SCOPING REPORT FOR COAL MINING RIGHT APPLICATION, INTEGRATED ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL AUTHORISATION

Portion 1 of the farm Annysspruit 140 HT, Portion 4 of the farm Annysspruit 141 HT and remaining extent of the farm Mooihoek 168 HT situated under the Magisterial District of Mkhondo (Piet Retief), Mpumalanga Province with DMRE REF: MP 30/5/1/2/2/10384 MR

PREPARED FOR

Notre Coal
Plot 106, Road 4, Delmas Street, Gauteng, 2210.
Tell: +27 66 211 8714
Email: eddi@notrecom.co.za

PREPARED BY

Singo Consulting (Pty) Ltd
Singo Consulting (Pty) Ltd
5 Balalaika Street, Tasbet Park Ext 2,
Witbank 1035.
Tel: 013-692-0041
Cell: 072-081-6682/078-2727-839
Fax: 086-514-4103

COMPETENT AUTHORITY

mineral resources & energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

MPUMALANGA REGIONAL OFFICE

DMRE SAMRAD REF: MP 30/5/1/2/2/10384 MR

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DISCLAMER

The opinion expressed in this, and associated reports are based on the information provided by Notre Coal (Pty) Ltd to Singo Consulting (Pty) Ltd ("Singo Consulting") and is specific to the scope of work agreed with Notre Coal (Pty) Ltd. Since the client is the owner or lessor of the property, many of the advice and acts contained in this legally binding contract remain his or her duty.

Singo Consulting acts as an advisor to Notre Coal (Pty) Ltd to and exercises all reasonable skill and care in the provision of its professional services in a manner consistent with the level of care and expertise exercised by members of the environmental profession.

Except where expressly stated, Singo Consulting has not verified the validity, accuracy or comprehensiveness of any information supplied for its reports. Singo Consulting shall not be held liable for any errors or omissions in the information given or any consequential loss resulting from commercial decisions or acts arising from them.

Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by Singo Consulting during the visit, visual observations, and any subsequent discussions with regulatory authorities. The data and information used in this report were provided to Singo Consulting by the Notre Coal (Pty) Ltd and referred to other outside sources (includes historical site investigation information and third-party expert research).

These views do not generally refer to circumstances and features that may occur after the date of this study, which were not previously known to Singo Consulting (Pty) Ltd or had the opportunity to assess.

SCOPING REPORT

For listed activities associated with mining right and/or bulk sampling activities including trenching in cases of alluvial diamond prospecting.

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:	**NOTRE COAL (PTY) LTD (2022/560476/07)**
TEL NO.:	+27 66 211 8714
E-MAIL.:	eddi@notrecom.co.za
FAX NO.:	N/A
PHYSICAL ADDRESS.	Plot 106, Road 4, Delmas, Gauteng, 2210
FILE REFERENCE NUMBER SAMRAD:	MP 30/5/1/2/2/10384 MR

1. Important notice

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment". Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment (EIA) and an Environmental Management Programme report (EMPr) 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 considered 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 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.

OBJECTIVES OF THE SCOPING PROCESS

The objective of the scoping process through a consultative process is to:

a) Identify the relevant policies and legislation relevant to the activity.
b) Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location.
c) Identify and confirm the preferred activity and technology alternatives through an impact and risk assessment and ranking process.
d) Identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment.
e) Identify the key issues to be addressed in the assessment phase.
f) Agree on the key issues addressed in the assessment phase; including the methodology to be applied, the expertise required as well as the extend of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration, and probability of the impacts to inform the location of the development footprint within the preferred site.
g) Identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

Executive summary

Notre Coal (Pty) Ltd (hereafter the applicant) has appointed Singo Consulting (Pty) Ltd (Consultant) to apply for a mining right and undertake environmental authorization associated with the proposed Notre Coal Mine. The proposed project area covers 366.606 Ha in extent.

A Mining right application was lodged with the DMRE on the 08th of November 2022 with reference number: MP 30/5/1/2/2/ 10384 MR. The extent of the mining right covers the above-mentioned farm portions and the proposed project relate to the opencast mining.

Thorough consultation will be undertaken with interested and affected parties in the vicinity of the Mkhondo area covering a 30km radius. People who are from Kwa-Ngema, Driefontein, Dirkiesdorp, Piet Retief and farm dwellers will all be consulted whereby an open public meeting will be arranged.

In order for the proposed mine to operate, the applicant is required to submit an application for a mining right with the DMRE. In support of the application to obtain the mining right, the applicant is required to conduct a Scoping and Environmental Impact Assessment (S&EIA) for submission to the DMRE for adjudication. This assessment must include activities triggered under the Environmental Impact Assessment Regulations of 2014 (as amended) promulgated under the National Environmental Management Act, 1998 (Act 107 of 1998) and activities triggered under the National Environmental Management: Waste Act, 2008 (NEM: WA) (Act 59 of 2008).

The proposed project area can be accessed via the R543 provincial road, and it is easily accessible as there are multiple existing farm roads within the project area. The topology is mostly gentle on the mining right area. There are farmhouses scattered within the project area. There are agricultural activities taking place on the project area, mainly crop farming (maize) and grazing (cattle and sheep). There are both perennial and non-perennial rivers within the project area and this water is used by the local residents for drinking, cooking, washing, as well as agricultural purposes. There are a lot of plantations in the project area. There is evidence of two existing drilling sites, according to local residents, these were drilled not so long ago by another company.

There are various mining right applications by Singo Consulting (Pty) Ltd near the proposed mining right application such as Foloyi Construction on Grootlaagte 70 HT which is approximately 19.7 km northeast from the proposed mining right area, and Suikerhoek 104 HT approximately 27 km northeast of the proposed mining right area.

According to the Windeed Search results, the landowner of portion 1 of the farm Annysspruit 140 HT is Reheivo Boerdery CC. During the Windeed Search, it was discovered that the remaining extent of the farm Mooihoek 168 HT does not exist, hence the Department of Land Reform and Rural Development Restitution will be consulted regarding this farm portion.

Scoping and Environmental Impact Assessment process

A S&EIA is conducted in two phases: Scoping and EIA compilation. The scoping phase will commence with the following activities once the application has been submitted with the competent authority:

- Identify interested and affected parties (I&APs) and stakeholders
- Identify relevant policies and legislation
- Consider the need and desirability of the project
- Consider alternative technologies and sites
- Identify the potential environmental issues
- Determine the level of assessment and public participation process required for the EIA phase
- Identify preliminary measures to avoid, mitigate or manage potential impacts

The objectives of the EIA phase will be to assess the potential impacts associated with the preferred project alternatives as per the terms of reference for the assessment set out in the scoping report. The EIA/EMPr report will document the assessment findings and detail the measures required to avoid, mitigate and/or manage the potential impacts.

The S&EIA process requirements are contained in Chapter 4, Part 3 of the NEMA Reg No 326 (amended on 7 April 2017). The EIA process can take up to 300 days to complete (87 days for the scoping phase, 106 days for the EIA phase, 107 days for competent authority to review).

List of abbreviations

BID	Background Information Document
DEA	Department of Environmental Affairs
DMRE	Department of Mineral Resources
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EIAr	Environmental Impact Assessment Report
EMPr	Environmental Management Programme Report
GDARD	Gauteng Department of Agriculture and Rural Development
GIS	Geographic Information System
GN	Government Notice
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
IBA	Important Bird Area
IWULA	Integrated Water Use Licence Application
ASAPA	Association of Southern African Professional Archaeologists
LoM	Life of Mine
MPRDA	Minerals and Petroleum Resources Development Act, 2002
Mtpa	Million tonnes per annum
NEM:WA	National Environmental Management: Waste Amendment Act, 2008
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PPP	Public Participation Process
RoM	Run of Mine
SAHRA	South African Heritage Resources Agency
SANS	South African National Standard
SCC	Species of Conservation Concern
S&EIA	Scoping and Environmental Impact Assessment
WMA	Water Management Area

1 INTRODUCTION AND BACKGROUND

Notre Coal (Pty) Ltd (hereafter the applicant) has appointed Singo Consulting (Pty) Ltd (Consultant) to apply for a mining right and undertake environmental authorization associated with the proposed Notre Coal Mine. A Mining right application was lodged with the Department of Mineral Resources and Energy (DMRE) on the 08th of November 2022 with reference number: MP 30/5/1/2/2/ 10384 MR. The extent of the mining right covers portion 1 of the farm Annysspruit 140 HT and remaining extent of the farm Mooihoek 168 HT and the proposed project relate to the opencast mining. The mining right application to the DMRE includes the abovementioned properties and on an extent of 366.606 ha.

Throughout consultation was undertaken with interested and affected parties in the vicinity of Mkhondo Area covering 30km radius. People who are from Kwa-Ngema, Driefontein, Dirkiesdorp, Piet Retief and farm dwellers will all be consulted whereby an open public meeting will be arranged.

There are various mining right applications by Singo Consulting (Pty) Ltd near the proposed mining right application such as Foloyi Construction on Grootlaagte 70 HT which is approximately 19.7 km northeast from the proposed mining right area, and Suikerhoek 104 HT approximately 27 km northeast of the proposed mining right area.

In order for the proposed mine to operate, the applicant is required to submit an application for a mining right with the DMRE. In support of the application to obtain the mining right, the applicant is required to conduct a Scoping and Environmental Impact Assessment (S&EIA) for submission to the DMRE for adjudication. This assessment must include activities triggered under the Environmental Impact Assessment Regulations of 2014 (as amended) promulgated under the National Environmental Management Act, 1998 (Act 107 of 1998) and activities triggered under the National Environmental Management: Waste Act, 2008 (NEM:WA) (Act 59 of 2008).

The proposed open-cast/ surface coal mining operations constitute various listed activities, as contained in the scheduled activities in Government Notice Regulation No 324, 325 and 327 (amended 7 April 2017), now amended as GNR 517 (11 June 2021). As such, a full Scoping and EIA process must be followed. Prior to any listed activity being approved by the DMRE, an environmental process must be undertaken, and a report submitted to the relevant environmental authority for consideration.

The purpose of the S&EIA process is to ensure that potential environmental, economic, and social impacts associated with operation and closure/rehabilitation of a project are identified, assessed, and appropriately managed. This is done in two primary phases: the scoping phase and the impact assessment phase, both of which are discussed in more detail in the following:

1.1 Scoping phase

The scoping phase is conducted as a precursor to the EIA process, during which:

- Project and baseline environmental information is collated. Baseline information for the scoping report is gathered through visual inspections during field visits to the proposed project area and surroundings, desktop studies (including GIS mapping), and review of existing reports, guidelines, and legislation.
- Landowners, adjacent landowners, local authorities, environmental authorities, and other stakeholders who may be affected by/or have an interest in the environmental impacts of the project, are identified.
- Interested and affected parties (I&APs) are informed about the proposed project.
- Environmental authorities are consulted to confirm legal and administrative requirements.
- Environmental issues and impacts are identified and described.
- Development alternatives are identified and evaluated, and non-feasible development alternatives are eliminated.
- The nature and extent of further investigations and specialist input required in the EIA phase is identified.
- The draft and final scoping reports are submitted for review by authorities, relevant organs of state and I&APs.
- Key I&AP issues and concerns are collated into an issues and response section for consideration in the EIA phase.

1.2 Environmental Impact Assessment process

After the initial scoping phase, the following EIA activities are completed:

- Specialist investigations are undertaken in accordance with the terms of reference established in the scoping assessment (plan of study for EIA appended to the scoping report). The scope for specialist work is determined by the nature and scale of the project impacts.
- Evaluation of development alternatives and identification of a proposed option.
- Assessment of existing impacts (no-go development option), environmental impacts that may be associated with the proposed project option, and cumulative impacts using the impact assessment methodology.

- Identification of mitigation measures to address the environmental impacts and development of actions required to achieve the mitigation required.
- Consultation with I&APs.
- Incorporation of public comments received during scoping into the Environmental Impact Assessment (EIA) and Environmental Management Programme report (EMPr), and finalisation of the EIA report.
- Issuing of the final EIA report for review.
- The requirements for the S&EIA process are contained in Chapter 4, Part 3 of the NEMA Reg No 326 (amended on 7 April 2017). The EIA process can take up to 300 days to complete (87 days for the scoping phase, 106 days for the EIA phase, and 107 days for the competent authority review).

2 PROPONENT AND ENVIRONMENTAL ASSESSMENT PRACTITIONER DETAILS

2.1 Details of the proponent

The following person may be contacted regarding this project:

Table 1: Proponent's contact details

NAME OF APPLICANT:	**NOTRE COAL (PTY) LTD (2022/560476/07)**
TEL NO.:	+27 66 211 8714
E-MAIL.:	eddi@notrecom.co.za
FAX NO.:	N/A
PHYSICAL ADDRESS.	Plot 106, Road 4, Delmas, Gauteng, 2210
FILE REFERENCE NUMBER SAMRAD:	MP 30/5/1/2/2/10384 MR

2.2 Details of the Environmental Assessment Practitioner

Singo Consulting has been selected by the applicant as an independent EAP to undertake an S&EIA in support of the application for a mining right. Singo Consulting (Pty) Ltd has no vested interest in the proposed project and as required by the EIA Regulations, asserts its independence. The contact details of the consultants who compiled this report are as follows:

Table 2: Details of the Environmental technician that prepared the Report

Name of the Practitioner	Valentine Mhlanga
Designation	Environmental Technician
Tel No.	+27 13 692 0041
Cell No.	+27 81 813 0654
Fax No.	+27 86 515 4103
Email	valentine@singoconsulting.co.za

Table 3: Details of the 1st EAP who reviewed the Report

Name of the Practitioner	Rudzani Shonisani
Designation	EAP
Tel No.	+27 13 692 0041
Cell No.	+27 78 548 1244
Fax No.	+27 86 515 4103
Email	rudzani@singoconsulting.co.za

Table 4: Details of the 2nd EAP who reviewed the Report

Name of the Practitioner	Dr NK Singo
Designation	Principal EAP
Tel No.	+27 13 692 0041
Cell No.	+27 78 2727 839
Fax No.	+27 86 515 4103
Email	kenneth@singoconsulting.co.za

2.2.1 Expertise of Environmental Assessment Practitioner

See Appendix 4 for EAP CVs.

2.2.2 Specialist studies

Specialists will be hired during the EIA phase to conduct the Environmental Impact Assessment and resolve concerns that need to be investigated further. investigations entail acquiring data that is useful to identifying and analysing potential repercussions from the proposed activity. The experts will provide recommendations for suitable mitigation, control, or optimization methods to reduce any negative consequences while maximizing potential advantages. During the EIA phase, the appropriate expert evaluations will be made public.

2.3 Property description

The property description of the proposed Notre Coal mine is provided in Table 5. The farm name applicable to this S&EIA is listed in this table. Several S&EIA processes would have to be followed for the proposed mining operations.

Table 5: Property descriptions of the proposed Notre Coal Mine

Farm name	Annysspruit 140 HT Mooihoek 168 HT
Proposed name of the mine	Notre Coal Mine
Application area (ha)	Approximately 366.606 Ha
Magisterial district:	Mkhondo (Piet Retief)
Local government municipalities	Local Municipality: Mkhondo Local Municipality District Municipality: Gert Sibande District Municipality
Distance and direction from nearest town	Approximately 18,9 km Southwest of Piet Retief, approximately 19.5 km northeast of Driefontein, approximately 22 km northeast from Dirkiesdorp, approximately 9 km east of KwaNgema. The mining right area cuts between the R543 road and is next to Matafuleni. Community. There are two coal fired power stations located in less than 90km to the project area, namely Amajuba and Camden power stations.
21-digit Surveyor General code for farm portion	T0HT00000000014100004 T0HT00000000016800000
Locality map	Locality map at a scale not smaller than 1:250000 (see Figure 1 and Figure 2).

2.4 Locality map

The mining right area falls in the Gert Sibande District Municipality and Mkhondo (Piet Retief) Local Municipality, Mpumalanga Province. The mining right application will be on portion 1 of the farm Annysspruit 140 HT, and the remaining extent of the farm Mooihoek 168 HT and the proposed project relates to the opencast mining. The site is 366.606 hectares in extent and is located approximately 18,9 km Southwest of Piet Retief, approximately 19.5 km northeast of Driefontein, approximately 22 km northeast from Dirkiesdorp, approximately 2.1km east of Etshondo Primary School, approximately 4.87 km southeast of Matafuleni Community, approximately 9 km east of KwaNgema Clinic, approximately 14.1 km southeast of Estheni Primary School and approximately 9.2 km southeast of Ngema Tribal Trust. The mining right area cuts between the R543 road and is next to Matafuleni. Community. There are two coal fired power stations located in less than 90km to the project area, namely Amajuba and Camden power stations. Refer to Figure 1 and Figure 2. There is a community located after the R543 National Route closer called Matafuleni. The community will be addressed during the public meeting to be held to discuss the plans of the proposed mining project.

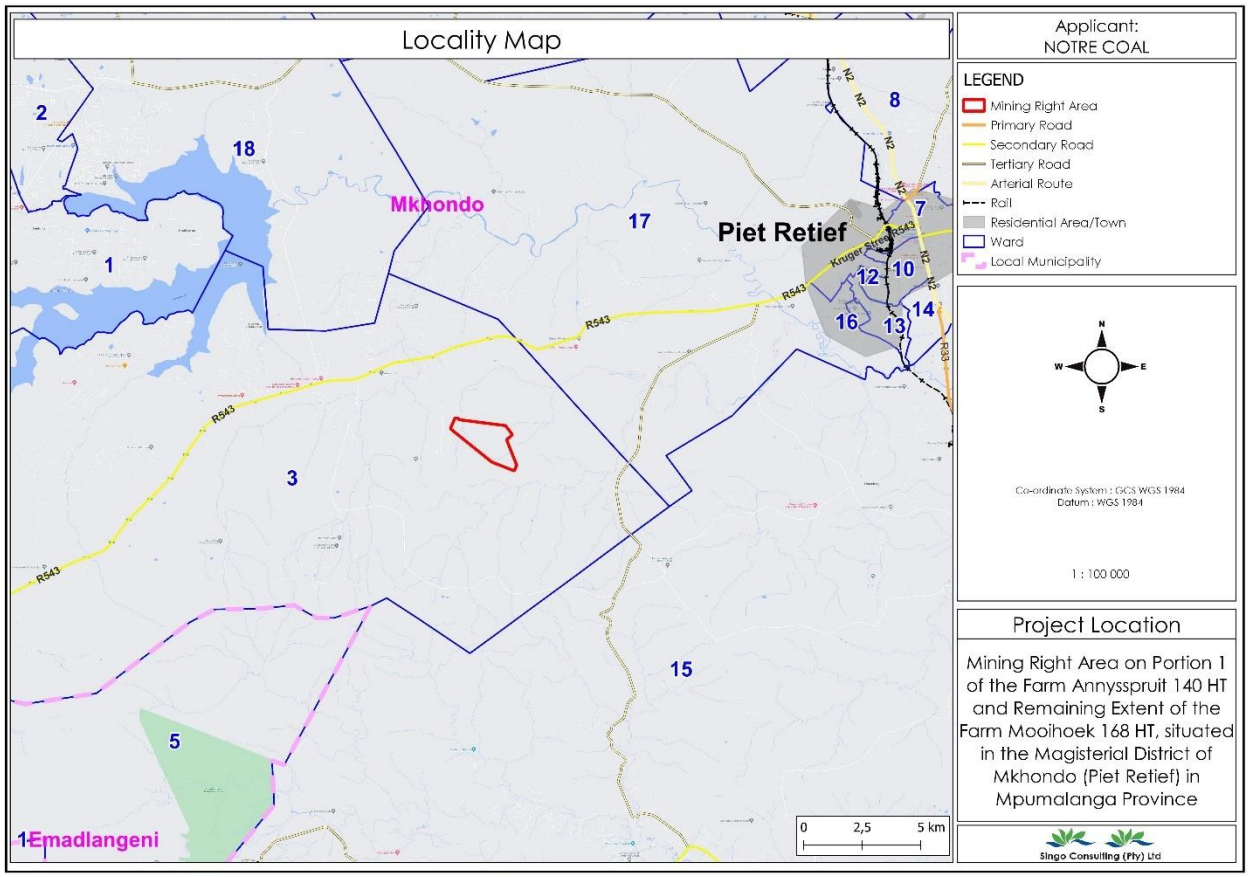


Figure 1: Project area locality (Singo Consulting (Pty) Ltd, 2022)

Figure 2: Google Earth view of the project area (Google Earth View , 2022)

2.4.1 Landowner

The mining right is applicable for portion 1 of the farm Annysspruit 140 HT and the remaining extent of the farm Mooihoek 168 HT. The environmental authorisation process for the Notre Coal Mine project study area includes the property indicated in Table 6. Portion 1 of the farm Annysspruit 140 HT is owned by Reheivo Boerdery CC. During the Windeed Search, it was discovered that the remaining extent of the farm Mooihoek 168 HT does not exist, hence the Department of Land Reform and Rural Development Restitution will be consulted regarding this farm portion.

Table 6: Landowner of the affected properties

Landowner	Property description	Title deed number
Reheivo Boerdery CC	Portion 1 of the farm Annysspruit 140 HT	T24875/2003
	Remaining extent of the farm Mooihoek 168 HT	

2.4.2 Description of current land cover

Land cover data is an important reference resource that informs a wide range of activities, including environmental planning and protection, development planning, economic development, compliance monitoring, enforcement, and strategic decision making.

Landsat 8 satellite photography allows for the creation of a national land cover dataset for South Africa, which replaces the earlier (1994 and 2000) South African national land cover datasets (Geoterraimage, 2015). The national land cover dataset for 2013-14 is based on 30x30 m raster cells and is excellent for 1:75,000 - 1:250,000 scale GIS-based mapping and modeling applications. The current land cover for the study area, according to the 2013-14 national land cover dataset, includes numerous classes, with the majority being natural vegetation, followed by cultivated land, a few waterbodies, a few plantations, and a few build-ups. The national land cover dataset for 2013-14 is based on 30x30 m raster cells and is excellent for 1:75,000 - 1:250,000 scale GIS-based mapping and modeling applications. According to the 2013-14 national land cover dataset, the current land cover for the study area includes numerous classifications, with natural vegetation accounting for the majority, followed by cultivated land, a few waterbodies, a few plantations, a few build-ups, and bare land. Take a look at Figure 3. (A, B). During a field survey, it was discovered that the majority of the farm is utilized for grazing and commercial farming, and that neighboring farms are also used for the same purpose.

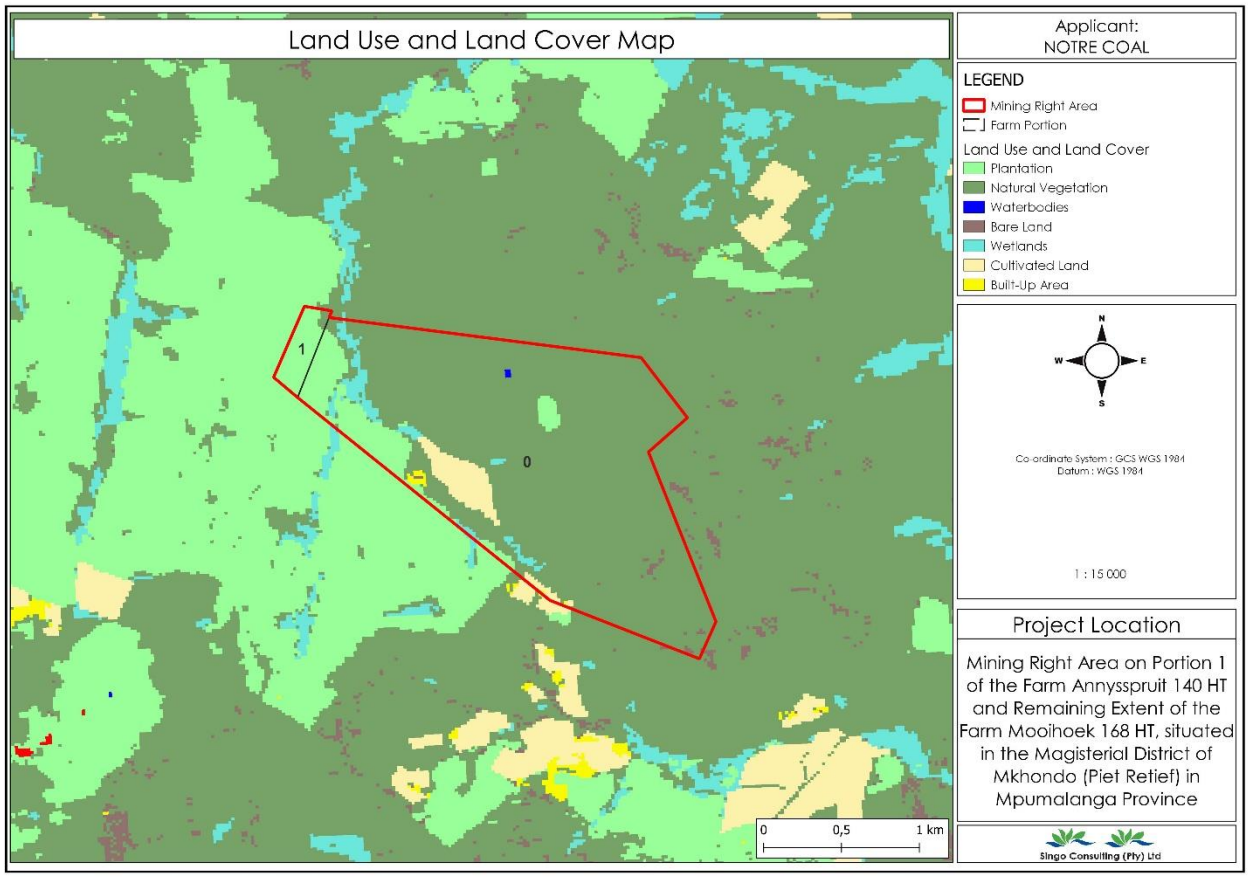


Figure 3: Land use and land cover map of the proposed site.

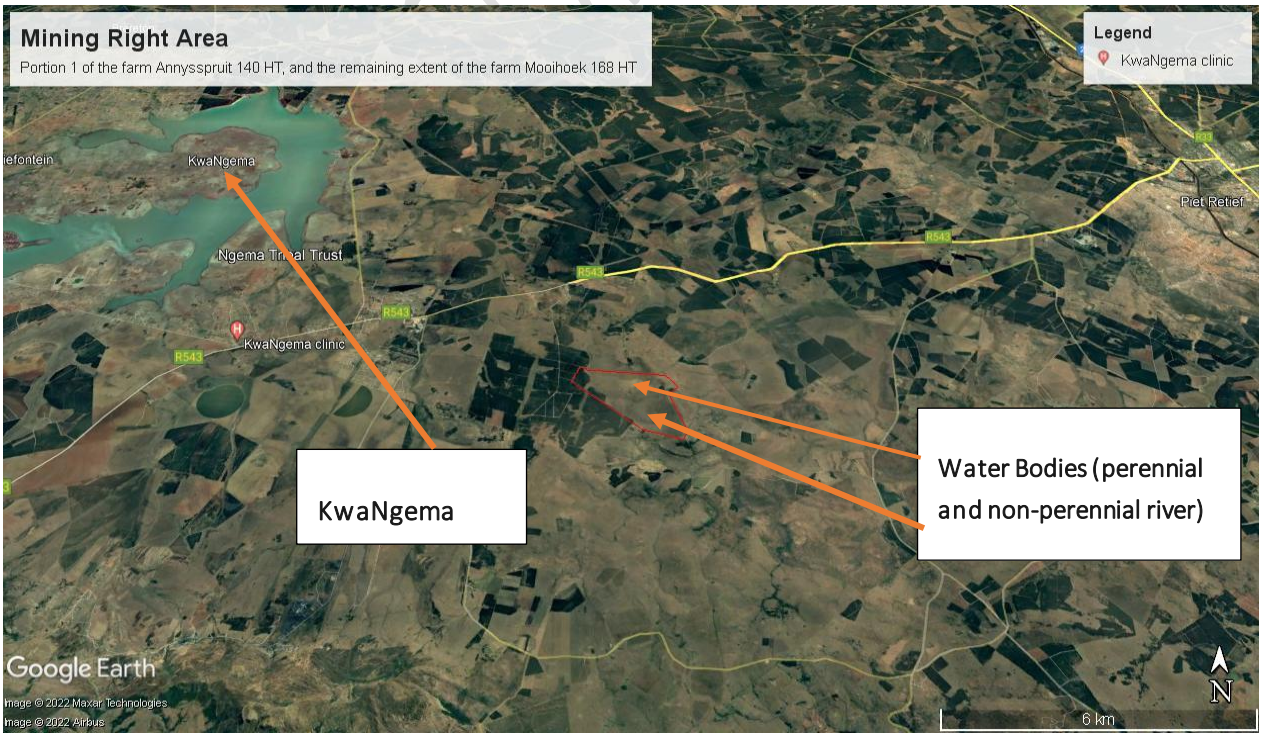


Figure 4: Study area in relation to current land cover (Singo Consulting (Pty) Ltd, 2022) & (Google Earth View , 2022)

3 POLICY AND LEGISLATIVE CONTEXT

This section provides an overview of the governing legislation relating to the proposed project.

3.1 Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa, Act 108 of 1996 (as amended) Section 24 states that:

"Everyone has the right— (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that—

a) prevent pollution and ecological degradation;
b) Promote conservation; and
c) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

3.2 Mineral and Petroleum Resources Development Act

The Mineral and Petroleum Resources Development Act, 2002 (MPRDA), outlines the procedural requirements an applicant must follow to obtain a mining right before proceeding with a mining project. Applicants are required to obtain Environmental Authorisation (EA) in terms of the National Environmental Management Act 107 of 1998, as amended (NEMA).

The MPRDA is administered by the Department of Mineral Resources (DMRE) and governs the sustainable utilisation of South Africa's mineral resources. The MPRDA aims to "make provision for equitable access to, and sustainable development of, the nation's mineral and petroleum resources".

3.3 National Environmental Management Act

The aim of the NEMA is to provide for co-operative governance by establishing decision-making principles on matters affecting the environment. In terms of the NEMA EIA regulations, the applicant is required to appoint an EAP to undertake the EIA, as well as conduct the public participation process (PPP). In South Africa, EIAs became a legal requirement in 1997 with the promulgation of regulations under the Environment Conservation Act (ECA). Subsequently, NEMA was passed in 1998. Section 24(2) of NEMA empowers the Minister and any MEC, with the concurrence of the Minister, to identify activities which must be considered, investigated, assessed, and reported on to the competent authority responsible for granting the relevant environmental authorisation.

On 21 April 2006, the Minister of Environmental Affairs and Tourism promulgated regulations in terms of Chapter 5 of the NEMA. These regulations, in terms of the NEMA, were amended in June 2010 and December 2014. The December 2014 NEMA regulations apply to this project. Mining activities officially

became governable under the NEMA EIA in December 2014. The objective of the Regulations is to establish the procedures that must be followed in the consideration, investigation, assessment and reporting of the identified activities. The purpose of these procedures is to provide the competent authority with adequate information to refuse authorisation of activities which may impact negatively on the environment to an unacceptable degree. These procedures also aim to ensure that authorised activities are undertaken in a manner that responsibly manages environmental impacts.

In accordance with the provisions of Section 24 (5) and Section 44 of the NEMA, the Minister has published regulations (GN R. 982) pertaining to the required process for conducting EIAs in order to be considered for the issuing of EA. These regulations provide a detailed description of the EIA process to be followed when applying for EA for any listed activity.

The regulations differentiate between a simple Basic Assessment Process (required for activities listed in GN R. 983 and 985) and a more complete EIA process (activities listed in GN R. 984). In the case of this project, activities under GN R. 984 are triggered, requiring a full EIA process. On 7 April 2017, the NEMA 2014 regulations were amended, making activities triggered under GN R. 324, 325 and 327, now amended as GNR 517 OF 11 June 2021 applicable to this application.

A scoping and EIA process is reserved for activities with potentially significant impacts that are complex to assess. Scoping and EIA provides a mechanism for the comprehensive assessment of activities that are likely to have significant environmental impacts.

3.4 National Water Act

The National Water Act, 1998 (NWA) also has a role to play in regulating mining. Mining almost always uses water and/or has an impact on water resources, like streams, wetlands, or rivers. The NWA is administered by the Department of Water and Sanitation (DWS).

The NWA Section 21 defines eleven water uses that require EA:

21 (a): taking water from a water resource

21 (b): storing water

21 (c): impeding or diverting the flow of water in a watercourse

21 (d): engaging in a stream flow reduction activity contemplated in section 36

21 (e): engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1)

21 (f): discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit

21 (g): disposing of waste in a manner which may detrimentally impact on a water resource

21 (h): disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process

21 (i): altering the bed, banks, course, or characteristics of a watercourse

21 (j): removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people

21 (k): using water for recreational purposes. The proposed mine is in the process of applying for an Integrated Water Use Licence (IWUL) as per the water uses indicated.

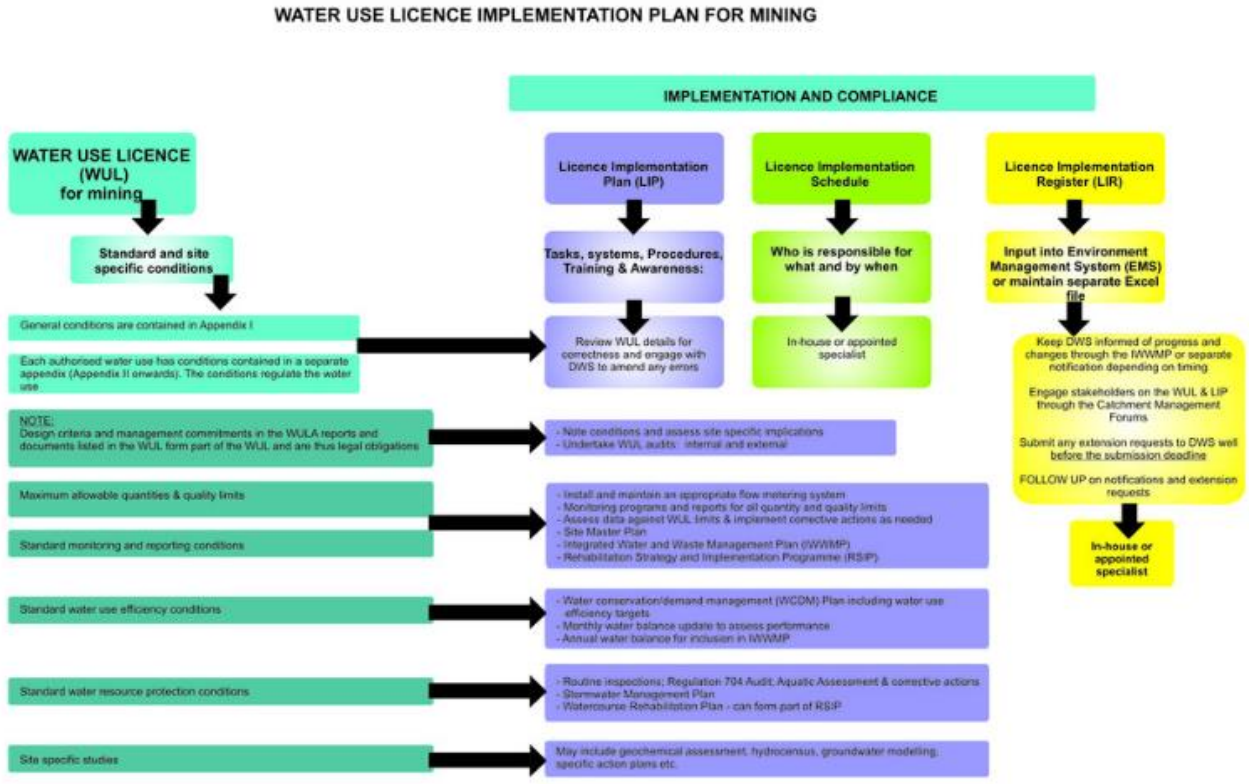


Figure 5: WULA process and Guideline

3.5 National Environmental Management: Waste Act

The National Environmental Management: Waste Act, 2008 (NEM:WA) (Act 59 of 2008) lists mining activities that must be undertaken to manage waste generated by the project and prevent environmental pollution and littering. On 2 June 2014, the NEM:W (amended) came into force. As per the amended Act, waste is longer governed by the MPRDA, but is subject to all the provisions of the NEM:WA). As per Section 16 of the NEM:WA, "a holder of waste must, within the holder's power, take all reasonable measures to:

- Avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated;
- Reduce, re-use, recycle and recover waste;
- Where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner;
- Manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour, or visual impacts;
- Prevent any employee or any person under his or her supervision from contravening the Act; and
- Prevent the waste from being used for unauthorised purposes."

These general principles of responsible waste management will be incorporated into this project's EMPr requirements . The NEM:WA provides for specific waste management measures to be implemented and provides for the licensing and control of waste management activities. Waste management activities apply to Category A, B and C according to GN R 921 (Nov 2013) and the proposed residue stockpiles in terms of Category B, Activity 11 of GNR 921, and, therefore, form part of the application process (Table 5).

3.5.1 NEM:WA – Planning and Management of Residue Stockpiles and Residue Deposits Regulations, 2015 (GN R 632)

This regulates the planning and management of residue stockpiles and deposits from a prospecting, mining, exploration or production operation.

3.5.2 NEM:WA – National Norms and Standards for the Assessment of Waste for Landfill Disposal, 2013 (GN R 635)

These norms and standards prescribe the requirements for the assessment of waste prior to disposal to landfill. The aim of the waste assessment tests is to characterise the material to be deposited or stored in terms of the above-mentioned waste assessment guidelines set by the DEA.

3.5.3 NEM:WA – Waste Classification and Management Regulations, 2013 (GN R 634)

Chapter 9 of the NEM:WA stipulates the requirements for a motivation for and consideration of listed Waste Management Activities that do not require a Waste Management License. The motivation must:

- Demonstrate that the waste management activity can be implemented without unacceptable impacts on, or risk to, the environment or health
- Must provide a description of the waste
- Description of waste minimisation or waste management plans
- Description of potential impacts, etc.

- The transitional provisions under Chapter 6 of this Regulation prescribes timeframes in which all waste must be classified within 18 months from the date of commencement of these regulations (23 August 2013)

Waste streams generated from mine activities will, where applicable, be classified to determine their nature (i.e. general or hazardous), managed and disposed of in accordance with the relevant legislation.

3.6 National Environmental Management: Air Quality Act

The National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004 as amended) is the main legislative tool for the management of air pollution and related activities.

The objectives of the Act are to protect the environment by providing reasonable measures for:

- The protection and enhancement of the quality of air in the republic
- The prevention of air pollution and ecological degradation
- Securing ecologically sustainable development while promoting justifiable economic and social development
- Generally, to give effect to Section 24(b) of the constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and wellbeing of people

The NEM:AQA mandates the Minister of Environmental Affairs to publish a list of activities that result in atmospheric emissions and consequently cause detrimental effects on the environment, human health and social welfare. The Listed Activities and Minimum National Emission Standards were published on 22 November 2013 (Government Gazette No. 37054).

According to NEM:AQA, air quality management control and enforcement is the responsibility of local government, with district and metropolitan municipalities being the licensing authorities. Provincial government is primarily responsible for ambient monitoring and ensuring municipalities fulfil their legal obligations, with national government primarily as policy maker and coordinator. Each sphere of government must appoint an Air Quality Officer responsible for coordinating matters pertaining to air quality management. Under the old Act, air quality management was the sole responsibility of national government, with local authorities only being responsible for smoke and vehicle emission control. The National Pollution Prevention Plan Regulations, which came into effect on 21 July 2017, tie in with The National Greenhouse Gas Emission Reporting Regulations, which took effect on 3 April 2017.

These regulations aim to prescribe the requirements that greenhouse gas (GHG) pollution prevention plans need to comply with (in terms of priority air pollutants), as per NEM:AQA. The regulations specify who needs to comply, and by when, and prescribes the content requirements. Mines do have an obligation to report on the GHG emissions under these regulations.

3.7 The National Heritage Resources Act

The National Heritage Resources Act (NHRA) (Act 25 of 1999) stipulates that cultural heritage resources may not be disturbed without authorisation from the relevant heritage authority. Section 34(1) of the NHRA states that, "no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority…".

The NHRA informs the identification, evaluation, and management of heritage resources and, in the case of Cultural Resource Management (CRM), affected by development (as stipulated in Section 38 of NHRA) and those developments administered through the NEMA, MPRDA and NEMWA legislation. In the latter cases, the feedback from the relevant heritage resources authority is required by the state and provincial departments managing these Acts before any authorizations are granted for development. The last few years have seen a significant change towards the inclusion of heritage assessments as a major component of EIAs required by NEMA and MPRDA. This change requires an evaluation of the section of these Acts relevant to heritage. The NEMA 23(2)(b) states that an integrated environmental management plan should, "…identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage".

Subsections (23)(2)(d), (29)(1)(d), (32)(2)(d) and (34)(b) require the (compulsory) inclusion of the identified cultural resources, the evaluation of the impacts of the proposed activity on these resources, the identification of alternatives and the management procedures for such cultural resources for each of the documents noted in the environmental regulations. Regulations under NEMA's regulations on the Specialist Report requirements must be considered when compiling such a report.

The MPRDA and NEMA have similar definitions of "environment". Both acknowledge cultural resources as part of the environment. Section 39(3)(b) of this Act specifically refers to the evaluation, assessment and identification of impacts on all heritage resources as identified in Section 3(2) of the NHRA. Section 40 of the same Act requires consultation with any state department administering any law relevant to such an application through Section 39 of the MPRDA. This implies the evaluation of Heritage Assessment Reports in Environmental Management Plans or Programmes by the relevant heritage authorities (Fourie, 2008b).

In accordance with the legislative requirements and EIA rating criteria, the regulations of the South African Heritage Resources Agency (SAHRA) and Association of Southern African Professional Archaeologists (ASAPA) have been incorporated to ensure that a comprehensive and legally compatible Heritage Impact Assessment (HIA) is compiled.

3.8 National Environmental Management: Biodiversity Act

The overarching aim of the National Environmental Management: Biodiversity Act (No 10 of 2004) (NEM:BA), within the framework of NEMA, is to provide for:

- The management and conservation of biological diversity in South Africa and of the components of such diversity.
- The use of indigenous biological resources in a sustainable manner.
- The fair and equitable sharing, among stakeholders, of benefits arising from bioprospecting involving indigenous biological resources.
- The South African National Biodiversity Institute (SANBI) was established on 1 September 2004 through the signing into force of the NEM:BA, its purpose being (*inter alia*) to report on the status of the country's biodiversity and the conservation status of all listed threatened or protected species and ecosystems.
- Other objectives include the identification, control, and eradication of declared weeds and alien invaders in South Africa. These are categorised according to one of the following categories, and require control or removal:
    - Category 1a Listed Invasive Species: Category 1a Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be combated or eradicated.
    - Category 1b Listed Invasive Species: Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled.
    - Category 2 Listed Invasive Species: Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be.
    - Category 3 Listed Invasive Species: Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of Act, as specified in the Notice.
    - The provisions of this Act have been considered and, where relevant, incorporated into the proposed mitigation measures and requirements of the EMPr. It is also appropriate to undertake a Fauna and Flora Impact Assessment for developments in an area that is considered ecologically sensitive which require environmental authorisation in terms of NEMA, with such Assessment taking place during the EIA phase.

3.9 The Conservation of Agricultural Resources Act

This Act informs the utilisation of the natural agricultural resources in South Africa to promote soil, water and vegetation conservation, as well as combat weeds and invader plants.

3.10 Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA)

The Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA) is a framework law, which means that the law provides broad principles for a set of provincial laws that will regulate planning for the country. The Act introduces provisions to cater for development principles; norms and standards; inter-governmental support; Spatial Development Frameworks (SDFs) across national, provincial, regional and municipal areas; Land Use Schemes (LUS); and municipal planning tribunals.

SPLUMA also provides clarity on how planning law interacts with other laws and policies. It is a uniform, recognisable and comprehensive system that addresses the past spatial and regulatory imbalances and promotes optimal exploitation of minerals and mineral resources. SPLUMA achieves this by strengthening the position of mining right holders when land needs to be rezoned for mining purposes. SPLUMA's impact on optimal exploitation is particularly evident where conflict exists between mining right holders and landowners. Economic and policy considerations, as well as practical necessities, often motivate the state to grant mining rights to entities other than landowners. SPLUMA is a new national framework Act that provides clear principles and standards for provincial and local governments to formulate their own new spatial planning and land use policies. The new provincial legislation can regulate, among other things, land development, land use management, spatial planning, and municipal planning.

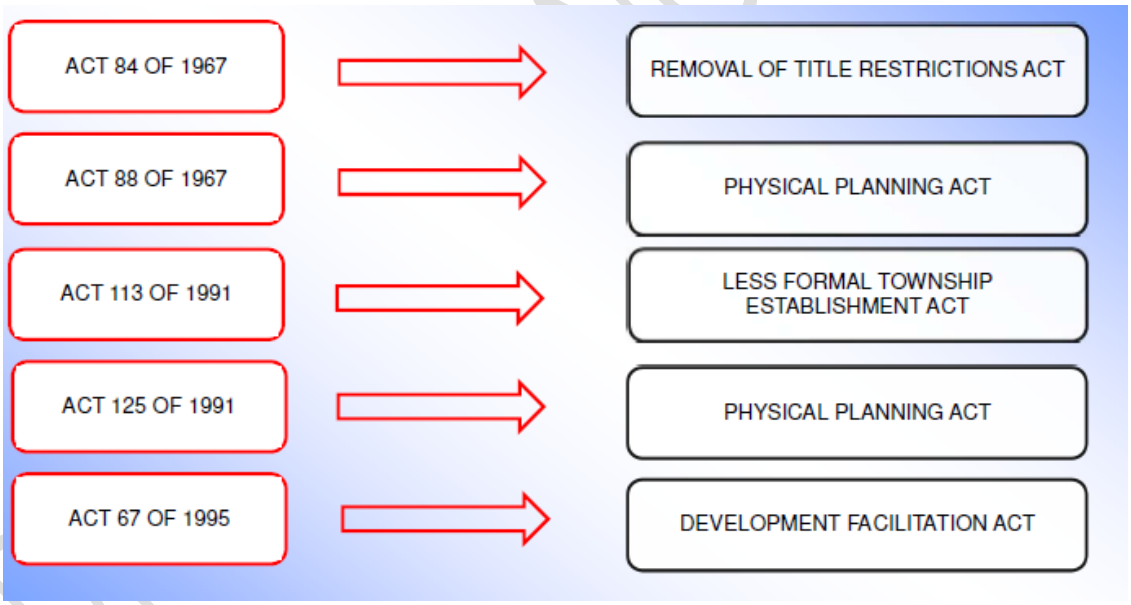


Figure 6: Repealed legislation as a result of SPLUMA

3.11 Environment Conservation Act, 1989 (Act 73 of 1989) – Noise control regulations

In terms of section 25 of the ECA, the national Noise Control Regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992) were promulgated. The NCRs were revised under GN R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations. The Gauteng Province promulgated

provincial regulations: Noise Control Regulations of Gauteng 1999, (Provincial Gazette, Extraordinary no 75 of August 1999).

The noise control regulations must be considered in relation to the potential noise that may be generated during the construction and decommissioning phases of the proposed project. The two key aspects of the noise control regulations relate to disturbing noise and noise nuisance. Section 4 of the regulations prohibits a person from making, producing or causing a disturbing noise, or allowing it to be made produced or caused by any person, machine, device or apparatus or any combination thereof.

A disturbing noise is defined in the regulations as "a noise level which exceeds the zone sound level or if no zone sound level has been designated, a noise level which exceeds the ambient sound level at the same measuring point by 7 dBA or more". Section 5 of the noise control regulations prohibits the creation of a noise nuisance. A noise nuisance is defined as "any sound which disturbs or impairs or may disturb or impair the convenience or peace of any person". Noise nuisance is anticipated from the proposed project particularly to those residents that are situated near the project sites. South African National Standard 10103 also applies to the measurement and consideration of environmental noise and should be considered in conjunction with these regulations. A noise specialist study is proposed for the EIA.

3.12 Noise standards

The following South African Bureau of Standards (SABS) requirements relate to noise from mines, industry, and roads:

- South African National Standard (SANS) 10103:2008. "The measurement and rating of environmental noise with respect to annoyance and to speech communication".
- SANS 10210:2004. "Calculating and predicting road traffic noise".
- SANS 10328:2008. "Methods for environmental noise impact assessments".
- SANS 10357:2004. "The calculation of sound propagation by the Concave method".
- SANS 10181:2003. "The Measurement of Noise Emitted by Road Vehicles when Stationary".
- SANS 10205:2003. "The Measurement of Noise Emitted by Motor Vehicles in Motion".

The relevant standards use the equivalent continuous rating level as a basis to determine what is acceptable. The levels may take single event noise into account, but single event noise by itself does not determine whether noise levels are acceptable for land use purposes. With regards to SANS 10103:2008, the recommendations are likely to inform decisions by authorities, but non-compliance with the standard will

not necessarily render an activity unlawful. The noise assessment will take these noise standards and impacts into consideration.

4 SCOPE OF THE PROPOSED OVERALL ACTIVITY

4.1 Mining operations

Previous studies show that anthracite has been mined before in areas such as Piet Retief, Ermelo and Wakkerstroom. There are four coal seams that are most important namely, the A seam, B Seam, C Seam and Dundus. The surface geology over the project area is dominated by outcrops and sub-crops of sedimentary rocks of the Ecca Group (Vryheid Formation), with Transvaal Supergroup (Hekpoort Formation) outcrops also present at the surface in the far east of the project area. From the data gathered from CGS on the respective farms, it clearly indicates and can be confirmed that there are coal commodities on the area of interest. Refer to Figure 7and Figure 8 below.

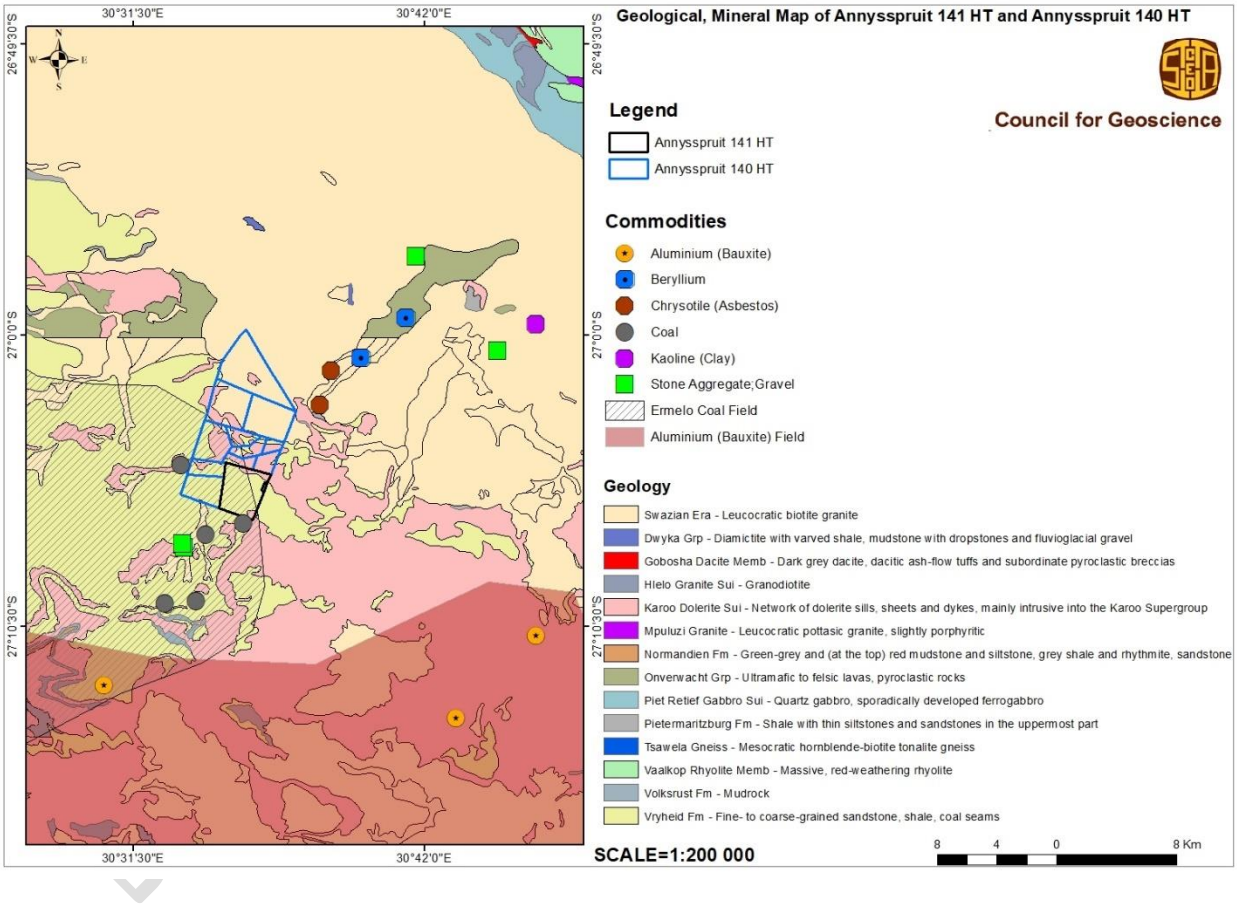


Figure 7: Geological, Mineral Map of Annyspruit 141 HT, and Annyspruit 140 HT (Counsel of GeoScience, 2021).

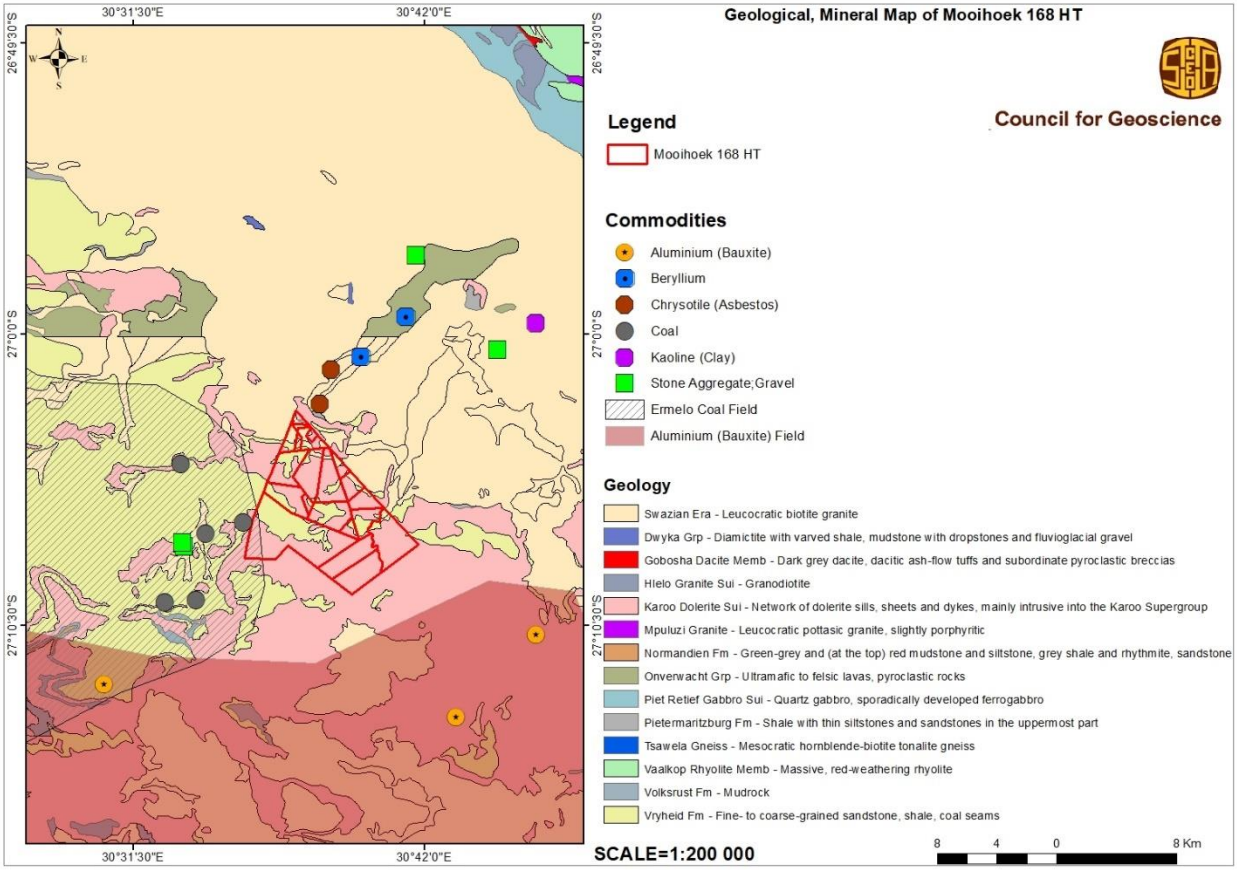


Figure 8: Geological, Mineral Map of Mooihoek 168 HT (Counsel of GeoScience, 2021)

4.2 Mining methodology

The location, nature, and number of mineral deposits all influence the mining processes used. Surface mining is most cost-effective when mineral resources are close to the surface (e.g., coal, salts, and other evaporate deposits, or road quarry material) or are part of surface deposits (e.g., alluvial gold and diamonds, and heavy mineral sands). Surface mining of coal is feasible for this project because the resource is located near enough to the surface to be economically mineable. Strip mining and open-pit mining are common surface mining processes, as are dredge, placer, and hydraulic mining in riverbeds, terraces, and beaches. These activities always disrupt the surface, which has an impact on soils, surface water, near-surface ground water, wildlife, vegetation, and all other land-use options.

The project region's relatively low strip ratios and large surface area make it suited for open-cast truck and shovel mining. Applicability of mining methods is determined by technical feasibility, economic viability, safety, equipment, and infrastructure.

The proposed mining method and sequence comprise the following mining activities for waste and coal:

- Initial topsoil and soft overburden removal, which will be stockpiled to ensure it can be placed back in the initial box cut.
- The physical mining of the coal seam, which includes drilling of hard overburden material, charging and blasting.
- Loading coal onto trucks and hauling it to the crushing and screening facility.
- Discard coal will be extracted and replaced in the bottom of the open-cast pit, while the product will be taken to the weighbridge via trucks and then moved off-site.
- The overburden is placed back into the pit as mining progresses, leaving a minimum area open at a single time. Formally known as concurrent rehabilitation.
- The topsoil, which was stripped and stockpiled separately before mining commenced, is then replaced. The findings of the land capability study will determine the optimal composition to ensure pre-mining conditions for utilisation.

The proposed mining layout for the mine shown below.

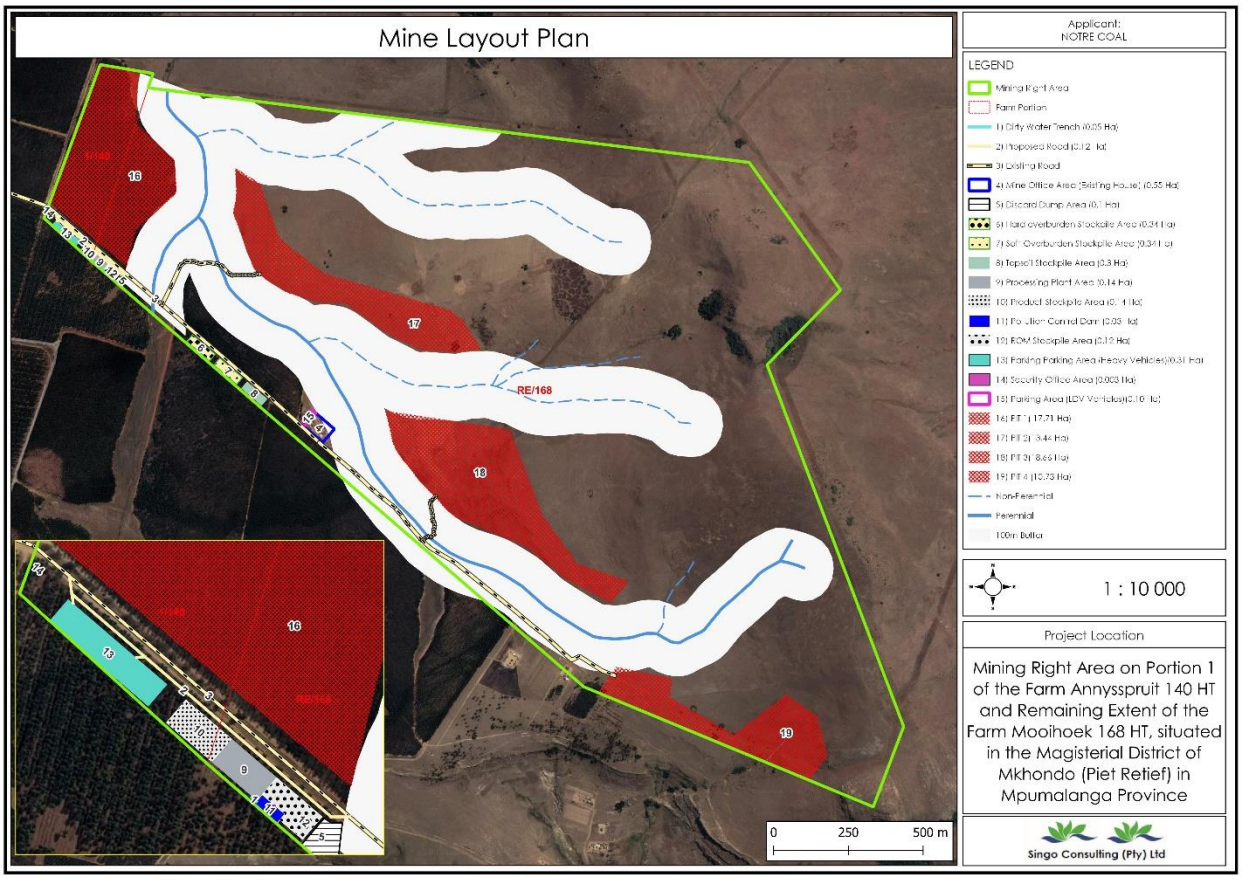


Figure 9: Mining Right Layout Plan (Singo Consulting (Pty) Ltd, 2022)

4.2.1 Infrastructure requirements

The project has the following infrastructure requirements:

- Access and haul roads (with necessary security), including upgrading the access point to the gravel road
- Offices with septic/chemical ablution facilities
- Weighbridge, workshop, and stores (with septic/chemical ablution facilities)
- Diesel facilities and a hardstand
- Power and water
- Boxcut
- Stockpiles (topsoil, overburden, subsoil/softs, RoM)
- Surface water management measures (storm water diversion berms and trenches, pollution control dams, discard dump, etc.)
- Processing plant facility

The preliminary mine schedule layout is indicated in Figure 10. This layout will change once specialist investigations have been completed and alternatives have been assessed and also enclose/ charter for storm water design from WULA Engineers. The layout design will adhere to EA requirements for the NEMA and WULA processes. This will be discussed in detail during the EIA phase, once the draft Mining Work Programme has been updated.

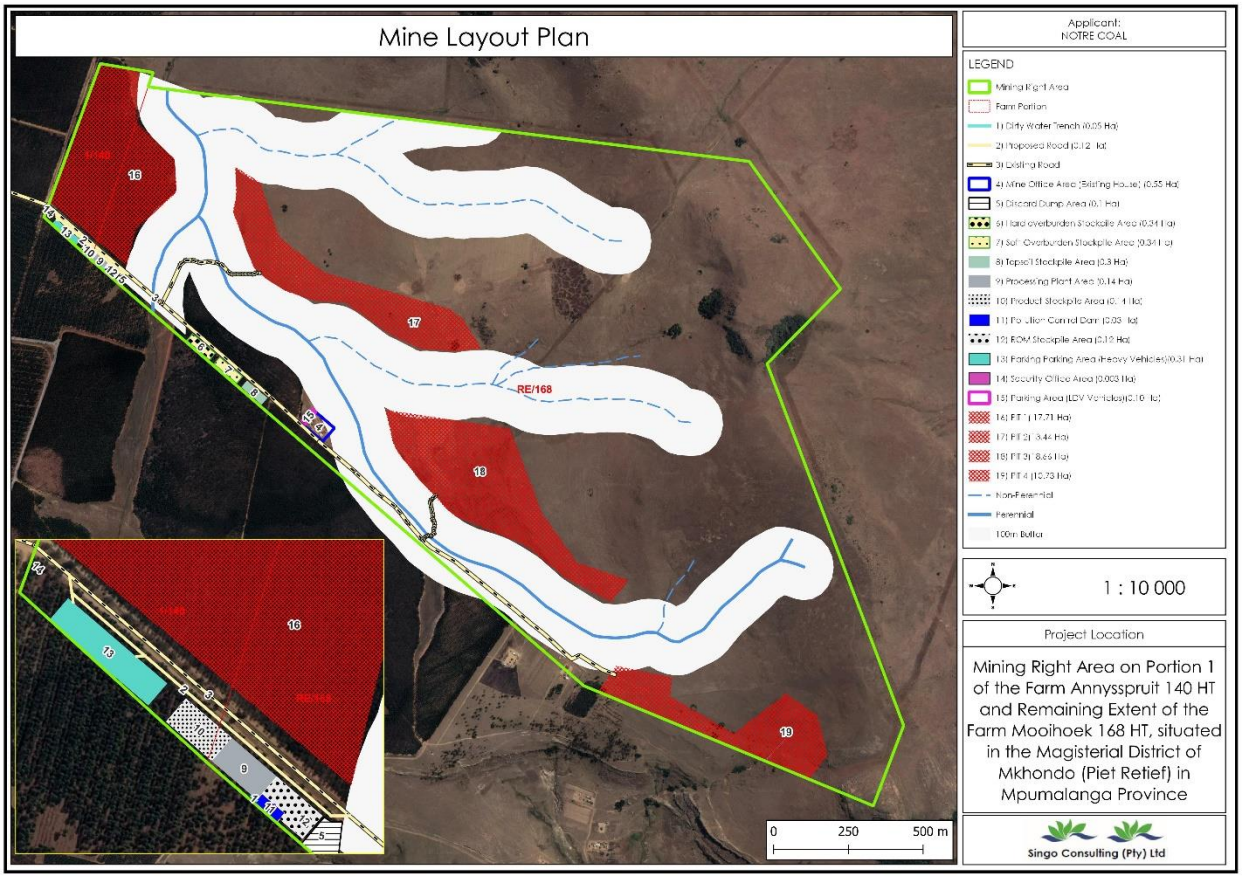


Figure 10: Preliminary mining layout for the proposed Notre Coal Mine (Singo Consulting (Pty) Ltd, 2022)

4.3 Listed and specified activities

The applicant has applied for a mining right and EA for the development of a mine and supporting infrastructure for the mining area identified. The listed activities require EA in terms of the NEMA EIA Regulations GN R. 326/324/325/327 amended on 7 April 2017, now amended as GNR 517 of June 2021 and the Waste Management Activities listed in terms of the NEM:WA GN R. 921 (2013) and GN R. 633 (amended 2015). The water uses in terms of Section 21 are indicated in the following tables.

Table 7: Listed activities according to NEMA requiring environmental authorisation

Government notice	Activity number	Description
Listing Notice 1:	9	The development of infrastructure exceeding 1,000 m in length for the bulk transportation of water or storm water— (i) with an internal

GN 517 (11 June 2021)		diameter of 0,36 m or more; or (ii) with a peak throughput of 120 l per second or more; excluding where— (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
	10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes- (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
	12	The development of— a) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 m^2; or b) infrastructure or structures with a physical footprint of 100 m^2 or more; where such development occurs – • within a watercourse; • in front of a development setback; or • if no development setback exists, within 32 m of a watercourse, measured from the edge of a watercourse
	13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50,000 m^3 or more.
	14	The development and related operation of facilities or infrastructure for the storage/storage and handling of dangerous good, where such storage occurs in containers with a combined capacity of 80 m^3 or more, but not exceeding 500 m^3.
	19	The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles, or rock of more than 10 m^3 from a watercourse.

		Mining activities associated with the physical mining activities, construction of wetland and stream crossing or any other related mining activities that trigger this activity.
	24	The development of a road – a) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or b) with a reserve wider than 13,5 m, or where no reserve exists where the road is wider than 8 m Construction of mining road infrastructure, which will include service, access, and haul roads as part of the proposed mining activities.
	25	The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater, or sewage with a daily throughput capacity of more than 2,000 m^3 but less than 15,000 m^3. Pollution Control Dams.
	28	Residential, mixed, retail, commercial, industrial, or institutional developments where such land was used for agriculture, game farming, equestrian purposes, or afforestation on or after 1 April 1998 and where such development: a) will occur inside an urban area, where the total land to be developed is bigger than 5 ha; or b) will occur outside an urban area, where the total land to be developed is bigger than 1 ha.
	31	The decommissioning of existing facilities, structures, or infrastructure for – a) any development and related operation activity or activities listed in this Notice, Listing Notice 2 of 2014 or Listing Notice 3 of 2014 b) Any expansion and related operation activity or activities listed in this Notice, Listing Notice 2 or Listing Notice 3 of 2014; c) … d) Any phased activity or activities for development and related operation activity or expansion or related operation activities listed in this Notice or Listing Notice 3 of 2014; or e) Any activity regardless the time the activity was commenced with, where such activity:

		a. Is similarly listed to an activity in i. or ii. above; and b. Is still in operation or development is in progress.
	56	The widening of a road by more than 6 m, or the lengthening of a road by more than 1 km – a) where the existing reserve is wider than 13,5 m; or b) where no reserve exists, where the existing road is wider than 8 m Upgrades to existing roads.
Listing Notice 2: GN.517 (11 June 2021)	4	The development and related operation of facilities or infrastructure, for the storage/storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 m^3. Storage of diesel and other hydrocarbons.
	15	The clearance of an area of 20 ha or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
	17	Any activity including the operation of that activity which requires a mining right in terms of section 22 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the mining right.
	19	The removal and disposal of a mineral, which requires a permission stated in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission. Relates to coal crushing, screening, and washing on site.
	24	The extraction or removal of peat or peat soils, including the disturbance of vegetation or soils in anticipation of the extraction or removal of peat or peat soils, but excluding where such extraction or removal is for the rehabilitation of wetlands in accordance with a maintenance management plan.

Listing Notice 3: GN.517 (11 June 2021)	4	*(The development of a road wider than 4 metres with a reserve less than 13,5 metres.)* f) Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding disturbed areas; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an international convention; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; or (gg) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas, where such areas comprise indigenous vegetation; or ii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.
	10	*(The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.)* f. Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas;

		(cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an international convention; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; (gg) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, where such areas comprise indigenous vegetation; or (hh) Areas within a watercourse or wetland, or within 100 metres of a watercourse or wetland; or ii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.
	12	*(The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.)* f. Mpumalanga i. Within any critically endangered or endangered ecosystem listed in terms of Section 52 of the NEM:BA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; or iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning or proclamation in terms of NEMPAA.
	14	*(The development of-* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or*

		(ii) infrastructure or structures with a physical footprint of 10 square metres or more; *where such development occurs-* *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;* *excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.)* f. Mpumalanga i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) World Heritage Sites; (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Sites or areas identified in terms of an international convention; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Core areas in biosphere reserves; or (hh) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve, where such areas comprise indigenous vegetation; or ii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose.

Table 8: Waste management listed activities according to NEM:WA requiring environmental authorisation

Government notice	Activity	Description
R.921: Category A	7	Treatment of hazardous waste using any form of treatment at a facility with the capacity to process between 10 and 100 tonnes.
	12	Construction of a facility for a waste management activity listed in Category A of this schedule.
R.921: Category B	1	Storage of hazardous waste in lagoons, excluding storage of effluent, wastewater, or sewage.
	7	Disposal of any quantity of hazardous waste to land (Discard Dump).
	10	Construction of a facility for a waste management activity listed in Category B of this schedule.
R.633: Category B	11	Establishment/reclamation of a residue stockpile or deposit resulting from activities that require a mining, exploration, or production right in terms of the MPRDA.
R.921: Category C	2	Storage of hazardous waste at a facility with the capacity to store more than 80m^3 of hazardous waste at any time, excluding the storage of hazardous waste in lagoons or temporary storage of such waste

Table 9: Water uses according to NWA requiring environmental authorisation

Section 21 water use	Description
21 (a)	Abstraction of water
21 (b)	Storage of water
21 (c)	Impeding or diverting the flow of water in a watercourse
21 (g)	Disposing of waste in a manner which may detrimentally impact a water resource.
21 (i)	Altering the bed, banks, course, or characteristics of a watercourse
21 (j)	Removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people

5 NEED AND DESIRABILITY OF PROPOSED ACTIVITIES

This section examines the need and desirability of the proposed Notre Coal Mine project, and the importance of coal as a resource and the desirability of coal mining operations at the proposed study area.

5.1 Project selection area

The site was selected due to the presence of an economically mineable coal resource. The Notre project offers several economic benefits; mine revenue will facilitate fund allocation to local economic development through the implementation of projects identified on the social and labour plan. Local contractors and businesses will benefit from supplying the mine with goods and services. The applicant is fully committed to implementing development plans and projects that will align with the provisions of the broad-based socio-economic empowerment charter of the South African mining industry.

Project development will contribute to the South African economy through exports that will leverage foreign income to the country. The National Government will obtain tax revenue from the project. The project will provide income for the mining company through profits and will provide wages for employees. Indirect income will also be increased through the mine's procurement of goods and services. More information regarding employment generated by this project will be included in the EIA report.

The Mkhondo spatial development framework (STM, 2021-2022), Forestry, mining and subsistence farming are the main economic factors within the municipality. There are three major mining companies within Mkhondo Local Municipality (Jindal Mining SA (Pty) Ltd, Kiepersol Mine and Kangra Coal SA (Pty) Ltd). Mkhondo Local Municipality ranks low in terms of tourism statistics compared to other local municipalities in Mpumalanga. However, there is a lot of tourism potential within the municipality, with the South African Heritage sites which lie within the municipality namely the Entombe Battlefield, Rooikraal, Confidence, Kalkoenvlakte and the Heyshope Dam. The Heyshope Dam is located east of the municipality (Saul Mkhizeville/KwaNgema Area). It is the only other main tourist fascination in the municipality despite the numerous guest houses and 'bed & break- fasts' within the municipality. The Jabulani Agrivillage has great tourism potential with proposal of a Resort near the Jabulani Agrivillage dam.

Mkhondo Local Municipality has a HDI of 0,53 which falls within the United Nations 'Low Human Development Category. Mkhondo local Municipality ranks very low compared to other local municipalities in Mpumalanga Province. The number of people that are unemployed has declined. It is noteworthy that settlements with high unemployment rates are Saul Mkhizeville, KwaNgema Tribal Trust and Dirkiesdorp. The sector or industry that contributes the most to the GVA of the municipality is community services (22.2

%) followed by trade (18.4 %), agriculture and forestry (16 %), finance (14.8 %), mining (11.9 %), transport (7.6 %), manufacturing (5.4%), construction (2.3%) and utilities (1.4 %). Mining will enable community members to gain skills in mine construction and operation. Although mining is a large contributor to the local economy, the primary objective should be to prevent mining activities from encroaching onto high-potential agricultural land and areas of high biodiversity, and to ensure that the mining area is properly rehabilitated, and the agricultural value of the land use are restored once the mineral resource is fully depleted. The location of the coal resource to be mined is a phenomena natural resource that cannot be moved, but the mine infrastructure can be located with due consideration to known environmental and social sensitivities, while still considering engineering feasibility and financial factors.

The Notre Coal project will:

- Enable the applicant to commence coal mining and produce coal
- Enable the community to benefit and ensure that resource is mined.
- Enable the applicant to produce a sufficient quality of coal to satisfy its clients' requirements
- Facilitate economic development opportunities created by the project.

More details relating to the need and desirability of the proposed project will be contained in the EIA and EMP reports.

5.2 Coal as an important resource

According to South African Coal Sector Report, Coal is a combustible sedimentary rock formed from vegetation that has been consolidated between other rock strata and altered by the combined effects of pressure and heat over millions of years. Coal is composed primarily of carbon, and contains varying amounts of other components, like hydrogen, oxygen, sulphur, and other impurities. Main parameters used to define coal are calorific value, ash, moisture, and sulphur. According to the energy balance compiled by the DoE, coal constitutes approximately 72% of total primary energy supply in South Africa and is mostly used for power generation. In addition, coal is used to produce virtually all non-recycled iron. Coal is abundant, affordable, easy to transport, store and use, plus free of geopolitical tensions; all these attributes make it very popular. South Africa contributes about 3.5% of the world's coal resources. The country's production is around 3.3% of the world's annual total and exports approximately 6% of global exports. Coal is the major primary energy source for South Africa. More than 90% of the country's electricity and approximately 30% of the liquid fuel are produced from coal (DoE, 2016). Coal also plays a significant role

in supply to the South African chemicals industry and is an essential component of its steelmaking industry. Despite the country's attempts at diversifying energy, coal is expected to play a major role in the foreseeable future, and it is the leading mining commodity revenue generator in South Africa.

Eskom generates approximately 90% of the electricity used in South Africa and approximately 45% of the electricity used in Africa. In global terms, the utility is among the top seven in generating capacity, among the top nine in terms of sales, and has one of the world's biggest dry-cooled power stations. Eskom uses over 90Mt of coal per annum and typically burns low quality coal characterised by high ash content and low calorific values. The coal which can be used varies between power stations. The Return-to-Service power stations require higher grade coal (23 MJ/kg), another group require 21-23 MJ/kg and only certain power stations can burn the lowest grade (Eskom, 2016).

Coal is a good energy source, and it is also the cheapest source of energy. Unlike other forms of energy (nuclear, natural gas, oil, hydroelectric), coal mining provides many jobs by removing coal from the earth, transporting it to the utility, burning it, and properly disposing of coal ash. Eskom has voiced concern over medium and long-term future supply security to its coal-fired electricity generating power stations. If Eskom's needs are not met, it might have severe economic impacts. As such, coal is one of the five minerals selected by the DMRE for local beneficiation as it is considered critical to South Africa's on-going development (DMRE, 2011). See table 8 of Eskom's power stations.

In South Africa, coal is not only used for electricity generation. A diverse range of products can be derived from coal. Coal is also used to produce liquid fuels and non-energy coal products such as chemicals. Recently there is a fight amongst Ukraine and Russia over rulership and the impacts of the war has resulted to more need of coal in other areas as Russian country being a provider of coal in other regions is not trading, thus South Africa's coal was valued yet again, and coal price increased in the market ($324.00/t). The need for this thermal coal to can be mined, will increases the JSE market of South Africa as more coal will be required in other parts of the continent.

Taking into consideration the need to shift from coal-fired power stations to a greener economy including solar powered stations. Coal remains the best source of energy in South Africa. According to Rob Schmitz (2022), on the journal titled "Amid an energy crisis, Germany turns to the world's dirtiest fossil fuel", available on: https://www.npr.org/2022/09/27/1124448463/germany-coal-energy-crisis, developed countries such as Germany have tried to transition to greener and more renewable sources of energy, which however has ultimately failed, and the same countries are reviving their coal-fired power stations which were meant to shut down such as the Evonik coal plant in Marl, Germany to generate a source of energy

once again. In addition, being mindful of the newly signed agreement by the government to shut down 8 power stations by 2035, Eskom being relatively more ambitious; to shut down 9 coal-fired power stations also by 2035. Unfortunately, Camden Coal fired power station falls under those targets, However Amajuba coal fired power station is not included which means it will still need more coal to operate efficiently and if this proposed mine is granted, it will be able to provide exceptional quality coal which will ultimately curb the loadshedding crisis we are faced with in South Africa.

Table 10: Eskom's coal-fired power stations and their installed capacity (South African Coal Sector Report)

Base load stations		Return-to-Service stations	
1. Arnot	2 352 MW	1. Camden	1 510 MW
2. Duvha	3 600 MW	2. Grootvlei	1 200 MW
3. Hendrina	2 000 MW	3. Komati	940 MW
4. Kendal	4 116 MW	Newly built	
5. Kriel	3 000 MW	1. Medupi	4 788 MW
6. Lethabo	3 708 MW	2. Kusile	4 800 MW
7. Majuba	4 110 MW		
8. Matimba	3 990 MW		
9. Matla	3 600 MW		
10. Tutuka	3 654 MW		

Source: Eskom, 2016

5.3 Notre proposed open-cast mining operations

The proposed open-cast mining operations of the Notre coal mine project will have positive economic impacts on a local, regional, and national scale. It will result in additional coal, job creation and skills development opportunities. A mine which was the source of income for many and created jobs in the past is Kangra Coal Mine which now only operates in Driefontein, thus many people are left jobless and crime rate increases dramatically due to lack of jobs. With more extension of population in Dirkiesdorp, the rate of unemployment currently 35.5% in the whole of south African, thus with increase in household around this area, it will result to more numbers to add on the statistics. The mine will act as a job gap closer in the Dirkiesdorp, KwaNgema and Driefontein areas. The projected mining activities will blend in with these developments, and the results will be delivered to nearby power stations (Majuba and Camden) to guarantee that there is no electrical shortage. If the applicant does not proceed with the intended application, another firm may file an application under the MPRDA, Act 28 of 2002. Mining companies will continue to try to extract these coal deposits unless the government deems these regions "NO-GO" for mining and/or the demand for coal falls.

5.4 Period for which EA is required

The estimated period for which EA is required, is 30 years. This includes construction, mining and closure, and rehabilitation. A period for post-closure management risks will be investigated during the EIA phase.

6 PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED SITE

During the S&EIA phase, all reasonable and practicable alternatives must be identified and appraised for consideration and evaluation during the EIA phase. When considering options for a project of this magnitude, there are several restrictions that must be considered. Social, economic, and environmental restrictions are examples of such constraints, which will be considered throughout the examination of the options. It is necessary to emphasize and submit the preferable choice to the authorities. Location, procedure, technology, and activity are generally used to identify alternatives (including the no-go option).

Any option that is regarded feasible (from a technical and environmental standpoint) must fulfil the development proposal's demand while minimizing the related consequences. Such choices must be discussed, as well as the benefits and drawbacks of each. Incremental alternatives are frequently presented as a way of mitigating identified concerns throughout the EIA process. These options are inextricably tied to the selection of mitigation actions and are not clearly defined as separate options.

The development footprint, properties, and activity type possibilities to consider are detailed in the following sub-sections;

6.1 Location alternatives

The research region was chosen based on the favourable results gained from data collected from the Council for Geoscience. The proposed study area is ideal for coal mining, based on the positive findings of the CPR conducted on the region's coal resources.

6.2 Land use alternatives

Due to the results of the data received from the Council for Geoscience, the first option is coal mining, while the second option is to utilise the region for its agricultural potential (as per the current land use).

Alternative 1: Coal mining

Many of the people in the area are forced to travel long distances in order to get employments as minor mines or opportunities of employment are found in their area. See Figure below. According to the land use

map, the area is dominated by natural vegetation, followed by cultivated land, few waterbodies, few plantations, few build-ups and bare land. There is a need for rezoning the area from agriculture to mining as Notre Coal is proposing an open cast mine. The coal is of very high grade and the economic injection to the local and regional economy if the mine is to be opened as detailed in section 4.2, compared to the agricultural sector must be investigated in the EIA phase.

Figure 11: Google Earth Map showing the nearby mines

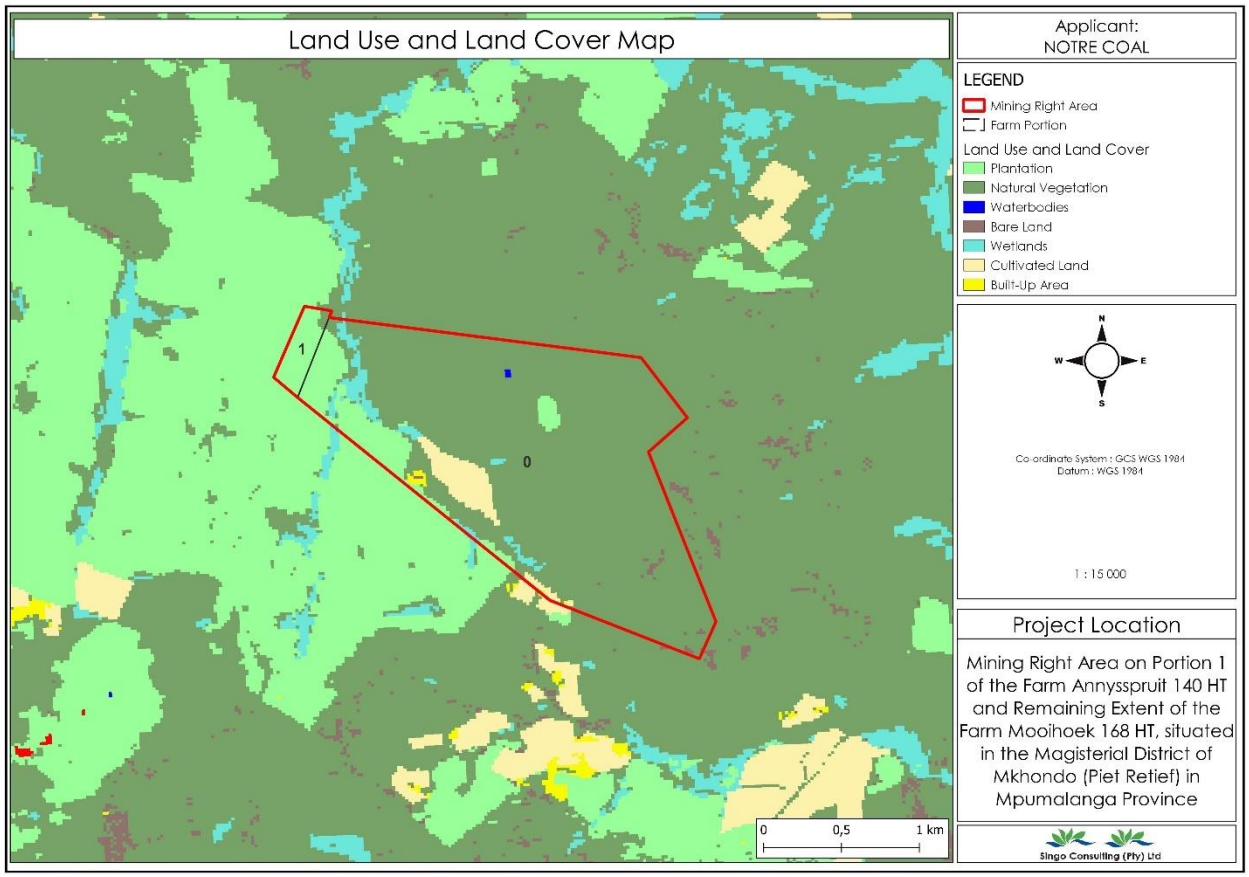


Figure 12: Land use and land cover map of the proposed area (Singo Consulting (Pty) Ltd, 2022)

Alternative 2: Agricultural land

The current land use of the study area (See Figure 12). The area is mainly compromised of natural vegetation, followed by cultivated land, few waterbodies, few plantations, few build-ups, and bare land. The area falls under mainly other natural areas as well as heavily modified and ESA Local corridor and mostly other natural areas see Figure 10 below. According to the Emakhazeni Local Municipality-Spatial Development Framework (SDF), Other natural areas are defined as natural areas which are not identified as CBAs or ESAs but which provide a range of ecosystem services from their ecological infrastructure. In the heavily modified area, it is where biodiversity and ecological function has been lost to a point that they are not worth considering for conservation at all and old lands area areas that are modified within the last 80 years and now are abandoned (old mines and old cultivated lands). That is where mining activities will take place. The areas will be stabilised and managed to restore ecological functionality in particular, the soil carbon and water related functionality. Water bodies are seen on the Important Sub catchment and a quaternary catchment W51C of which activities of WUL that are triggered will be applied, See Table 7. The

land use alternatives must be investigated in more detail once specialist investigations have been completed in the EIA phase.

Several archaeological and heritage studies were conducted in the project area since 2002 and these presents the nature and heritage character of the area. The HIA conducted in the area also provide some predictive evidence regarding the types and ranges of heritage resources to be expected in the proposed project area: (see reference list for HIA reports). The studies include mining, water pipeline and powerline projects completed by van Vollenhoven (2010, 2011, 2016, 2020, 2021), Coetzee (2021), Pistorius (2012). No sites were recorded, but the reports mention that structures older than 60 years occur in the area, Pelser, and Van Vollenhoven (2010, 2011, 2014, 2015) for mining and infrastructure development survey also recorded no sites. Van Schalkwyk did extensive work in the project area mostly for mining and infrastructure developments for example Van Schalkwyk, (2002,2004, 2006, 2006, and 2010). Other than burial sites and buildings older than 60 years the studies did not record any significant archaeological sites in the area.

The study concludes that the impacts will be negligible since the site did not yield any confirmable archaeological remains. The following section presents results of the archaeological and heritage survey conducted within the proposed mining development site. See Table 9 for current activities and features on site.

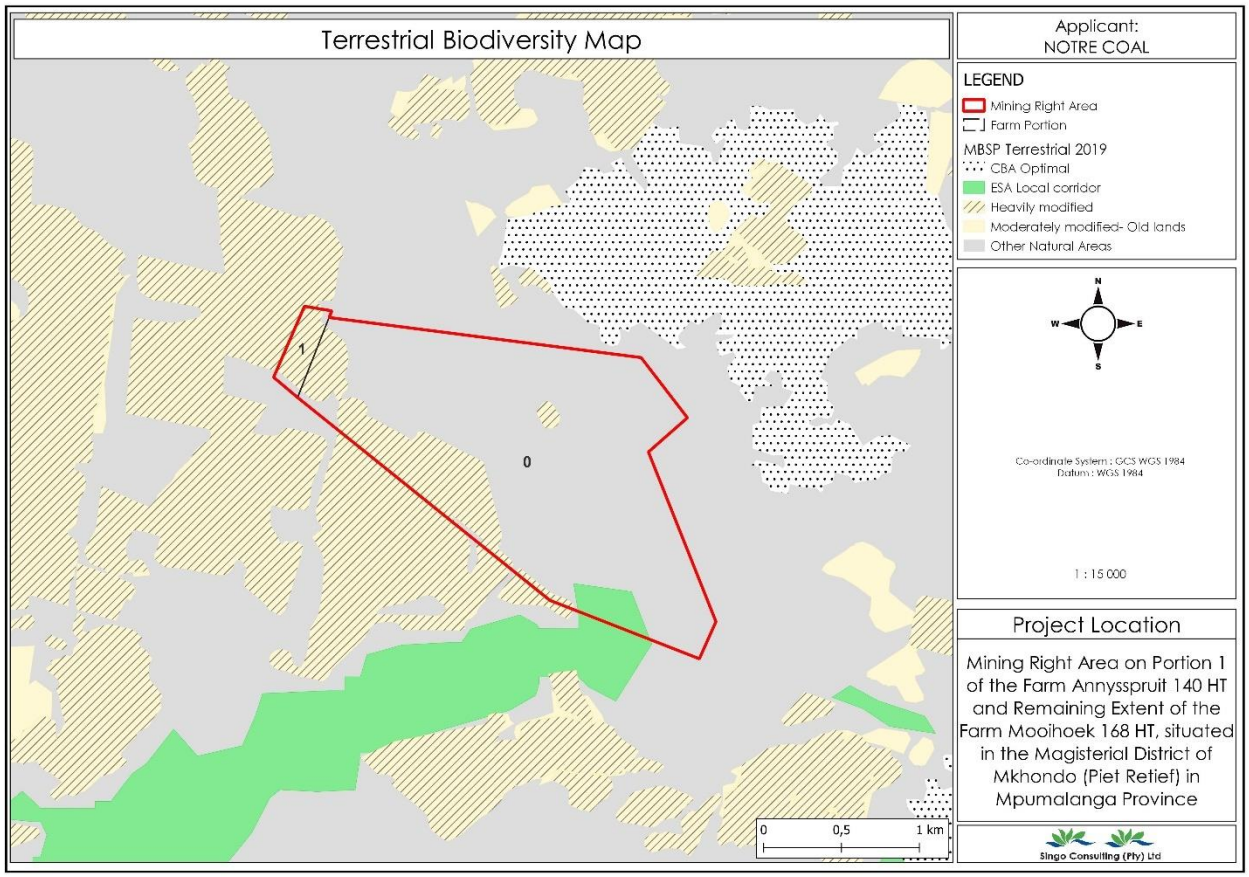


Figure 13: Terrestrial biodiversity map of the proposed mining right area (Singo Consulting (Pty) Ltd, 2022)

Table 11: Site pictures of the current active activities in and around the mining right application area


GPSMAP 64s
GARMIN

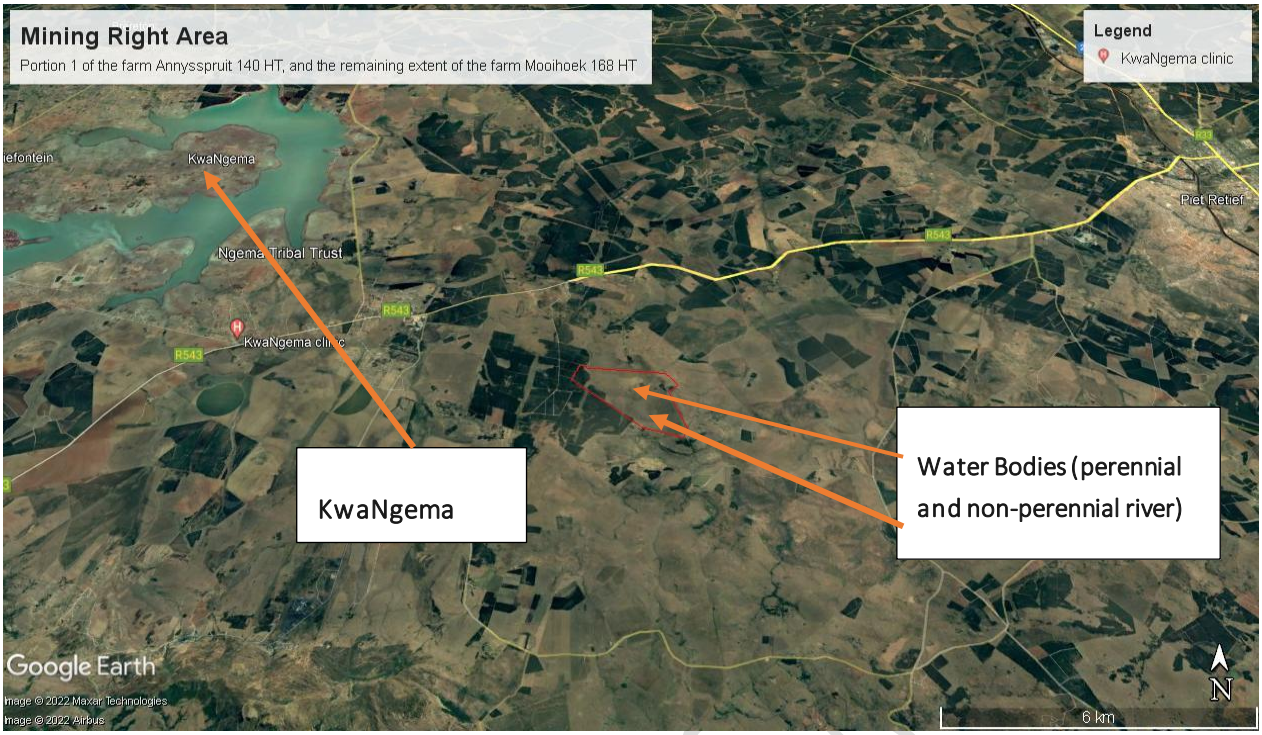


Figure 14: Wide range of activities on and around the proposed area (Integrated Specialist Services (Pty) Ltd, 2022) & (Google Earth View , 2022)

6.3 Process alternatives

6.3.1 Mine technology

The alternative for mining and extracting the target mineral resource is open-cast surface mining.

6.3.2 Mine operational

Operations and associated infrastructure, including a full washing facility will be available for the duration of the LoM.

6.3.3 Water supply

Two alternative water-supply options have been identified, namely:

- Water obtained from drilled boreholes. This activity will trigger section (21a) of the NWA, which is included in the IWUL application.
- Water obtained from dirty water containment facilities, e.g., the Pollution Control Dams (PCD) will be used for dust suppression, and this triggers section (21g & 21j) of the NWA, which is included in the IWUL application.

- Any additional triggered sections that can be discussed during meetings and site visits will be added.

6.3.4 Waste disposal

The following waste disposal options have been identified:

- Stockpile for use as non-select product. This option involves temporarily stockpiling on-site and selling it off at a later stage.
- Disposal: This option involves disposal of discard to a surface disposal site or into the pit. The disposal of waste will be further investigated and discussed during the EIA phase.

6.4 No-go alternative

Not mining the coal deposit and leaving the region as agricultural land would be a no-go option. No-go options must be researched and analyzed, according to the NEMA. No-go alternatives suggest that the Notre project will not be implemented, resulting in the projected severe environmental and socioeconomic consequences. This option will have to be assessed against the EIA findings as well as the project's potential socioeconomic advantages. The assessment's findings will be reported in the EIA report.

South Africa's coal deposits are a strategic resource, and they are critical to the country's economic prosperity. This project will create more than 86 permanent jobs and 20 unskilled positions. Additionally, as raw coal, a resource with good seam quality and a calorific value of up to 168 716 500Mj/kg will be sterilised. During the EIA phase, the environmental, social, and economic implications will be thoroughly analyzed in order to detect and mitigate any negative consequences.

The no-go alternative was not deemed to be the preferred alternative as:

- The applicant will not be able to supply in the demand of coal mineral,
- The application, if approved, would allow the applicant to utilize the available coal as well as provide employment opportunities to local employees. Should the no-go alternative be followed, these opportunities will be lost to the applicant, potential employees, and clients.

The no-go alternative's viability cannot be addressed at this time and will be discussed in more detail during the EIA phase once specialist inputs have been received. The brief overview of the no-go alternative is not an in-depth assessment, and the impacts will be assessed and discussed in detail in the EIA report.

7 PUBLIC PARTICIPATION PROCESS

7.1 Objectives of public participation

Public participation aims to:

- Provide I&APs with an opportunity to voice their support, concerns and questions regarding the project, application, or decision.
- Provide an opportunity for I&APs, EAPs and the Competent Authority (CA) to obtain clear, accurate and understandable information about the environmental, social, and economic impacts of the proposed activity or implications of a decision.
- Provide I&APs with the opportunity to suggest ways to reduce or mitigate an activity's negative impacts and enhance the positive impacts.
- Enable the applicant to incorporate the needs, preferences, and values of the I&APs into the application.

7.2 Legislation

The PPP must comply with several important sets of legislation that require public participation as part of an application for authorisation or approval, namely the MPRDA, NEMA, NEM:WA and NWA. Adherence to the requirements of these acts will allow for an integrated PPP, satisfying the requirement for public participation referenced in the Acts. The details of the integrated PPP are provided in the following sections (7.3-7.7) respectively.

7.3 Identification of I&APs

Potential I&APs will be identified based on the definition of I&APs in the EIA regulations. The I&APs database includes authorities and landowners. The PPP and consultation will be conducted in adherence to the relevant legislation.

People and/or organisations will be registered as I&APs for the project if they:

- Are landowners or tenants adjacent to the proposed study area.
- Are the local municipality/ward councillors with jurisdiction in the area or represent the ratepayer's association.
- Are an authority or organ of state with jurisdiction in respect of any aspect of the activity.

- Responded to the Background Information Document (BID), advertisements and site posters.
- Attend a public meeting.

The PPP will commence on the 11th of November 2022. The public participation meeting will be organised with the community and further communication will be announced in due time. The Draft Scoping Report will be available for stakeholders and I&APs to review for a period of 30 days commencing from the 11th of November to the 11th of December 2022. The notification procedure includes the following (Appendix 3 and 6):

- Newspaper advertisement: Published in 'Excelsior Nuus/News'' on 11 November 2022.
- A meeting with the committee and also the ward counsellor.
- A meeting with the landowner (Reheivo Boerdery CC) of portion 01 of the farm Annysspruit 140 HT.
- A meeting with the landowner of the remaining extent of the farm Mooihoek 168 HT
- Public A2 notices will be distributed to an identified police stations in (Dirkiesdorp and Driefontein), at local shopping complexes, taxi rank, bottle store, Kwa-Ngema clinic and also at the nearby farm portions and the farm portions affected.
- Project introduction meeting will be held with the Kwa-Ngema Trust if need be.
- Consultation emails will be sent to the identified authorities, adjacent landowners, and stakeholders
- Public Participation meeting will be held with the people from Dirkiesdorp, KwaNgema, Driefontein and affected farm households either face to face or virtually.
- Draft Scoping Reports will be shared to registered I&APs of the project and comments received, will be incorporated on the report for submission to the DMRE.

Table 12: Consultation procedure

A table containing the procedures that will be undertaken to engage with all interested and affected parties physically is demonstrated below:

Consultation with Mkhondo Local Municipality
Meeting with the landowners
Project introductory stop and go meeting with locals
Meeting with Kwa-Ngema Trust Members
Public involvment meeting with the Matafuleni Community, KwaNgema, Dirkiesdorp, Driefontein and affected farm households
Site notices erected around the farm, neighbouring properties, national routes and town

7.4 Background information document

Included in the I&AP notification letters: facsimiles, and e-mails in a BID, which includes:

- Locality map and description
- Project description and background
- Legal framework
- Explanation of the scoping and EIA process to be followed
- An invitation to get involved and comment on the proposed project
- Time frames of the scoping report

7.5 Notification of availability of scoping report

All registered I&APs and stakeholders have been notified via email of the availability of the Draft Scoping Report for review for a planned period of thirty days which was due to start from 11th of November 2022 to the 11th off December 2022. The report will be available at: KwaNgema Clinic, Mkhondo Local Municipality & Mkhondo Public Library Respectively and obtainable from Ms Valentine Mhlanga (valentine@singoconsulting.co.za) at Singo Consulting (Pty) Ltd. All incoming comments received from stakeholders and I&APs will be included in the Final Scoping Report. Comments are also being anticipated to be received from stakeholders including the Department of Agriculture, SANRAL (South African National Roads Agency Limited), Department of water and sanitation (DWS). Comments have been received from community members who participated in the meeting. The DMRE has forty-three days from report submission to review and make decision for the application.

7.6 Meetings

The following meetings will be held:

- Mkhondo Local Municipality meeting (Environmental Team)
- Landowner's meeting
- Informal community with farm dwellers
- Public participation meeting

The minutes of all meetings, the presentation at the public participation meeting and site notices advertising the project will be included in the Final Scoping Report

Names of I&APs	Organisation/Capacity
	Mkhondo Local Municipality
	Gert Sibande District Municipality
	Mpumulanga Department of Agriculture, Rural Development, Land and Environmental Affairs
	Department of Environmental Affairs
	Department of Agriculture, Forestry and Fisheries
	Department of Water and Sanitation
	Department of Environmental Affairs
	Department of Labour
	Department of Public Works
	Commission on Restitution of Land Rights
	Mpumalanga Tourism
	Biodiversity Planning
	Eskom
	Sanral
	Transnet

7.7 Summary of issues raised by I&APs

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Landowners					
Portion 1 of the farm Annysspruit 140 HT					
Remaining extent of the farm Mooihoek 168 HT					
Lawful Occupiers					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.	Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Adjacent Occupiers				

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Local Municipality					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
District Municipality					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.	Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Government departments				

Department of Agriculture, Forestry and Fisheries 					

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
South African Heritage Resource Agency an agency of the Department of Arts and Culture					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Department of Water and Sanitation water & sanitation Department: Water and Sanitation REPUBLIC OF SOUTH AFRICA					
Department of Environmental Affairs environmental affairs Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
economic development & tourism MPUMALANGA PROVINCE REPUBLIC OF SOUTH AFRICA the dedet Department: Economic Development, Environment and Tourism MPUMALANGA PROVINCIAL GOVERNMENT					
Department of Labour labour Department: Labour REPUBLIC OF SOUTH AFRICA					
Department of Public Works public works Department: Public Works REPUBLIC OF SOUTH AFRICA					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Commission on Restitution of Land Rights					
Mpumalanga Tourism					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
Eskom Wayleaves					
SANRAL					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated
TRANSNET					
COMMUNITY (Driekiesdorp, Kwa-Ngema and Driefontein)					
INTERESTED AND AFFECTED PARTY					

I&APs Names of persons consulted. An "X" indicates that those who had to be consulted were consulted.		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where issues and/or responses were incorporated

8 ENVIRONMENTAL ATTRIBUTES AND DESCRIPTION OF THE BASELINE RECEIVING ENVIRONMENT

8.1 Geology

8.1.1 Regional geology

The Karoo Supergroup in the project area comprises the Ecca Group and the Dwyka Formation. The Ecca sediments consist predominantly of sandstone, siltstone, shale, and coal. Combinations of these rock types are often found in the form of interbedded siltstone, mudstone, and coarse-grained sandstone. The Ecca sediments overlie the Dwyka Formation (loosely referred to as the Dwyka tillite). The latter consists of a proper tillite, sandstone and sometimes thin shale development. The upper portion of the Dwyka sediments may have been reworked, in which case carbonaceous shale and even inclusion of coal may be found.

The Ermelo Coalfield is obtainable at depth 0-100m whereby the Vryheid Formation has the following seams depth: E Seam(0–3 m), D Seam(0.6 m), C Lower Seam(1.5 m, sandstone partings in upper section), C Upper Seam(well developed, 0.7–4 m, sandstone, siltstone or mudstone partings split seam into 2–3 plies, devolatilized/ destroyed by dolerite over large areas), B Lower Seam, B Upper Seam(may coalesce in south, 0–3 m), A (isolated outliers, 1 m), A Seam(0–1.5 m, mainly removed by erosion) Dip gently southwest, minor folding; dykes (2–5 m) common, up to 8 sills (10–250 m) transgress and uplift the seams.

It consists mainly of sandstone, shale and coal beds of the Vryheid Formation of the Ecca Group and is underlain by the Dwyka Formation of the Karoo Supergroup. The Karoo sediments again are underlain at depth by felsitic lavas of the Selons River Formations of the Rooiberg Group and granite from the Lebowa Granite Suite of the Bushveld Complex. The Ecca Group, which is part of the Karoo Supergroup, comprises of sediments deposited in shallow marine and fluvio-deltaic environments with coal accumulated as peat in swamps and marches associated with these environments. The sandstone and coal layers are normally reasonable aquifers, while the shale serves as aquitards. Several layered aquifers perched on the relative impermeable shale are common in such sequences. The Dwyka Formation comprises consolidated products of glaciation (with high amounts of clay) and is normally considered to be an aquiclude. The generally horizontally disposed sediments of the Karoo Supergroup are typically undulating with a gentle regional dip to the south.

The extent of the coal is largely controlled by the pre-Karoo topography. Steep dips can be experienced where the coal buts against pre-Karoo hills. Displacements, resulting from intrusions of dolerite sills, are common. Abundant dolerite intrusions are present in the Ecca sediments. These intrusions comprise sills, which vary from being concordant to transgressive in structure, and feeder dykes. Although these structures

serve as aquitards and tend to compartmentalise the groundwater regime, the contact zones with the pre-existing geological formations also serve as groundwater conduits.

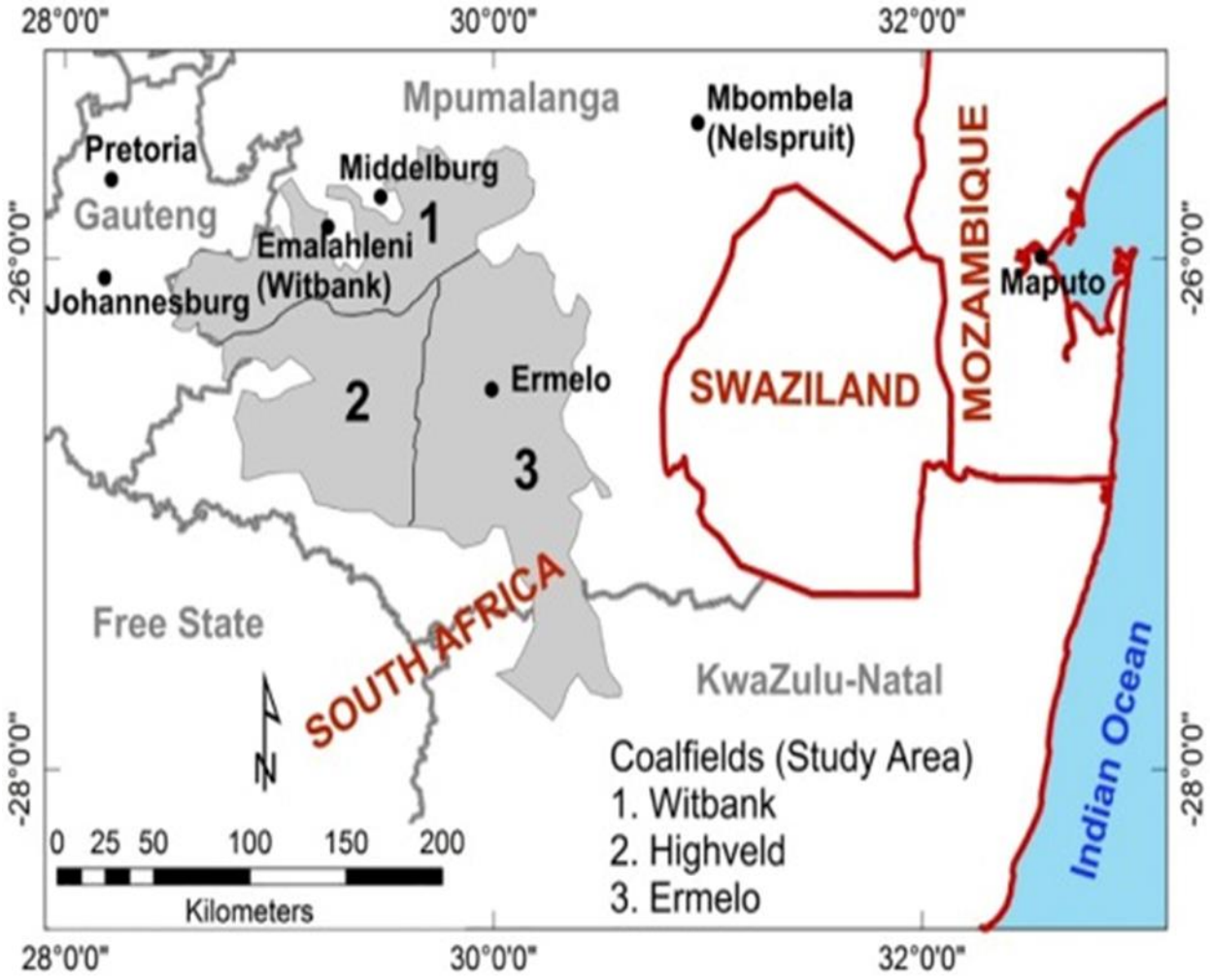


Figure 15: Depiction of the geology where the proposed project is situated (Google Earth View , 2022)

8.1.2 Vryheid formation

The Main Karoo Basin consists of a retro-arc foreland basin filled with a lithological succession ranging in age from the Late Carboniferous to the Middle Jurassic (Johnson et al., 2006). The basin-fill sequence wedges out northwards over the adjacent Kaapvaal Craton. In the Main Karoo Basin of South Africa, the Vryheid Formation is a sandstone and coal-rich stratigraphic unit that interfingers with (i.e., is transitional with and partially time equivalent to) the overlying Volksrust and underlying Pietermaritzburg Formations, both of which are both are predominantly argillaceous (Figure 16). In terms of environment of deposition, the formation can be divided into lower fluvial-dominated deltaic interval, a middle fluvial interval (the coal-bearing zone) and an upper fluvial-dominated deltaic interval (Johnson et al., 2006). The thickness and frequency of the sandstone units increases from the base of the formation, reaching their maximum in the

middle fluvial interval and then decrease again towards the overlying Volksrust Formation. To the south and south-east, the Vryheid Formation grades laterally into undifferentiated, deep-water argillites of the Ecca Group (Figure 16 The Volksrust and Pietermaritzburg Formations can only be recognised when the Vryheid Formation forms part of the vertical sequence. In the north and north-western portions of the basin, the Pietermaritzburg Formation was not deposited and the coal-bearing strata of the Vryheid Formation rest directly upon the basement.

The Vryheid Formation is one of sixteen recognised stratigraphic units that constitute the Permian Ecca Group. During the deposition of the Ecca Group the basin was dominated by a large sea (the salinity levels of this water body remain unresolved). The exception to this model was the deposition of the coal-bearing strata of the Vryheid Formation along the northern margin during an episode of deltaic progradation into the basin. Deposition of the Vryheid Formation was terminated by a basin-wide transgression that drowned the Vryheid deltas and their coal swamps, resulting in the deposition of the deep-water sediments of the Volksrust Formation. The investigation of the project area did not identify any outcrops of bedrock, the entire area being covered by Cenozoic Regolith.

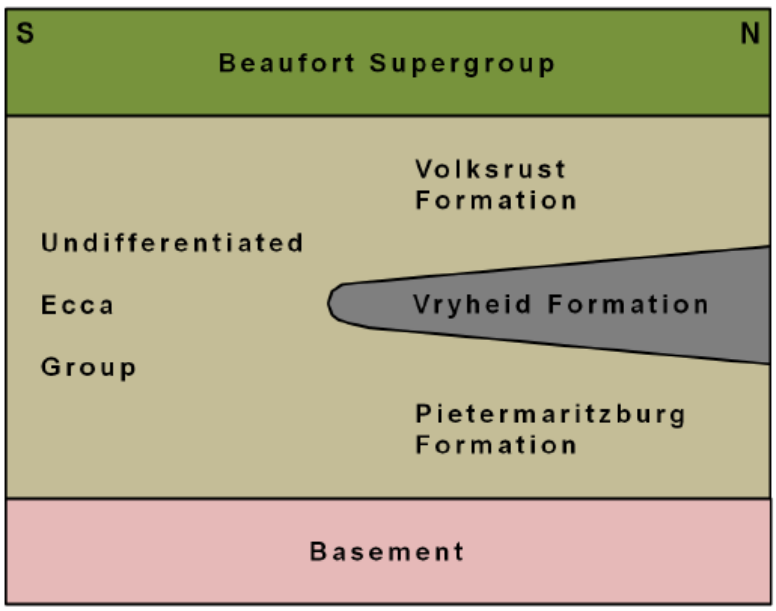


Figure 16: Schematic north-south oriented stratigraphic section of the Ecca Group in the northeast corner of the Karoo Basin.

8.1.3 Local geology and coal seams

8.1.3.1 Ermelo coalfield

According to the geological map of the project area below, it can be observed that the area is underlain by Vryheid Formations which forms part of the Ecca Group within the Karoo Supergroup. The Vryheid Formation is composed of shales, sandstones, and coal seams.

According to the studies that were conducted by XMP Consulting available online, Ermelo coal field stretches from Carolina in the north to Wakkerstroom in the south, a distance of 150 km and the east-west extent of the field is about 80km, about 25km east of Standerton, eastwards to Sheepmoor. It is bounded by the Witbank Coalfield in the northwest, Highveld in the west and Utrecht Coalfield to the south. Previous studies show that anthracite has been mined before in areas such as Piet Retief, Ermelo and Wakkerstroom. There are four coal seams that are most important namely, the A seam, B Seam, C Seam and Dundus.

The surface geology over the project area is dominated by outcrops and sub-crops of sedimentary rocks of the Ecca Group (Vryheid Formation), with Transvaal Supergroup (Hekpoort Formation) outcrops also present at the surface in the far east of the project area.

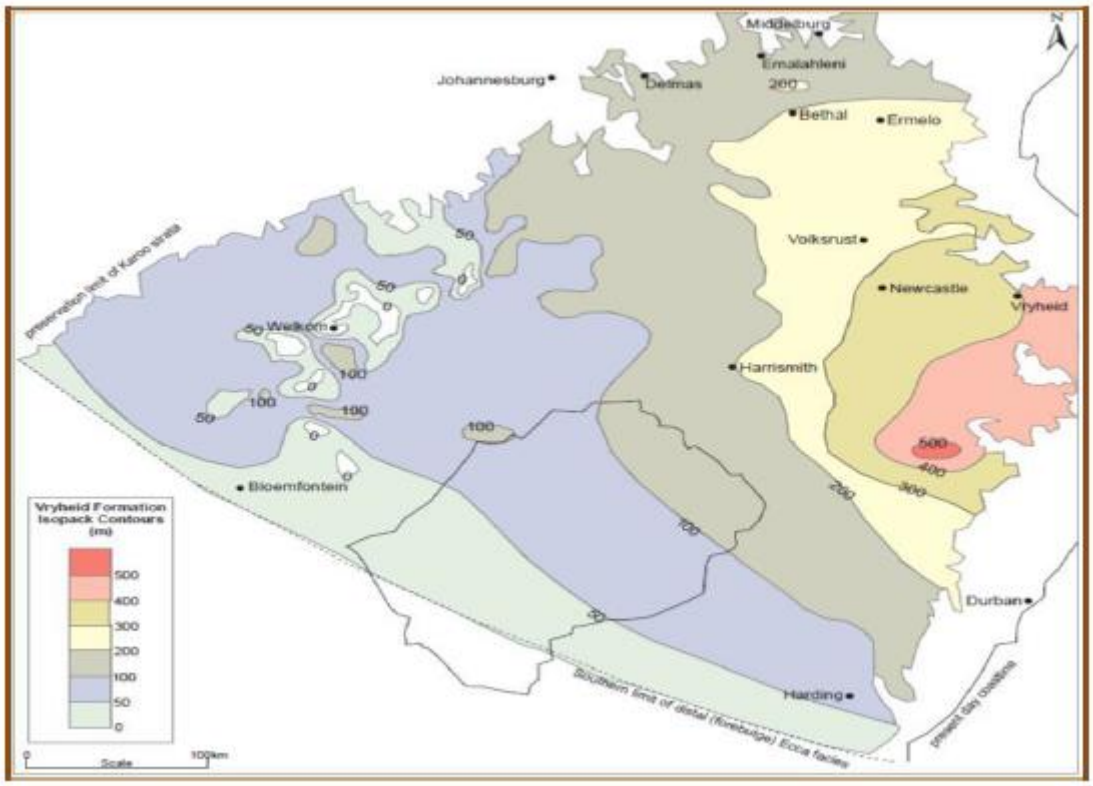


Figure 17:Illustration of the Ermelo Coalfield in the Vryheid Formation. (Google Earth View , 2022)

The project falls under the Vryheid formation and the rocks of the Permian Vryheid Formation and Jurassic aged dolerites dominate the surface exposures of the coalfield. The Vryheid Formation is underlain by the Dwyka Group and is gradually overlain by mudstones (and shale) and sandstones of the Volksrust Formation. The typical colours for the Vryheid Formation are grey and yellow for the sediments and black for the coal seam. The thickness of the grey shale can vary, and this is interlayered with variable yellow sandstone and coal seams, see Figure 18.

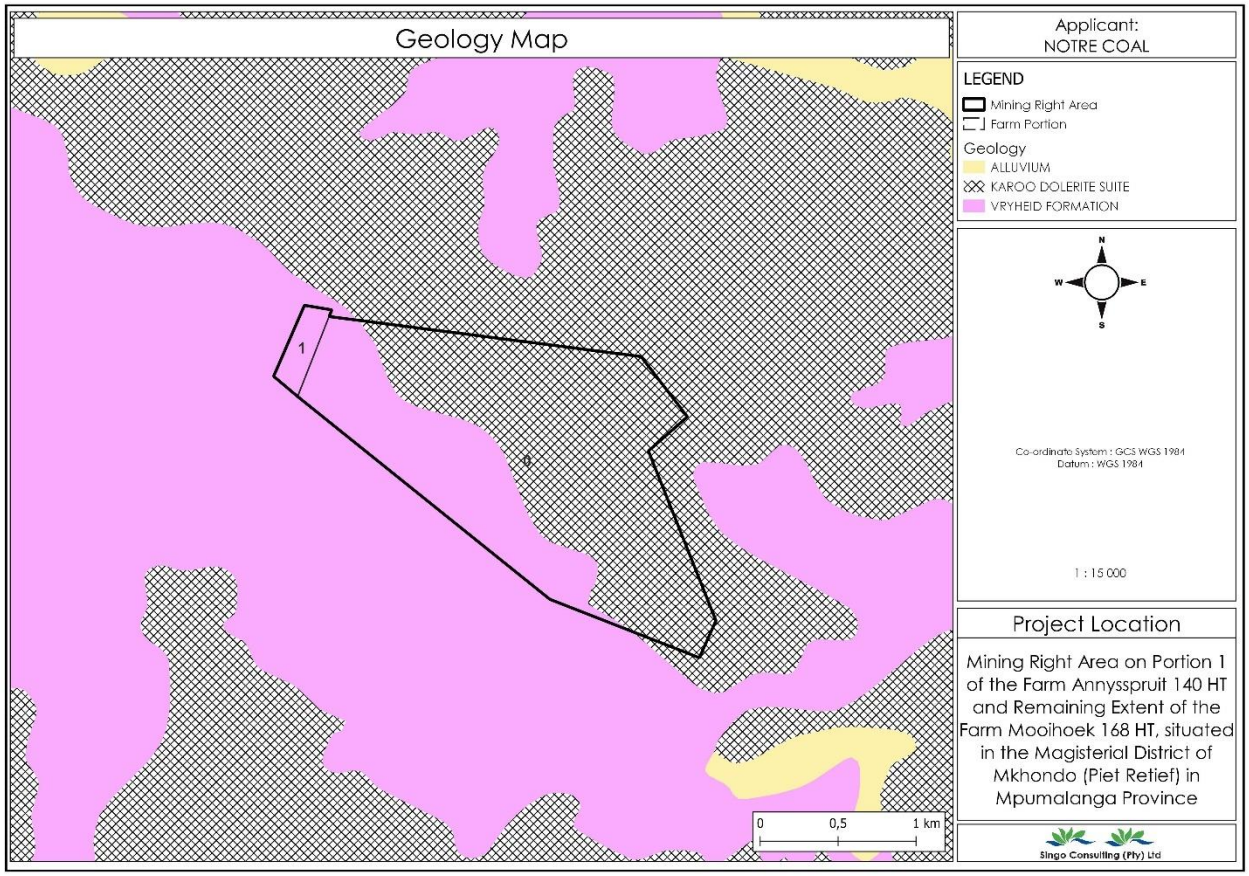


Figure 18: The lithology of the area (Singo Consulting (Pty) Ltd, 2022)

8.1.3.2 Exploration outcomes

As per the CPR complied by Singo Consulting (Pty) Ltd. It is important to note again that Singo Consulting did not conduct the drilling of this project, the data was acquired from Council of Geoscience (GCS) and used for Geological modelling.

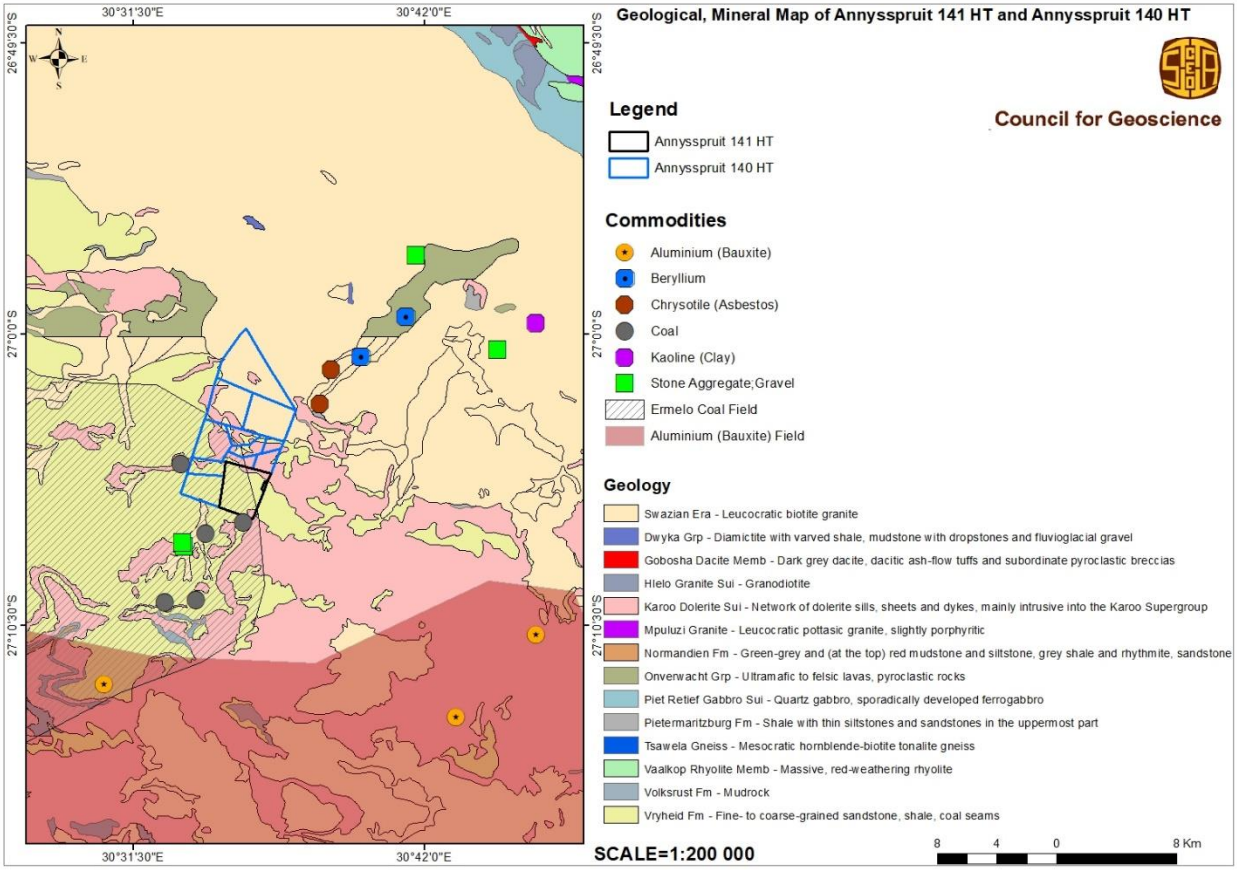


Figure 19: Geological, Mineral Map of Annyspruit 141 HT, and Annyspruit 140 HT (Counsel of GeoScience, 2021).

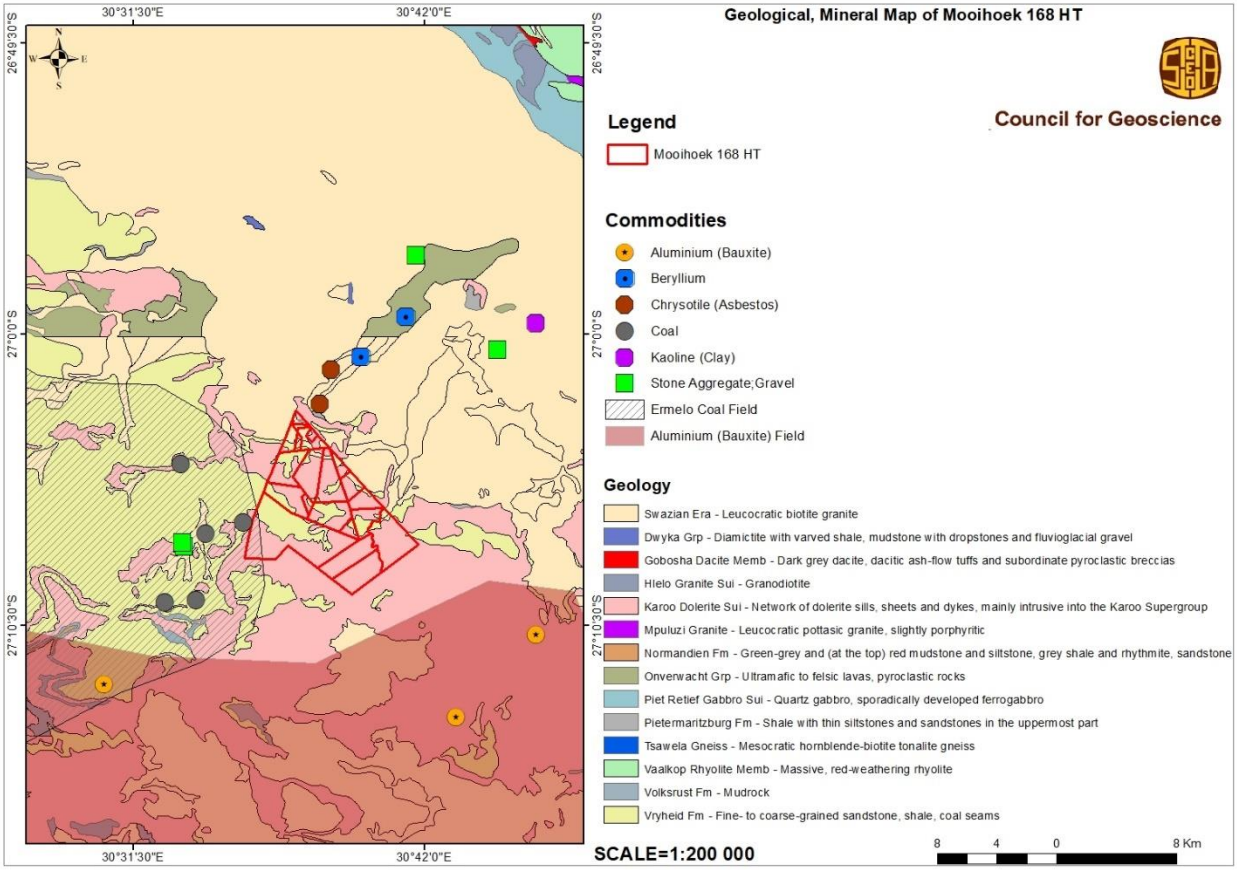


Figure 20: Geological, Mineral Map of Mooihoek 168 HT (Counsel of GeoScience, 2021)

8.1.3.3 Local geology

Ermelo Coalfield stretches from Carolina in the north to Wakkerstroom in the south, a distance of some 150km and the east-west extent of the field is some 80km, from about 25km east of Standerton, eastwards to Sheepmoor. It is bounded by the Witbank Coalfield in the north west, Highveld in the west and Utrecht Coalfield to the south. Anthracite has been mined in the Piet Retief, Ermelo, Wakkerstroom areas, but essentially the Coalfield generates bituminous coal. It hosts up to eight coal seams within the middle Ecca Group sediments of the Karoo Supergroup, but not all are present in the various sectors. There are four coal seams which are the most important: A Seam; B Seam, C upper and C lower or Eland, Alfred, Gus and Dundas, depending on which sector is being exploited. See a nearby (Kwa-Ngema) cross section.

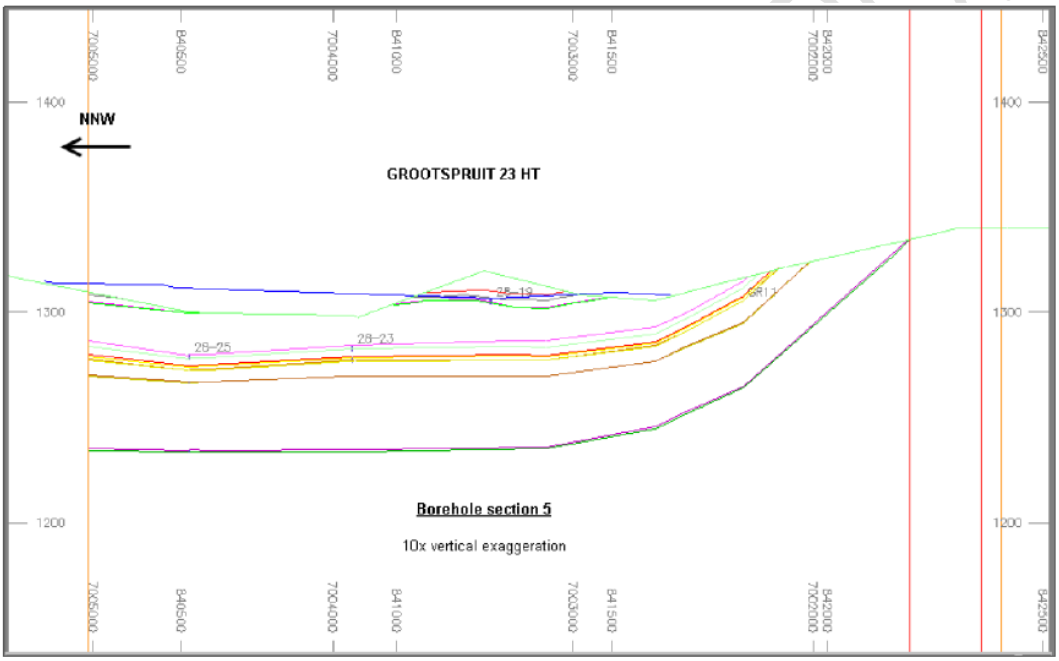


Figure 21: Cross section showing a seam undulation in an NNW direction. (Norman Duma, 2018)

8.1.4 Soil

A soil study will be conducted by Singo Consulting (Pty) Ltd.

8.1.4.1 Soil classes of the project area

The soil classes map in Figure 22 below, shows that the mining Right area is largely covered with Association of Classes 13 and 16; Undifferentiated shallow soils and land classes as well as Association of Classes 1 to 4; Undifferentiated structureless soils.

VC

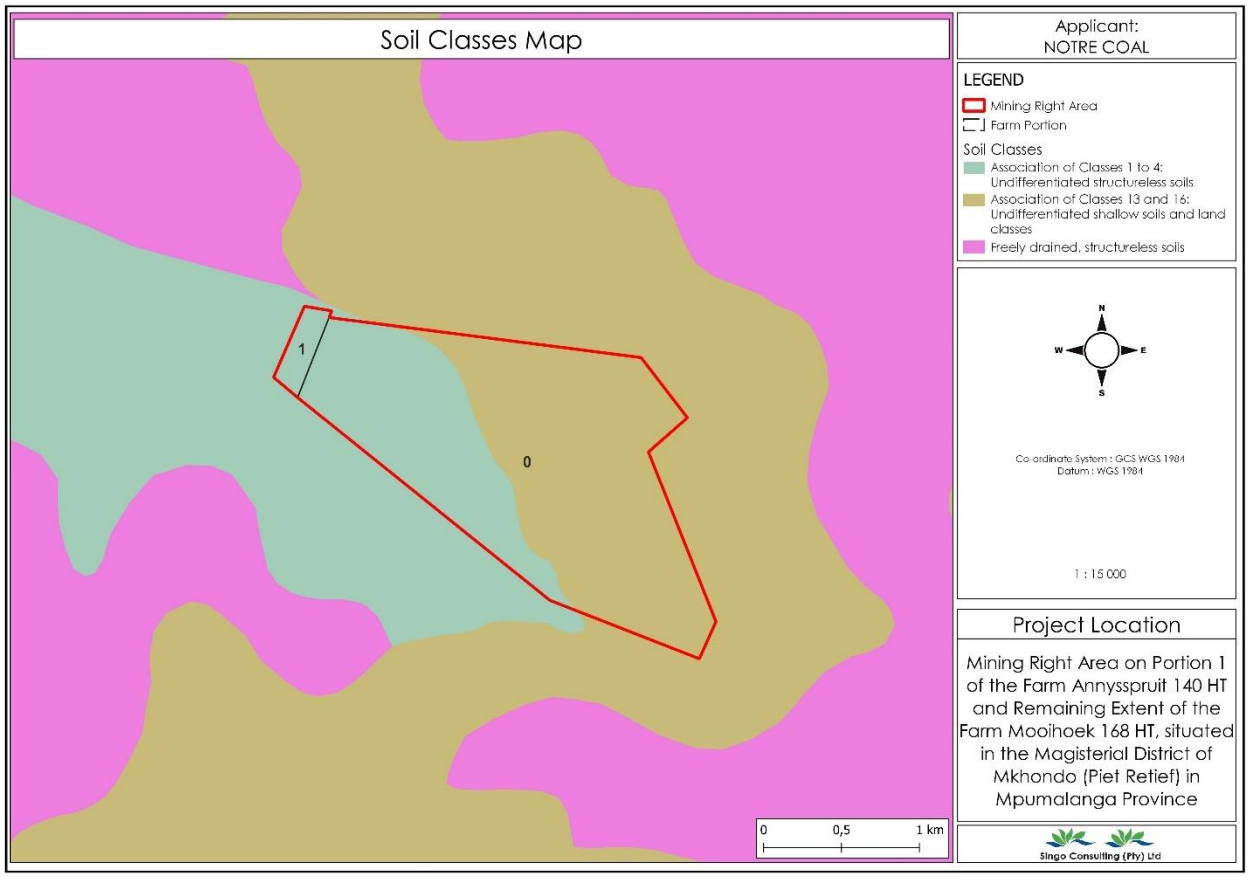


Figure 22: Soil classes map

Figure 23: Soil type observed onsite (Site Visit, 2022)

9 CLIMATE

9.1 Regional climate

The study area is in the summer rainfall Mpumalanga Highveld Region. Summers are hot and humid, while winters are chilly and dry. Summer is when mist, rain, and hail are most likely to occur. The majority precipitation comes from convectional thunderstorms, which are frequent. Around six days each year, hail is likely to occur. The average annual rainfall is between 801 and 1000 millimeters, with 85 percent of this occurring during the rainy season (October-March). Warm summers and frigid winters characterize the highveld climate, with the primary temperature about 17°C at 14:00 in winter. The climate of the area under consideration is characterized as being in the Highveld region (Region H), which is defined as having a climate with a lot of sunshine. The climate of the area under examination is classed as being in the Highveld region (Region H), which is defined as having a moderate to warm climate with summer rains.

The main wind direction is north-west throughout the year, while storm winds (i.e. high-velocity winds) come from the south-east, with the highest winds in late winter and early spring. Summer (October-January) sees the most evaporation because to the high temperatures. The area in question receives 801-1000 mm of rain every year. See Figure 24 below.

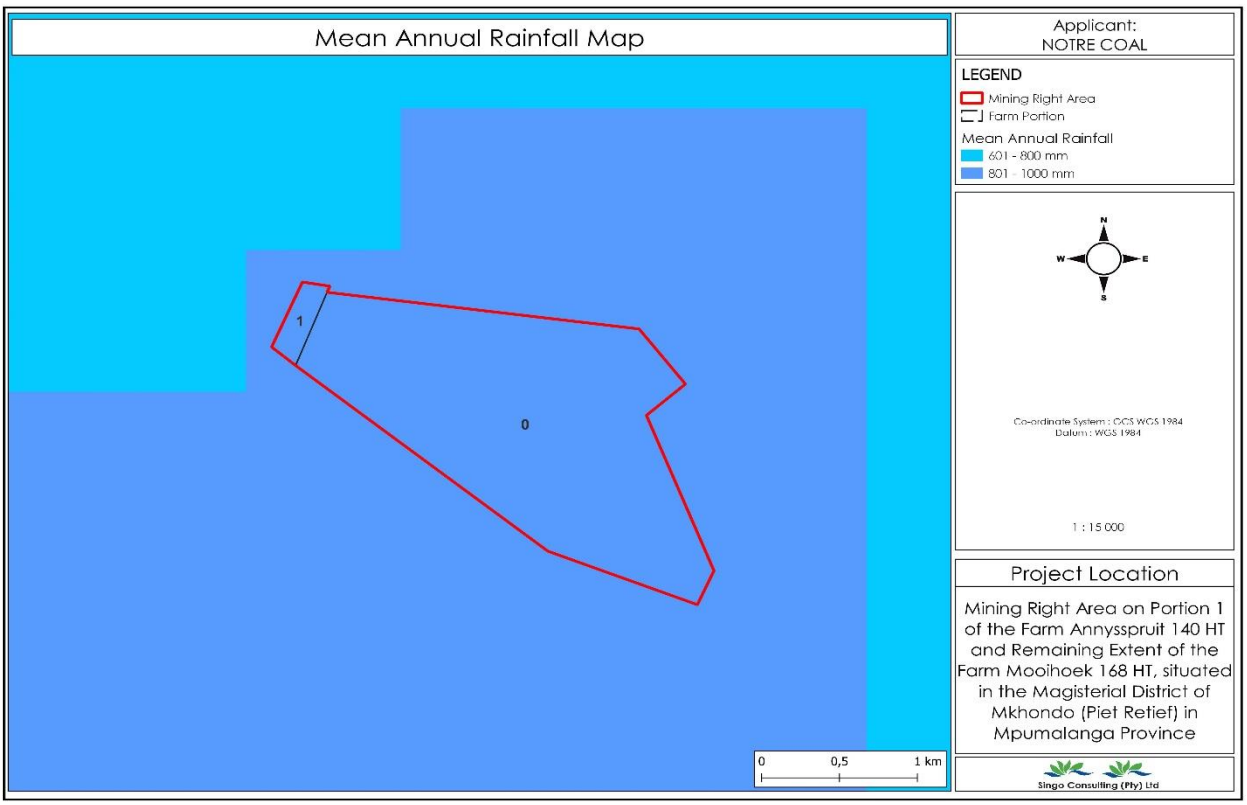


Figure 24: Rainfall in the area (Singo Consulting (Pty) Ltd, 2022)

9.2 Local climate

Climatically the area may thus be described as sub-humid. Frost is not commonly found in Piet Retief. The average maximum summer temperature is at its highest in January at 26.20C and the coldest in June at 19.40C. Winters are cool to cold with an average minimum in June of 3.20C. Figure 25 below depicts the mean minimum annual temperature which ranges from 0.1˚C to 2˚C and 2.1 ˚C to 4 ˚C. The area receives summer rainfall with a mean annual precipitation of about 601-800 mm and 801-1000 mm. According to (Climate- data.org), Piet Retief lies on 1251 m above sea level.

eMkhondo has a temperate highland tropical climate with dry winters climate (Classification: Cwb) The climatic conditions described in this section are based on the W5E009 weather station, which is the closest to the project site, at about 18 km southwest.

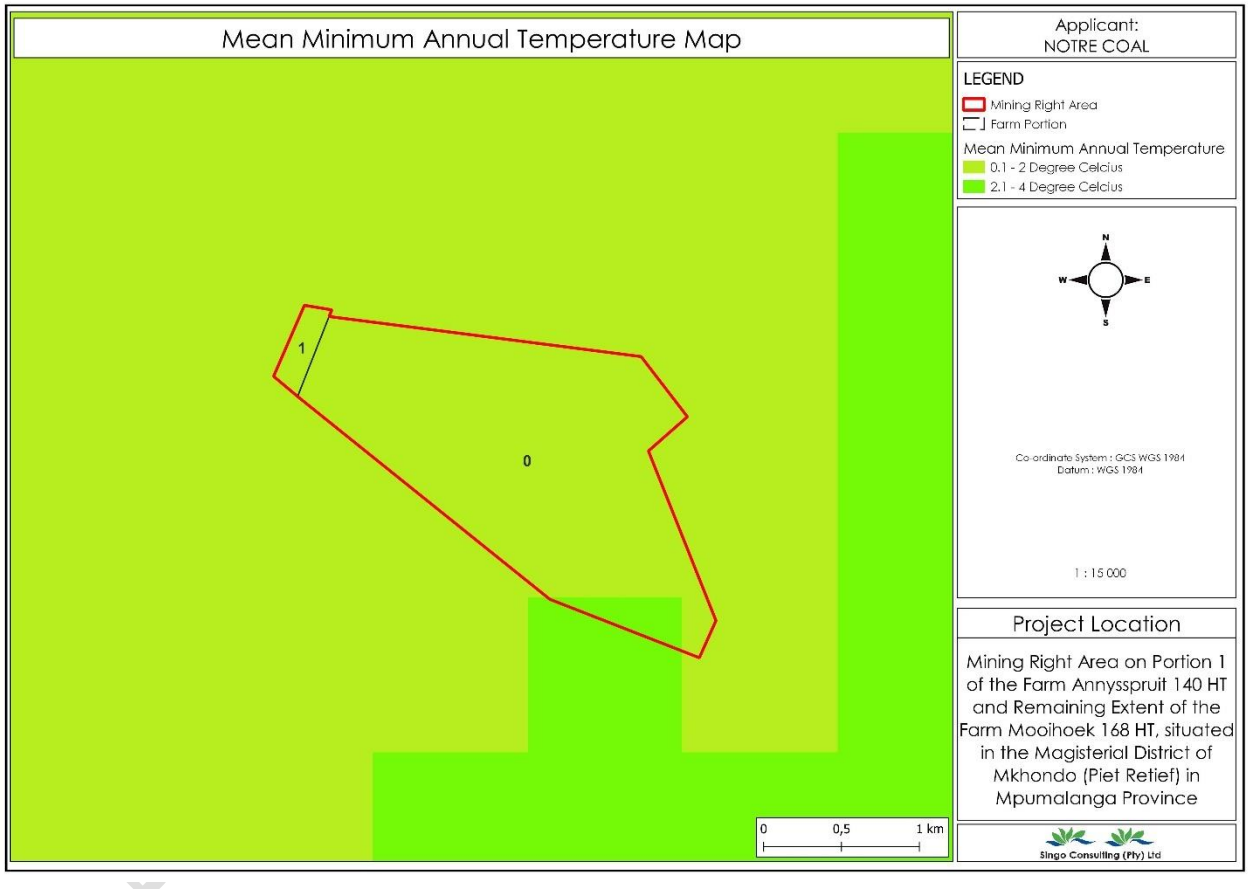


Figure 25:Mean Annual temperatures. (Singo Consulting (Pty) Ltd, 2022)

9.3 Local temperatures, rainfall and wind

- Temperature

Over the course of the year, the temperature typically varies from 0,1°C to 32°C. Table 11 below shows the monthly minimum, maximum and average temperatures for January 2016 - December 2018. December is the hottest month with temperatures reaching up to 32°C, followed by the months October, November, and January ranging from 30°C – 30,5 °C. July is the coldest month, with temperatures as low as 0.1°C.

Table 13: Temperatures from January 2016 through December 2018 (minimum, maximum, and average).

MONTHLY MINIMUM, MAXIMUM AND AVERAGE TEMPERATURES (°C) 2016 – 2018												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Minimum	8.8	10.8	8.6	5.6	3.2	1.6	0.1	1.1	3.6	3.1	5.0	9.4
Maximum	30.5	29.4	27.8	27.1	21.2	19.4	19.0	23.1	27.2	30.2	30.0	32.0
Average	19.2	19.4	18.8	16.3	12.2	10.2	9.4	12.1	15.8	16.1	18.0	20.0

Moisture in the Atmosphere, in the form of water vapor, liquid water, and ice, controls most aspects of our weather and climate. Moisture moves back and forth from Earth's surface to the atmosphere and, once in the atmosphere, is transferred vertically and laterally by moving air. The moisture found in the project area and around Piet Retief is slight. See Figure 26 below.

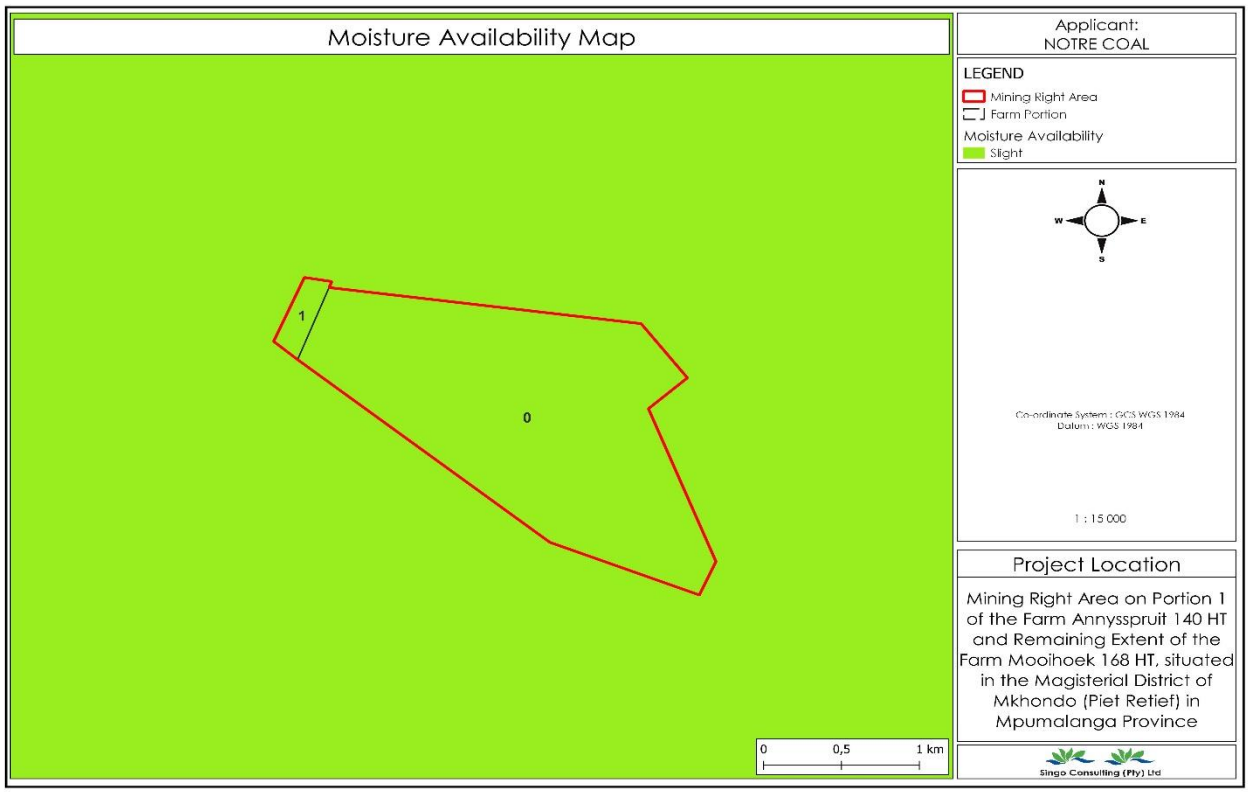


Figure 26: Moisture content (Singo Consulting (Pty) Ltd, 2022)

❖ Wind

The wind rose for Piet Retief shows how many hours per year the wind blows from the indicated direction. Example SW: Wind is blowing from South-West (SW) to North-East (NE). Cape Horn, the southernmost land point of South America, has a characteristic strong west-wind, which makes crossings from East to West very difficult especially for sailing boats. From January 2016 to December 2018, the prevalent wind direction was 13.8 percent west and 11% east-northeast, with wind speeds ranging from moderate to strong in calm conditions.

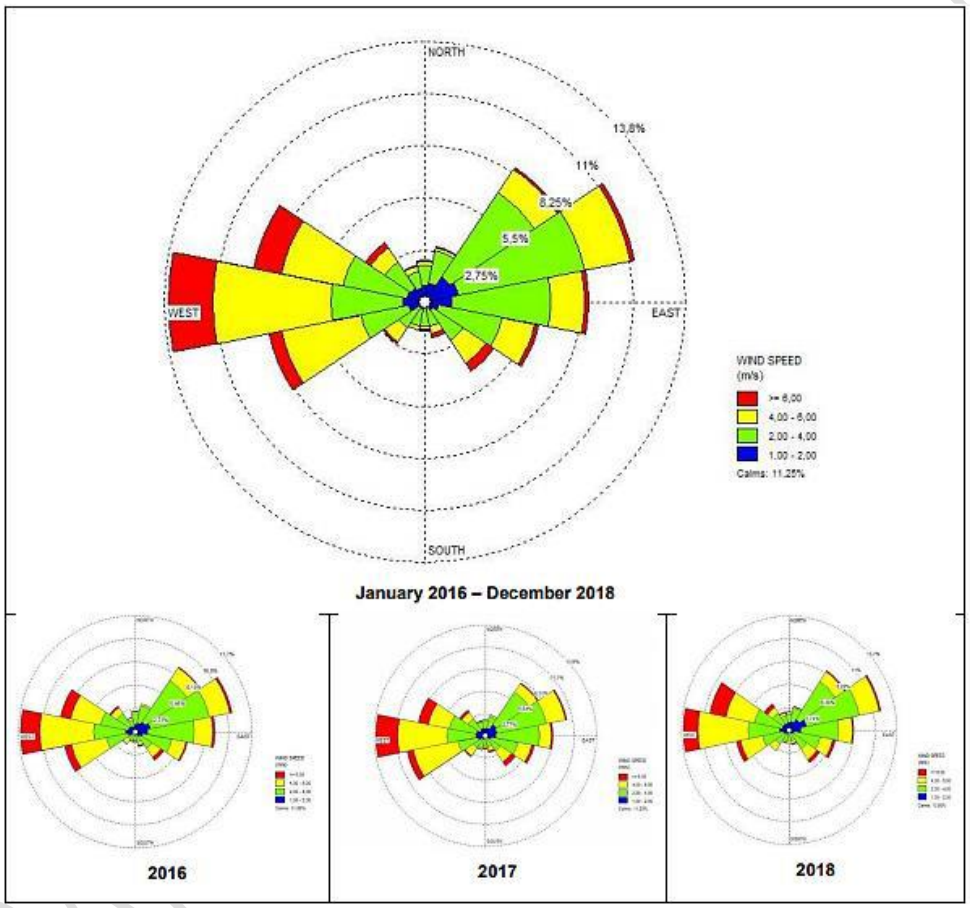
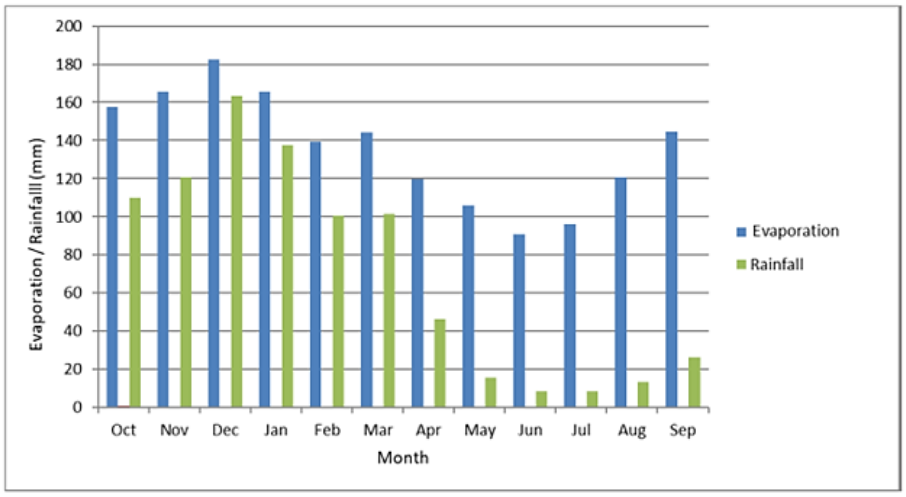


Figure 27: Wind characteristics of the areas (meteoblue, 2022)

❖ Rainfall

In eMkhondo, the wet season is comfortable and partly cloudy and the dry season is cool and mostly clear. The monthly rainfall in the project region varies greatly depending on the season. The monthly rainfall in the project region varies greatly depending on the season. The average annual rainfall ranges from 801 to 1000 mm, with January having the greatest rain and July receiving little to none. Table 14 shows the monthly rainfall and evaporation for the project area, whereas Figure 28 shows the mean yearly rainfall.

Table 14: Average Monthly Rainfall



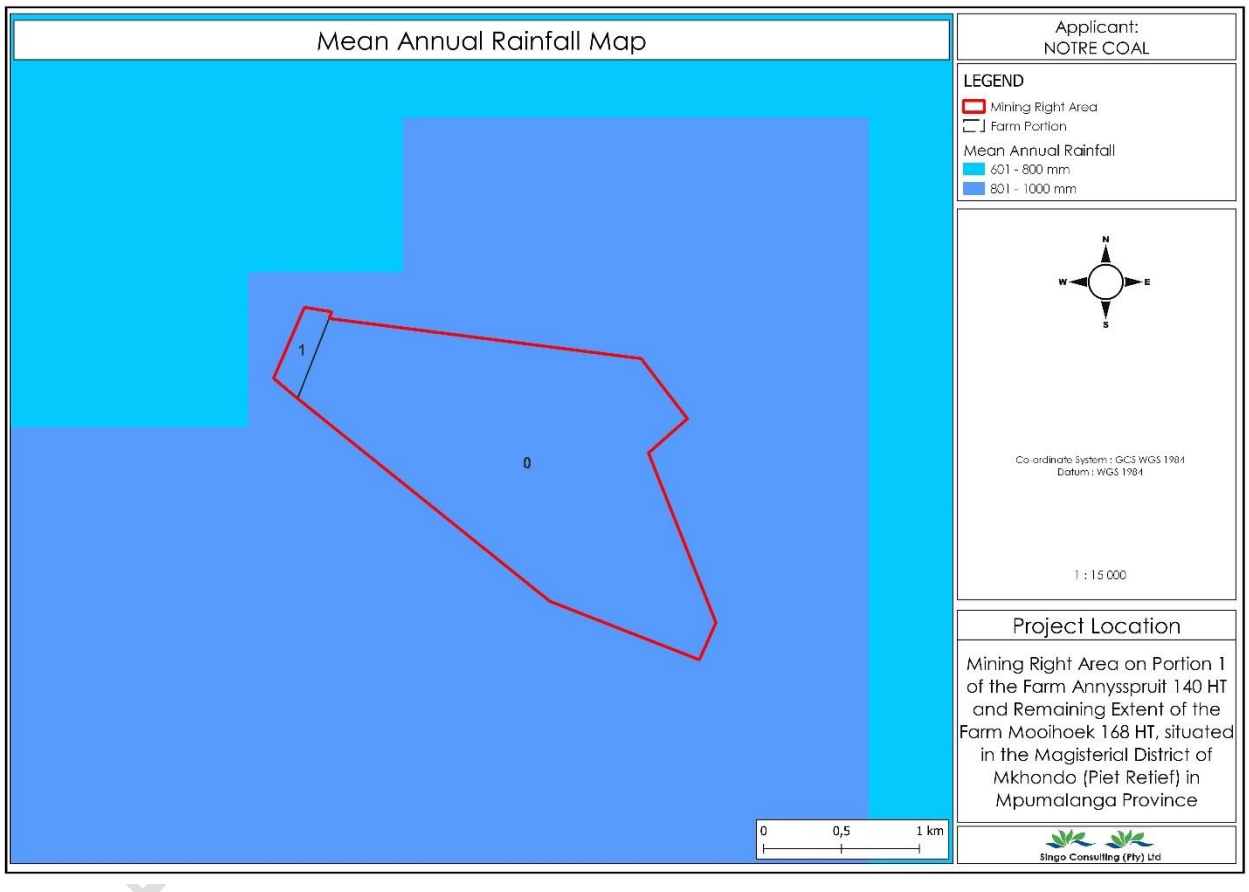


Figure 28: Mean Annual Rainfall for the project area. (Singo Consulting (Pty) Ltd, 2022)

10 TOPOGRAPHY

The area's topography is depicted in the diagram below. A topographic map is a map that depicts natural and manmade features on the Earth's surface to scale, with elements in the proper relationship to one another (Oxford Dictionary; 2020). The topographical map not only depicts landform features, rivers, and associated water resources, but it also uses contour lines to represent the height above sea level. Contour lines are imaginary lines that connect places of equal height on the ground surface. The topography begins to grow in height towards the south-east of the mining right region, as evidenced by the tightness of the contour lines. The elevation of every point on the map that touches the line should be the same.

Topography is utilized in this environmental project to estimate how soil may be saved and how water will flow across the earth's surface. Data from topography can assist to save the environment since it can be calculated how topsoil will be eroded and in what direction by wind or water by studying the contours of the terrain. This knowledge can aid in environmental mitigation and water management in the area over the project's lifespan. Water is likely to flow from the area where the contour lines are densely packed to the area where they are sparsely distributed in this project. This can also help in understanding the groundwater vulnerability of the area, since a gentle slope represents an area where contaminants have a longer residence time. As a result, topography can also help in avoiding the risk of contamination.

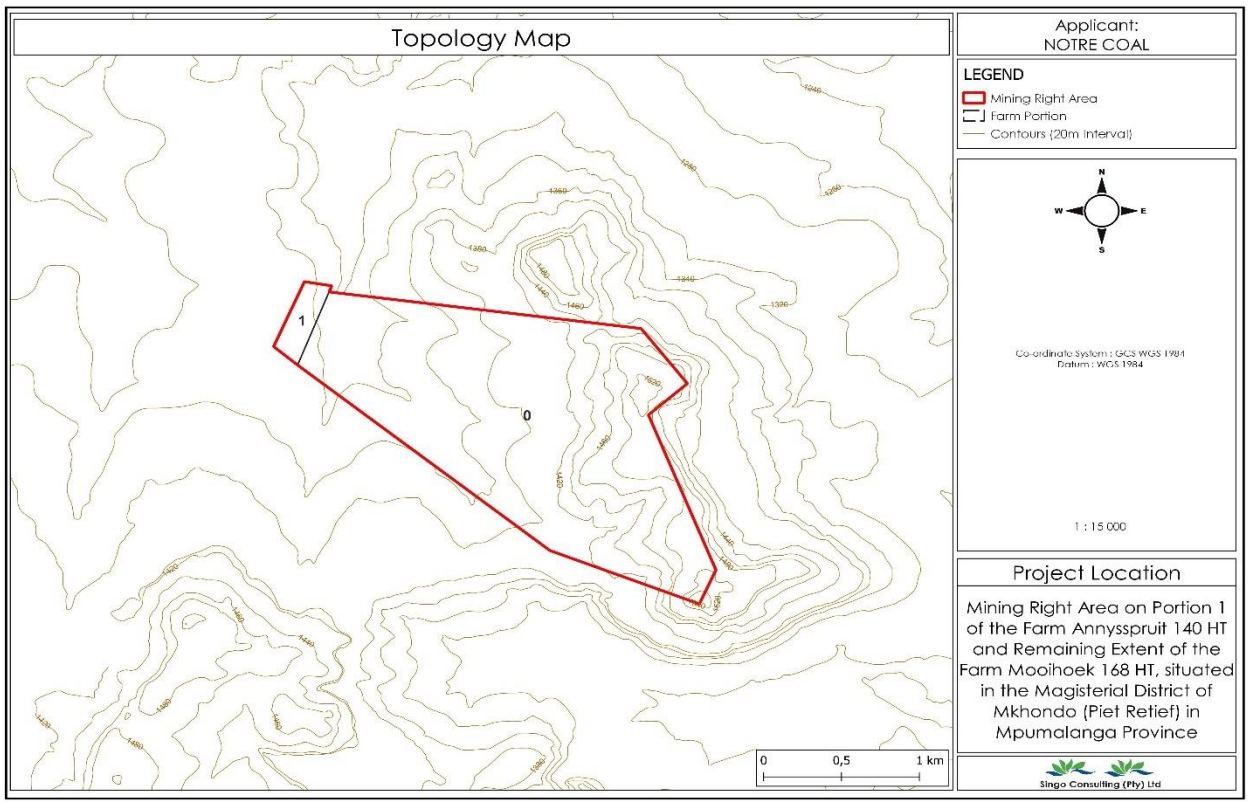


Figure 29: Area topology (Singo Consulting (Pty) Ltd, 2022)

11 AIR QUALITY

The assessment of the ambient air quality is based on available ambient air quality information identified in the literature review and data availed by the DEA and the South African Weather Service (SAWS) websites.

Mpumalanga experiences a wide range of natural and anthropogenic sources of air pollution ranging from veld fires to industrial processes, agriculture, mining activities, power generation, paper and pulp processing, vehicle use and domestic use of fossil fuels. Different pollutants are associated with each of the above activities, ranging from volatile organic compounds and heavy metals to dust and odours.

The project area is located in the Mpumalanga Highveld Priority Area, which has been declared as such by the Minister of Environment and Tourism in terms of Section 18 (1) and 57 (1) of the NEM:AQA. The area is situated near two power stations, namely; Camden and Amajuba situated less than 90km. the two stations result a significant negative impact on air quality in the area and have specific air quality management actions rectifying the situation.

Ambient air quality in Mpumalanga is strongly influenced by regional atmospheric movements, as well as local climatic and meteorological conditions. The most important of these atmospheric movement routes are the direct transport towards the Indian Ocean and the recirculation over the sub-continents (Scholes, 2002). It is these climatic conditions and circulation movements that are responsible for the distribution and dispersion of air pollutants in Mpumalanga and between bordering provinces and countries.

The current Air quality for Piet Retief is denoted as follows:

SO^2: Fair→Exposure to Sulfur Dioxide can lead to throat and eye irritation and aggravate asthma as well as chronic bronchitis. 35 µg/m³

PM 2.5: Excellent→ Fine Particulate Matter are inhalable pollutant particles with a diameter less than 2.5 micrometers that can enter the lungs and bloodstream, resulting in serious health issues. The most severe impacts are on the lungs and heart. Exposure can result in coughing or difficulty breathing, aggravated asthma, and the development of chronic respiratory disease more. 9 µg/m³

O^3: Excellent→ Ground-level Ozone can aggravate existing respiratory diseases and also lead to throat irritation, headaches, and chest pain. 41 µg/m³

PM 10: Excellent→ Particulate Matter are inhalable pollutant particles with a diameter less than 10 micrometers. Particles that are larger than 2.5 micrometers can be deposited in airways, resulting in health

issues. Exposure can result in eye and throat irritation, coughing or difficulty breathing, and aggravated asthma. More frequent and excessive exposure can result in more serious health effects more. 13 µg/m³

NO^2: Excellent→ Breathing in high levels of Nitrogen Dioxide increases the risk of respiratory problems. Coughing and difficulty breathing are common and more serious health issues such as respiratory infections can occur with longer exposure more. 5 µg/m³

CO: Excellent→ Carbon Monoxide is a colorless and odorless gas and when inhaled at high levels can cause headache, nausea, dizziness, and vomiting. Repeated long-term exposure can lead to heart disease. 136 µg/m³.

In summary, the air quality for Wakkerstroom, Piet Retief area is fair, meaning that is not immensely impacted by the two power stations found in the area.

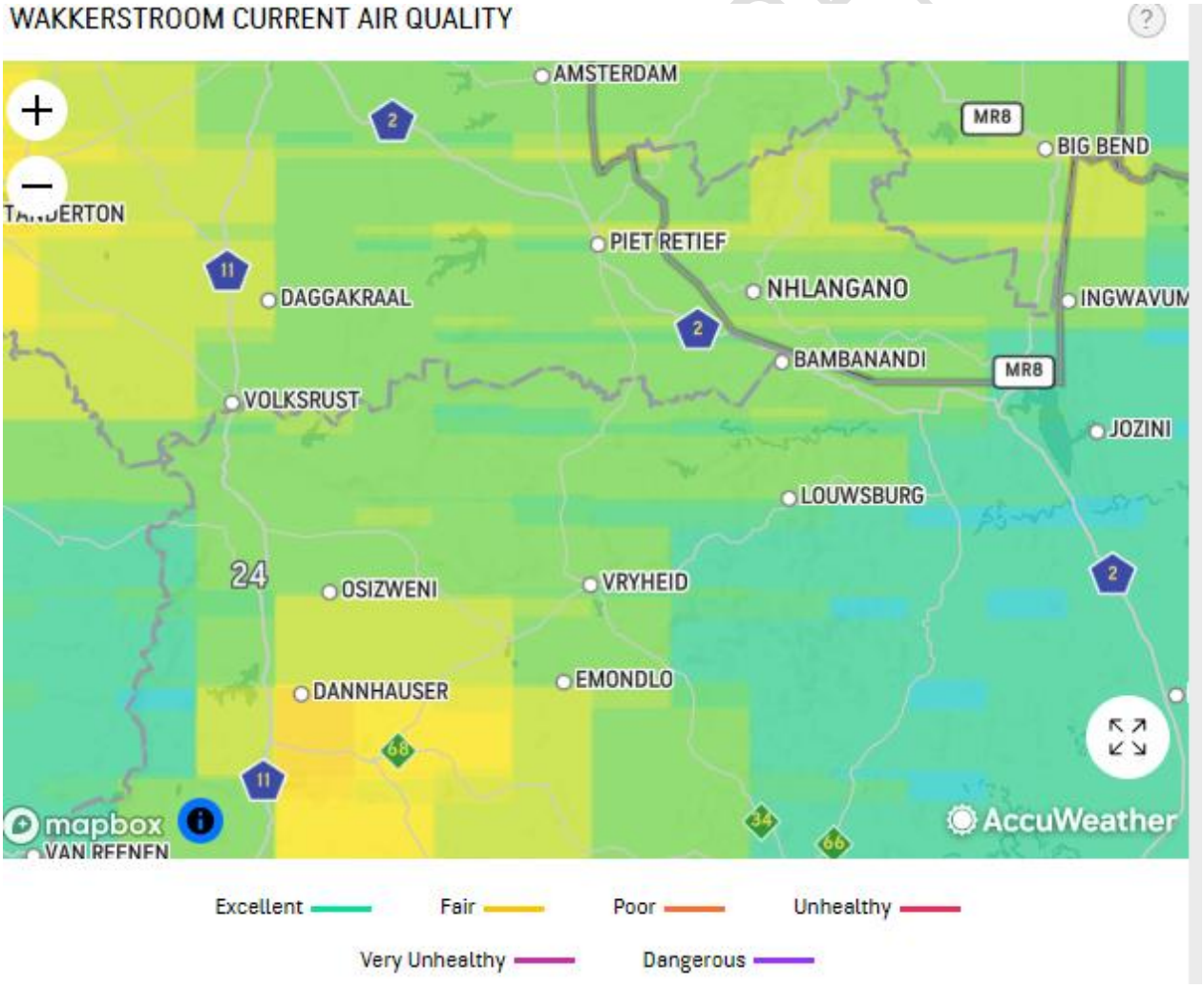


Figure 30:Air quality in the project area and surrounding areas. (AccuWeather, 2021)

12 NOISE

Measurements of the existing noise climate in accordance with the relevant SANS 10103:2008 Code of practice within the project area were made at 5 defined positions around the site.

In summary the results of the noise baseline indicated that existing sources of noise in the project area are:

• Natural sounds of the bush;

• Noise of existing agricultural activities around the site; and

• Noise from roads (incl. domestic traffic as well as trucks carrying maize meal in surrounding areas).

Noise and vibration are not monitored at the proposed site as it is not currently being mined and used for agricultural activities. As with air quality, the surrounding mobility, community activities impact on noise levels from vehicular and mechanical equipment, however the noise level is minimal as the mine nearing the proposed area is 7.3km northeast called Kiepersol Mine as well as Jindal Mining SA (Pty) Ltd which is approximately 7.6 km northeast of the proposed project area. The current ambient noise levels are generally comparable with the levels associated with farming activities. Due to numerous daytime sources including traffic on the provisional route (R543), haul roads, the noise and vibration levels are most prominent during the daytime and the noise emitted during these activities is occasionally intrusive to the wellbeing of the community. In the proposed coal mining area, the noise will be coming from vehicles moving to and from the site together with blasting activities. The following are the current sources of noise in the project area.

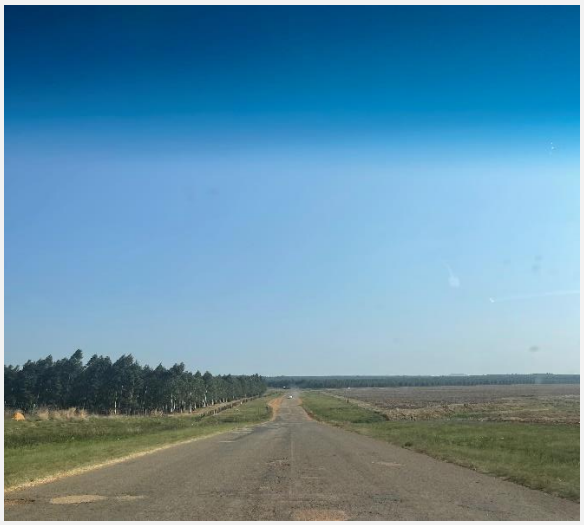


Figure 31: Sources of noise near the proposed mining area. (Singo Consulting (Pty) Ltd, 2022)

13 WATER RESOURCES

Hydrology and hydrogeological studies will be conducted by Singo Consulting (Pty) Ltd.

The hydrological map illustrating possible surface water bodies that can be found within and around the project area (see Figure 32). Within and nearby the mining right area, there are various types of wetlands namely; Channelled valley bottom and Seep wetlands. There is a perennial as well as a non-perennial river which runs through the mining right area.

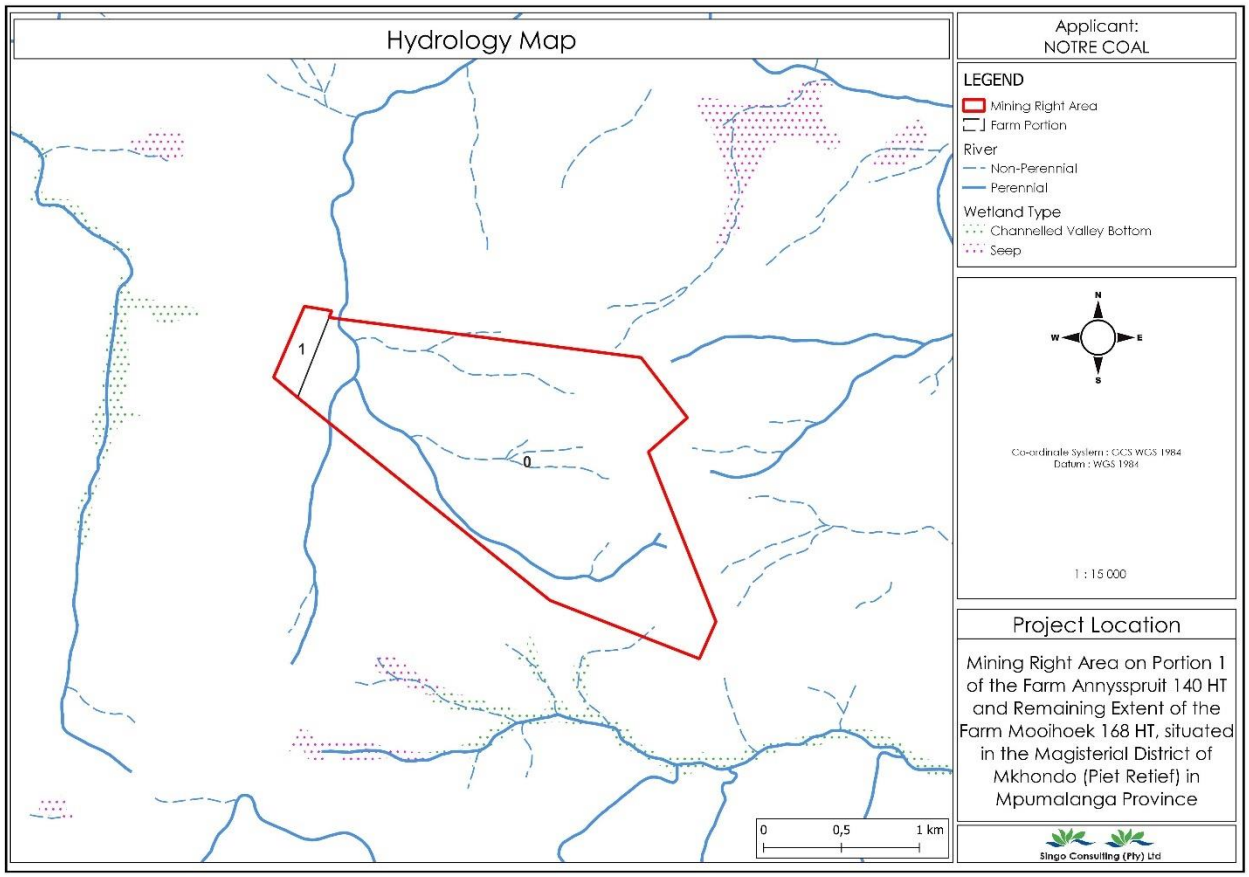


Figure 32: Hydrology map of the project area (Singo Consulting (Pty) Ltd, 2022)

The cumulative impacts due to the proposed mining could be of a quantitative and qualitative nature. The aquifers within the region are classified as minor aquifer systems and their main function is a domestic water supply source as well as supplying base flow to the surface water environment. This will result in a positive impact locally and could see the importance of groundwater increasing as a potential source within the catchment.

However, the water quality within the workings could be good or deteriorate depending on the geochemical characteristics of the material. This could in turn result in surface water users being put under pressure should the decant water quality lead to the deterioration of surface water resources in the catchment. The cumulative impact on the catchment will have to be considered for mining, agriculture and the remainder of the current surface and groundwater uses in the Inkomati-Usuthu. The study area falls under the W51C of the Inkomati-Usuthu catchment area

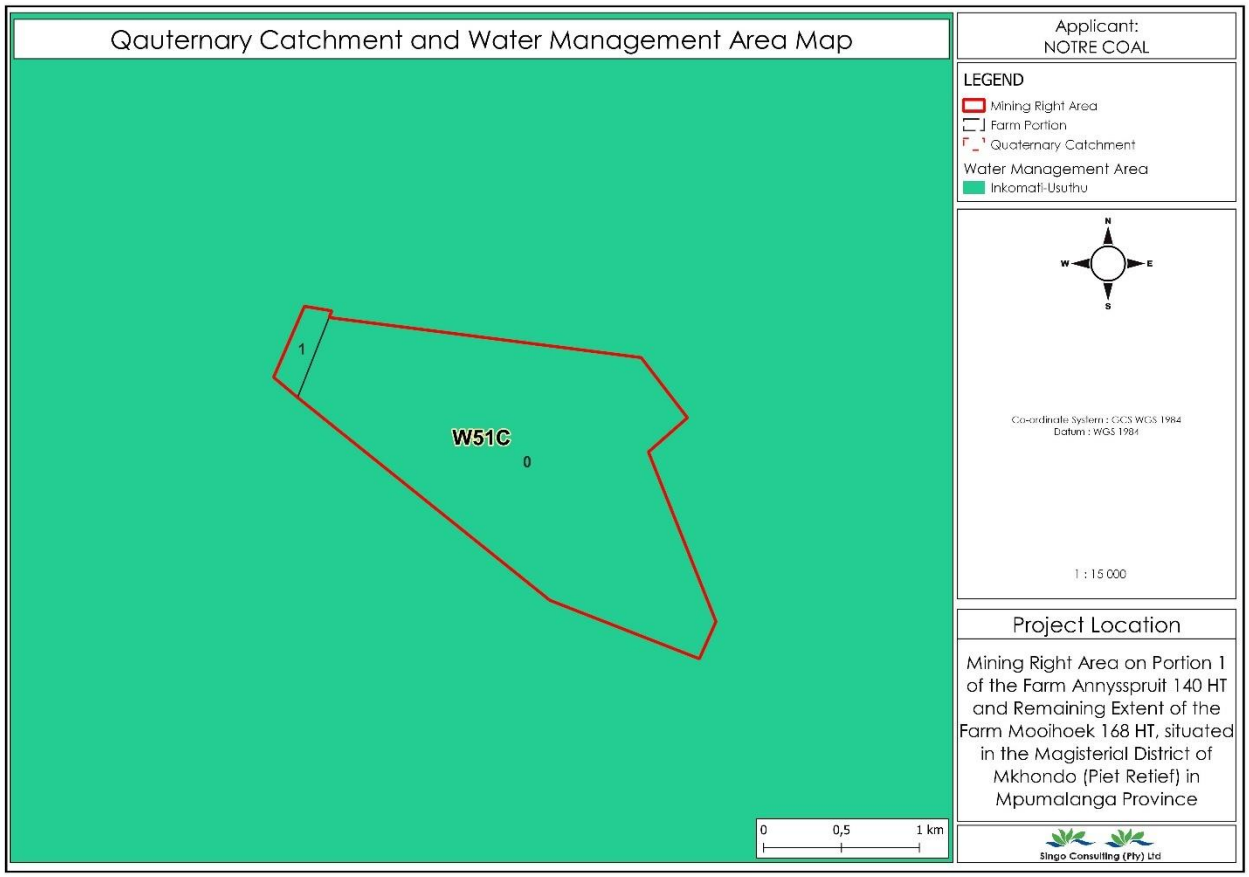


Figure 33: Quaternary Catchments and Water Management Area Map (Singo Consulting (Pty) Ltd, 2022)

The figure below illustrates aquifer classification of different areas in South Africa. It can be deduced that the project area at the magisterial district of Mkhondo, it comprises of minor aquifers and the dominant water source is surface water. Table interprets the meaning of the aquifer classification and when an area is said to have minor aquifer it means that the aquifer is moderately acceptable quality or high yielding aquifer of poor-quality water.

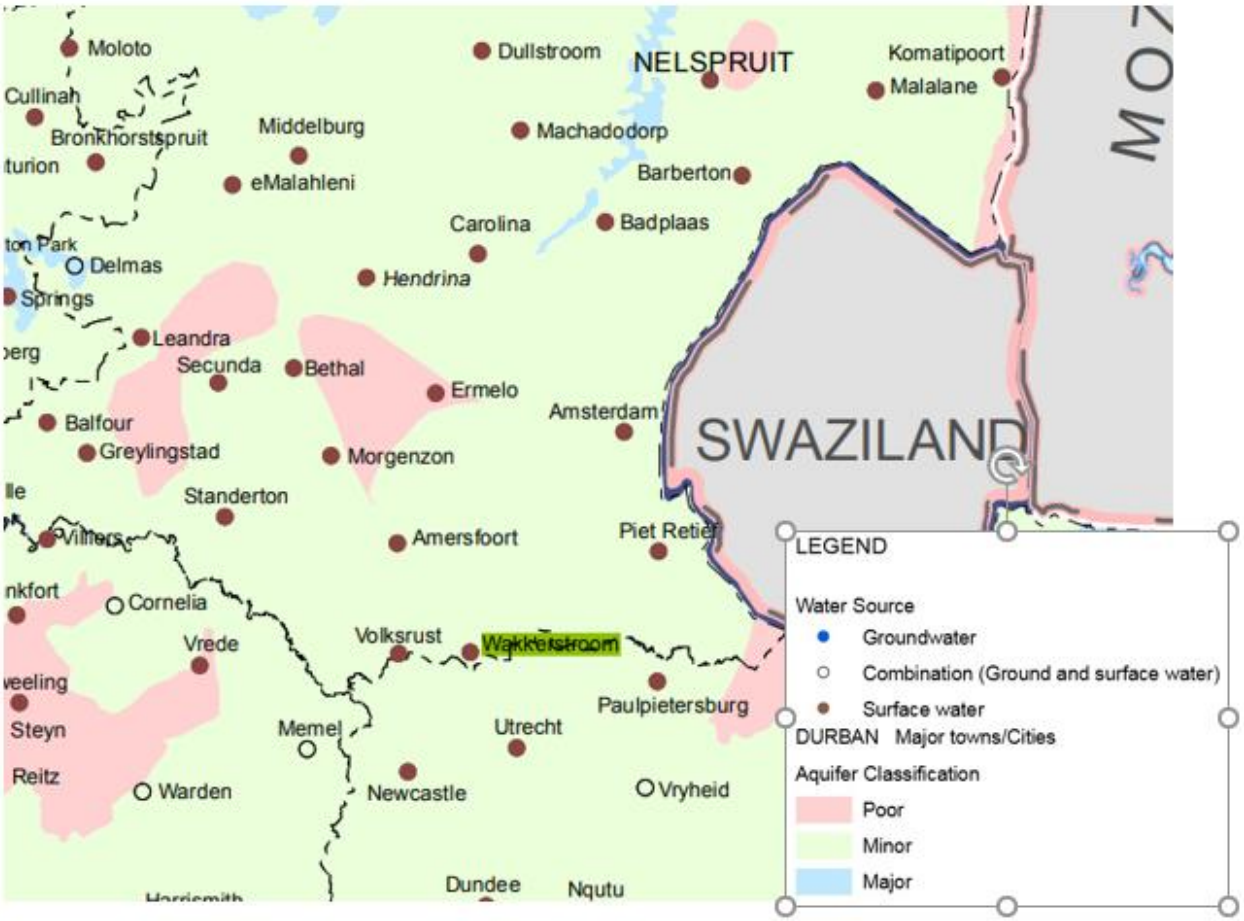


Figure 34: Aquifer classification (Source: Vegter & Seymour, 2012).

Table 15: Aquifer characterization

Sole source aquifer	An aquifer used to supply 50% or more of urban domestic water for a given area, for which there are no reasonably available alternative sources should this aquifer be impacted upon or depleted.
Major aquifer region	High-yielding aquifer of acceptable quality water.
Minor aquifer region	Moderately yielding aquifer of acceptable quality or high yielding aquifer of poor-quality water.
Poor aquifer region	Insignificantly yielding aquifer of good quality or moderately yielding aquifer of poor quality, or aquifer that will never be utilised for water supply and that will not contaminate other aquifers.

13.1 Hydrocensus

A hydrocensus survey will be conducted during the month of November 2022 in a 2km radius from the study area. The main objective of the survey was to gather the existing borehole information within the study area.

The actions performed during the fieldwork includes:

- Locating existing neighbouring boreholes.
- Site walk to identify possible groundwater pollution sources.
- Perform hydrocensus survey with the following recordings:

  - Taking coordinates of the boreholes using handheld GPS.
  - collecting water samples for each borehole.
  - Taking photographs of the area.

- Sampling and chemical analysis

The data will be collected using a variety of equipment, including a water level meter, a handheld GPS, a measuring tape, and a bailer. During site visit, these tools will be employed on a variety of boreholes, the portable GPS will be utilized to determine the longitudinal, latitude, and elevation. The measuring tape will be used to take the collar height measurements of the boreholes after recording the GPS coordinates. The water levels will be measured using a level meter and a measuring tape.

- ✓ Surface water sampling

- Sampling using sampling vessels

Before sampling, the sampler must make sure that they rinse the sampling vessel on site with water about 3-4 times, to prevent contamination between samples. Submerge the collecting vessel gently, fill it with the water sample and seal it firmly. Leave some room for expansion equal to about 10 percent of the sampling vessel if the collected water sample can be frozen (Singh, 2015).

- ✓ Groundwater sampling

- Bailer

A bailer is a hollow tube used to collect samples of groundwater from wells for monitoring. Bailers are tied to and lowered into the water column by a piece of rope or a piece of wire. When lowered, the bailer uses

a simple ball check valve to seal a sample of the groundwater. The bailers are made of polyethylene, PVC, FEP or stainless steel and can be disposable or reusable (Singh, 2015).

In addition, bailers can be lowered to any depth although the depth of the well is sharply limited by pumps. Aeration of the water when the sample is collected, which could release volatile organic compounds that need to be tested, is the main downside to using bailers. This can also conflict with the proper seating of the ball check valve if there is a high volume of sediment or turbidity (Singh, 2015).

Figure 35: Stainless steel bailer, picture extracted from (Solist, n.d.). A bailer uses a simple ball check valve to seal a sample of the groundwater table at the bottom to raise it up.

Dip meter or water level meter.

Figure 36: Dip meter used to measure water level in the borehole.

The standard model dip meter is ideal for the measurement of ground water levels. The stainless-steel part is lowered into the borehole slowly, when it reaches the water in the borehole it will beep, and a measurement of the water level is taken using the tape attached to the stainless steel lowered. It is relatively easy to use, and the operator chooses the metric system to employ depending on states and purposes.

 4.3 Groundwater modelling

The chosen software is MODFLOW. During model setup, the conceptual model is translated into a numerical model. This stage entails selecting the model domain, defining the model boundary conditions, discretizing the data spatially and over time, defining the initial conditions, selecting the aquifer type, and preparing the model input data. The above conditions together with the input data are used to simulate the groundwater flow in the model domain for pre steady state conditions.

14 TERRESTRIAL ECOLOGY

14.1 Regional vegetation

14.1.1 Overview of the biome type

Singo Consulting (Pty) ltd was appointed as a specialist to conduct a thoroughgoing study for ecology.

Biomes are broad ecological units that represent major life zones extending over large natural areas. Biomes are further divided into bioregions, which are spatial terrestrial units possessing similar biotic and physical features, and processes at a regional scale (Rutherford, 1997). The proposed project site falls in the forest biome (see Figure 37). Forest biomes are characterised by a closed canopy and several vegetation strata, usually a canopy of tall trees, a mid-stratum of small trees and shrubs, and a ground layer of herbaceous plants and ferns with grasses usually absent.

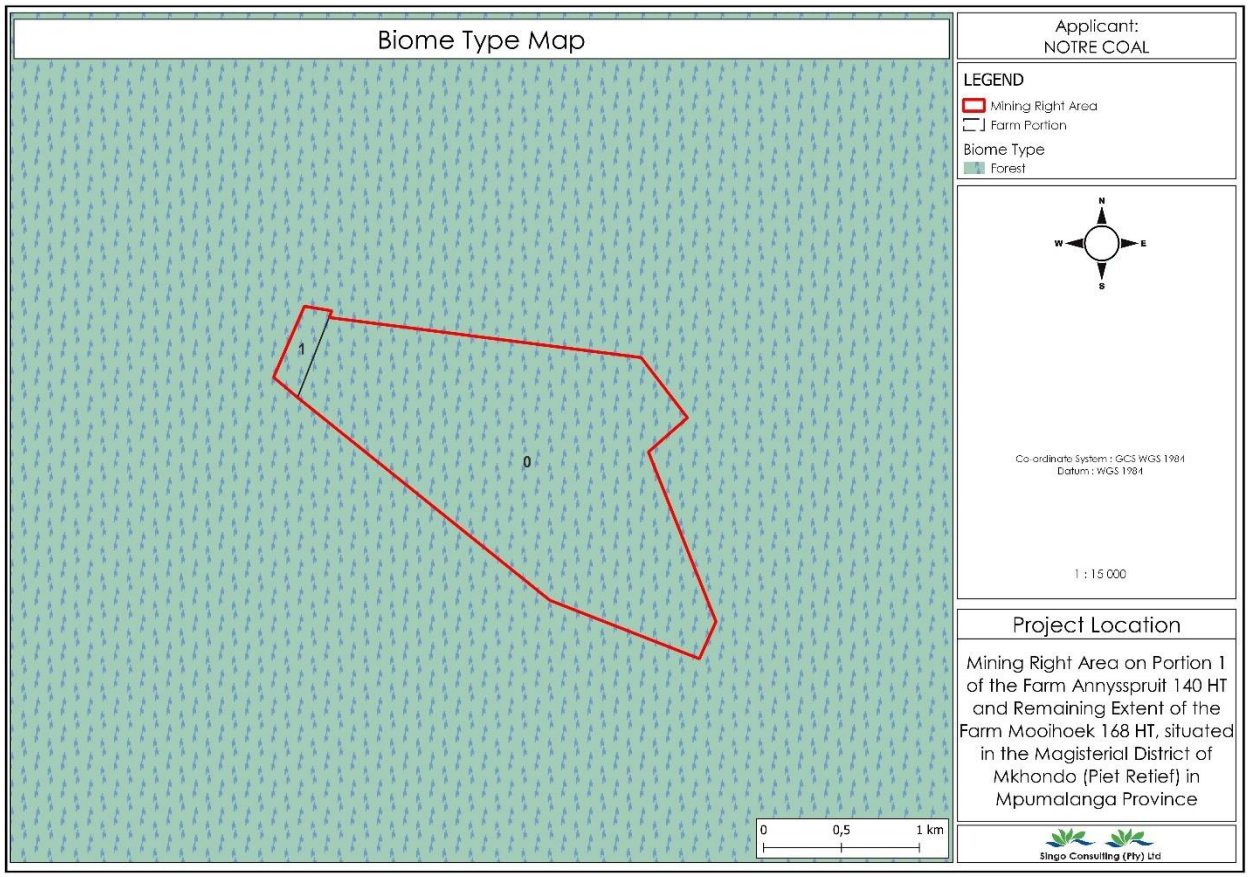


Figure 37: Biome type of the proposed area (Singo Consulting (Pty) Ltd, 2022)

14.1.2 Broad vegetation classification

The vegetation of the proposed project area is dominated by North-Eastern Mountain Grassland (see Figure 38 below). The grassland is dominated by Eragrostis plana, E. curvula, Heteropogon contortus, Trachypogon spicatus and Themeda triandra. Dicotyledonous forbs are not abundant, but many species occur in the area (Van Rooyen & Bredenkamp, 1998). The distribution of this vegetation is controlled by rainfall on the cold, frosty, eastern Mpumalanga highveld together with sandy soils. It is generally very suitable for crop production while areas of natural vegetation are heavily grazed by sheep and cattle. The conservation status is considered very poor, being restricted to patchy remnants, which are often heavily grazed. Large parts are ploughed and subsequently transformed (Van Rooyen & Bredenkamp, 1998).

The area has a woody species component, however, most wood species in the area (including Pinus sp, Eucalyptus camaldulensis and Acacia mearnsii) are exotic. Some of the areas in the proposed site are home to terrestrial grasslands, which have not been cultivated due to very stony soil. Hyparrhenia dissoluta, Eragrostis rotifer, E. gummiflua, E. curvula, Pogonarthria squarrosa, Aristida congesta and Stoebe vulgaris are common in sandy, disturbed veld (Mucina and Rutherford, 2006).

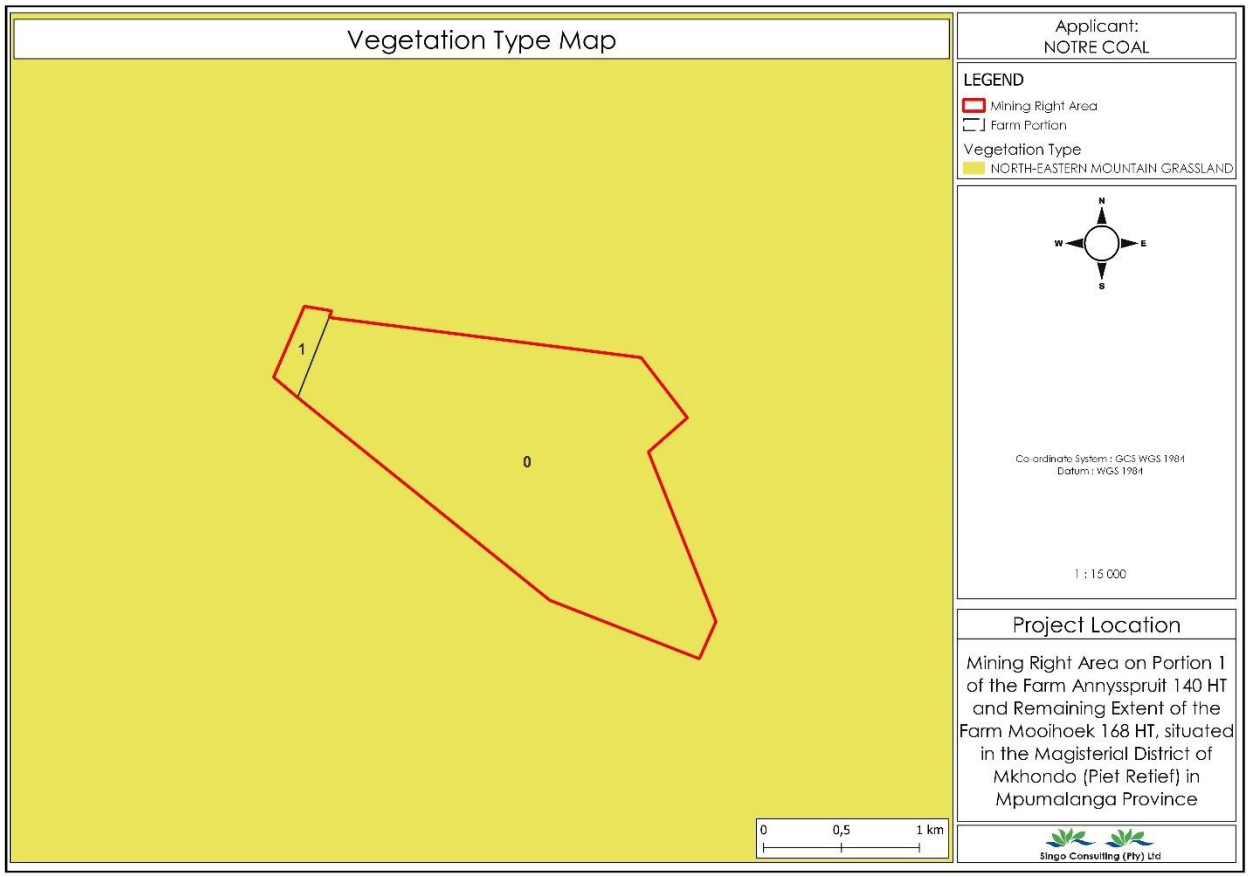


Figure 38: Broad vegetation classification for the site

14.2 Terrestrial threatened ecosystem

The South African National Biodiversity Institute (SANBI), in conjunction with the Department of Environmental Affairs (DEA), released a draft report in 2009 entitled "Threatened Ecosystems in South Africa: Descriptions and Maps", to provide background information on the List of Threatened Ecosystems (SANBI, 2009). The purpose of this report was to present a detailed description of each of South Africa's ecosystems and to determine their status using a credible and practical set of criteria. The following criteria were used in determining the status of threatened ecosystems:

- Irreversible loss of natural habitat
- Ecosystem degradation and loss of integrity
- Limited extent and imminent threat
- Threatened plant species associations
- Threatened animal species associations

- Priority areas for meeting explicit biodiversity targets as defined in a systematic conservation plan

In terms of section 52 (1) (a), of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA), a new national list of ecosystems that are threatened and in need of protection was gazette on 9 December 2012 (Government Notice 1002 (Driver et. al., 2004). The list classified all threatened or protected ecosystems in South Africa in terms of four categories, namely Critically Endangered (CR), Endangered (EN), Vulnerable (VU), or protected. The purpose of categorising these ecosystems is to prioritise conservation areas to reduce the rates of ecosystem and species extinction, as well as preventing further degradation and loss of structure, function, and composition of these ecosystems. It is estimated that threatened ecosystems make up 9.5% of South Africa, with CR and EN ecosystems accounting for 2.7%, and VU ecosystems 6.8% of the land area. It is therefore vital that Threatened Terrestrial Ecosystems inform proactive and reactive conservation and planning tools, like Biodiversity Sector Plans, municipal Strategic Environmental Assessments (SEAs) and Environmental Management Frameworks (EMFs), EIAs and other environmental applications (Mucina et al., 2006).

14.3 Methodology and Site Assessment

The information provided in this terrestrial biodiversity report is based mainly on the observations that were made during the field survey and a review of the available reports that contain known and predicted ecology and wetland information on the study area. A wide range of spatial data sets were interrogated, and relevant information was extracted for the study area. A basic ecological sensitivity analysis was performed to identify areas of special interest or concern. The various approaches used, and aspects considered are detailed in this section.

14.3.1 5.1 Desktop study

A desktop survey was conducted using maps and reviewing other reports and photography to assemble background information on the different features of and vegetation present in the proposed project area. The site was assessed on the 12th of October 2022 to record the features present.

14.3.2 Vegetation

A desktop study of the habitats of the red and orange-listed species was conducted prior to site assessment. The vegetation types identified by Mucina & Rutherford (2012) were used as reference, but where necessary, vegetation communities were named according to the recommendations for a standardised South African syntaxonomic nomenclature system (Brown et al., 2013). By combining the available literature, stratification of vegetation communities was possible.

14.3.3 Fauna survey

Most mammals and reptiles are very secretive, nocturnal, hibernate (reptiles), migrate (birds) or prefer specific habitats, so sampling and identification was proved difficult.

14.3.4 Mammals

Mammals are nocturnal, secretive, or seasonal. Their specific habitats, walking trails, faeces, spoor, fur, bones, and carcasses were assessed to document mammal species associated with the proposed site. The site assessment was conducted using direct and indirect methods, including mammal sightings, and identification of burrows and holes, which were verified using the available literature (Skinner and Chimimba, 2005.

14.3.5 Sensitivity analysis

Following the site visit, an ecological sensitivity analysis of the site was conducted based on the Mpumalanga Biodiversity Sector Plan (MBSP) which shows Critical Biodiversity Areas (CBAs) and Ecological Support Areas. The ecological sensitivity of the different units identified in the sensitive analysis procedure was rated according to the following scales:

Table 16: sensitive analysis rating scales.

Low	Units with low sensitivity where there is likely to be a negligible impact on ecological processes and terrestrial biodiversity. This category is reserved specifically for areas where the natural vegetation has already been transformed, usually for intensive agricultural purposes like cropping. Most types of development can proceed in these areas with little ecological impact.
Medium	Areas of natural or previously transformed land where the impacts are likely to be largely local and the risk of secondary impact like erosion low. Development in these areas can proceed with relatively little ecological impact provided that appropriate mitigation measures are taken.
High	Areas of natural or transformed land where a high impact is anticipated due to the high biodiversity value, sensitivity, or important ecological role of the area. Development in these areas is highly undesirable and should proceed with caution as it may not be possible to mitigate all impacts appropriately.

Very high	Critical and unique habitats that serve as habitat for rare/endangered species or perform critical ecological roles. These areas are essentially no-go areas from a developmental perspective and should be avoided at all costs.

14.1 Methodology adapted in assessing impacts

Impacts significance will be assessed using the following descriptors:

Table 17: Impact assessment table.

Nature of the impact		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude		
Minor	2	Negligible effects on biophysical or social functions/processes. Includes areas/environmental aspects that have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions/processes. Includes areas/environmental aspects which have been largely modified, and/or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions/processes. Includes areas/environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions/processes. Includes areas/environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions/processes. Includes areas/environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).

14.2 Assessment results

14.2.1 Vegetation

The desktop study found that in some areas of the proposed site there is cultivation. It was confirmed by the land use and land cover map that there is cultivation in some areas of the proposed site (see Figure 39). During ground truthing, it was identified that there is cultivation onsite, namely maize. Due to the complete transformation of currently cultivated fields, the areas have negligible or low ecological function and low conservation importance.

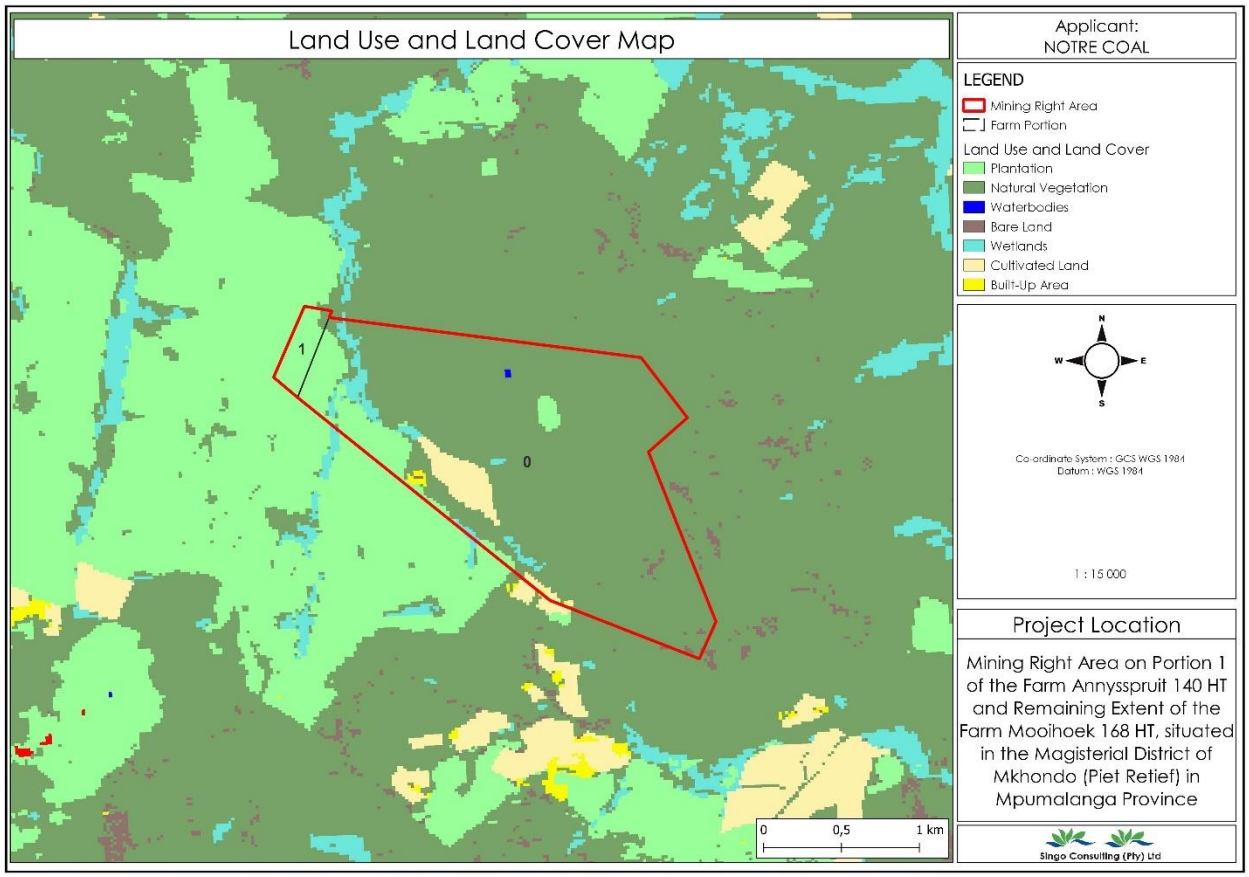


Figure 39: Land use and land cover map of the proposed site.

The proposed site is dominated by North-Eastern Mountain Grassland. During ground truthing, it was identified that the vegetation type of the area is largely dominated by Sporobolus indicus (L)R.Br. The following floral species were recorded scattered in the grassland onsite: Hyparrhenia hirta (L) Stapf, Cynodon dactylon (L) pers, Solanum sisymbriifolium Lam, Sporobolus indicus (L)R.Br, Paspalum Dilatatum

Poir, Richardia brasilliensis Gomes, Acacia tortillIs (Forssk., Ledebouria ovatifolia, Melinis repens, Xanthium spinosum L, Brachiaria serrata, Ziziphus mucronate Wild, Cosmos bipinnatus Cav, Schkuhria pinnata (Lam.) Kuntze ex Thell, Tagetes minuta L, Diospyros Lycioides Desf, Amaranthus spinosus L, Plantago virginica L, Acanthospermum autrale (Loefl.) Kuntze, Salvia tiliifolia Vahl, Conyza canadensis (L.) Cronquist, Digera muricata (L.) Mart, Chloris virgata Sw, Hibiscus surattensis L, Cussonia spicata Thunb, Solanum elaeagnifolium Cav, Hypochoeris maculate L and Themeda triandra.

Figure 40 depicts some of the floral species observed onsite

Figure 40: Some of the floral species observed onsite

Table 18: Plant species recorded scattered in the grassland onsite.

Scientific names	Common names	Threat Status (SANBI, 2017)	SA Endemic
Hyparrhenia hirta (L) Stapf	South African bluestem	LC	Not Endemic
Cynodon dactylon (L) pers	Bermuda Grass	LC	Not Endemic
Solanum sisymbriifolium Lam	Sticky nightshade	Not Evaluated	Naturalized exotics
Sporobolus indicus (L)R.Br	Smut grass		
Paspalum Dilatatum Poir	Dallis grass		
Richardia brasilliensis Gomes	Brazilian calla-lily		
Acacia tortillls (Forssk.) Hayne	Umbrella thorn		
Ledebouria ovatifolia	Flat-leaved African Hyacinth.	Vulnerable D2	Endemic
Melinis repens	Natal Red Top	LC	Not Endemic
Xanthium spinosum L	Clotweed	NE	Naturalized Exotics
Brachiaria serrata (Thunb.) Stapf	Velvet Signal Grass	LC	Not Endemic
Ziziphus mucronate Wild	Buffalo Thorn		
Aloe maculata	Soap aloe		
Cosmos bipinnatus Cav	Cosmos	NE	Naturalized Exotic weed
Schkuhria pinnata (Lam.) Kuntze ex Thell	Curious weed		
Tagetes minuta L	Aztec marigold	Not Evaluated	Naturalized Exotics
Diospyros Lycioides Desf	bluebush		
Amaranthus spinosus L	Thorny amaranth	Not Evaluated	Naturalized Exotics
Plantago virginica L	Hoary plantain	Not Evaluated	Naturalized exotics
Acanthospermum autrale (Loefl.) Kuntze	Sheepbur		

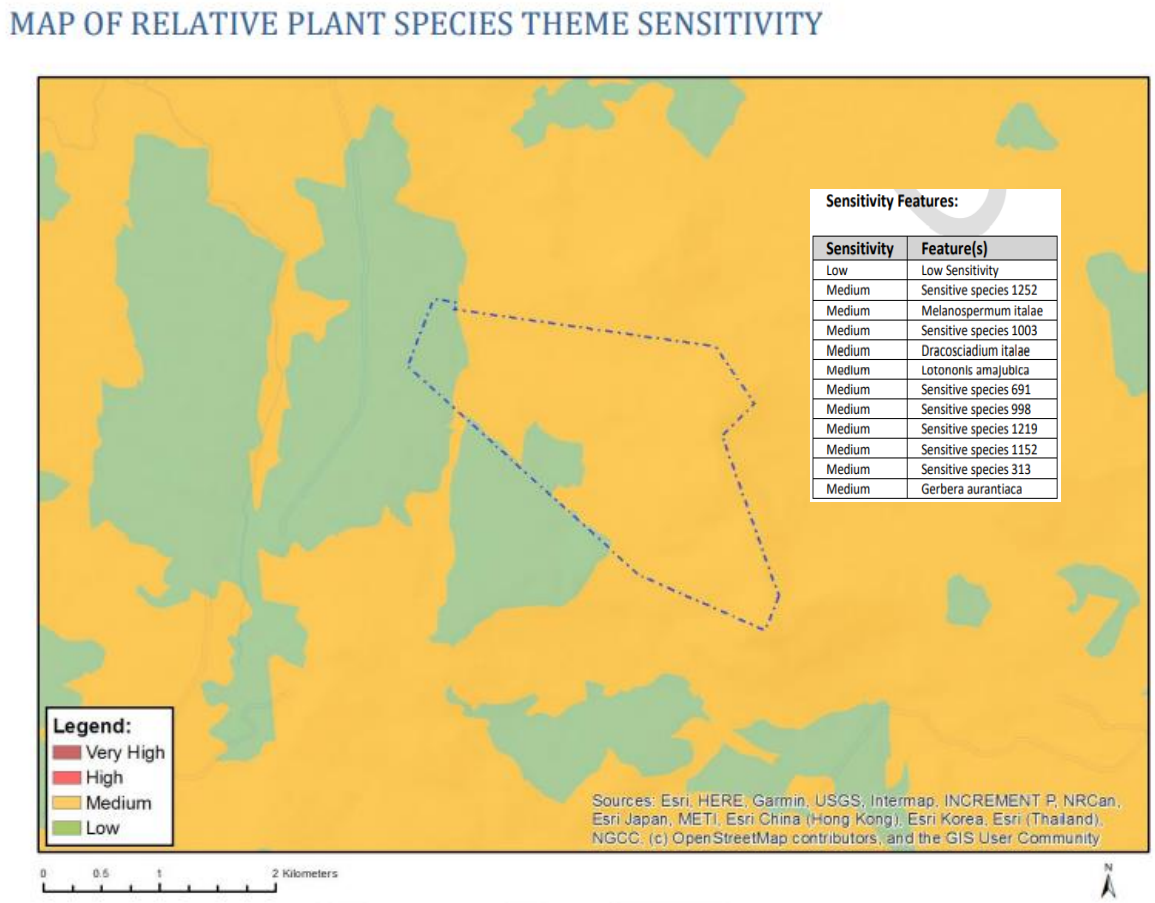
Scientific names	Common names	Threat Status (SANBI, 2017)	SA Endemic
Salvia tiliifolia Vahl	Lindenleaf sage	Not Evaluated	Naturalized Exotics
Conyza canadensis (L.) Cronquist	Canadian horse	Not Evaluated	Naturalized Exotics
Digera muricata (L.) Mart.	False amaranth		
Chloris virgata Sw	Feather finger grass	LC	Not Endemic
Hibiscus surattensis L.	Prickly hibiscus creeper	LC	Not Endemic
Solanum elaeagnifolium Cav	Silverleat nightshade	Not Evaluated	Naturalized Exotics
streptocarpus latens	Cape primrose	Rare	Endemic
Cussonia spicata Thunb.	Cabbage-tree	LC	Not Endemic
Hypochoeris maculate L.	Spotted Hawkweed		
Themeda triandra	Red Grass	LC	Not Endemic

14.2.2 Plant species of conservation concern

Species of conservation concern (SCC) are either categorized as Red Data Listed species (RDL species), according to specific scientifically researched criteria and administered by the South African National Biodiversity Institute (SANBI), as protected trees by the National Forests Act (NFA)(Act No. 84 of 1998), or as Protected Trees and Plants by The NEMBA Threatened or Protected Species Regulations 152 of 2007 ("TOPS Regulations") and the Lists of Critically Endangered, Vulnerable and Protected Species (TOPS Lists) and the provincial nature conservation legislation, in the context of this report the Mpumalanga Nature Conservation (Act No. 10 of 1998).

The screening report shows that the proposed project area is of medium sensitivity and populated by the following floral species: *Sensitive species 1252, Melanospermum italae, Sensitive species 1003, Dracosciadium italae, Lotononis amajubica, Sensitive species 691, Sensitive species 998, Sensitive species 1219, Sensitive species 1152, Sensitive species 313* and *Gerbera aurantiaca.*

During ground truthing, no floral species of conservation concern were recorded in the proposed project area. According to the list of protected species under Schedule 11; no person may cut, disturb, damage, or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate, or in any other manner acquire or dispose of any protected plant unless he or she is the holder of a permit which authorises him or her to do so.



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Figure 41: Plant Species Theme Sensitivity

The characteristics of each vegetation community are discussed in the following sections:

14.2.2.1 Alien invasive plants

Declared weeds and invaders tend to dominate or replace the herbaceous layer of natural ecosystems, transforming the structure, composition, and function of natural ecosystems. It is important that all these transformers be eradicated and controlled by means of an eradication and monitoring programme. Some invader plants may degrade ecosystems through superior competitive capabilities to exclude native plant species (Henderson, 2001).

The NEM:BA is the most recent legislation pertaining to alien invasive plant species. In August 2014, the list of alien invasive species was published in terms of the NEM:BA. The Alien and Invasive Species Regulations were published in the Government Gazette No. 43726 on 18 September 2020. The legislation calls for the removal and/or control of alien invasive plant species (Category 1 species). In addition, unless authorised thereto in terms of the National Water Act, 1998 (Act No. 36 of 1998), no land user shall allow Category 2 plants to occur within 30 m of the 1:50 year flood line of a river, stream, spring, natural channel in which

water flows regularly or intermittently, lake, dam, or wetland. Category 3 plants are also prohibited from occurring close to a watercourse.

The following describes the three categories in terms of the NEM:BA:

Category 1a: Invasive species requiring compulsory control. Remove and destroy. Any specimens of Category 1a listed species need, by law, to be eradicated from the environment. No permits will be issued.

Category 1b: Invasive species requiring compulsory control as part of an invasive species control programme. Remove and destroy. These plants are deemed to have such a high invasive potential that infestations can qualify to be placed under a government sponsored invasive species management programme. No permits will be issued.

Category 2: Invasive species regulated by area. A demarcation permit is required to import, possess, grow, breed, move, sell, buy, or accept as a gift any plants listed as Category 2 plants. No permits will be issued for Category 2 plants to exist in riparian zones.

Category 3: Invasive species regulated by activity. An individual plant permit is required to undertake any of the restricted activities (import, possess, grow, breed, move, sell, buy, or accept as a gift) involving Category 3 species. No permits will be issued for Category 3 plants to exist in riparian zones.

According to the regulations, a person who has under their control a Category 1b listed invasive species must immediately:

Notify the competent authority in writing

Take steps to manage the listed invasive species in compliance with:

Section 75 of the Act

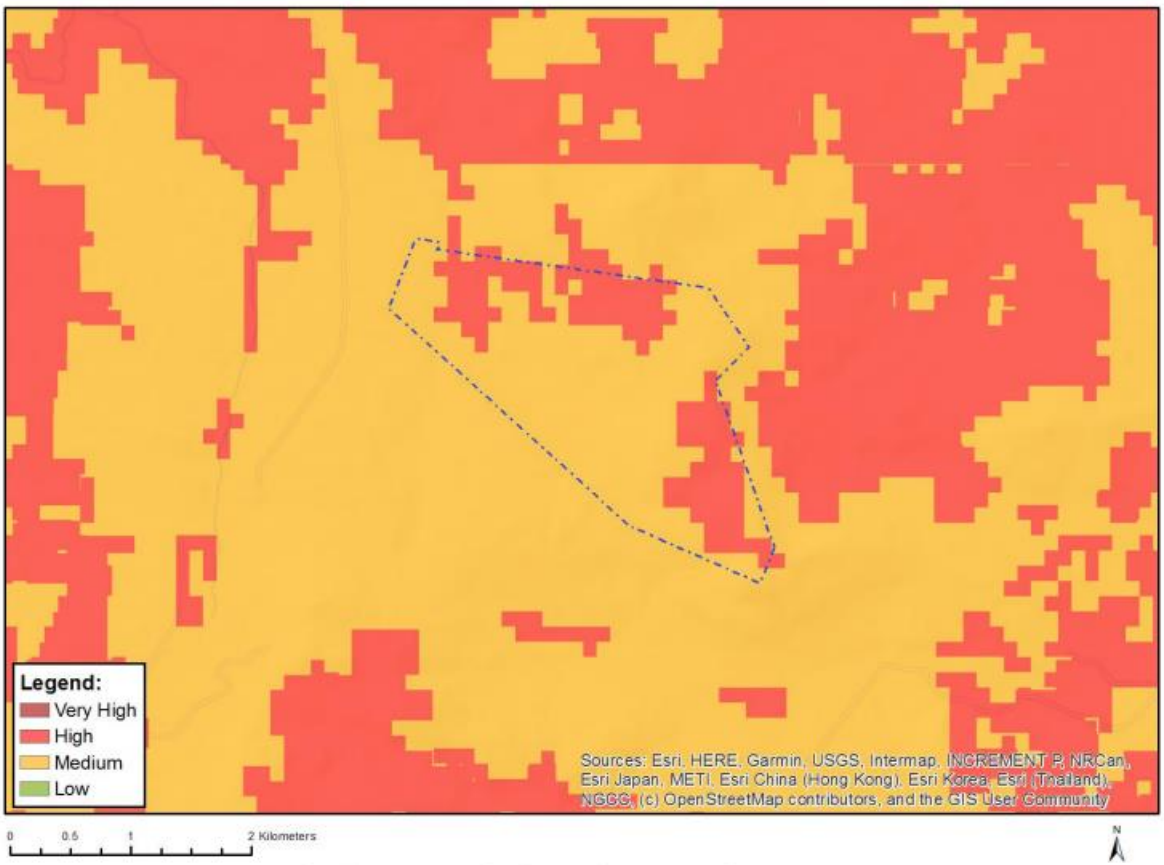
The relevant invasive species management programme developed in terms of regulation 4 Any directive issued in terms of section 73(3) of the Act.

The area has several Alien and Invaders species of special concern which will be investigated further during the EIA phase.

14.2.2.2 Mammals

During the desktop study, no red data mammal species were found on the proposed site. The screening report shows that the proposed project area is of high animal sensitivity with the following mammal species: *Aves-Balearica regulorum, Aves-Polemaetus bellicosus, and medium sensitivity for Aves-Stephanoaetus coronatus, Aves-Eupodotis senegalensis, Aves-Sagittarius serpentarius, Aves-Geronticus calvus, Mammalia-Chrysospalax villosus, Mammalia-Ourebia ourebi ourebi, Invertebrate-Clonia lalandei and Invertebrate-Doratogonus praealtus*. During site assessment none of the high and medium sensitivity mammal species were observed. Only domestic animals were observed grazing, namely (A) Cattles (B) Sheep's (C) Dogs (see **Figure 43**).

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Figure 42: Animal Species Theme Sensitivity

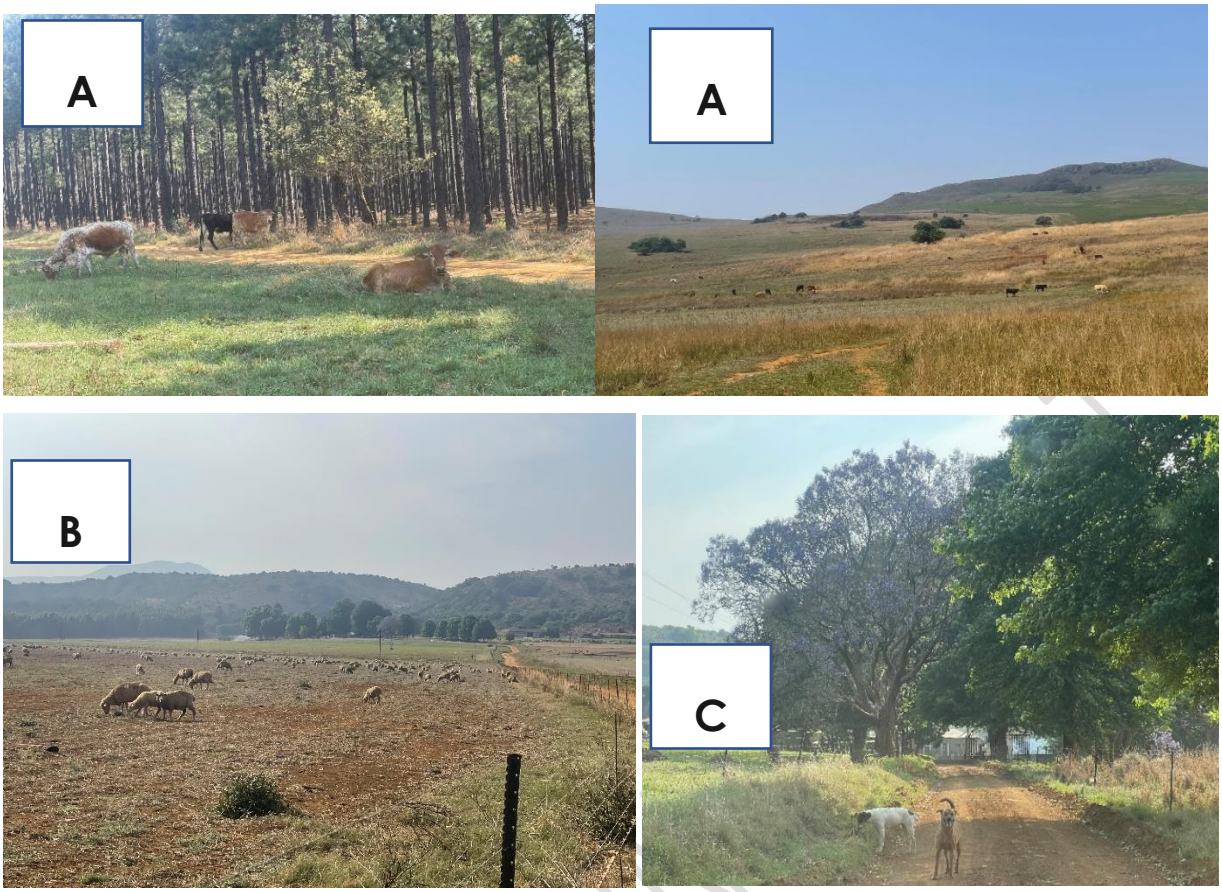


Figure 43: Domestic animals observed onsite.

Sensitivity aspects

- **Wetland habitat**

The non-perennial river and perennial rivers, channelled valley bottom, depression, and seep present onsite and outside the proposed site were identified during the desktop study (see Figure 42). According to MBSP freshwater assessment of 2019 and biodiversity freshwater map, the proposed area falls in the ESA of Strategic Water Source Area, ESA of important sub-catchments and CBA of Aquatic rivers which are outside of the proposed area (see Figure 43 and Figure 44). The screening report shows that the proposed area is of low sensitivity for aquatic biodiversity, whereas the area outside the proposed site is of high sensitivity (see Appendix 2 of the report).

During ground it was confirmed that the proposed area is covered with ESA of Strategic Water Source Area and ESA of important sub-catchments, namely (A) channelled valley bottom wetland and non-perennial rivers, (B) depression (C) seep (see Figure 45). CBA of Aquatic rivers were observed outside the proposed area and are rivers of high ecological importance. Some areas where there are ESAs of Strategic Water Source Area, important sub-catchments, CBA of Aquatic rivers are heavily modified areas due to cultivation, livestock grazing and existing roads (see Figure 46). These areas have ecological function and conservation importance of high. All the proposed buffer-zones as per the wetland assessment report should be

considered to conserve the ESA and CBA as they provide habitat for aquatic animals as well as water source for other animals.

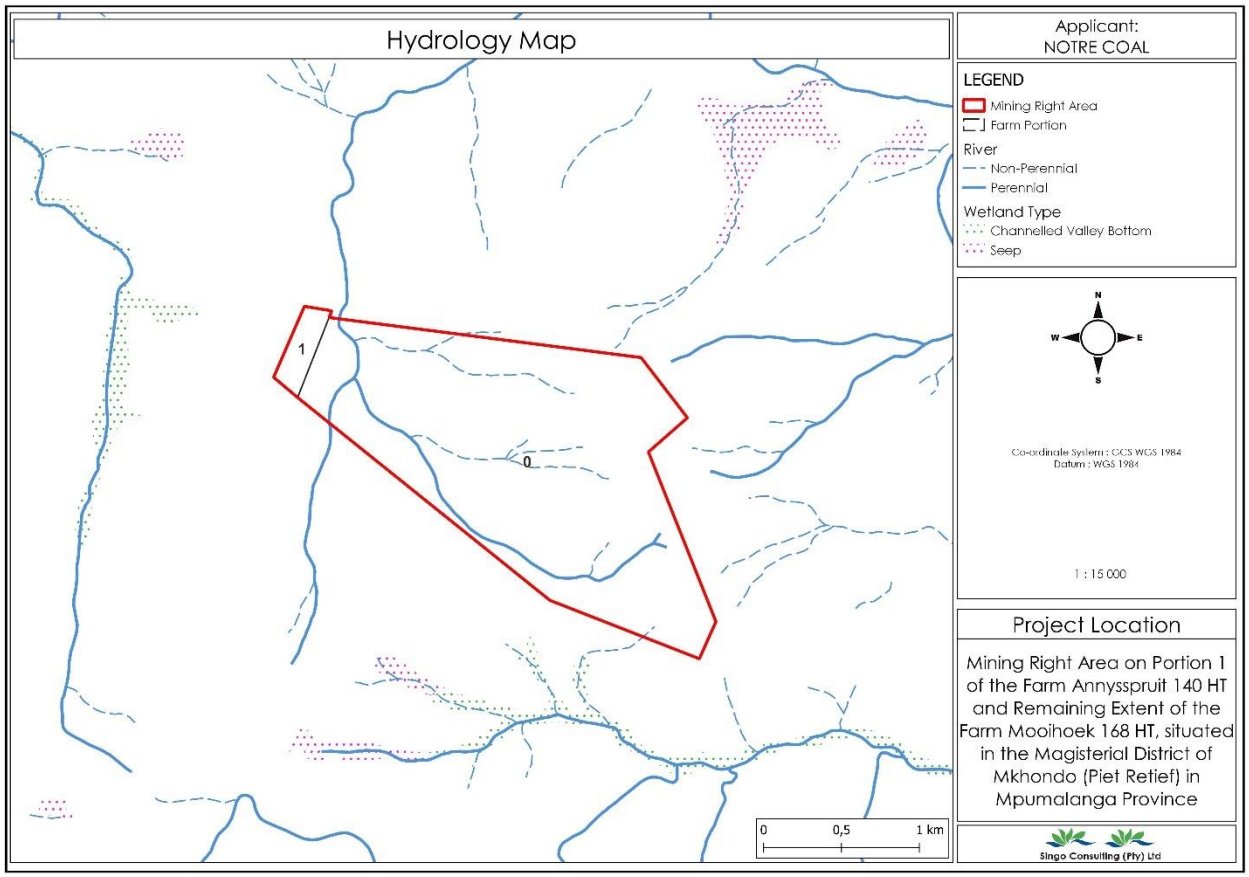


Figure 44: Hydrology map of the proposed site.

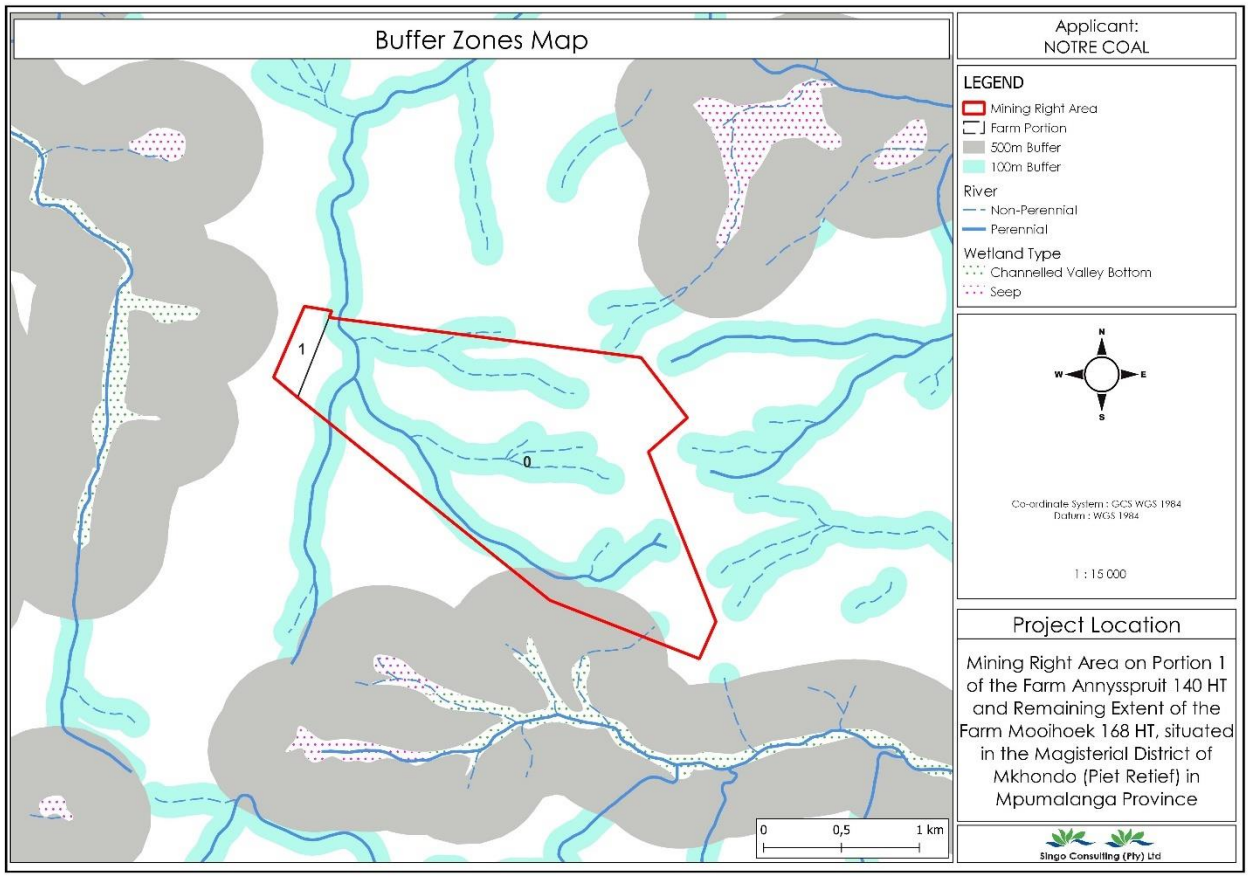


Figure 45: Buffer Map of the proposed mining area

Table 19: Waterbodies observed onsite




- **Grassland habitat**

During desktop study, MBSP terrestrial CBA map of 2019 and terrestrial biodiversity map depicts that the other area of the proposed site falls in the CBA irreplaceable, CBA optimal, heavily modified, and moderately modified old lands, and other areas outside the proposed area are PA Protected Environment Natural (see Figure 46 and Figure 23). During ground truthing, it was confirmed that the other area of the proposed site falls in the CBA irreplaceable and optimal, whereas other areas are heavily modified and moderately modified old lands due to existing roads, cultivation and grazing of livestock (see Figure 48).

The CBA irreplaceable and optimal are dominated by Sporobolus indicus (L)R.Br and the following grass species Hyparrhenia hirta (L) Stapf and Themeda triandra are scattered on the area. The CBA irreplaceable and optimal are ecological areas of medium to high ecological importance and high conservation important due to Plant SCCs. These vegetation communities need to be protected for the service they render to the

environment as they provide habitat and grassing area for animals. The heavily modified and moderately modified old lands provided the necessary conditions for alien and invasive plant (AIP) species to proliferate and dominate the disturbed areas. The dominant alien and invasive plant (AIP) species in the disturbed area include Bidens Pilosa and Seriphium plumosum, Schkuhria pinnata (Lam.) Kuntze ex Thell and Cosmos bipinnatus Cav.

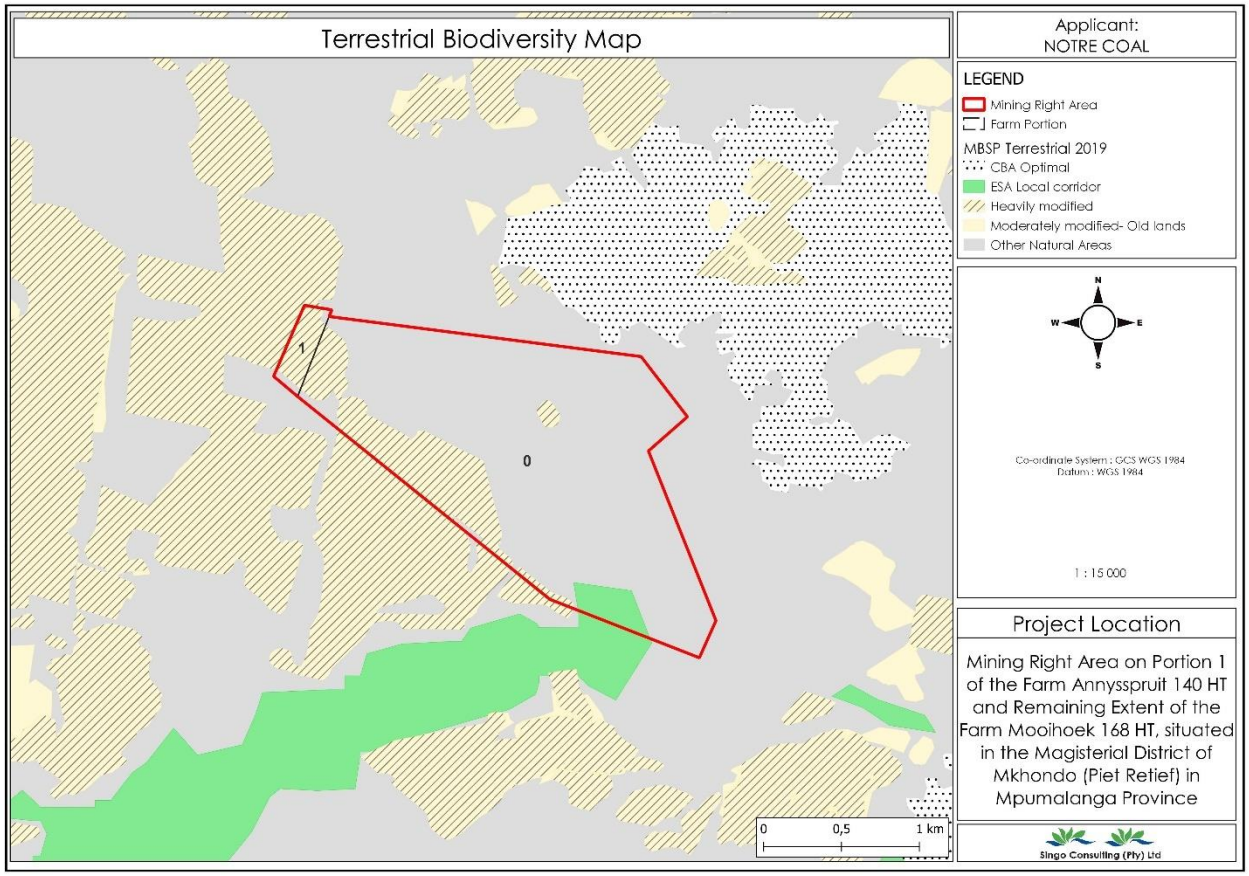


Figure 46: Terrestrial Biodiversity map

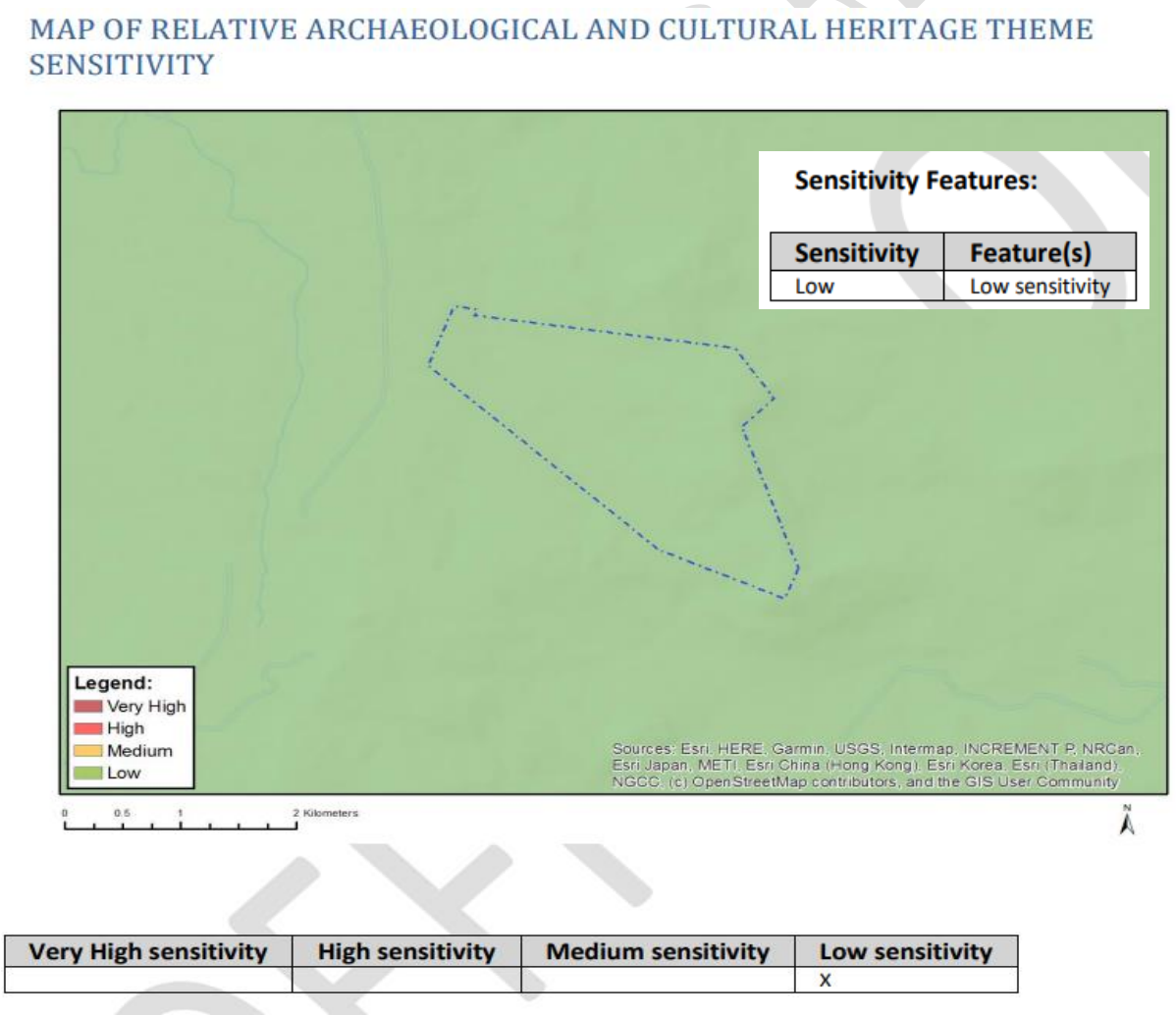
Figure 47: Natural areas and Heavily Modified areas on site

15 HERITAGE STUDY

15.1 Historical background

Singo consulting (Pty) Ltd will appoint a specialist (Integrated Specialist Services (Pty) Ltd) who will conduct a heritage impact assessment. Relevant published and unpublished sources will be consulted to generate desktop information. This includes online databases such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) website, Google Earth, Google Scholar, and South African Heritage Resources Information System (SAHRIS). Previous HIA in the project area will also be consulted. Published works on the archaeology, history and palaeontology will also be consulted. Thus, the proposed mining right application site will be considered in relation to the broader landscape, which is a key requirement of the International Council on Monuments and Sites (ICOMOS) Guidelines.

As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area will be studied. The desktop study will be followed by field surveys. The field assessment will be conducted according to generally accepted AIA/HIA practices and aimed at locating all possible objects, sites, and features of cultural significance on the development footprint. Initially a drive-through was undertaken around the proposed mining development site as a way of acquiring the archaeological impression of the general area. This will then be followed by a walk down survey in the study area, with a handheld Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording will be taken. The findings will then be analysed in view of the proposed mining development in order to suggest further action. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the Mining Right Application site. According to screening report the archaeological and cultural theme sensitivity of the area is low sensitivity see Figure 48 below.



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Figure 48: Archaeological and Cultural Heritage Theme Sensitivity

15.2 The Fieldwork surveys

The fieldwork survey was undertaken on the 12th of October 2022. The main focus of the survey involved a pedestrian survey which was conducted on the proposed mining right application site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller that the surrounding grass veld; the presence of exotic trees; evidence for building rubble, and ecological indicators such as invader weeds. The literature survey suggests that prior to the 20th century agriculture activities; the general project area would have been a rewarding region to locate heritage resources related to Stone Age and particularly Iron Age and historical sites (Bergh 1999). However, the current situation is completely different. The study area now lies on a clearly modified landscape that has been cleared of vegetation (Plates 1-17 on the attached heritage study).

15.3 Historical Background

According to Bergh (1999) Piet Retief was founded in 1882 on land bough from a local Swazi chief, although physical layout of erven only started in 1884 (1999: 21; www.satowns.co.za). Another source indicates that the town was established in 1885, and the Urban Board founded in 1903 (Praagh 1906: 453). The town of Piet Retief was laid out by the surveyor Anton von Wielligh in 1883 on the Farm Osloop and Geluk and was named such after the Voortrekker leader by the same name. In 1932 Piet Retief became a municipality. The town, conveniently located in the mist belt of South Africa, originated as a centre for timber, paper and wattle bark production, but mica, kaolin and iron played a role as well. During the early years an area of 100 square kilometres was known as the 'Little Free State', had its own president between 1886 and 1891 and a population of 72 residents. The republic, however, was incorporated into the Piet Retief district as Ward 1 on 2 May 1891. The Assegaai River that flows to the south of Piet Retief was erroneously translated by Europeans from 'Mkhondo', actually meaning zigzag (Bulpin 1986: 639-640).

Missionaries also came to this part of the country during the 19th century. The Dutch Reformed Church and the Hermannsburg Missionaries established mission stations at Volksrust and Wakkerstroom during this time (Bergh 1999). The first missionaries from Sweden erected a missionary in Piet Retief in 1905, today known as the Mission House. Piet Retief used to be known as a kind of "wild east" during the 1800's, being a buffer area between different land grabbing people. There were constant infringements and hostilities between Zulu and Swazi Impies. Then to the north were the Boers looking to extend their farming interests and to the south the British were looking to extend their Empire. Not many people today know that there used to be a little independent Republic called the "Klein Vrystaat Republic". Seen as a little chunk cut out of the rounded border of Swaziland, this land was bought from Swazi king Mbandini in 1876 for the price of

blankets, picks, beads etc. to the value of 180 Pounds Sterling as well as 14 horses. The land was ruled by a three-man committee acting as executive and judicial officers. It becamepart of the Transvaal Republic due to popular demand by its citizens in 1892.

During the Anglo-Zulu War of 1879 a number of historic events also took place in the area. The area known as the 'disputed territory' was the site of several skirmishes during the war. The most important incident was the Battle of Entombe Drift which took place at dawn on 12 March 1879. A convoy of 18 wagons, carrying ammunition and supplies from Derby, camped along the swolen Entombe River, was attacked by a large number of Zulu irregulars. One British officer and 60 men, a civil surgeon, 2 white wagon conductors and 15 black drivers were killed. Coloursergeant Booth was awarded the Victoria Cross for his heroic action. The battle site, a monument and war graves can be visited near the Entombe Mission Station. The men took part in action further south. (The above information was taken from www.satowns.co.za). Another source indicates 14 that the town of Piet Retief was nearly completely destroyed by British forces during the war (www.mpumalangahappenings.co.za).

The south-eastern part of Mpumalanga was the focus point of battles between the British and the Boers. Boers trekked into this area in the 1880s. And throughout this time settled communities of Tswana people also attacked each other. As a result of this troubled period, Sotho-Tswana people concentrated into large towns for defensive purposes. Their settlements were built of stone because of the lack of trees in the project area. These stone-walled villages were almost always located near cultivatable soil and a source of water. Such sites are known to occur near Kriel (e.g., Pelser, et al 2006) and to the south (Taylor 179). The British on the other hand had a camp in Wakkerstroom and were beleaguered by the Boers. Three important battles were fought during this time. These were at Laingsnek on 25 January 1881, Schuinshoogte on 8 February 1881 and Amajuba on 27 February 1881. The Boers were victorious in all of these which led to peace being declared (Bergh 1999). Although these sites are all situated close to the town of Volksrust, it does indicate that commandos may have moved through the entire area. In the Wakkerstroom cemetery there is a commemorative stone for 18 British soldiers who died during this War (Smit n.d.: 1).

None of the early trade routes in the interior of South Africa went through the area of study (Bergh 1999). However, it is possible that due to the little research in the area, this still has to be discovered. It also is possible that secondary routes did pass through the south-east of Mpumalanga were the present day Dirkiesdorp is located. At the beginning of the 19th century a Sotho group called the Phuthing, inhabited the western section of southern Mpumalanga. To the south-east the Swazi were present (Delius 2006; Bergh 1999). It was therefore mainly the Swazi who inhabited the south-eastern parts of Mpumalanga during this time (Makhura 2006; Mitchell 2006). In 1800 Dingiswayo fled to Hlubi close to Wakkerstroom. He died in 1818 and his empire was taken over and strengthened by Shaka (Hofmeyr & Smith 2009: ix). During the

Difaquane (1820-1837) the Ndebele of Mzilikazi moved through this landscape and some even settled here. As a result, the Phuthing fled to the south. The Swazi now moved to the north and west, therefore inhabiting the area (Bergh 1999; Bergh & Bergh 1984 It was during this period when, the region also witnessed the massive movements associated with the Mfecane. The causes and consequences of the Mfecane are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988). In this context, new African kingdoms emerged such as the Zulu Kingdom under Shaka in the second quarter of the 1800s AD. Military pressure from Zululand spilled onto the Highveld by at least 1821. Various marauding groups of displaced Sotho-Tswana moved across the plateau in the 1820s. Mzilikazi raided the plateau extensively between 1825 and 1837. For example, at the beginning of the 19th century, the Phuthing, a South Sotho group, stayed to the east of eMalahleni. During the Difaquane they fled to the south from the Ndebele of Mzilikazi who established several settlement complexes in Eastern Bankveld (Bergh 1999: 10-11; 109).

Early white travellers did not travel to this area (Bergh 1999). White farmers only moved into the south-eastern Mpumalanga after 1853 when the government of the South African Republic (ZAR or Transvaal) traded the land from the Swazi. Wakkerstroom 17 became a town and district in 1859 (Bergh 1999). The town was originally known as Marthinus Wesselstroom. Dirk Cornelius Uys was the founder of the town. He and his wife are buried in the municipal cemetery in the town (Smit n.d: 1). The town mainly served as market for local farmers (Hofmeyr & Smith 2009).

The broader geographical area also experienced some action during the Anglo-Boer War (1899-1902). During the British offensive, Lt-general R Buller moved through the area and occupied Volksrust on 12 June 1900. He then moved further to the north and reached Amersfoort on 7 August 1900. At this time Boer commandos were placed at Laingsnek and Amajuba, but Buller had them on the retreat. They moved through Volksrust and Amersfoort. The only battle in this area was on 22 July 1900 when a skirmish broke out to the north of Volksrust, between the Boer commando of General D Joubert and the British troops under command of Genl Coke (Bergh 1999). There was however also a skirmish, namely at Kastrolsnek, close to Wakkerstroom (Hofmeyr & Smith 2009: 96). The British later established a concentration camp for the Boer woman and children in Volksrust (Bergh 1999: 54). A memorial for British soldiers who died during the War is found in the Wakkerstroom municipal cemetery (Smit n.d.: 1). The British also occupied Wakkerstroom and established a large camp here. This included blockhouses at Kastrolsnek (Hofmeyr & Smith 2009: 99). They also erected some blockhouses (small fortifications) in the broader geographical area during this War. Between Volksrust and Wakkerstroom they build 19 of these and the line of blockhouses was completed on 6 February 1902. Unfortunately, it is not known how many of these survived even partially. Between Wakkerstroom and Piet Retief the remains of 11 blockhouses were identified. Some of these are no more than a few stones left on some farms (Van Vollenhoven & Van den Bos, 1997). Again,

this indicates that both Boer and British commandos moved through the area and remains of their fortifications may be found along these routes. A further indication of the lack of research and heritage work in the south-east of Mpumalanga comes from the SAHRA list of declared heritage sites. The only declared provincial sites in the area are buildings and streetscapes in some of the towns. Although not formally declared, many historical buildings are found in south-eastern Mpumalanga. This would be mostly sandstone buildings typical of the years approximately 1870-1920 as well as Victorian architecture from the 1890's too early in the twentieth century. Many of the latter were probably built during the Anglo- Boer War and are usually made of corrugated iron. However, these are mostly to be found in the towns with only a few located on farms.

15.4 Results of the field study

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The severe impacts are likely to occur during clearance at the proposed mining right application site; indirect impacts may occur during movement of mining and construction vehicles and machinery. The excavation for foundations and fence line posts will result in the relocation or destruction of all existing surface heritage material. Similarly, the clearing of access roads will impact material that lies buried below the surface. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to any mining activities at the site. It is important to note, that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed mine site.

Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during mining, construction of site offices, clearance of the site and actual mining. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed development by means of mitigation measures (see appended Chance Find Procedure). The study concludes that the impacts will be negligible since the site did not yield any confirmable archaeological remains. The following section presents results of the archaeological and heritage survey conducted within the proposed mining development site.

15.4.1 Archaeological heritage sites

No Archaeological heritage sites confirmable archaeological remains on the Mining Right Application site.

15.4.2 Burial grounds, graves, and farm steads

In terms of built environment there are several farmhouses scattered across the mining right area. If these farmhouses are found to be more than 60 years old, then they are therefore protected in terms of Section 34 of the NHRA and must not be destroyed or altered without a permit from PHRA. However, it is unlikely that these buildings are going to be destroyed by mining activities. The mine will provide a buffer zone of 100m from the houses If deemed necessary. In terms of Section 34 of the NHRA, the mining right application site may be approved subject to protection of the recorded historic houses and mitigation in accordance with the said legislation.

Human remains and burials are commonly found close to archaeological sites; they may be found in abandoned and neglected burial sites or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked on the surface. Archaeological and historical burials are usually identified when they are exposed through erosion, mining and earth moving activities for infrastructure developments such as powerlines and roads. In some instances, packed stones or stones may indicate the presence of informal pre-colonial burials.

The images displayed in the following figure are farmhouses within the proposed mining right application site.

Figure 49: Farmhouses on the proposed mining right area

16 SOCIAL ASPECTS

The proposed project area is located in Mkhondo Local Municipality within Gert Sibande District Municipality (GSDM), Mpumalanga Province. The socio-economic analysis is based on a desktop study of existing socio-economic information and development strategies contained in the governmental national, regional and local databases (Statistics SA: Census 2011/2016 and Community Survey 2016), IDP and Census data from the Municipal IDP (2017- 2022).

Table 20: Mkhondo Local Municipality Structure

Urban nodes	Rural nodes/Settlements
• eMkhondo (Town) • eThandakukhanya • Amsterdam • KwaThandeka	• Saul Mkhizeville • KwaNgema • Mahamba • Dirkiesdorp/Mabola • Iswepe • Stafford • eNtombe • Commondale

The Municipality comprises of forestry plantations and much of its economy originates from this source. Mondi, Sappi, TWK and Komati Land Forests are the major companies that lead the forestry industry in the municipality. Mkhondo Local Municipality is known for wood processing, furniture, manufacturing, and coal briquettes manufacturing. A number of timbers producing companies are located within the municipality, including Mpact, Tafibra and PG Bison and Normandien which are national businesses. Large-scale

agriculture is limited in the municipality due to the extensive use of land for forestry.

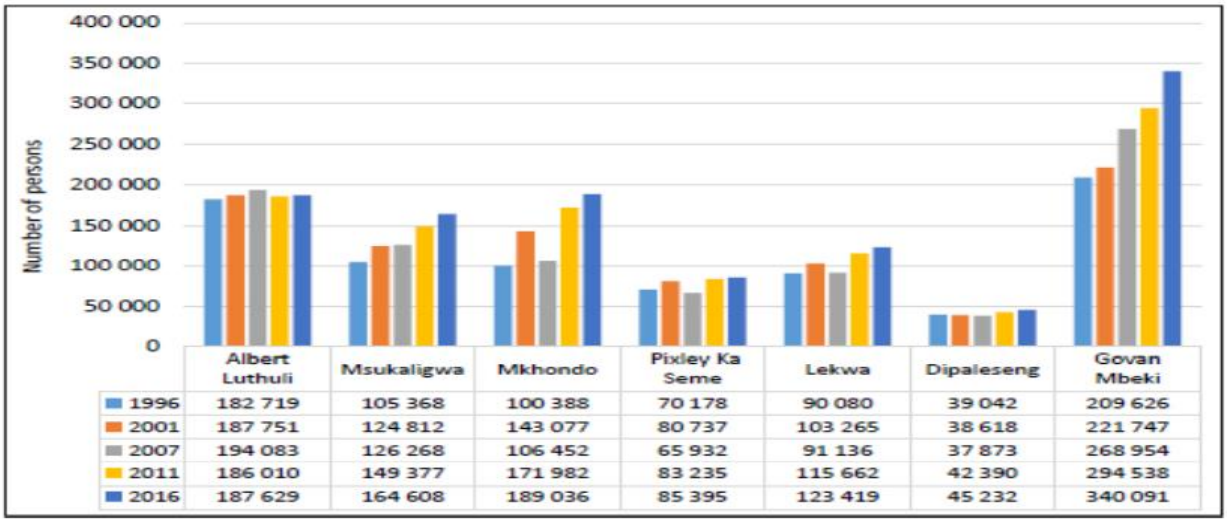
The municipality's primary economic components are forestry, mining, and subsistence farming. Mkhondo Local Municipality is home to two significant mining firms (Jindal and Kangra Coal Pty (Ltd). In comparison to other local municipalities in Mpumalanga, Mkhondo Local Municipality ranks low in terms of tourism. There is, nevertheless, a lot of tourism potential within the municipality, thanks to the South African heritage sites that are located there.

- **Population Distribution**

According to Stats SA (2016) the population of Mpumalanga Province has increased. The population of Gert Sibande District Municipality has increased from 1 043 194 in 2011 to 1 135 409 in 2016 and that of Mkhondo Local Municipality has also increased (from 171 982 in 2011 to 189 036 in 2016). It is evident that the Gert Sibande District recorded an increase in population of 92216 people between 2011 and 2016. It noteworthy that Mkhondo Local Municipality grew at a rate of 2.0 % during the 2011 to 2016 period. This shows that the Gert Sibande District is ever-growing in population, between 2001 and 2011, there was an increase of +152 496 people.

Table 21: Mkhondo Local Municipality Population Distribution (IDP 2017- 2022)

	2011	2016	Growth rate	Projected 2030 number
Population	**171 982**	**189 036**	**2.0%**	**252 874**
Number of House Hold	**37 433**	**45 595**		
House Hols living in RDP House	**11 733**			
House Hold in Shacks within Informal Settlements	**642**	**508**		



	Albert Luthuli	Msukaligwa	Mkhondo	Pixley Ka Seme	Lekwa	Dipaleseng	Govan Mbeki
1996	182 719	105 368	100 388	70 178	90 080	39 042	209 626
2001	187 751	124 812	143 077	80 737	103 265	38 618	221 747
2007	194 083	126 268	106 452	65 932	91 136	37 873	268 954
2011	186 010	149 377	171 982	83 235	115 662	42 390	294 538
2016	187 629	164 608	189 036	85 395	123 419	45 232	340 091

Figure 50: Population 2001 vs 2011 vs 2016 (Sources: STATS SA Community Profile (2001, 2011 and 2016)

❖ Education and Unemployment

The number of people with 'no schooling' has declined from 2001 to 2011, while those with 'matric 'has increased. According to the Final MLM Draft SDF (2016) the settlements with the lowest education level are Ngema Tribal Trust, Mkhondo Non-urban, Saul Mkhizeville and KwaNgema. These are the settlements that are in close proximity to traditional areas or informal settlements. Settlements with the highest education levels are eMkhondo, Iswepe and Amsterdam (UP Enterprise, 2016).

Table 22: Educational Background 1996 vs 2001 vs 2011 vs 2016

EDUCATION BACK-GROUND	1996	2001	2011	2016
No Schooling	18 000	22 806	15 914	38 045
Grade 7	3 360	4 304	4 543	7880
Grade 12	5 594	8 674	22 600	30841
Higher than Grade 12	1 759	2 411	4 575	

Sources: STATS SA 2016

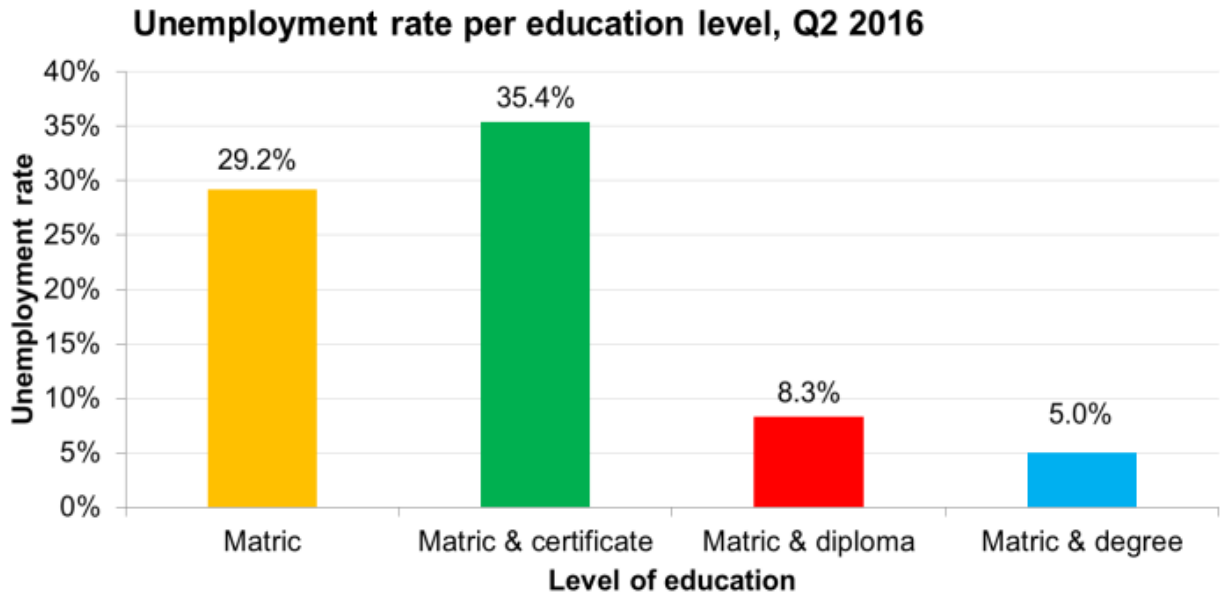


Figure 51: Unemployment rate per education level, Q2 2016

❖ Gross Value Added (GVA) Contribution for Mkhondo Local Municipality

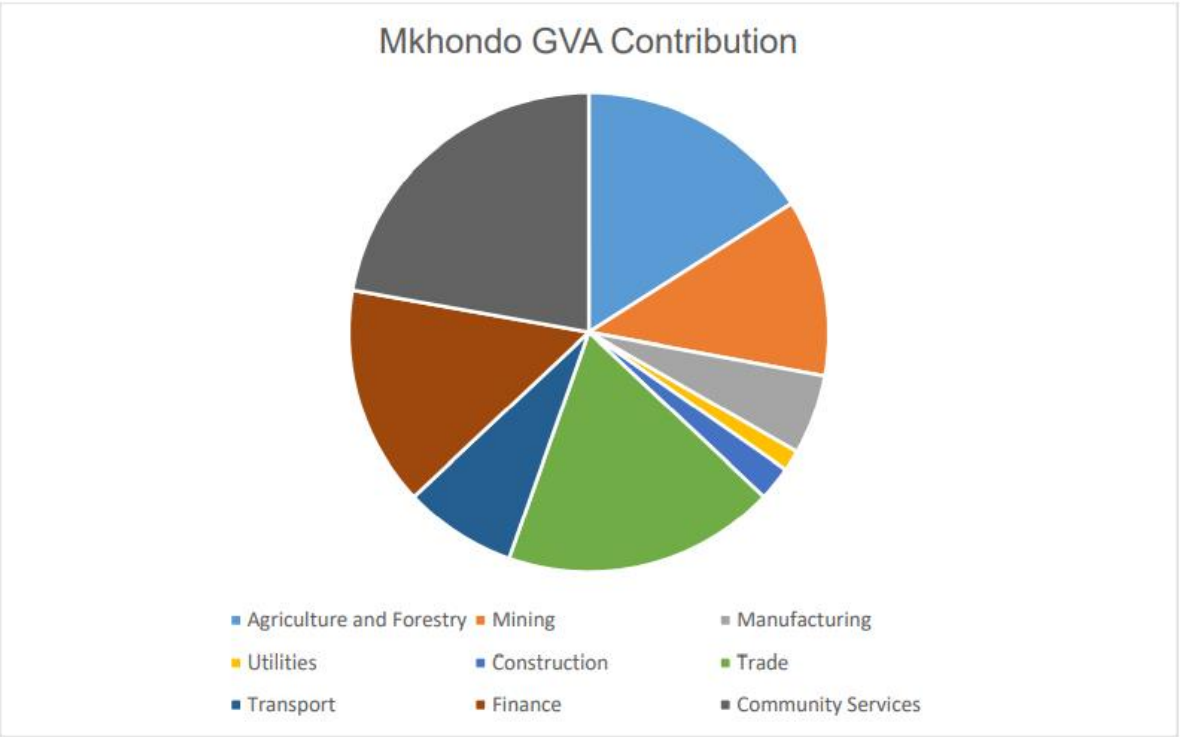


Figure 52: Mkhondo GVA Contribution (2017- 2022)

The sector or industry that contributes the most to the GVA of the municipality is community services (22.2 %) followed by trade (18.4 %), agriculture and forestry (16 %), finance (14.8 %), mining (11.9 %), transport (7.6 %), manufacturing (5.4%), construction (2.3%) and utilities (1.4 %).

Concluding Remarks

Socio-economic information detailed in this section of the report provides an understanding of the need for economic development which is to further create employment opportunities. The people most affected by the proposed project is the community residing near/around the project area. Although there are economic/agricultural activities taking place in close proximity to the application area, most of the people residing within the 20 km radius; in this context being Dirkiesdorp, Driefontein and Kwa Ngema remain unemployment and underprivileged. Not implementing the activities will result in a loss of potential economic development and opportunities that comes with the development.

Taking into consideration the need to shift from coal-fired power stations to a greener economy including solar powered stations. Coal remains the best source of energy in South Africa. According to Rob Schmitz (2022), on the journal titled "Amid an energy crisis, Germany turns to the world's dirtiest fossil fuel", available on: https://www.npr.org/2022/09/27/1124448463/germany-coal-energy-crisis, developed countries such as Germany have tried to transition to greener and more renewable sources of energy, which however has ultimately failed, and the same countries are reviving their coal-fired power stations which were meant to shut down such as the Evonik coal plant in Marl, Germany to generate a source of energy once again. In addition, being mindful of the newly signed agreement by the government to shut down 8 power stations by 2035, Eskom being relatively more ambitious; to shut down 9 coal-fired power stations also by 2035. Unfortunately, Camden Coal fired power station falls under those targets, However Amajuba coal fired power station is not included which means it will still need more coal to operate efficiently and if this proposed mine is granted, it will be able to provide exceptional quality coal which will ultimately curb the loadshedding crisis we are faced with in South Africa.

17 IMPACT ASSESSMENT

17.1 Methodology

Direct, indirect and cumulative impacts of the issues that will be identified during the specialist investigations will be assessed in terms of standard rating scales to determine their significance. The rating system used for assessing impacts (or when specific impacts cannot be identified, the broader term issue should apply) is based on five criteria, namely:

1. Status of impacts– Determines whether the potential impact is positive (positive gain to the environment), negative (negative impact on the environment), or neutral (no perceived cost or benefit to the environment).
2. Spatial scale of impacts– Determines the extent of the impact. Potential impact is expressed numerically on a scale of 1 (site-specific) to 5 (global).
3. Temporal scale of impacts – Determines the extent of the impact in terms of timescale and longevity. Potential impact is expressed numerically on a scale of 1 (project duration) to 5 (permanent).
4. Probability of impacts– Quantifies the impact in terms of the likelihood of the impact occurring on a percentage scale of <5% (improbable) to >95% (definite).

5. Severity of impacts– Quantifies the impact in terms of the magnitude of the effect on the environment (receptor) and is derived by consideration of points 1, 2 and 3 above. For this particular study, a conservative approach is adopted for severity (e.g. where spatial impact was considered to be 2 and temporal impact was considered to be 3, a value of 3 would be adopted as a conservative estimate for severity of impact).

Table 23: Status of impacts

Rating	Description	Quantitative rating
Positive	A benefit to the receiving environment (positive impact)	+
Neutral	No determined cost or benefit to the receiving environment	N
Negative	At cost to the receiving environment (negative impact)	-

Table 24: Spatial scale of impacts

Rating	Description	Quantitative rating
Very low (VL)	Site-specific: Impacts confined within the project site boundary.	1
Low(L)	Proximal: Impacts extend to within 1 km of the project site boundary.	2
Medium(M)	Logal: Impacts extend beyond to within 5 km of the project site boundary.	3
High(H)	Regional: Impacts extend beyond the site boundary and have a widespread effect, i.e. > 5 km from the project site boundary.	4
Very high (VH)	Global: Impacts extend beyond site boundary and have a national/global effect.	5

Table 25: Temporal scale of impacts

Rating	Description	Quantitative rating
Very low (VL)	Project duration: Impacts expected only for the duration of the project or not longer than one year.	1
Low(L)	Short term: Impacts expected on a duration timescale of 1-2 years.	2
Medium(M)	Medium term: Impacts expected on a duration timescale of 2-5 years.	3
High(H)	Long term: Impacts expected on a duration timescale of 5-15 years.	4
Very high (VH)	Permanent: Impacts expected on a duration timescale exceeding 15 years.	5

Table 26: Probability of impacts

Rating	Description	Quantitative rating
Highly improbable	Likelihood of the impact arising is estimated to be negligible <5%	1
Improbable	Likelihood of the impact arising is estimated to be negligible 5-35%	2
Possible	Likelihood of the impact arising is estimated to be negligible 35-65%	3
Probable	Likelihood of the impact arising is estimated to be negligible 65-95%	4
Highly probable	Likelihood of the impact arising is estimated to be negligible >95%	5

Table 27: Severity of impacts

Rating	Description	Quantitative rating
Very low (VL)	Negligible: Zero or very low impact	1
Low (L)	Site-specific and short-term impacts	2
Medium (M)	Local scale and/or short-term impacts	3
High (H)	Regional and/or long-term impacts	4
Very high (VH)	Global scale and/or permanent environmental change	5

These five criteria combine to describe the overall significance rating. Calculated significance of impact determines the overall impact on (or risk to) a specified receptor and is calculated as the product of the probability (P) of the impact occurring and the severity (S) of the impact if it were to occur (Impact = P×S). This is a widely accepted methodology for calculating risk and results in an overall impact rating of Low (L), Low/Medium (LM), Medium (M), Medium/High (MH) or High (H). The significance of a particular impact is depicted in Table 30 and assigned a particular colour code in relation to its severity.

Table 28: Overall significance rating

Rating	Description		Quantitative rating
Low	PxS=1-3	(Low impact significance)	L
Low/medium	PxS=4-5	(Low/medium impact significance)	LM
Medium	PxS=6-9	(Medium impact significance)	M
Medium/high	PxS=10-12	(Medium/high impact significance)	MH
High	PxS=13-25	(High impact significance)	H

Table 29: Overall significance rating - Severity

Probability (P)	Severity (S)				
	1	2	3	4	5
1	L	L	L	LM	LM
2	L	LM	M	M	MH
3	L	M	M	MH	H
4	LM	M	MH	H	H
5	LM	MH	H	H	H

The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings described in the following.

- *Insignificant:* The potential impact is negligible and will not have an influence on the decision regarding the proposed development.
- *Low*: The potential impact is very small and should not have any meaningful influence on the decision regarding the proposed development.
- *Low/medium:* The potential impact may not have any meaningful influence on the decision regarding the proposed activity/development.
- *Medium:* The potential impact should influence the decision regarding the proposed activity/development.
- *Medium/high:* The potential impact will affect the decision regarding the proposed activity/development.
- *High:* The proposed activity should only be approved under special circumstances.

Practicable mitigation and optimisation measures are recommended, and impacts are rated in the prescribed way, both without and with the assumed effective implementation of the recommended mitigation (and/or optimisation) measures. Mitigation and optimisation measures are either:

- *Essential:* Measures that must be implemented and are non-negotiable.
- *Best practice:* Recommended to comply with best practice, with adoption dependent on the proponent's risk profile and commitment to adhere to best practice, and which must be shown to have been considered and sound reasons provided by the proponent if not implemented.

The model outcome is then assessed in terms of impact certainty and consideration of available information. Where a particular variable rationally requires weighting or an additional variable requires consideration, the model outcome is adjusted accordingly.

18 IDENTIFICATION OF IMPACTS

Potential impacts resulting from the proposed Notre Coal Mine are identified during the scoping phase using input from the following sectors:

- Views of I&APs parties
- Existing information based on literature reviews and desktop studies (EAP, Stakeholders, and specialist inputs)
- Site visit with the project team
- Legislation
- Guidelines

The following potential impacts were identified:

- Contamination of ground and surface water (including AMD)
- Disturbance of geology and soils
- Land uses and capability
- Socio-economic
- Flora and fauna
- Traffic
- Watercourses (wetlands)
- Dust and air quality
- Blast and vibration
- Heritage and cultural resource
- Paleontological

Proposed specialist studies to assess the environmental impacts during the EIA phase:

- Geohydrological investigation, impact assessment and modelling
- Wetland delineation and impact assessment (PES and EIS)
- Aquatic ecology and surface water assessment and Floodline determination
- Terrestrial ecology including flora and fauna
- Civil engineering pollution control dam designs and storm-water management plan
- Blasting and vibration assessment
- Soils and land capability assessment

- Agricultural input assessment
- Traffic impact assessment
- Rehabilitation management plan
- Heritage impact assessment
- Hydropedological study
- Mine Work Programme
- Rehabilitation Plan
- Social and Labour Plan
- Paleontological desktop assessment

18.1 Positive and negative impacts of the proposed activities/development and alternatives

Currently, a comprehensive impact assessment has not being conducted for certain studies expect for Heritage impact assessment, Ecology and Wetlands. The anticipated impacts can, however, be discussed to provide an indication of whether it will be positive or negative (Table 30).

Table 30: Anticipated impacts

Impact	Status of impacts prior to mitigation	Proposed mitigation/improvement measures/ Recommendations
Surface and groundwater		
Ground and surface water contamination	Negative	❖ Conduct water monitoring and implement remedial actions as required and effective rehabilitation to as close to pre-processing conditions as practically possible. ❖ It is recommended that the monitoring network be extended to all the boundaries; north, south, east and west of the proposed coal mine. The construction must be overseen by a qualified Hydrogeologist to monitor pollution in the upper weathered aquifer as well as the lower fractured aquifer. ❖ A monitoring network should be dynamic. This means that the network should be extended over time to accommodate the migration of contaminants through the aquifer as well as the expansion of infrastructure and/or addition of possible pollution sources. An audit on the monitoring network should be conducted annually ❖ Prevention of pollution of surface water resources and impacts on other surface water users by training of workers to prevent pollution, equipment and vehicle maintenance, fast and effective clean-up of spills, effective waste management, manage clean and dirty water in accordance ❖ The disturbance of streams and surface drainage patterns and reduction in flow to downstream must be mitigated through

		careful design of ephemeral stream diversion that minimizes impacts on the downstream environment, limit activities and infrastructure within wetland and watercourses and their floodlines and implementation of storm water management plan to divert clean water ❖ Clean water trenches should be constructed surrounding the coal mine to prevent clean water from entering the coal mine area, regarded as a dirty water catchment ❖ Dirty water trenches must be constructed as well to direct water from the mine to the pollution control dam, thereby preventing any contaminant water from leaving the mine area.
Wetland/River/ Hydrology/Geomorphology	Negative	• Natural pans and channelled valley bottom wetlands, including the Klein Olifants River, are the most important wetlands in the study area. These wetlands have been identified as potential no - go areas and it is recommended that all mining activities avoid these highly sensitive wetlands. Where any wetlands are to be destroyed, the best possible security factor (to a factor of 2) should be used if mining is above 100 m. This must be determined in the later stages of the design of the project. • Mining across wetlands/rivers should be restricted to low flow period (dry winter season) if possible. Ensure that mining activities are carefully monitored to limit unnecessary impacts to wetlands/riparian areas (particularly in-stream habitat). • Do not lower the original stream bed / profile of the wetland/river as this may result in scouring in an upstream direction and further alteration of bed conditions. • Ensure that coarse immovable material including boulders and other rock in river channels is not removed to ensure continued stability and functioning of the river systems. River sediments should not be permanently removed from the system in any case. • Limit activities occurring within the in-stream area of channels. • Under no circumstance should consideration be given to the excavation of an artificial channel or the damming of wetlands or rivers in such a manner as to totally restrict the flow. • Excavated material/sediments/spoil from the mining zone (including any foreign materials) should not be placed or stockpiled within wetlands or river channels, including the riparian zone of streams/rivers. • Any abstraction of water from rivers/wetlands for construction purposes must be approved by the Department of Water and Sanitation (DWS) by means of WUL.
Potential reduction of catchment yield of the aquifers through dewatering	Negative	• Regularly monitor groundwater levels as per the recommendations of the geohydrological report.

Excavated materials that are stockpiled in incorrect areas can interfere with the natural drainage, cause sedimentation and water pollution	Negative	• The areas excavated must have vegetated berms to separate dirty and clean water systems and serve as an erosion control measure. • The stockpiles must be vegetated to prevent erosion and subsequent siltation of clean and dirty water streams, as well as surface water resources. • Upslope diversion and down-slope silt containment structures should be constructed. • Surface water resources must be monitored pre-mining and during construction, as per the monitoring programme.
Terrestrial ecology		
The clearance for the construction of the proposed structures and infrastructure will result in habitat loss	Negative	• Keep the footprint of the disturbed area to the minimum and designated areas only. • Unnecessary vegetation clearing should be avoided. • Ensure rehabilitation plans are initiated during and after construction in areas not affected by mining operations. • Vegetation clearing on slopes must be minimised and, where necessary, appropriate stormwater management must be put in place to limit erosion of exposed soil. • No harvesting of indigenous tree species for firewood should be permitted. • An environmental induction for all staff members must be mandatory to discuss the potential of fire e.g. only smoking in designated areas and no open cooking fires. • All licences must be obtained prior to mining; • All ablution facilities must be placed far away from the water bodies including their buffer zone (50 meters from watercourses); • When placing structures as well as the mining area high sensitive areas as according to Appendix C of this report must be avoided; • An alien and invasive management plan as well as emergency preparedness plan during spillages must be adhered to at all times; and • Rehabilitation of cleared/mined areas occurs to avoid or to limit erosion
Accidental introduction of alien species and invaders	Negative	• Eradication and/or control of alien invasive plants and weeds as per the alien and invasive species monitoring programme. • Disturbance of natural areas should be avoided as far as possible and the spread of alien flora into natural areas must be controlled. • Continuous monitoring of the growth and spread of alien and invasive flora coupled with an adaptive management approach to identify suitable control mechanisms (e.g. mechanical, chemical or biological control). Mechanical control is usually preferred. • Cleaning of vehicles and equipment before entering natural areas to remove large deposits of foreign soils and plant material sourced from elsewhere.

Faunal mortalities	Negative	• Environmental induction for all staff members must be mandatory to discuss issues related to the killing and/or disturbance of faunal species should be avoided. • Several staff members must complete a snake handling course to safely remove snakes from designated areas. • Road mortalities should be monitored by vehicle operators (for personal incidents only) and the ECO (all roadkill on a periodic monitoring basis as well as specific incidents) with trends being monitored and subject to review as part of the monthly reporting. Monitoring should occur via a logbook system where staff notes the date, time and location of the sighting/incident. This will allow determination of the locations where the greatest likelihood exists of causing road mortality and allow mitigation against it (e.g., fauna underpasses, and seasonal speed reductions). Mitigation must be adapted to the on-site situation which may vary over time. • All staff operating motor vehicles must undergo an environmental induction training course that includes instruction on the need to comply with speed limits, to respect all forms of wildlife (especially reptiles and amphibians) and, wherever possible, prevent accidental road kills of fauna. Drivers not complying with speed limits should be subject to penalties. • The proposed prospecting activities will result in the deaths of numerous fauna species. It is suggested that construction and mining operations occur from a predetermined area and move along a gradient to allow fauna species to relocate. • The ECO must monitor live animal observations to detect trends in animal populations and implement proactive adaptable mitigation of vehicle movements. • Should holes or burrows be located on-site, contact a zoological specialist to investigate and possibly remove any species located in them. • Where possible, barriers around excavation sites must be erected to prevent fauna from falling into excavations. • The area surrounding the bulk sampling operation must be demarcated and fenced-off to restrict animals from moving into the area, and to reduce fauna mortalities.
Vegetation and Fauna Management		• Keep the clearing of natural vegetation in wetland areas to a minimum and attempt to ensure that clearing occurs in parallel with the mining progress where practically possible. • Limit mining equipment operating in wetland/riparian areas to that needed to clear • Temporary noise pollution due to mining works should be minimized in sensitive areas by ensuring the proper maintenance of equipment and vehicles and tuning of engines and mufflers as well as employing low noise equipment where possible.

		• No wild animal may under any circumstance be hunted, snared, captured, injured, killed, harmed in any way or removed from the site. This includes animals perceived to be vermin. • Any fauna that are found within the mining corridor should be moved to the closest point of natural or semi-natural vegetation outside the mining corridor. A specialist may need to be used for dangerous/venomous species such as snakes.
Geology and soils		
Land use change which will affect the soil and land use capability both during construction phase and post-mining operations. Loss of agricultural soils and land expected.	Negative	• Should the No-Go alternative not be considered, mining activities must be located on low-medium agricultural potential land to minimise impacts. • Compensate landowners. • Rehabilitate areas disturbed by mining to return land to arable land where feasible. If not, other land uses (decommissioning phase) deemed socially, economically or environmentally applicable must be considered.
Site clearance and levelling during the construction phase will cause some additional exposed areas and could trigger erosion and siltation, especially during rainy periods	Negative	• Prevent soil loss through erosion. • Develop appropriate storm water management system to control surface run off over exposed areas. • Preserve soil fertility for later use. • Ensure all vehicles stay within the designated areas (for example, away from watercourses). • Plan to construct the majority of development during the dry winter months. • Have in place temporary erosion and sedimentation trapping control measures during the construction phase
Storage of topsoil	Negative	• Remove and stockpile topsoil from roads, building platforms, stockpile and dam areas prior to construction. • Preserve topsoil and store in an appropriate manner to maintain viability and seed bank for future rehabilitation. • Store away from watercourses to prevent sedimentation and erosion. • Protect from alien plