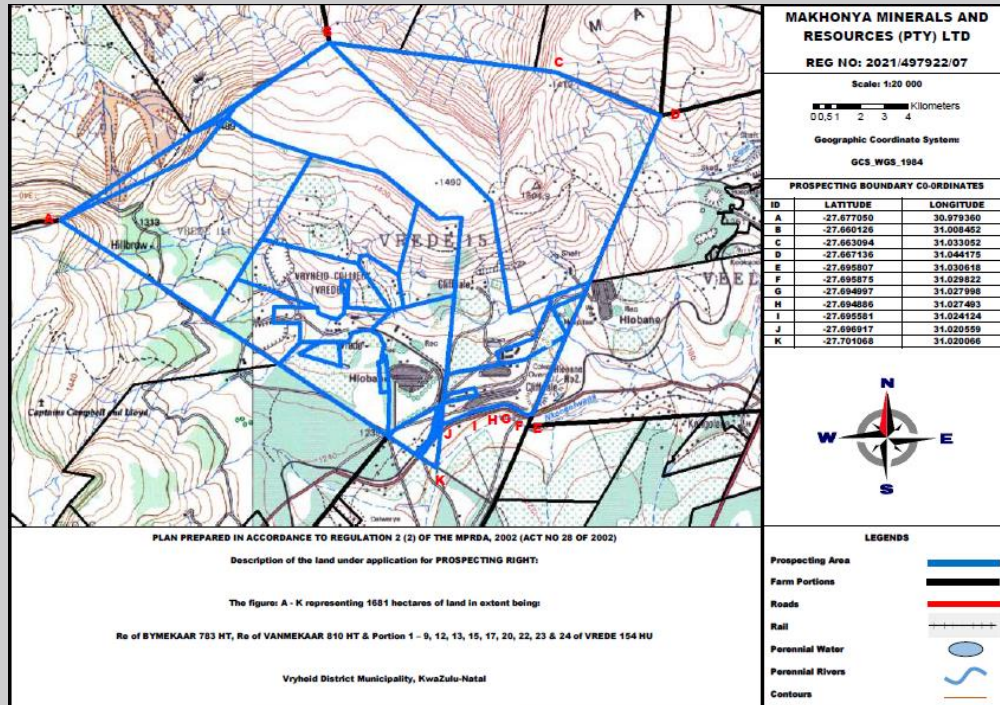


Figure 2: Application Area

Table 2 below indicates the location of the proposed five (5) drill holes. It is important to note that the reduced development footprint only covers Portion 8 of Farm VREDE 154 HU.

Table 2: Geographic coordinates of the reduced prospecting area

Area	Latitude	Longitude
DH1	27°40'24.28"S	31° 0'13.75"E
DH2	27°40'24.56"S	31° 0'28.15"E
DH3	27°40'32.18"S	31° 0'40.01"E
DH4	27°40'34.72"S	31° 0'15.45"E
DH5	27°40'37.83"S	31° 0'30.97"E

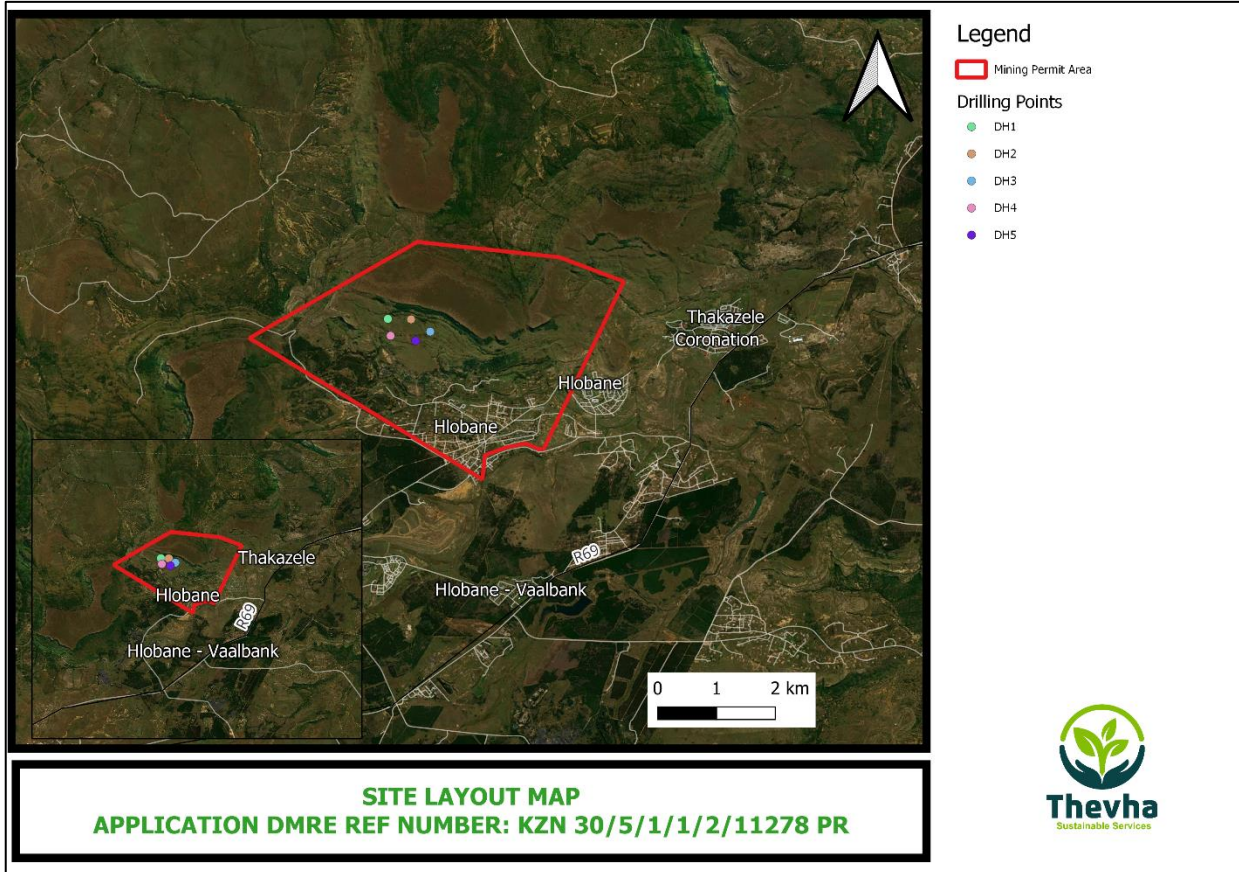


Figure 3: Reduced prospecting right area

2.1 Listed and specified activities

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	APPLICABLE LISTING NOTICE	WASTE MANAGEMENT AUTHORISATION
Average Prospecting Right Reduced Area	20 ha	Government Notice, No. R. 327, April 2017 (LN1)	X
Drilling	5 Holes 2200 meters	Government Notice, No. R. 327, April 2017 (LN1)	X
Site camp	80 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Ablution facilities	10 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Sample storage	40 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Equipment storage	50 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
Temporal Site offices	40 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X

Access roads	100 m ²	Government Notice, No. R. 327, April 2017 (LN1)	X
TOTAL APPROXIMATE AREA	20 HA		

2.2 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 proposed prospecting activities have been separated into invasive activities and non-invasive activities. The invasive activities are noted as the activities that poses an impact on the environment. In addition, a pre-feasibility study has been included.

DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

1. Desktop study

A geologist will conduct research about the area of interest. Information will be gathered from other earth-sciences and geological institutions and the council for geosciences. No physical visit to the study area will be done during this phase. The surveyor moves through the identified survey area on foot, using these instruments to gather data from the ground surface. The individual survey areas vary between 500 x 500 m to 2 x 2 km in extent depending on the inferred size of the target area. Magnetic survey lines are spaced at a maximum of 50 m apart, and readings will be taken at a minimum of 5 m intervals along the lines. Electromagnetic and gravity survey lines are spaced at a maximum of 100 m apart with readings taken at a maximum of 50 m along the lines. This method of data collection is non-invasive and does not require clearance or disturbance of the vegetation. Therefore, the only potential impact of this data collection process is inconvenience to the landowner, who would need to grant access to the survey site. After data collection has been completed, data processing and visualization is carried out to allow the interpretation of the survey.

2. Geological field mapping

This will be achieved by a geologist walking the farm mapping the outcrops. This will result into the production of geological maps showing the types of lithologies found in the area. The size of core drilled will be determined by such factors as cost, proposed core sampling, the degree of logging required and proposed geotechnical investigations. Sizes commonly used are 63.5 mm or 47.6 mm diameter core or variations on these. The orientation and depth of core holes will vary depending on the drilling objective. In the case of delineation drilling, angled core holes will be drilled to establish accurate kimberlite / country rock boundaries at depth (in other words, where the edge of the kimberlite is at depth). Vertical holes will be drilled for geological modelling and / or sampling of the core.

DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

3. Drilling

The drilling contractors in supervision of the field geologist will initially drill 5 boreholes for preliminary drilling; this phase will last for three months.

DESCRIPTION OF PRE-/FEASIBILITY STUDIES

4. Geological Modeling

A geologist will create a geological model that will delineate the orientation and the extent of the ore body.

SERVICES DESCRIPTION

1. Water Supply

Process water supply for the operation will be sourced from water service providers and will be carted onto the site in a tanker. A 2000-liter water cart will be adequate for the size of this operation. The water will be used for dust suppression of access roads. Dust suppression will be conducted as and when necessary. No water will be abstracted in terms of section 21(a) of the National Water Act, 1998 (Act no. 36 of 1998).

2. Potable Water Supply

Potable water required for the proposed prospecting operation is approximately 40 litres per day (ℓ/day). The water will be used for drinking purposes and will be sourced from local water vendors within the town of Morgenzon and supplied in cooled water dispensers.

3. Ablution Facility

Ablution facility at the drill site will involve chemical mobile toilets. Approximately 2 chemical mobile toilets will be required on site. All raw sewage from these toilets will be disposed of into the nearest wastewater treatment works within the Nongoma Local Municipality. The service provider will be required to provide proof of disposal of sewer.

SITE INFRASTRUCTURE

Temporary Office Area/ Camp Site

A temporary office area will be established on site and will include the following:

- Vehicles and equipment area (drill and pipe truck)
- Ablution facility (chemical mobile toilet)
- Mobile office (mobile container)

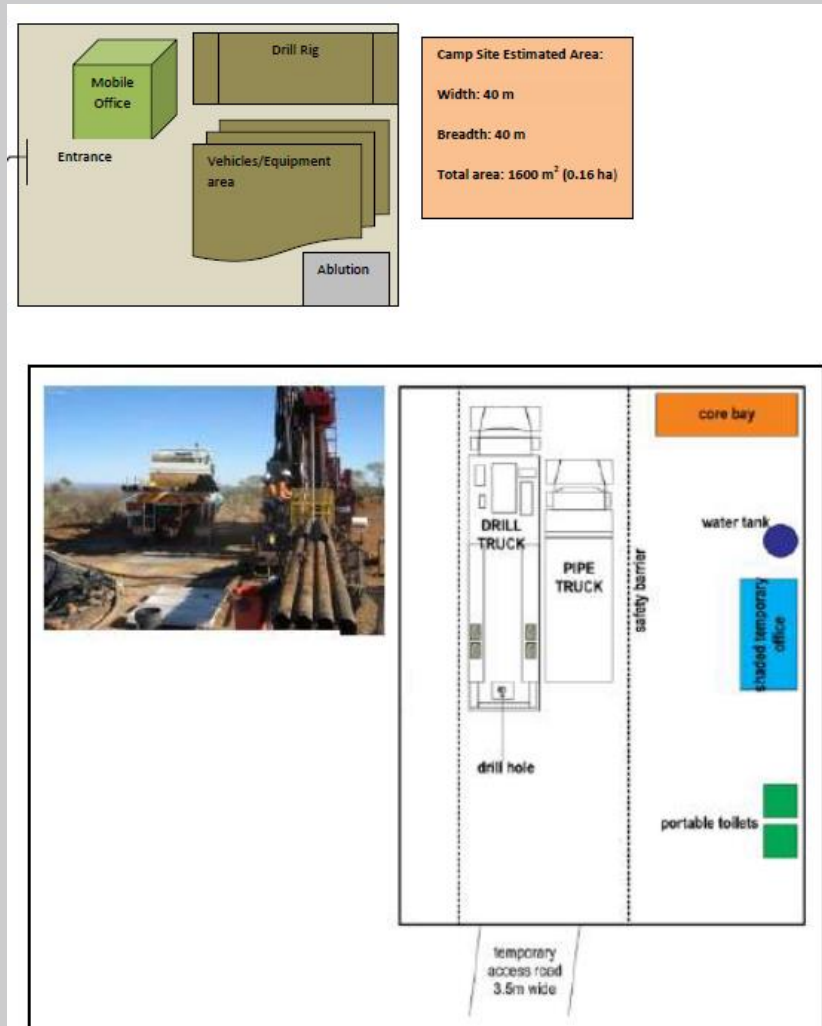


Figure 4: Typical example of a temporary site office for prospecting activities

Accommodation

No accommodation for workers will be provided on site. Accommodation will be sourced within the Matheni Traditional Council, KwaKhangela Qongqo area. All workers will be transported on site daily. It is anticipated and agreed during the public participation process that most of the workers will be sourced from the local area.

Blasting

No blasting will take place on site. Planned invasive activities are limited to core drilling and site camping.

3. POLICY AND LEGISLATIVE CONTEXT

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
Constitution of the Republic of South Africa (Bill of Rights), 1996	Chapter 2 section 24	The prospecting activities shall be conducted in such a manner that significant environmental impacts are avoided, where significant impacts cannot all together be avoided, be minimised and mitigated in order to protect the environmental right of South Africans.
Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)	Section 16, 17, and 39 of MPRDA This entire report is prepared as part of the Prospecting Right Application under the MPRDA	In terms of the Mineral and Petroleum Resources Development Act a Prospecting Right Application has been applied for.
National Environmental Management Act, 1998 (Act 107 of 1998)	Listed Activity 20 of Regulation R327 (December 2014) as amended in April 2017. This entire report is prepared as part of the Application for Environmental Authorizations under the NEMA.	In terms of the National Environmental Management Act an Application for Environmental Authorization subject to a Basic Assessment Process has been applied for.
National Water Act, 1998 (Act 36 of 1998) (NWA)	Not applicable Due to the nature of the proposed prospecting activities no Section 21 water uses will be triggered, therefore there is no requirement to apply for Water Use authorisation in terms of the NWA.	In terms of the National Water Act, no Water Use License has been applied for. It is anticipated that prior to the commencement of the prospecting activities, the applicant will formally engage the Department of Water and Sanitation accordingly.
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004): National Dust Control Regulations (GN 827)	Not applicable	Appropriate dust extractions/ suppression equipment will be a condition imposed on the drill contractor for their drill rigs.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA) as amended	Waste management on site	The generation of potential waste will be minimised through ensuring employees of the drilling contractor are subjected to the appropriate environmental awareness campaign before commencement of drilling. All waste generated during the drilling activities will be disposed of in a responsible legal manner. Proof of legal disposal will be maintained on site.
National Heritage Resources Act, 1999 (Act 25 of 1999)	No graveyards have been reported or noted within the study area.	No graveyards have been reported or noted within the study area.

4. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The mining industry is of great importance to the South African economy. South Africa has one of the world's largest coal reserves. Eskom currently relies on coal fired power stations to produce approximately 95% of the electricity generated in South Africa and until such time as alternative energy generation options can be implemented on a sufficiently large scale, Eskom is totally dependent on coal mining. The market for coal products is increasingly defined by generally accepted local and international standard quality products for which physical and financial markets exist for trading these standard coal products.

The definition of prospecting in terms of the MPRDA states: "intentionally searching for any minerals by means of any method which disturbs the surface or sub-surface of the earth, including any portion of the earth that is under the sea or under other water..." Prospecting is the physical search for minerals, fossils, precious metals or mineral specimens, which allows a company to survey or investigate an area of land for the purpose of identifying an actual or probable mineral deposit, before investments are made into the mining activities.

In terms of the EIA Regulations the need and desirability of any development must be considered by the relevant competent authority when reviewing an application. The need and desirability must be included in the reports to be submitted during the environmental authorisation application processes.

According to the Nongoma Local Municipality IDP, 2020/2021, one of the key challenges facing the municipality includes high employment rate characterised by youth unemployment and poor land use management. The proposed development aims to address this challenge through the induction of economic growth to the municipality through temporary employment during the drilling phase of the proposed activity with a possible long-term employment during the mining phase of the development.

The contribution of mining within the municipal economic industry has motivated the applicant to promote local development through the introduction of additional mines within the municipality.

Assessment of the geological information available has determined that the area in question may have coal reserves. In order to ascertain the above and determine the nature, location, and extent of the coal reserves within the proposed prospecting area, it will be necessary that prospecting be undertaken. The prospecting will also determine if there are any features that may have an impact on the economic extraction of the coal.

The information that will be obtained from the prospecting to be done will be necessary to determine, should coal be found, how and where the coal will be extracted and how much economically viable coal reserves are available within the proposed prospecting area.

Should prospecting prove successful and a resource quantified, it would indicate a potential viable economic activity in the form of mining that is likely to contribute greatly to the socio-economic status quo in the form of increased income, employment and other benefits that would cascade through the local, regional and national levels.

5. MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE.

The identification of alternatives is a key aspect of the success of the Basic Assessment process. All reasonable and feasible alternatives must be identified and screened to determine the most suitable alternatives to consider in this application. There are, however, some constraints that have to be considered when identifying alternatives for a project depending on the scope. Such constraints include financial, social and environment related constraints. Alternatives can typically be identified according to:

- Activity Alternatives
- Location Alternatives
- Design or Layout Alternatives
- Technology Alternatives
- Operational Alternatives
- No-Action Alternative (No-Go)

For any alternative to be considered feasible, such an alternative must meet the need and purposes of the development proposal without presenting significantly high associated impacts. Alternatives are typically distinguished into discrete or incremental alternatives. Discrete alternatives are overall development options, which are typically identified during the pre-feasibility, feasibility and/or Basic Assessment process. Incremental alternatives typically arise during the Basic Assessment process and are usually suggested as a means of addressing/mitigating identified impacts (drilling and trenching in low sensitivity areas). These alternatives are closely linked to the identification of mitigation measures are therefore not specifically identified as distinct alternatives.

For the purpose of this project the need and justification for alternatives was specifically guided by the relatively low sensitivity of the receiving socio-economic and biophysical environment.

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

The motivation towards the selection of the preferred was based on the coal seams, residential areas, schools, clinic, Royal Palace, agricultural activities as well the environmental sensitivity of the original prospecting right area. The reduction approach was utilised which reduced the site by 98%.

6. FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE

6.1 Details of the development footprint alternatives considered

Due to the location of the coal seam, the site has been further reduced and thus reducing the development footprint. Therefore, the reduced prospecting area only Portion 8 of Vrede 154. The table below indicates the location of the proposed drill holes (DH).

Area	Latitude	Longitude
DH1	27°40'24.28"S	31° 0'13.75"E
DH2	27°40'24.56"S	31° 0'28.15"E
DH3	27°40'32.18"S	31° 0'40.01"E
DH4	27°40'34.72"S	31° 0'15.45"E
DH5	27°40'37.83"S	31° 0'30.97"E

6.2 The property on which or location where it is proposed to undertake the activity

The majority of the drill holes are located within Portion 8 of Vrede 154 as indicated by **Figure 3** above.

6.3 The type of activity to be undertaken

In terms of the technologies proposed, these have been chosen based on the long-term success of the company in terms of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore, no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

6.4 The option of not implementing the activity

Should economical reserves be present and Makhonya ("the applicant") does not have the opportunity to prospect, the opportunity to utilize these reserves will be lost. Furthermore, prospecting activities are essential to investigate and confirm the existence/presence of coal and also required to generate a SAMREC compliant mineral resources statement or competent persons report (CPR). Furthermore, investment in the mining industry will not transpire without prospecting activities and should the Prospecting Right application be denied, valuable economic and socio-economic opportunities may be lost.

7. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

7.1 Public Participation Methodology

The Public Participation Process (PPP) is a requirement of several pieces of South African Legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their opinions are taken into account and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study. The public participation process undertaken was done in accordance to Regulation 39 – 44 of the EIA Regulations, 2014 (amended) summarised below;

- (a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of—
 - (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and
- (b) giving written notice, in any of the manners provided for in section 47D of the Act, to—
 - (i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;
 - (ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;
 - (iii) the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (iv) the municipality which has jurisdiction in the area;
 - (v) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vi) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper;
- (d) conduction of focus or public meetings

The public participation process for this site includes the placement of site notices, notification of interested and affected parties inclusive of the landowners through notification letters.

7.2 Identification of I&APs

A Final IAP list has been included in this Report as **Appendix C6**. The IAP database was compiled containing the following categories of stakeholders.

- Provincial Authorities
- Local Authorities
- State-owned companies
- Other organisations, clubs, communities, and unions.
- Neighbouring properties

7.3 List of Authorities Identified and Notified

The following authorities have been identified and notified of the proposed Prospecting Right:

- KZN Department of Mineral Resources and Energy
- KZN Department of Transport;
- KZN Department of Economic Development, Tourism and Environmental Affairs
- KZN Corporative Governance and Traditional Affairs
- KZN Department of Water and Sanitation
- KZN Department of Agriculture
- Abaqulusi Local Municipality
- Zululand District Municipality

7.4 List of Key Stakeholders Identified and Notified

The following key stakeholders have been identified and notified of the proposed Prospecting Right:

- Ezemvelo KZN Wildlife
- South African Heritage Resources Agency/Amafa

7.5 Notification of I&APs

Notification documents were placed within the area. All pre-identified I&APs, including those that requested to be registered as I&APs during the initial public consultation phase of the Basic Assessment process were notified of the proposed Prospecting Right Application via the following methods:

- Notification letters (Hand delivered) See **Appendix C4**
- Site notices at various locations on-site. See **Appendix C1**
- Placement of newspaper adverts in the *Vryheid herald*. See **Appendix C2**

7.6 Description of the Information Provided to the Community, Landowners and I&APs

Notification documents sent to all pre-identified I&APs included the following information:

- Locality map
- List of activities to be authorised.
- Scale and extent of activities to be authorised.
- The duration of the activity.
- The purpose of the proposed project.
- The prospecting methods to be used.
- Details of the affected property
- Details of the MPRDA and NEMA regulations that must be adhered to.
- The minerals being prospected for.
- Date by which comment, concerns and objections must be forwarded through to TSS.
- Contact details of the Environmental Assessment Practitioner (EAP).

7.7 Summary of Issues Raised by I&APs

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

Appendix C7 has been attached for the purpose of providing a detailed response of the comments received on the Draft BAR.

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	DATE COMMENTS RECEIVED	COMMENT RECEIVED	RESPONSE ISSUED
PROVINCIAL AUTHORITY				
KZN Department of Mineral Resources and Energy	X	N/A	No comments received to date	N/A
KZN Department of Economic Development, Tourism and Environmental Affairs	X	N/A	No comments received to date	N/A
KZN Department of Transport	X	N/A	No comments received to date	N/A
KZN Corporative Governance and Traditional Affairs	X	N/A	No comments received to date	N/A
KZN Department of Water and Sanitation	X	N/A	No comments received to date	N/A
KZN Department of Agriculture	X	N/A	No comments received to date	N/A
LOCAL AUTHORITIES				
Zululand District Municipality	X	N/A	No comments received to date	N/A
Abaqulusi Local Municipality	X	N/A		
STATE OWNED COMPANIES				
Ezemvelo KZN Wildlife	x	N/A	No comments received to date	N/A
OTHER PARTIES				
FARM OWNERS / LOCAL COMMUNITY MEMBERS				
N/A				

8. ENVIRONMENTAL ATTRIBUTES AND ASSOCIATED ALTERNATIVES

8.1 Baseline Environment

This section describes the baseline receiving environment of the prospecting area. Information in this section is based on desktop studies by the EAP, a site visits conducted during the period of November 2022, input from the public through the I&AP questionnaire. As such, the descriptions below of environmental features represent a consolidation of relevant information to the Application Area.

8.1.1 Cadastral

The application area is noted to be on Remaining Extent of BYMEKAAR 783 HT, Remaining Extent of VANMEKAAR 810 HT & Portion 1 – 9, 12, 13, 15, 17, 20, 22, 23 & 24 of VREDE 154 HU within the Magisterial District of Vryheid, KwaZulu-Natal Province. However, following extensive analysis, this area has been reduced to only Portion 8 of Farm VREDE 154 HU which is owned by Anglo Operations (Pty) Ltd.

8.1.2 Social and Economic

The proposed prospecting site is located in Ward 23 of the Abaqulusi Local Municipality under the jurisdiction of the Zululand District Municipality (Figure 5).

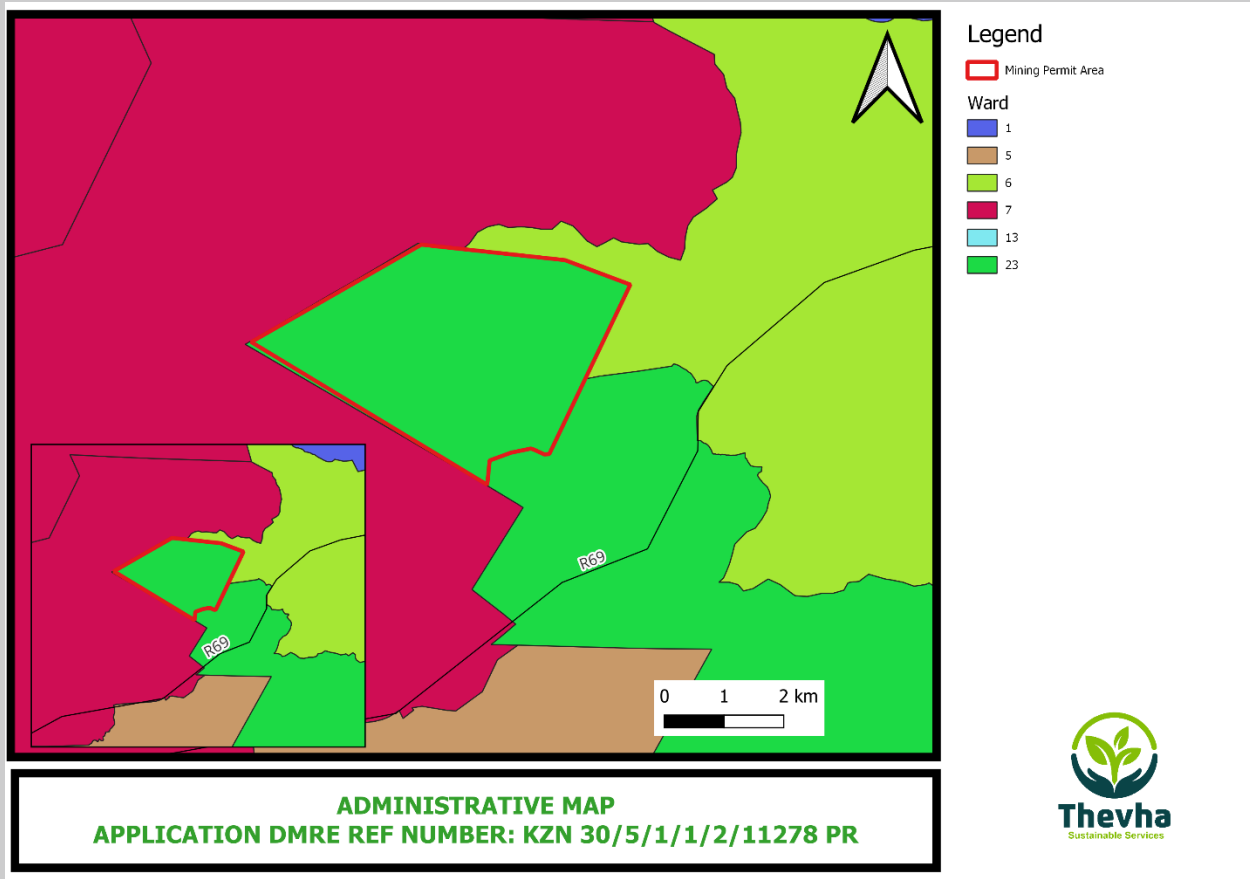


Figure 5: Wards Map

Vryheid will be utilised to detail the demographics of the study area as the closest Central Business District (CBD) to the site. According to Stats Sa 2011 Abaqulusi Municipality is located in the northern part of KwaZulu-Natal and is approximately 1943 km² in extent and has a population of about 211 060 people. It constitutes about 13.13% of the Zululand District Municipality and is one of the five local municipalities that make up the district. Vryheid is located in Abaqulusi local municipality, within the province of KwaZulu-Natal .

According to Census 2011, Ward 23 Abaqulusi Local Municipality has a total population of 12 477 of 97% black Africans.

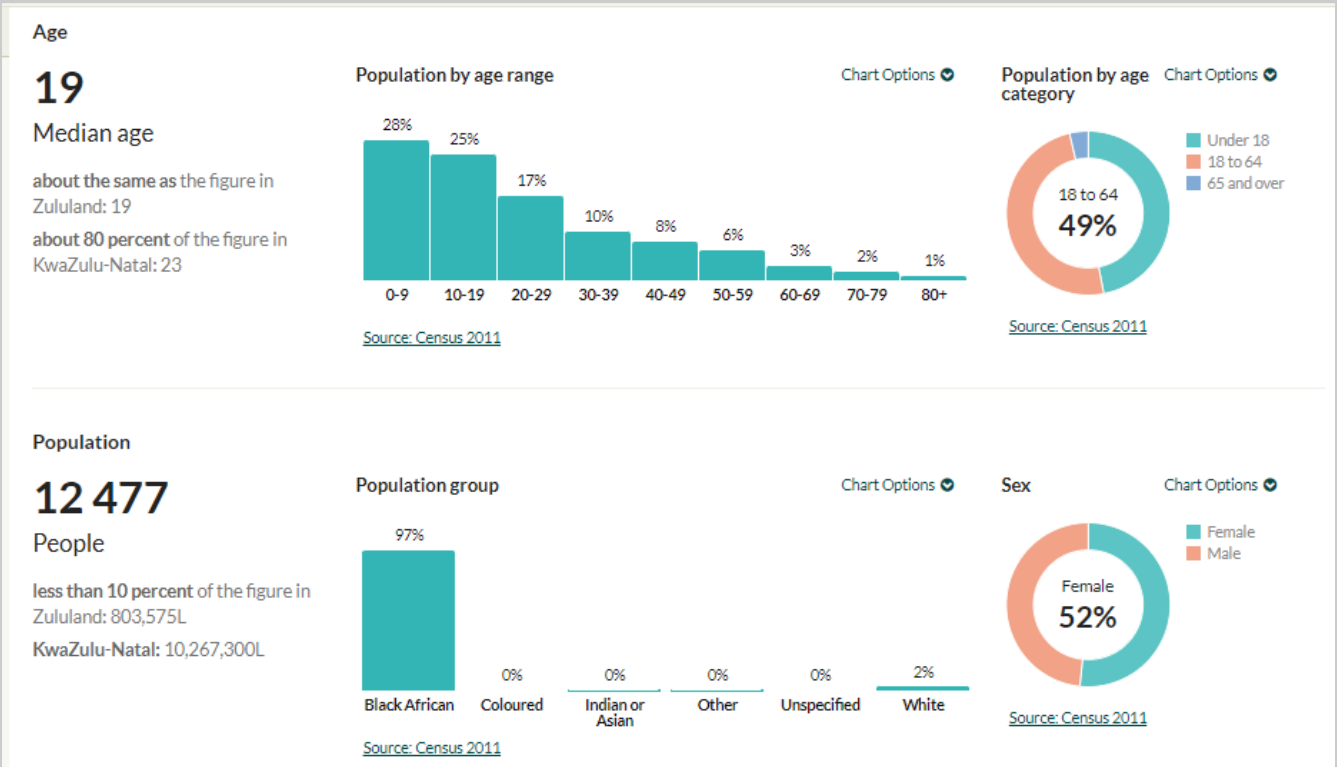


Figure 6: Gender, Population group statistics

Unemployment is rife in the ward with more than 20.3% of the population is employed whilst the municipality has 18.59% employment rate.

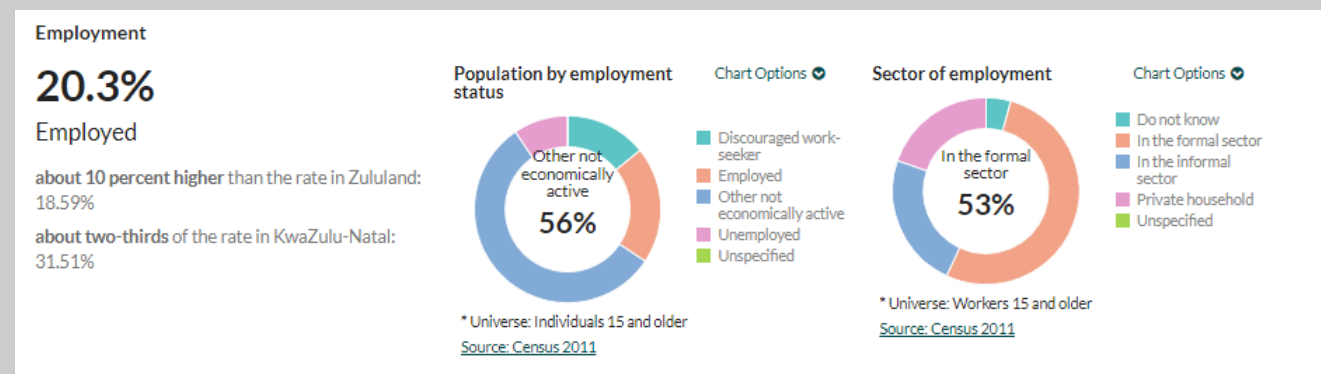


Figure 7: Employment statistics

8.1.3 Geology

The proposed project area is located in the Vryheid Coalfield, east of the Utrecht Coalfield, KwaZulu-Natal see Figure 8 below.

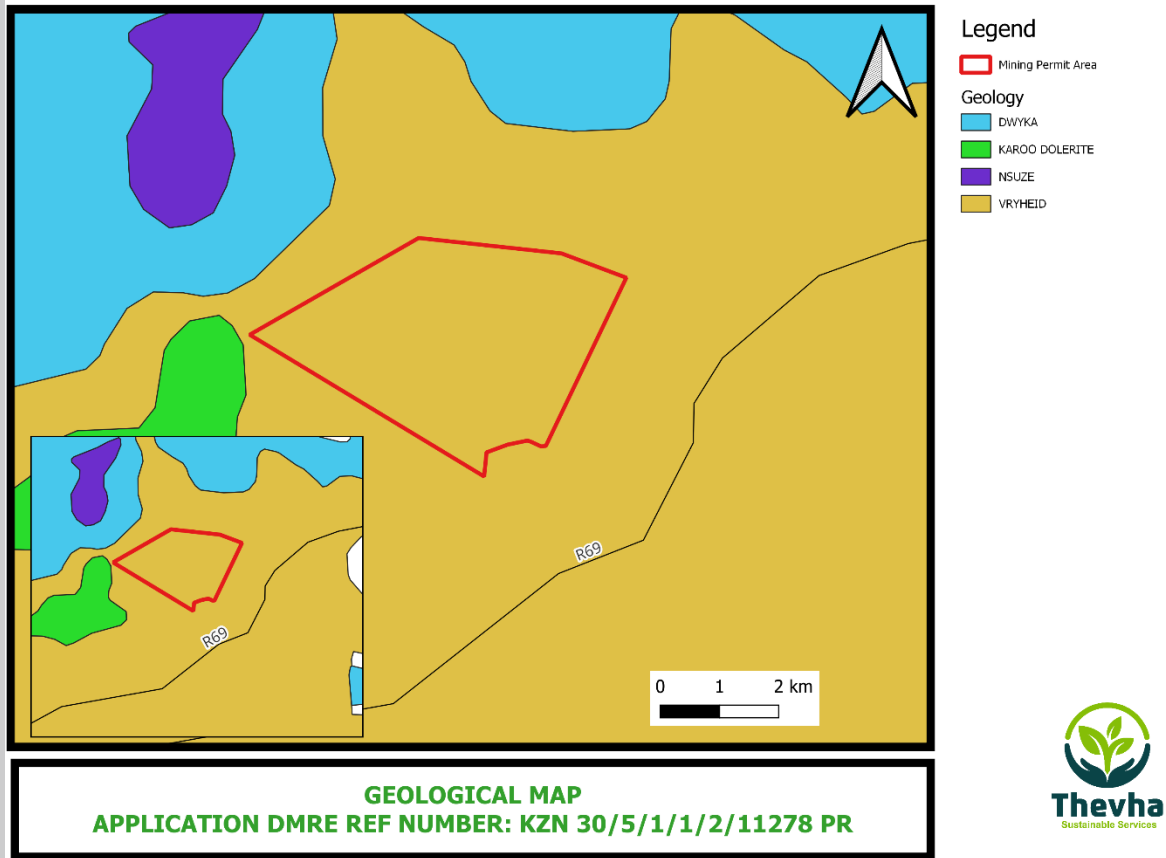


Figure 8: Geological map

Seven coal seams occur in the Vryheid coal seam, wherein four are economic coal seams, namely the Coking Seam, Dundus, Gus and Alfred seams. At the bottom is the Coking seam with a thickness that does not exceed 1.5m. The seam is generally made up of good quality, mainly bright, thinly banded coal. The Dundus seam occurs approximately 15m above the Coking seam and comprises of dull bright and shaly coal. Two of the seams (Bonas and Targas) are considered to be uneconomical. The Fritz Seam is generally thin and seldomly exceed 0.5m. It is considered economically where it is mines in conjunction with other seams as it has high sulphur content.

8.1.4 Agricultural capability

According to the Department of Forestry, Fisheries and the Environment Screening Tool, a high sensitivity towards agriculture is noted within the larger extent of prospecting area. Small scale traditional agricultural practises are noted within the study area.

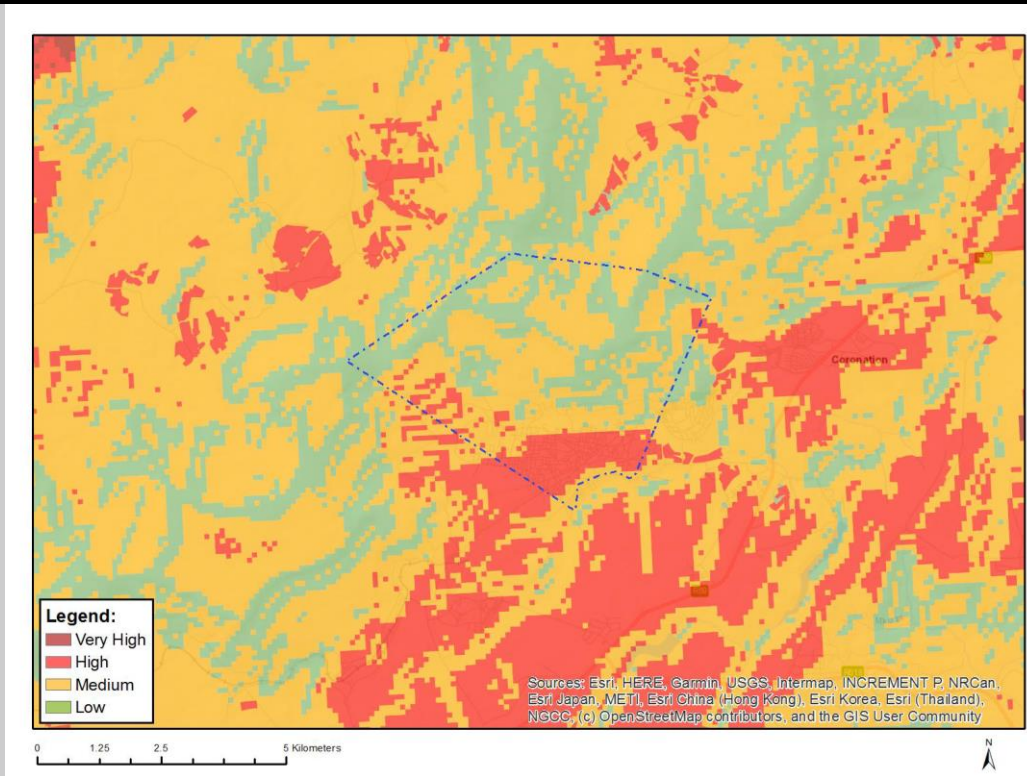


Figure 9: Agricultural sensitivity map

8.1.5 Biodiversity

Critical Biodiversity Areas (CBA) are natural or near natural landscapes that are considered critical for meeting biodiversity targets and thresholds, and which safeguard areas required for the persistence of viable populations of species and the functionality of ecosystems.

The identification of these areas with environmentally sensitive areas aims to ensure that they are well protected and necessary considerations are made as far as development proposals are concerned.

The overall prospecting area has CBA Optimal towards the south of the site.

Consequently the reduced area is not located within any terrestrial biodiversity areas.

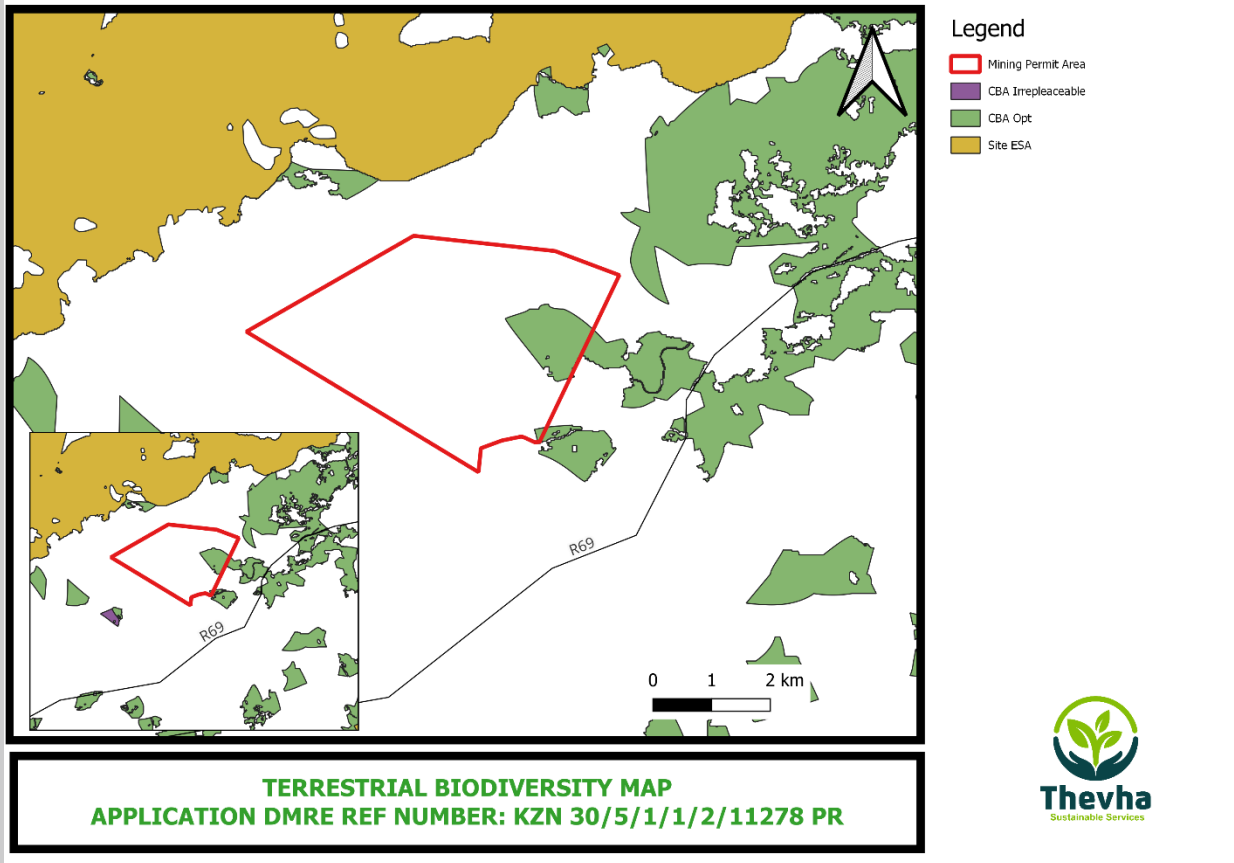


Figure 10: Biodiversity Map

Animal Species

A high sensitivity is noted in terms of animal species. There is an anticipated presence of *Mammalia-Hydrictis maculicollis* and *Mammalia-Ourebia ourebi ourebi* animal species as indicated below in **Table 3**. The EAP did not take note of any of the species tabulated below mainly due to the dominance of human inhabitat. .

Table 3: Anticipated animal species

<i>Mammalia-Ourebia ourebi ourebi</i>	
	

8.1.6 Land Use

The study area consists of a rural residential area around the prospecting area with old mine shafts as well as large forestry plantations .

8.1.7 Noise

Potential noise sources from the area may emanate from the following sources i.e., road and surrounding land uses.

8.1.8 Air Quality

The sources of air pollution from human activities comprise of three broad categories i.e., stationary sources (mining, quarrying,) community sources (homes or buildings, municipal waste, fireplaces, cooking facilities, laundry services and cleaning plants) and mobile sources combustion-

engine vehicles and fugitive emissions from vehicle traffic). Air pollutants are generally classified into suspended particulate matter (dust, fumes, mists and smokes), gaseous pollutants (gases and vapors) and odors.

Assessment of the proposed prospecting right area has determined that all three categories of air pollution sources are expected to be of a low significance within the reduced application area.

8.1.9 Topography

The mean elevation (m above sea level) ranges from 1308m above sea level, to 1341m above sea level. The study area is situated within a valley in relatively moderately steep profile as indicated in the figure below.

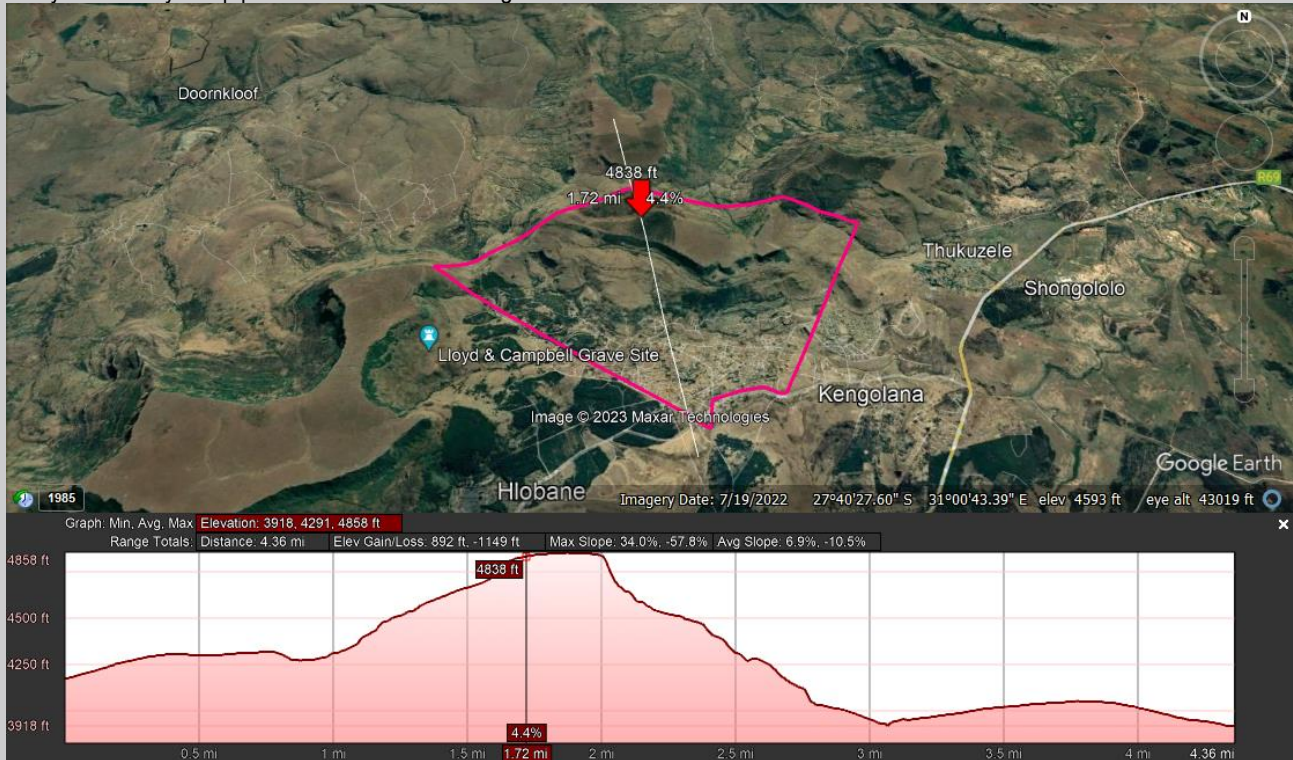


Figure 11: Topographic profile

8.1.10 Climate

In Vryheid, the wet season is warm and partly cloudy and the dry season is comfortable and mostly clear. Over the course of the year, the temperature typically varies from 41°F to 81°F and is rarely below 35°F or above 88°F. The warm season lasts for 3.1 months, from November 25 to February 28, with an average daily high temperature above 79°F. The hottest month of the year in Vryheid is January, with an average high of 80°F and low of 61°F.

The cool season lasts for 2.0 months, from June 1 to August 3, with an average daily high temperature below 70°F. The coldest month of the year in Vryheid is July, with an average low of 41°F and high of 68°F. A wet day is one with at least 0.04 inches of liquid or liquid-equivalent precipitation. The chance of wet days in Vryheid varies very significantly throughout the year. The wetter season lasts 5.6 months, from October 8 to March 27, with a greater than 30% chance of a given day being a wet day. The month with the most wet days in Vryheid is December, with an average of 17.3 days with at least 0.04 inches of precipitation. The drier season lasts 6.4 months, from March 27 to October 8. The month with the fewest wet days in Vryheid is June, with an average of 1.3 days with at least 0.04 inches of precipitation.

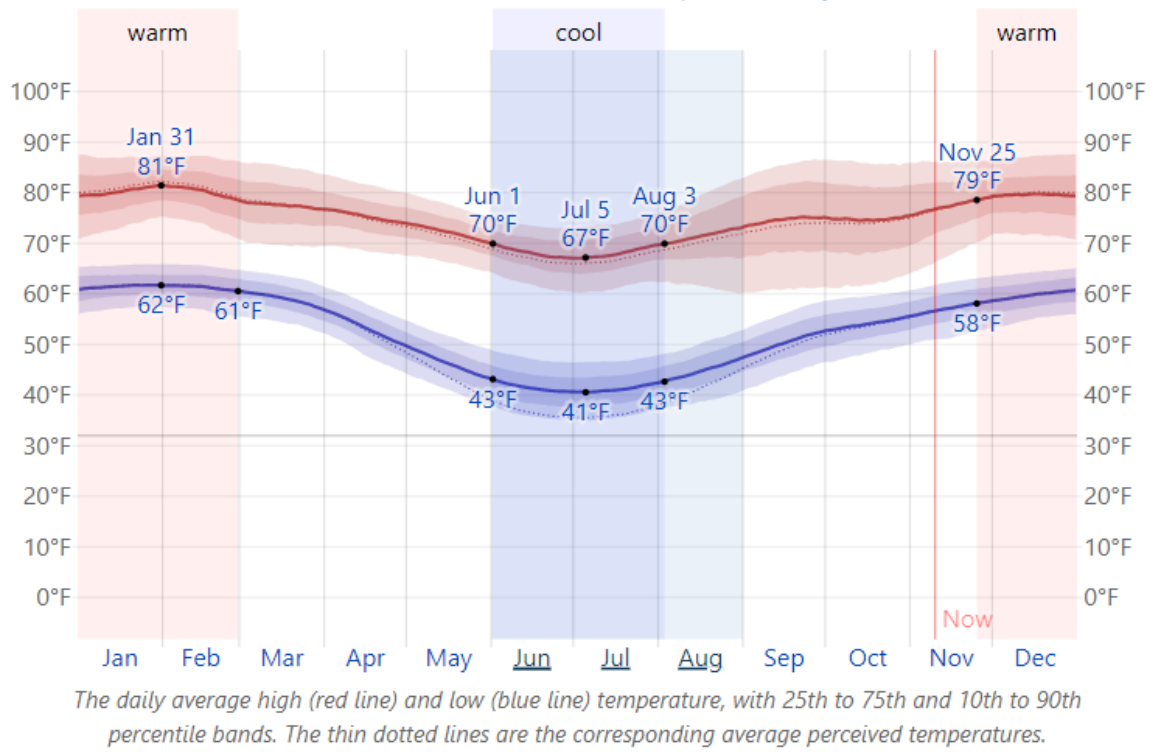


Figure 12: The daily average high (red line) and low (blue line) temperature, with 25th to 75th and 10th to 90th percentile bands. The thin dotted lines are the corresponding average perceived temperatures (<https://weatherspark.com/y/96306/Average-Weather-in-Vryheid-South-Africa-Year-Round>)

8.1.11 Hydrology

The prospecting area is located within the Usuthu- to-Mhlatuze Water Management Area under W31A and W41F quaternary catchment with two wetlands noted within 500m of the site. The prospecting area has been carefully selected to exclude any wetland buffers.

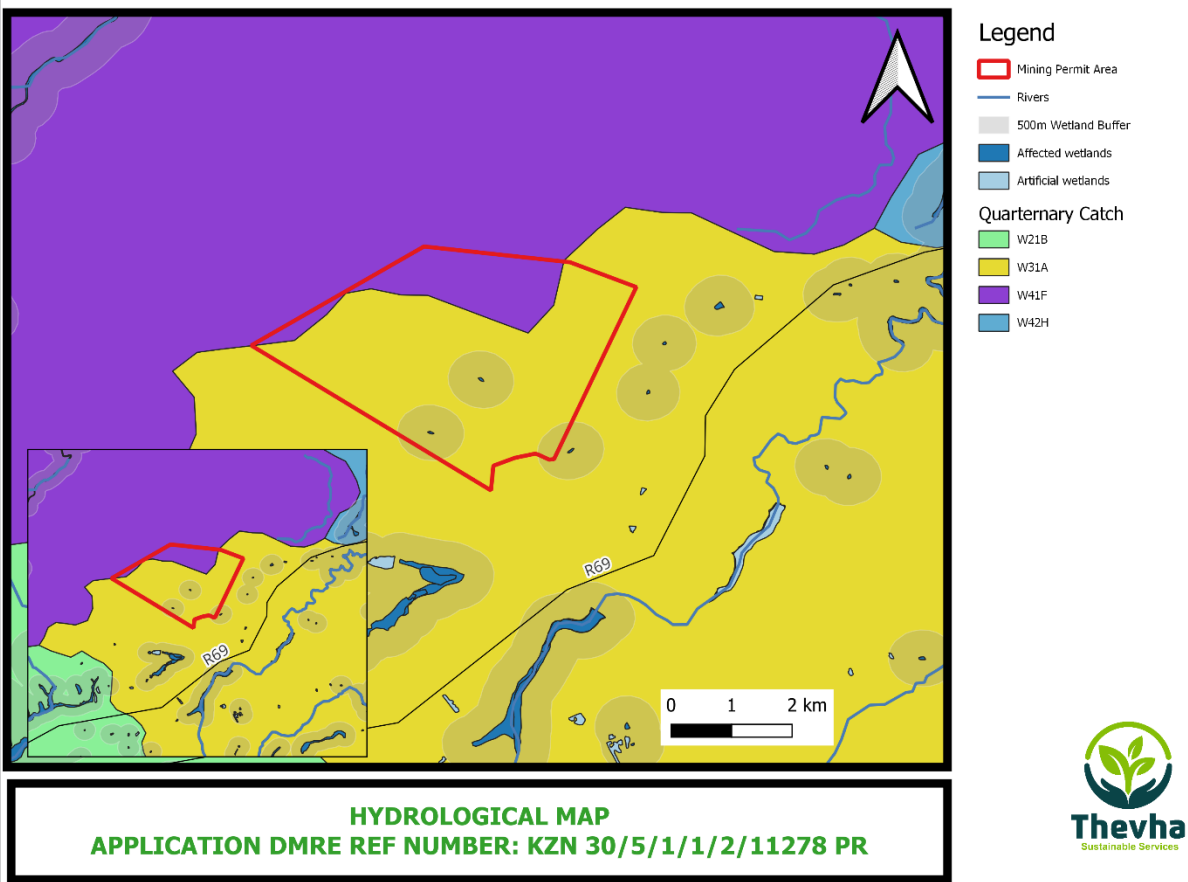


Figure 13: Hydrological map

8.1.12 Heritage Resources

No graveyards or heritage resources were noted within the prospecting area.

8.1.13 Vegetation

The study area is situated within Northern KwaZulu-Natal Moist Grasslands, Paupiersberg Moist Grassland and Northern Zululand Mistbelt Grassland. The proposed drill holes are specifically within the Northern Zululand Mistbelt Grassland. The Northern Zululand Mistbelt Grassland is, as the name suggests, located in KwaZulu-Natal specifically on the crests and slopes of the Ngome Mountain range and the Ngoje Mountain surrounding Louwsburg as well as some smaller mountainous areas of Langkrans, KwaCeze, KwaNtimbankulu and Nhlazatshe. Located on gentle to steep upper slopes of mountains formed by hard dolerite dykes dominated by relatively forb-rich, tall sour Themeda triandra grasslands.

This vegetation unit is seen as vulnerable with a 23% conservation target. Only about 3% is statutorily conserved in the Ithala Nature Reserve and in the Ntendeka Wilderness Area of the Ngome State Forest. Some 22% has been transformed for plantations or cultivated land. Threats to the remaining grasslands are heavy selective grazing by livestock and extensive annual burning. Spread of alien Acacia mearnsii and Eucalyptus species is a serious concern.

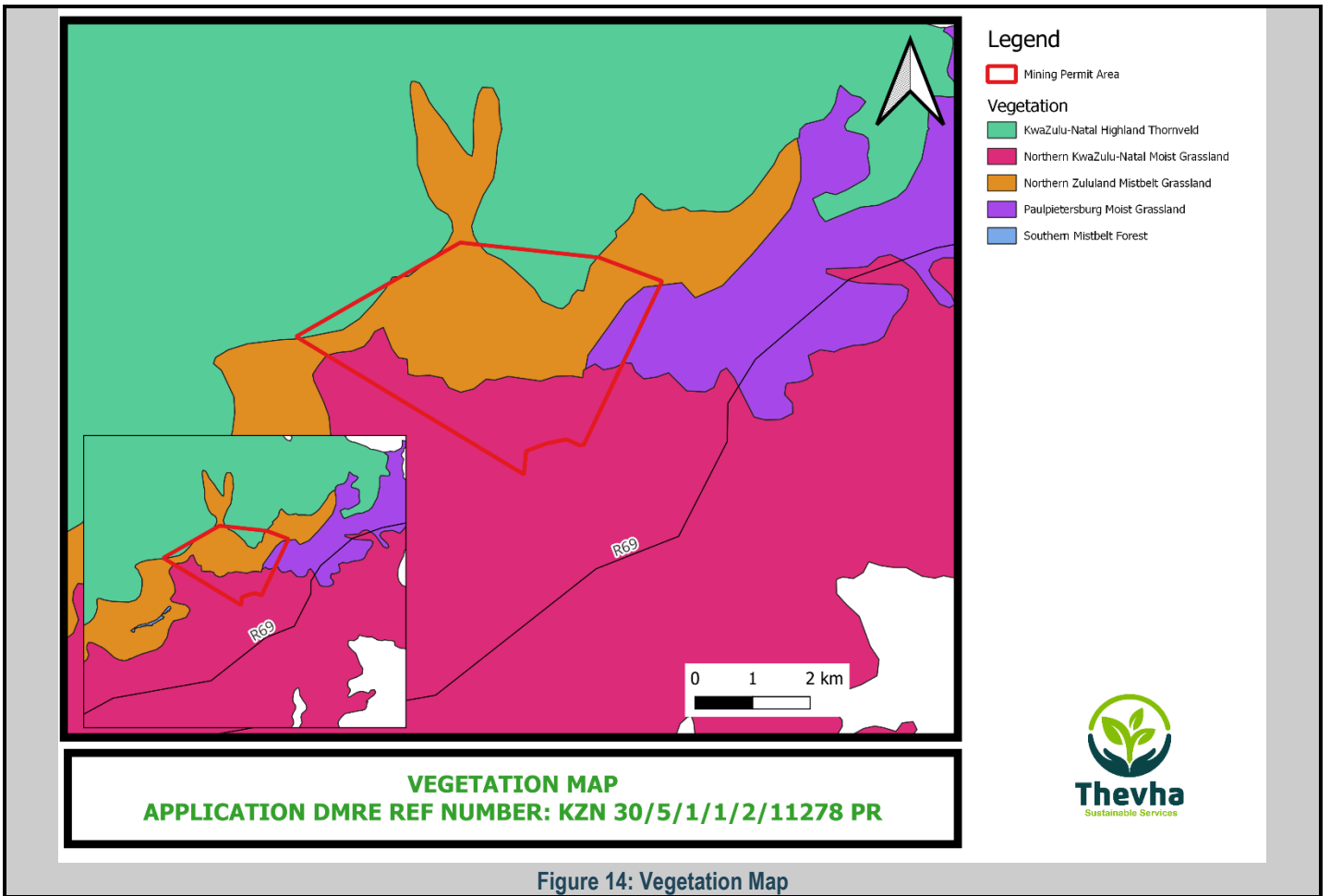


Figure 14: Vegetation Map

9. METHODOLOGY OF IMPACT ASSESSMENT

The following methodology has used to conduct the impact assessment for the proposed prospecting application.

ASPECT	SCORE	DEFINITION
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site)
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years)
	3	Medium term (6-15 years)
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after
Magnitude/	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected)
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected)
Intensity	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way)
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease) or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease)
Reversibility	1	Impact is reversible without any time and cost
	2	Impact is reversible without incurring significant time and cost
	3	Impact is reversible only by incurring significant time and cost
	4	Impact is reversible only by incurring prohibitively high time and cost
	5	Irreversible impact
Probability	1	Improbable (the possibility of the impact materialising is very low as a result of
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

SIGNIFICANCE AND RISK CATEGORY	DEFINITION
< -10	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
>-10 <-20	Medium negative (i.e. where the impact could influence the decision to develop in the area).
>-20	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).

10. IMPACTS AND RISKS IDENTIFIED

(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).

CONSTRUCTION / OPERATION PHASE		
Impact	Social: Safety and security risks to landowners and land occupiers	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	2	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	11 (moderate)	8 (low)
Mitigation Measures:	<ul style="list-style-type: none"> Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowners. This formal agreement should additionally stipulate landowner's special conditions which would form legally binding agreement. All homestead gates must be closed immediately upon entry/exit. Vehicles used must be in a roadworthy condition. Speed limits must be adhered to and all local, provincial and national regulations with regards to road safety and transport. 	
Impact	Disturbance of the natural characteristic of wetlands and rivers	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	2	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	11 (moderate)	8 (low)
Mitigation Measures:	<ul style="list-style-type: none"> It is recommended that all drill sites be located outside (or beyond) the 500m buffer zone for wetlands as much as possible; Drill sites must be decommissioned and rehabilitated on completion of drilling each hole, and not left to be rehabilitated on completion of the drilling programme; and Existing access routes should be prioritised for the programme, with all newly required features adhering to the buffer zone 	
Impact	Clearance of vegetation	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	1	1
Duration of Impact	2	2
Magnitude of Impact	3	2

Reversibility of Impact	3	3
Probability	5	4
Environmental Risk Pre-Mitigation	13 (moderate)	11 (moderate)
Mitigation Measures		
<ul style="list-style-type: none"> Existing roads must be used as far as possible. In the event that the proposed activity requires new access routes, these routes should avoid all sensitive areas and their ecological buffers. Minimise clearing to areas that are required for invasive works. Where possible, cut vegetation instead of clearing to minimise soil disturbance. Where possible, locate drill sites as close to existing access roads to minimise the extent of vegetation disturbance caused by temporary access roads. Rehabilitate all disturbed areas following invasive prospecting activities to the conditions that existed prior to prospecting. 		
Impact	Soil Compaction	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	2
Probability	4	2
Environmental Risk Pre-Mitigation	13 (moderate)	9 (low)
Mitigation Measures		
<ul style="list-style-type: none"> All areas that are compacted as a result of prospecting activities must be assessed by the ECO and where necessary, scarifying must take place to loosen the soil. Where topsoil is to be removed, the topsoil and subsoil must be stockpiled separately, with stockpiles of topsoil being no greater than 1.5 meters in height and the replacement of topsoil and subsoil in original order. All drill holes and survey pits must be filled in and rehabilitated. 		
Impact	Noise	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	1	1
Probability	3	2
Environmental Risk Pre-Mitigation	11 (moderate)	7 (low)
Mitigation Measures		
<ul style="list-style-type: none"> All construction vehicles and machinery must be maintained in good working order. When working or travelling past noise sensitive receptors, no unnecessary hooting or noise should occur. 		
Impact	Dust	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	3
Duration of Impact	2	1
Magnitude of Impact	3	2

Reversibility of Impact	2	2
Probability	3	3
Environmental Risk Pre-Mitigation	12 (moderate)	10 (low)
Mitigation Measures		
<ul style="list-style-type: none"> All vehicles utilising gravel roads must adhere to speed limits. By minimising the removal of vegetation and topsoil in affected areas, this will minimise the potential for dusty conditions. Prospecting activities (including drill sites) must be located 100 m away from the residential area. 		
Impact	Increased runoff & sedimentation	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	2
Duration of Impact	3	2
Magnitude of Impact	4	2
Reversibility of Impact	4	2
Probability	4	4
Environmental Risk Pre-Mitigation	17 (moderate)	11 (moderate)
Mitigation Measures		
<ul style="list-style-type: none"> Due to the sensitivity of the soil layer, the steep topography and the associated high risk of erosion, the access road should be constructed during the dry season and ideally all prospecting should occur only in this season in order to prevent all run-off and erosion. All necessary road mitigation measures must be put in place to slow (or stop) run-off from the proposed access road. This is a vital mitigation measure to prevent erosion. Appropriate speed humps and mitre drains must be constructed along the road for every three metres of elevation in order to slow the flow of water run-off from the road surface. All methods to slow the flow of water off the road surface must be implemented and the feasibility of building an attenuation system to hold surface water and release it slowly into the surrounding environment must be investigated. 		
Impact	Spillage of oils, fuels and chemicals	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	3
Reversibility of Impact	4	3
Probability	4	3
Environmental Risk Pre-Mitigation	14 (moderate)	12 (moderate)
Mitigation Measures		
<ul style="list-style-type: none"> Drip trays must be placed under vehicles. Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of. During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks. Spill clean-up equipment must be available on site at all times. In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up. 		
Impact	Heritage Resources	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1

Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	3
Reversibility of Impact	4	3
Probability	4	3
Environmental Risk Pre-Mitigation	14 (moderate)	12 (moderate)
Mitigation Measures		
<ul style="list-style-type: none"> In the event that any human remains are discovered. It should also be pointed out that the NHR-Act requires that operations exposing archaeological and historical residues, including modern graves, should cease immediately pending an evaluation by the heritage authorities. 		
Impact	Introduction of alien invasive species	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	4	2
Reversibility of Impact	4	2
Probability	3	2
Environmental Risk Pre-Mitigation	14 (moderate)	8 (low)
Mitigation Measures		
<ul style="list-style-type: none"> Undertake activities in previously disturbed areas. Locate activities on the boundaries of existing disturbance. Use existing access roads as much as possible. Rehabilitate disturbed areas as soon as possible. Manage alien plants within close proximity to prospecting activities. 		
DECOMMISSIONING PHASE		
Impact	Spillage of oils, fuels and chemicals	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	3	3
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	4	3
Probability	4	2
Environmental Risk Pre-Mitigation	15 (moderate)	11 (moderate)
Mitigation Measures		
<ul style="list-style-type: none"> Drip trays must be placed under vehicles. Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of. During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks. Spill clean-up equipment must be available on site at all times. In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up. 		
Impact	Noise	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1

Extent of Impact	2	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	1
Probability	3	2
Environmental Risk Pre-Mitigation	12 (moderate)	7 (low)
Mitigation Measures		
	<ul style="list-style-type: none"> All construction vehicles and machinery must be maintained in good working order. When working or travelling past noise sensitive receptors, no unnecessary hooting or noise should occur. 	
Impact	Dust	
Environmental Risk Scoring	Pre-Mitigation	Post-Mitigation
Nature of Impact	-1	-1
Extent of Impact	1	1
Duration of Impact	1	2
Magnitude of Impact	3	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	10 (low)	8 (low)
Mitigation Measures		
	<ul style="list-style-type: none"> All vehicles utilising gravel roads must adhere to speed limits. By minimising the removal of vegetation and topsoil in affected areas, this will minimise the potential for dusty conditions. 	

(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

No changes of the original prospecting area were made during the commenting period especially with regards to the drill hole locations relative to the watercourses.

(viii) The possible mitigation measures that could be applied and the level of risk.

The following potential mitigation measures and residual risks have been provided for each environmental aspect assessed. It should be noted that this report will be made available to I&APs for review and comment, and their comments and concerns will be addressed in the final report to be submitted to the DMR for adjudication.

Furthermore, it should be noted that the results of the public consultation will be used to update the proposed potential mitigation measures prior to the submission of the finalised BAR and EMPr to the DMR for adjudication.

Safety and security risks to landowners and lawful occupiers:

- Ensure construction is consistent with occupational health and safety requirements.
- Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowner. This formal agreement should additionally stipulate landowner's special conditions which would form a legally binding agreement.
- All homestead gates must be closed immediately upon entry/exit.
- All construction and vehicles using public roads must be in a roadworthy condition and their loads secured. Speed limits must be adhered to and all local, provincial and national regulations with regards to road safety and transport.

Clearance of vegetation:

- Minimise clearing to areas that are required for invasive works. Where possible, cut vegetation instead of clearing to minimise soil disturbance.
- Where possible, locate drill sites and trenches as close to existing access roads to minimise the extent of vegetation disturbance caused by temporary access roads
- Rehabilitate all disturbed areas following invasive prospecting activities to the conditions that existed prior to prospecting.

Soil compaction:

- All areas that are compacted as a result of prospecting activities must be assessed by the ECO and where necessary, scarifying must take place to loosen the soil.

Soil contamination/pollution:

- Drip trays must be placed under vehicles.
- Drilling fluids (mud) must be contained in the steel sumps and any spills or leaks must be cleaned up.
- Machinery to be used for the operation will be of good working conditions.
- Any hydrocarbon spill from the site establishment will be remediated as soon as possible.

Heritage Resources

- In the event that any human remains are discovered. It should also be pointed out that the NHR-Act requires that operations exposing archaeological and historical residues, including modern graves, should cease immediately pending an evaluation by the heritage authorities.

Increased runoff and sedimentation:

- Due to the sensitivity of the soil layer, the steep topography and the associated high risk of erosion, the access road should be constructed during the dry season and ideally all prospecting should occur only in this season in order to prevent all run-off and erosion.
- All necessary road mitigation measures must be put in place to slow (or stop) run-off from the proposed access road. This is a vital mitigation measure to prevent erosion.
- Appropriate speed humps and mitre drains must be constructed along the road for every three metres of elevation in order to slow the flow of water run-off from the road surface. All methods to slow the flow of water off the road surface must be implemented and the feasibility of building an attenuation system to hold surface water and release it slowly into the surrounding environment must be investigated.

- Clearing of vegetation or topsoil must be minimised as far as possible.
- A suitably qualified specialist must monitor that no drilling and trenching are undertaken on or within 100m of a watercourse and within the 1:100 years of a floodline.
- All disturbed areas must be suitably rehabilitated on completion of the works to ensure that erosion does not occur.

Spillage of oils, fuels and chemicals:

- Drip trays must be placed under vehicles.
- Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of.
- During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks.
- Spill clean-up equipment must be available on site at all times.
- In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up.

Dust

- All vehicles utilising public gravel roads must adhere to the speed limits.
- By minimising the removal of vegetation and topsoil in affected area, this will minimise the potential for dusty conditions.
- Prospecting activities (including drill and trench sites) must be located away from dwellings as far as possible.

Noise:

- All construction vehicles and machinery must be maintained in good working order.
- When working or traveling past noise sensitive receptors, no unnecessary hooting or noise should occur.

Introduction of alien species:

- Undertake activities in previously disturbed areas.
- Locate activities on the boundaries of existing disturbance.
- Use existing access roads as much as possible.
- Rehabilitate disturbed areas as soon as possible.
- Manage alien plants within close proximity to prospecting activities.

Generation and disposal of waste

- Any excess or waste material or chemicals, including drilling muds etc. must be removed from the site and must preferably be recycled (e.g. oil and other hydrocarbon waste products)
- Any waste materials or chemicals that cannot be recycled must be disposed of at a suitably licensed waste facility
- All permanent facilities must be removed from site upon closure. This will include the associated equipment, material and waste on site
- Under no circumstances is any form of waste to be disposed of on site

(ix) Motivation where no alternatives sites were considered.

The application area has been selected as the preferred site based on the historical data and available, which indicates the potential for economically viable minerals to occur. In addition, the presence of operational mines within the Dundee town motivates the possibility of the desired mineral to occur.

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

The location considered for the proposed project include the prospecting sites and associated campsite location and access routes. The location was selected based on a number of criteria, which include the environmental considerations (how sensitive is the area in terms of soils, wetlands, groundwater etc.) and the dependency of the project to the required infrastructure.

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 are 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.)

The impact assessment process may be summarised as follows:

- Identification of proposed prospecting activities including their nature and duration.
- Screening of activities likely to result in impacts or risks.
- Utilisation of the above-mentioned methodology to assess and score preliminary impacts and risks identified.
- Inclusion of I&AP comment regarding impact identification and assessment.
- Finalisation of impact identification and scoring.

11. SUMMARY OF SPECIALIST REPORTS

No specialist assessments were required due to the nature of the environment and the selection of the reduced area to avoid sensitive areas.

12. ENVIRONMENTAL IMPACT STATEMENT.

12.1 Summary of the key findings of the environmental impact assessment

During the proposed prospecting operation impacts may only occur on soils, natural vegetation, surface water, groundwater, sensitive landscapes, air quality, noise, visual aspects, and sites of archaeological and cultural importance should the prospecting method statement not be adhered to.

Alternatives considered for the location campsite and drilling sites has shown that the selected locations would be the most favourable. Makhonya will undertake measures to ensure that the identified impacts are minimised. Assessment of the impacts with the proposed mitigation measures has shown the significance of the impacts on all affected environmental aspects to be reduced from to low and negligible significance.

Cadastral

The application area is noted to be on Remaining Extent of BYMEKAAR 783 HT, Remaining Extent of VANMEKAAR 810 HT & Portion 1 – 9, 12, 13, 15, 17, 20, 22, 23 & 24 of VREDE 154 HU within the Magisterial District of Vryheid, KwaZulu-Natal Province. However, following extensive analysis, this area has been reduced to only Portion 8 of Farm VREDE 154 HU which is owned by Anglo Operations (Pty) Ltd.

Therefore prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowners. This formal agreement should additionally stipulate landowner's special conditions which would form legally binding agreement. All homestead gates must be closed immediately upon entry/exit. Vehicles used must be in a roadworthy condition. Speed limits must be adhered to and all local, provincial, and national regulations with regards to road safety and transport

Land Use

The study area consists of a rural residential area around the prospecting area with old mine shafts as well as large forestry plantations.

Land use will not change. Measures such as safety along the roads and dust suppression will be undertaken to ensure that the impacts on the landowners and land occupiers are minimised.

Vegetation

The study area is situated within Northern KwaZulu-Natal Moist Grasslands, Paupietersberg Moist Grassland and Northern Zululand Mistbelt Grassland. The proposed drill holes are specifically within the Northern Zululand Mistbelt Grassland. The Northern Zululand Misbelt Grassland is, as the name suggests, located in KwaZulu-Natal specifically on the crests and slopes of the Ngome Mountain range and the Ngoje Mountain surrounding Louwsburg as well as some smaller mountainous areas of Langkrans, KwaCeze, KwaNtimbankulu and Nhlazatshe. Located on gentle to steep upper slopes of mountains formed by hard dolerite dykes dominated by relatively forb-rich, tall sour Themeda triandra grasslands.

This vegetation unit is seen as vulnerable with a 23% conservation target. Only about 3% is statutorily conserved in the Ithala Nature Reserve and in the Ntendeka Wilderness Area of the Ngome State Forest. Some 22% has been transformed for plantations or cultivated land. Threats

to the remaining grasslands are heavy selective grazing by livestock and extensive annual burning. Spread of alien *Acacia mearnsii* and *Eucalypts* species is a serious concern.

Therefore the following mitigation measures are proposed for the management of vegetation;

- Existing roads must be used as far as possible. In the event that the proposed activity requires new access routes, these routes should avoid all sensitive areas and their ecological buffers.
- Minimise clearing to areas that are required for invasive works. Where possible, cut vegetation instead of clearing to minimise soil disturbance.
- Where possible, locate drill sites as close to existing access roads to minimise the extent of vegetation disturbance caused by temporary access roads.
- Rehabilitate all disturbed areas following invasive prospecting activities to the conditions that existed prior to prospecting.

Wetlands and Rivers

The prospecting area is located within the Usuthu- to-Mhlatuze Water Management Area under W31A and W41F quaternary catchment with two wetlands noted within 500m of the site. The prospecting area has been carefully selected to exclude any wetland buffers.

Socio-economic

All workers must be recruited locally and temporary housed in the campsite to be established on site. The employees will be given strict instruction not to undertake activities that will affect the environment and that may have an impact on the landowner. Waste generated from the site will be collected in proper receptacle and disposed of in registered waste disposal sites.

12.2 Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as **Appendix B**

The final map is depicted by **Figure 15** below depicting the randomly selected drill hole locations as well as all the identified sensitive features.

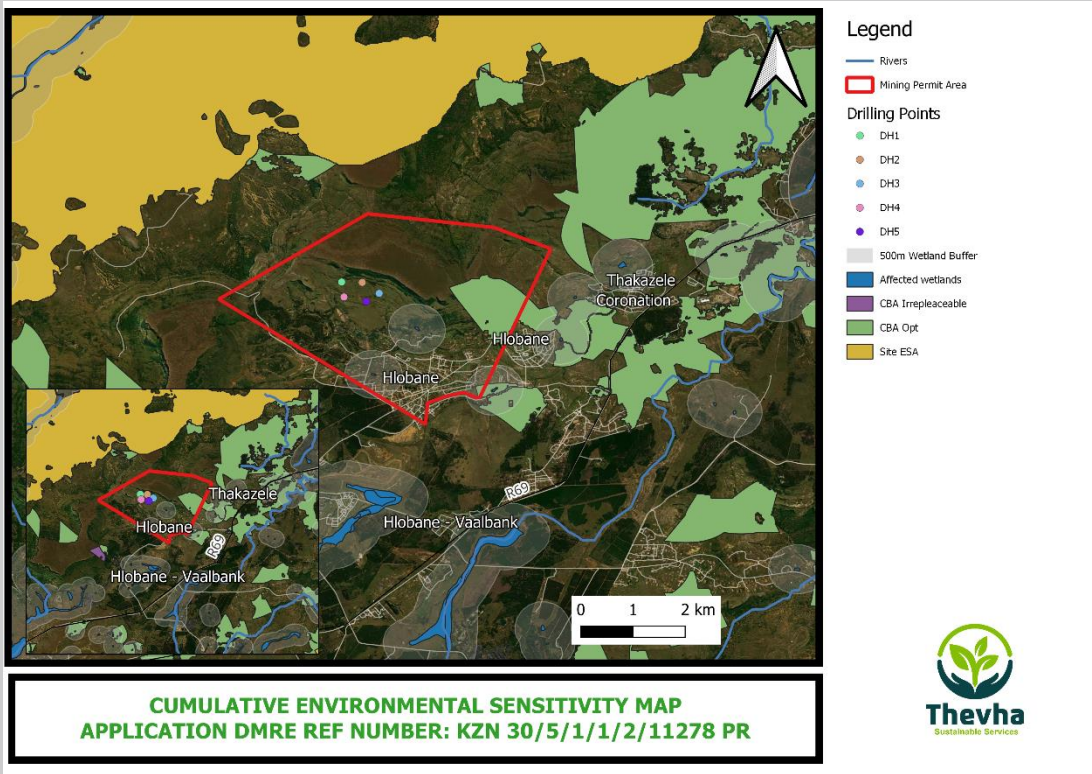


Figure 15: Cumulative sensitivity map

12.3 Summary of the positive and negative implications and risks of the proposed activity and identified alternatives;

A summary of the positive and negative potential impacts associated with the project has been outlined in Section I(i) above.

13. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPr;

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

The EMPr addresses the environmental impacts associated with the project during Construction, Operation, Decommissioning and Rehabilitation of the proposed project. The objectives of the EMPr will be to provide detailed information that will advise the planning design of mining activities in order to avoid and/or reduce impacts that may be detrimental to the environment. The following environmental management objectives are recommended for the proposed mining development and associated infrastructure:

- Alien plant monitoring should take place after construction, throughout the lifecycle of the borrow pit, as well as rehabilitation phase of the borrow pit.
- Development planning must restrict the area of impact to a minimum and designated area only. Monitor and prevent contamination and undertake appropriate remedial actions.
- Limit the visual and noise impact on receptors.
- Avoid impact on possible heritage finds.
- Promote health and safety of workers.
- Limit dust and other emissions to within allowable limits.
- Manage soils to prevent erosion.

14. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORIZATION

Any aspects which must be made conditions of the Environmental Authorization

In authorising the proposed Prospecting project, the following conditions must form part of the environmental authorisation:

- Makhonya may not alter the location of any of the project activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- Makhonya will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- Makhonya must, where necessary, undertake specialists' studies, management procedures and method statement should the need arise.
- The EMPr must be implemented fully at all stages of the proposed project.
- Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
- The Fossil Chance Find Protocol must be complied with during the construction/operational phase of the prospecting activity.

15. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE.

(Which relate to the assessment and mitigation measures proposed)

- The project scope and descriptions are based on project information provided by the client;
- The information presented in this report is based on the information available at the time of compilation of the report
- It is assumed that all data and information supplied by the departments, Applicant or any of their staff or consultants is complete, valid and true.
- The description of the baseline environment has been obtained from desktop studies and site visit. No specialist assessments were conducted for the preparation of this assessment report.

The EIA Regulations, 2014 outline specific requirements that a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures must be provided in the EIR. The assessments undertaken are based on conservative methodologies and these methods attempts to determine potential negative impacts that could occur on the affected environmental aspects.

These impacts may however be of smaller magnitude than predicted, while benefits could be of a larger extent than predicted. This section outlines various limitations to the specialist studies that have been undertaken and indicates, where appropriate, the adequacy of predictive methods used for the assessment. This has been done to provide the authorities and interested and affected parties with an understanding of how much confidence can be placed in this impact assessment.

The EIA has investigated the potential impact on key environmental media relating to the specific environmental setting for the site. A number of desktop assessment were undertaken and result thereof and are presented in this report. The information provided in this BAR and EMPr is therefore considered sufficient for decision-making purposes.

16. REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

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

According to the impact assessment undertaken for the proposed project, the key impacts of the project are on soils, wetlands, natural vegetation, and landowners/occupiers. The project will also have positive impacts due to the employment to be created although for a short term. The public will also be requested for their comments. All comments to be received during Public Participation Process will be included in this BAR and EMPr.

These comments will be addressed as far as possible to the satisfaction of the interested and affected parties. The management of the impacts identified in the impact assessment for all phases of the proposed project will be undertaken through a range of programmes and plans contained in the EMPr. Inconsideration of the programmes and plans contained within the EMPr, layouts and method statements compiled for the project, which is assumed will be effectively implemented, there will be significant reduction in the significance of potential impacts.

Based on the above, it is therefore the opinion of the EAP that the activity should be authorised.

17. CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION

In authorising the proposed Prospecting project, the following conditions must form part of the environmental authorisation:

- Drill sites are to remain outside of sensitive areas as delineated in the sensitivity map.
- A detailed drill site layout plan should be submitted to the DMR and interested and affected parties once finalised
- An Environmental Control Officer should be appointed for the proposed prospecting project
- Makhonya may not alter the location of any of the project activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- Makhonya will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- Makhonya must, where necessary, undertake specialists' studies, management procedures and method statement should the need arise.
- The EMPr must be implemented fully at all stages of the proposed project.
- Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
- The Fossil Chance Find Protocol must be complied with during the construction/operational phase of the prospecting activity.

18. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.

The Applicant requires the prospecting right to be valid for a period of five years.

19. UNDERTAKING

The undertaking is provided at the end of the EMPr and is applicable to both the BAR and EMPr.

20. FINANCIAL PROVISION

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

R71 673,65. The breakdown is detailed in Section 20.1.

20.1 Explain how the aforesaid amount was derived.

- The amount was derived for 5 boreholes with an average area of 0.180 ha based on diamond/core drilling.
- Depth per borehole: ~300m (typical for diamond drilling)
- The proposed prospecting activity will utilize existing access roads
- The closure actions and associated period will commence as soon as a borehole is abandoned
- It is assumed that the management and mitigation measures suggested in the BAR relating to ongoing environmental management will be complied with. This includes post drilling clean-up and rehabilitation; and
- It is assumed that the drilling, will be carried out in accordance with industry best practice and that permeable zones are adequately isolated if intercepted (including the usable ground water aquifers)
- The calculation has also been based on the avoidance of the watercourses i.e. wetlands and rivers using 32 m buffers for rivers and 500m for wetlands. This is to ensure that the sensitive environments are protected.

Arrangements for financial provisions for the decommissioning, closure and rehabilitation must be made. It should be noted that the Financial Provisioning Regulations under the NEMA will only come into effect in February 2021, during which the project is anticipated to have commenced. The applicant must therefore update the financial provisions in line with the regulations when they come into effect as the current financial provision are based on the quantum rates.

The Regulations Pertaining to the Financial Provision for Prospecting, Mining or Production Operations promulgated under section 44(aE), (aF), (aG), (aH) read with sections 24(5)(b)(ix), 24(5)(d), 24N, 24P and 24R of the National Environmental Management Act, 1998 (Act No.107 of 1998) (20 November 2015) have been considered and this is anticipated to result in an increase in the rehabilitation costs estimated using the regulated quantum.

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

Makhonya has committed to finance the prospecting costs and the rehabilitation of the site once prospecting has been concluded.

21. Specific Information required by the competent Authority

No other information was requested or required from 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.

The consultation process allowed directly affected parties to raise their concerns. Further to this, it must be noted that I&AP's, including directly affected parties such as landowners, had the opportunity to review and comment on this report. The result of the public consultation is included in the final report submitted to the department for adjudication.

(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 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6. and 2.12. herein).

N/A

u) Other matters required in terms of sections 24(4)(a) and (b) of the Act.

(The EAP managing the application must provide the competent authority with detailed, written proof of an investigation 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 D).

N/A

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. INTRODUCTION

1.1 Details of the EAP

The requirements for the provision of the details and expertise of the EAP are included in Part A, Section a) and as Appendix A.

1.2 Description of the Aspects of the Activity

The requirement to describe the aspects of the activity that are covered by the environmental management programme is included in PART A, Section d).

2. ENVIRONMENTAL MANAGEMENT PRINCIPLES

It is extremely important for effective environmental management that the Applicant be aware of the general principles upon which sound environmental management is based and that these principles are considered in all aspects of the prospecting operation. NEMA has established a general framework for environmental law, in part by prescribing national environmental management principles that must be applied when making decisions that may have a significant impact on the environment. These principles are briefly summarised in the sections that follow.

2.1 Holistic principle

The Holistic principle, as defined by NEMA (Section 2(4)(b) requires that environmental management must be integrated, acknowledging that all elements of the environment are linked and inter-related and it must take into account the effect of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option (defined below).

Holistic evaluation does not mean that a project must be looked at as a whole. It rather means that it must be accepted that there is a whole into which a project introduced. If the indications are that the project could have major adverse effects, the project must be reconsidered and where appropriate re-planned or relocated to avoid an adverse impact or to ensure a beneficial impact.

2.2 Best practicable environmental option

When it is necessary to undertake any action with environmental impacts, the different options that could be considered for the purpose must be identified and defined. The Best Practicable Environmental Option (BPEO) is defined in NEMA as "the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term." Other guidelines typically used for environmental management in terms of other legislation include BPM which is the Best Practicable Means and BAT which is the Best Available Technology.

2.3 Sustainable development

The concept of sustainable development was introduced in the 1980's with the aim to ensure that the use of natural resources is such that our present needs are provided without compromising the ability of future generations to meet their own needs. The constitution of South Africa is built around the fact that everyone has the right to have the environment protected through reasonable legislative and other measures that secure ecologically sustainable development. The National Environmental Principles included in the NEMA require development to be socially, environmentally and economically sustainable.

2.4 Preventative principles

The preventative principle is fundamental to sustainable development and requires that the disturbance to ecosystems and the pollution, degradation of the environment and negative impacts on the environment be avoided, or, where they cannot be altogether avoided, are minimised and remedied.

2.5 The precautionary principles

The precautionary principle requires that where there is uncertainty, based on available information, that an impact will be harmful to the environment, it is assumed, as a matter of precaution, that said impact will be harmful to the environment until such time that it can be proven otherwise. The precautionary principle requires that decisions by the private sector, governments, institutions and individuals need to allow for and recognise conditions of uncertainty, particularly with respect to the possible environmental consequences of those decisions. In South Africa, the DWA (then DWAF, now DWS) adopted a BPEO guideline in 1991 for water quality management and in 1994 in the Minimum Requirements document for waste management.

In terms of DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, 1994, the precautionary principle is defined as, "Where a risk is unknown; the assumption of the worst-case situation and the making of provision for such a situation." Here the precautionary principle assumes that a waste or an identified contaminant of a waste is "both highly hazardous and toxic until proven otherwise."

In the context of the EIA process in South Africa, the precautionary principle also translates to a requirement to provide sound, scientifically based, information that is sufficient to provide the decision-making authority with reasonable grounds to understand the potential impacts on the environment, the extent thereof and how impacts could be mitigated. If such information is not adequate for this purpose, the relevant authority cannot be satisfied as is required and then the authority should require that further information be collected and provided.

2.6 Duty of care and cradle to grave principle

In terms of the NEMA Section 28, "Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment."

By way of example, the principle of "duty of care" in terms of waste management emphasises the responsibility to make sure that waste is correctly stored and correctly transported, as it passes through the chain of custody to final point of disposal. This means that waste must always be stored safely and securely. The company removing and disposing of waste also holds the responsibility to hold the relevant licenses, and that waste is transported alongside the necessary paperwork. "Cradle to Grave" refers to the responsibility a company takes for the entire life cycle of a product, service or program, from design to disposal or termination. In terms of the DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, 1994, "any person who generates, transports, treats or disposes of waste must ensure that there is no unauthorised transfer or escape of waste from his control. Such a person must retain documentation describing both the waste and any related transactions. In this way, he retains responsibility for the waste generated or handled."

This places responsibility for a waste on the Generator, by the "Cradle to Grave" principle, according to which a "manifest" accompanies each load of Hazardous Waste until it is responsibly and legally disposed. This manifest is transferred from one transporter to the next along with the load, should more than one transporter be involved. Once the waste is properly disposed of at a suitable, permitted facility, a copy of the manifest must be returned to the point of origin." Duty of Care offers one strategy to implement sustainable development.

2.7 Polluter pays principle

The "polluter pays principle" holds that the person or organisation causing pollution is liable for any costs involved in cleaning it up or rehabilitating its effects. It is noted that the polluter will not always necessarily be the generator, as it is possible for responsibility for the safe handling, treatment or disposal of waste to pass from one competent contracting party to another. The polluter may therefore not be the generator but could be a disposal site operator or a transporter.

Through the 'duty of care' principle, however, the generator will always be one of the parties held accountable for the pollution caused by the waste. Accordingly, the generator must be able to prove that the transferral of management of the waste was a responsible action. The polluter pays principle acceding to NEMA dictates that "the cost of remedying pollution, environmental degradation and consequent adverse effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment."

3. FAILURE TO COMPLY WITH ENVIRONMENTAL CONSIDERATIONS

There are a number of penalties for non-compliance or offences. Below are a few extracts of national legislation with regards to non-compliance:

- NEMA Section 24F(2): It is an offence for any person to fail to comply with or to contravene the conditions applicable to any environmental authorization granted for that listed activity. 24F(4) A person convicted for an offence under subsection 2 is liable to a fine not exceeding 5 million rand or to imprisonment not exceeding 10 years or to both such a fine and imprisonment
- NEMA Section 34(6): Whenever any manager, agent or employee does or omits to do an act which it had been his or her task to do, or to refrain from doing on behalf of the employer and which would be an offence under any provision listed in Schedule 3 (relates to all environmental related acts) for the employer to do or omit to do, he or she shall be liable to be convicted and sentenced in respect thereof as if he or she were the employer
- NWA Section 151 (1): "No person may fail to comply with any condition attached to a permitted water use (Water Use License)"
- NWA Section 151 (2): "Any person who contravenes any provision of subsection 1 is guilty of an offence and liable, on the first conviction, to a fine or imprisonment for a period not exceeding 5 years or to both a fine and such imprisonment (10 years for second conviction)"
- In addition, if anyone is convicted of an offence under the act which has resulted in harm, loss or damage to any other person, the court may award damages to be paid by the accused or convicted
- NWA Section 154: Makes provision that it's not only the applicant that may be liable but also an employee or agent acting on their behalf
- In terms of the MPRDA, Section 98, any person is guilty of an offence if he or she fails to comply with the requirements of the issued mining permit
- MPRDA Section 99 (1a): any person convicted of an offence in terms of the MPRDA is liable to a fine not exceeding R100, 000 or to imprisonment to a period not exceeding 2 years or to both such fine and imprisonment.

It is recommended that a procedure for non-compliances (i.e. incentives or disincentives for conformance and non-conformance with the EMPr requirements) must be employed to ensure that the EMPr is adequately implemented. The system to be used must be determined before mining commences, included in the tender documents and contracts, and made clear to all project workers. The system may include that the independent ECO can be authorised to impose spot fines on the Contractor and/or his subcontractors for any of the transgressions detailed below:

- Littering on site
- Lighting of illegal fires on site
- Persistent or un-repaired oil leaks
- Any persons, vehicles or equipment related to the Contractor's operations found within the designated "No – go" areas
- Any vehicles being driven in excess of designated speed limits
- Removal and/or damage to fauna, flora or heritage objects on site
- Legal contraventions

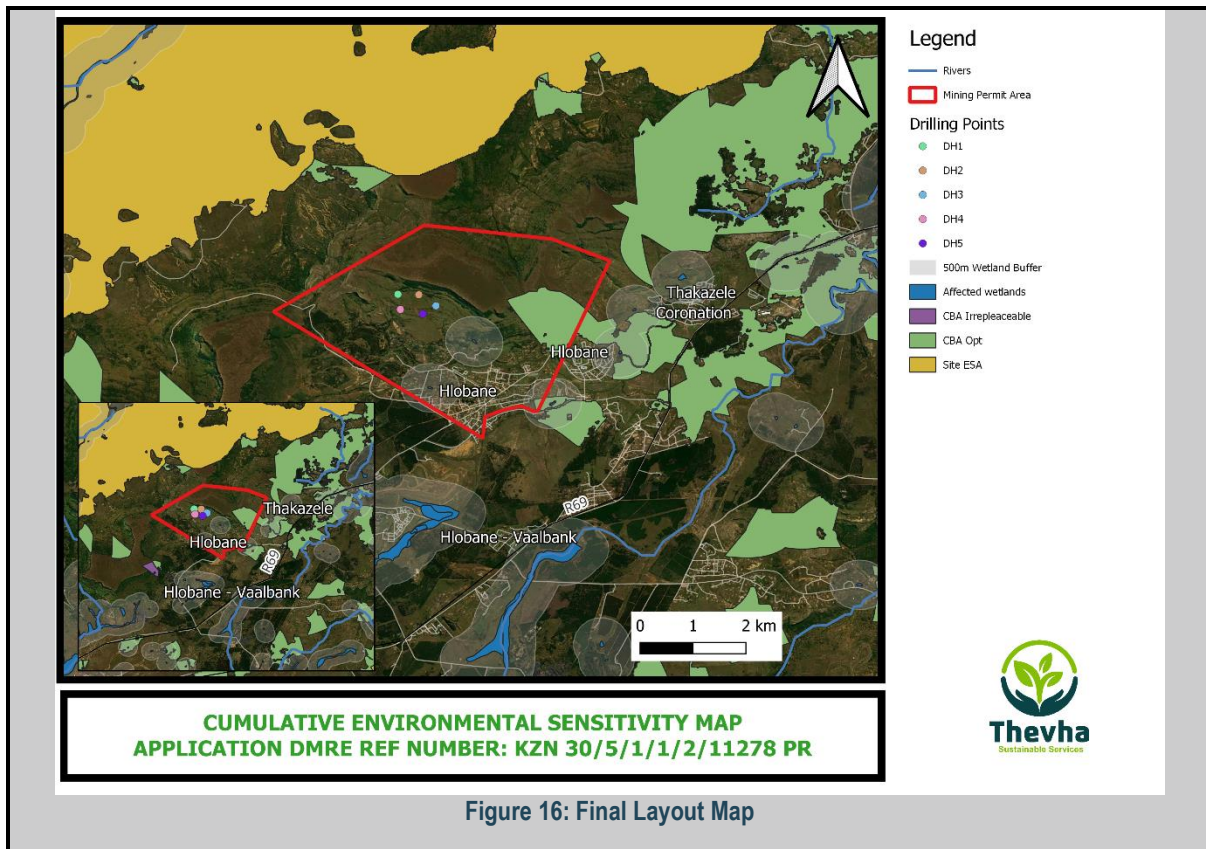
Such fines should be issued in addition to any remedial costs incurred as a result of non-compliance with the Environmental Specifications and or legal obligations.

(a) 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)

The maps below have been presented utilizing existing GIS information and databases from the Department of Water and Sanitation, and SANBI BGIS. The Department of Water and Sanitation has made provision of the rivers and NFEPA wetland databases. This data has been superimposed to the prospecting area to identify the wetlands and rivers present on site. A 32 m buffer has been created for the rivers and a 500m regulated buffer has been created for the wetlands.

Based on this information, the drill holes have been strategically placed out of the buffer zones with the aim of reducing the impacts of the drilling activity within the watercourses.



4. Description of Impact management objectives including management statements

The following are the closure objectives, general principles and objectives guiding closure of the Prospecting areas closure planning:

- Rehabilitation of areas disturbed as a consequence of prospecting to a land capability that will support and sustain a predetermined post-closure land use;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned final land use;
- Removal of existing contaminated material from affected areas;
- Establishment of final landforms that are stable and safe in the long run;
- Establishment and implementation of measures that meet specific closure related performance objectives;
- Treatment of mine-affected water to ensure compliance with all relevant standards and supply
- Monitoring and maintenance of rehabilitated areas forming part of site closure to ensure the long-term effectiveness and sustainability of measures implemented.

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

The vision, and consequent objective and targets for rehabilitation, decommissioning and closure, aim to reflect the local environmental and socio-economic context of the project, and to represent both the corporate requirements and the stakeholder expectations.

The receiving environment within which the prospecting activities will be undertaken includes the following key land uses:

Concerns raised by the stakeholders consulted during the public participation process for the basic assessment have been taken into consideration and included in the final BAR and EMPr.

In practice the post closure land-use will depend on the pre-prospecting land-use applicable to the specific location of the invasive prospecting activities. Considering that the exact locations of the planned prospecting have been identified and assessed, it can be said that the closure plan will sufficiently address the objectives for the preferred alternative. This EMP does, however, aim to address the key closure objectives which are likely to remain consistent for the majority of the prospecting activities.

The EMPr includes a monitoring and a rehabilitation plan. The plan shall outline the closure objectives which are aimed at reinstating the landform, land use and vegetation units to the same as before prospecting operations take place unless a specific, reasonable alternate land use is requested by the landowner. As such, the intended end use for the disturbed prospecting areas and the closure objectives will be defined in consultation with the relevant landowner. Proof of such consultation will be submitted together with the Application for Closure Certificate.

The overall aim of the rehabilitation plan is to rehabilitate the environment to a condition as close as possible to that which existed prior to prospecting. This shall be achieved with a number of specific objectives.

- Making the area safe. i.e. decommission prospecting activities so as to ensure that the environment is safe for people and animals. This entails refilling excavations, sealing boreholes, etc.
- Recreating a free draining landform. This entails earthworks infilling, reshaping, levelling, etc. to recreate as close as possible the original topography and to ensure a free draining landscape.
- Re-vegetation. This involves either reseeding or allowing natural succession depending on the area, climate etc.
- Storm water management and erosion control. Management of storm water and prevention of erosion during rehabilitation. e.g. cut off drains, berms etc. and erosion control where required.
- Verification of rehabilitation success. Entails monitoring of rehabilitation.
- Successful closure. Obtain closure certificate

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

The volumes of water anticipated for dust suppression and the prospecting activities are not known at this stage. In addition, the Applicant is still investigating the source of the water. Should water need to be abstracted from the watercourse on site, a water use licence application must be submitted under Section 21 a: abstraction of water from a watercourse to the KZN Regional offices.

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

No water use licence has been applied for as part of this Prospecting Right application; in the event that an application is applicable it will be confirmed with the Department of Water and Sanitation (DWS) prior to commencement of the invasive prospecting activities that require water and should any of the National Water Act (NWA) Section 21 water uses become applicable, then the Applicant will need to apply for the relevant water uses from the DWS prior to undertaking such activities.

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	Potential impact	Aspects affected	Phase	Mitigation type
Site clearance	<ul style="list-style-type: none"> • Interference with existing land uses • Disturbance/damage/destruction of the Grave Sites • Sense of place • Fugitive dust emissions • Noise • Loss and fragmentation of the vegetation Community • Disturbance/damage/destruction of heritage sensitive areas • Increased runoff and sedimentation • Degradation and/or destruction of wetland habitats • Contamination of surface and ground water • Displacement of landowners and livestock 	<ul style="list-style-type: none"> • Topography • Soil • Air quality • Groundwater • Social • Ecology • Wetlands • Noise • Heritage 	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g., speed limit enforcement, vehicle maintenance)
Storage of construction vehicles	<ul style="list-style-type: none"> • Soil compaction • Contamination of surface and ground water • Spillage of oils, fuels and chemicals • Soil contamination/pollution 	Surface water Groundwater Soils	Construction Operation	Avoid through implementation of EMP mitigation measures Control through implementation of ESMS

Activity	Potential impact	Aspects affected	Phase	Mitigation type
Transportation to and from drill and trench sites	<ul style="list-style-type: none"> • Soil compaction • Loss and fragmentation of the vegetation • community • Fugitive dust emissions • Noise • Spillage of oils, fuels and chemicals 	Ecology Air quality Noise Pollution Soil	Construction Operation	Avoid through implementation of EMP mitigation measures (e.g., speed limit enforcement, vehicle maintenance)
Storage of hazardous substances	<ul style="list-style-type: none"> • Spillage of oils, fuels and chemicals 	Surface water Groundwater Soil Pollution	Construction Operation	Avoid through implementation of EMP mitigation measures
Waste management	<ul style="list-style-type: none"> • Generation and disposal of waste 	Pollution	Construction Operation	Avoid through implementation of EMP mitigation measures
Refuelling	<ul style="list-style-type: none"> • Spillage of oils, fuels and chemicals • Surface water and groundwater contamination • Soil contamination/pollution 	Pollution Groundwater Soil	Construction Operation	Control through implementation of EMP mitigation measures
Rehabilitation	<ul style="list-style-type: none"> • Encroachment and displacement of an indigenous and vulnerable vegetation community by alien invasive species, potential re-establishment of natural species that were removed, the nature of 	Topography Land use Soil Ecology Heritage	Rehabilitation	Control through implementation of EMP mitigation measures

Activity	Potential impact	Aspects affected	Phase	Mitigation type
	<p>the erosion will depend on the amount of successful vegetation establishment</p> <ul style="list-style-type: none"> • Soil instability • Increased runoff and sedimentation • Soil pollution/contamination • Disturbance/damage/destruction of heritage sensitive areas • Disturbance/damage/destruction of the Grave 			
<p>Fossil Chance Find Protocol</p>	<ul style="list-style-type: none"> • 		<p>Construction/operational</p>	<ul style="list-style-type: none"> ▪ The following procedure is only required if fossils are seen on the surface or below the surface when excavations/mining commence. ▪ When excavations begin the rocks and must be given a cursory inspection by the geologist on site, environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the mining activities will not be interrupted. ▪ Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures. ▪ Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment. ▪ If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible. ▪ Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a

Activity	Potential impact	Aspects affected	Phase	Mitigation type
				<ul style="list-style-type: none">▪ SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.▪ If no good fossil material is recovered then the site inspections by the palaeontologist will not be necessary. If no fossils are found and the excavations have finished then no further monitoring is required.

i) Financial Provision

1) Determination of the amount of Financial Provision.

Section 24 P of NEMA requires an applicant applying for an environmental authorisation related to mining to comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts before the Minister responsible for mineral resources issues the environmental authorisation. The above-mentioned financial provision may be in the form of an insurance, bank guarantee, trust fund or cash.

Regulations pertaining to the pertaining to the financial provision for prospecting, exploration, mining or production operations (GNR 1147) were promulgated on the 20th of November 2015.

Makhonya has undertaken the financial provision determination in line with the requirements of section 11 of the Regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GNR 1147). The financial provision determination for the proposed project is submitted to the Department of Mineral Resources for their consideration.

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

Considering the relatively limited impact of the proposed prospecting activities, the closure objectives are aimed at re-instating the landform, land use and vegetation units to the same as before prospecting operations take place unless a specific, reasonable alternate land use is requested by the landowner. As such, the intended end use for the disturbed prospecting areas and the closure objectives will be defined in consultation with the relevant landowner. Proof of such consultation will be submitted together with the Application for Closure Certificate. The overall aim of the rehabilitation plan is to rehabilitate the environment to a condition as close as possible to that which existed prior to prospecting. This shall be achieved with a number of specific objectives

1. Making the area safe. i.e., Decommission prospecting activities so as to ensure that the environment is safe for people and animals. This entails refilling excavations, sealing boreholes, etc.
2. Recreating a free draining landform. This entails earthworks infilling, reshaping, levelling, etc. to re-create as close as possible the original topography and to ensure a free draining landscape.
3. Re-vegetation. This involves either reseeding or allowing natural succession depending on the area, climate, etc.
4. Storm water management and erosion control. Management of storm water and prevention of erosion during rehabilitation. e.g., cut off drains, berms etc. and erosion control where required.
5. Verification of rehabilitation success. Entails monitoring of rehabilitation.
6. Successful closure. Obtain closure certificate.

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

The Public Participation Process (PPP) is a requirement of several pieces of the South African legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their opinions are taken into account and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study.

The PPP which forms part of the Prospecting Right application needs to be managed sensitively and according to best practises in order to ensure and promote:

- Compliance with national legislation.
- Establish and manage relationships with key stakeholder groups.

- Encourage involvement and participation in the environmental study and authorisation/ approval process.

As such, the purpose of the PPP and stakeholder engagement process is to:

- Introduce the proposed project.
- Explain the environmental authorisations required.
- Explain the environmental studies already completed and yet to be undertaken (where applicable).
- Determine and record issues, concerns, suggestions and objections to the project.
- Provide opportunity for input and gathering of local knowledge.
- Establish and formalise lines of communication between the I&APs and the project team.
- Identify all significant issues for the project.
- Identify possible mitigation measures or environmental management plans to minimise and/or prevent negative environmental impacts and maximise and/or promote positive environmental impacts associated with the project.

- (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.

The main aim in developing this rehabilitation plan is to mitigate the impacts caused by the prospecting activities and to restore land back to a satisfactory standard. It is best practice to develop the rehabilitation plan as early as possible so as to ensure the optimal management of rehabilitation issues that may arise. It is important that the project's closure plan is defined and understood before starting the process and is complementary to the rehabilitation goals. Rehabilitation and closure objectives need to be tailored to the project and be aligned with the EMP. The overall rehabilitation objectives for this project are as follows:

- Maintain and minimise impacts to the ecosystem within the study area.
- Re-establishment of the pre-developed land capability to allow for a suitable post-mining land use.
- Prevent soil, surface water and groundwater contamination.
- Comply with the relevant local and national regulatory requirements.
- Maintain and monitor the rehabilitated areas.

Successful rehabilitation must be sustainable, requires an understanding of the basic baseline environment and project management to ensure that the rehabilitation program is a success. It is noted that an application for environmental authorisation must be submitted for closure in accordance with

Listing Notice 1 Activity 22:

The decommissioning of any activity requiring –

- a closure certificate in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).
- A prospecting right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure.

LANDFORM DESIGN, EROSION CONTROL AND REVEGETATION

Landform, erosion control and re-vegetation is an important part of the rehabilitation process. Landform and land use are closely interrelated, and the landform should be returned as closely as possible to the original landform.

Community expectations, compatibility with local land use practices and regional infrastructure, or the need to replace natural ecosystems and faunal habitats all support returning the land as closely as possible to its original appearance and productive capacity. This requires the following:

- Shape, level and de-compact the final landscape after removing all the project infrastructure, dress with topsoil and, where necessary, vegetate with indigenous species. Commission specialists to assist in planning re-vegetation and the management of environmental impact, as required.
- Remove access roads with no beneficial re-use potential by deep ripping, shaping and levelling after the removal and disposal of any culverts, drains, ditches and/or other infrastructure. Natural drainage patterns are to be reinstated as closely as possible.
- Shape all channels and drains to smooth slopes and integrate into the natural drainage pattern.
- Construct contour banks and energy dissipating structures as necessary to protect disturbed areas from erosion prior to stabilisation.
- Promote re-vegetation through the encouragement of the natural process of secondary succession.

- Natural re-vegetation is dependent on de-compaction of subsoils and adequate replacement of the accumulated reserves of topsoil (for example, over the borehole sites), so as to encourage the establishment of pioneer vegetation.
- Remove alien and/or exotic vegetation.
- Undertake a seeding programme only where necessary, and as agreed with the re-vegetation specialist.

POST-CLOSURE MONITORING AND MAINTENANCE

Prior to decommissioning and rehabilitation activities, a monitoring programme shall be developed and submitted to the relevant authority for approval, as a part of the Final Rehabilitation Plan. The programme is to include proposed monitoring during and after the closure of the prospecting borehole sites and related activities. It is recommended that the post-closure monitoring include the following;

- Confirmation that any waste, wastewater or other pollutants that is generated as a result of decommissioning will be managed appropriately, as per the detailed requirements set out in the Final Rehabilitation Plan.
- Confirmation that all de-contaminated sites are free of residual pollution after decommissioning.
- Confirmation that acceptable cover has been achieved in areas where natural vegetation is being re-established. 'Acceptable cover' means re-establishment of pioneer grass communities over the disturbed areas at a density similar to surrounding undisturbed areas, non-eroding and free of invasive alien plants.
- Confirmation that the prospecting borehole sites are safe and are not resulting in a pollution hazard.

Annual environmental reports will be submitted to the Designated Authority and other relevant Departments for at least one-year post-decommissioning. The frequency and duration of this reporting period may be increased to include longer term monitoring, at intervals to be agreed with the Designated Authority.

The monitoring reports shall include a list of any remedial action necessary to ensure that infrastructure that has not been removed remains safe and pollution free and that rehabilitation of project sites are in a stable, weed and free condition.

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

The closure plan will assist the proposed mining operation to achieve the following objectives:

- Comply with relevant legislation and policy requirements with regards to mine rehabilitation.
- Avoid or mitigate impacts associated with the project which may be detrimental to the environment.
- Land rehabilitation to a predetermined and agreed upon state that allows sustainable land use and capability of the site, that is to return the site to the condition that existed prior to mining or an agreed upon state.
- Cost effective and efficient closure of mining operations.
- Management and monitoring of the area post-closure.

The rehabilitation plan will thus be aligned to the closure objectives and tailored to the project to achieve these objectives. It will include information about the site prior to the mining operation and provide information on the maintenance of resources required for the rehabilitation process, as well detail how rehabilitation will be undertaken. It will also provide information on the management and monitoring of disturbance to avoid or minimise detrimental impacts, as well as an estimate of the financial closure provision. It will also include information associated with post-closure environmental monitoring of the site to ensure that the rehabilitation plan is followed, and its objectives are achieved.

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

Refer to Section 20.1 of the BAR for a detailed breakdown.

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

Makhonya has committed to finance the prospecting costs and the rehabilitation of the site once prospecting has been concluded.

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

The result of environmental monitoring and compliance to the approved EMPR will be undertaken annually and submitted to the DMR in the form of an environmental performance assessment. Included in the report will be the following relevant information:

- The period when the performance assessment was conducted.
- The scope of the assessment.
- The procedures used for conducting the assessment.
- Interpreted information gained from monitoring the EMPR.
- Evaluation criteria used during the assessment.
- Results of the assessment are to be discussed and mention must be made of any gaps in the EMPR and how it can be rectified.
- Yearly updated layout plans.

Any emergency or unforeseen impacts will be reported immediately to the DMR and other relevant government departments.

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.

The Applicant and Contractor must ensure that all relevant employees are trained and capable of carrying out their duties in an environmentally responsible and compliant manner and are capable of complying with the relevant environmental requirements. To obtain buy-in from staff, individual employees need to be involved in:

- Identifying the relevant risks.
- Understanding the nature of risks
- Devising risk controls.
- Given incentive to implement the controls in terms of legal obligations.

Training and/or awareness should be raised and effectively communicated prior to the commencement of the prospecting activity. Training sessions should incorporate the management plans addressed in the EMPR as well as any new information and documentation.

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

Environmental awareness could be fostered by induction course for all personnel on site, before commencing site visits. Personnel should also be alerted to particular environmental concerns associated with their tasks for the area in which they are working. Courses must be given by suitably qualified personnel and in a language and medium understood by personnel. The environmental awareness training programme will include the following:

1. Occupational Health and Safety Training (OHS).
2. Environmental Awareness Training EMPR management actions.

Environmental awareness training will focus on the following specific aspects and be undertaken in "Tool box talk" topics prior to site access:

1. Waste collection and disposal.
2. EMPR management options and application.

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

The following measures are provided to control any causes of pollution or degradation during the prospecting activities.

- Contain potential pollutants and contaminants (where possible) at source.
- Handling of potential pollutants and contaminants (where possible) must be conducted in bunded areas and on impermeable substrates.
- Ensure the timeous clean-up of any spills.
- Implement a waste management system for all waste stream present on site.
- Investigate any I&AP claims of pollution or contamination as a result of mining activities.

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

No specific information requirements have been made by the Competent Authority at this stage.

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.



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Signature of the environmental assessment practitioner:

THEVHA SUSTAINABLE SERVICES (PTY) LTD
Name of company:

27th January 2023
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Date: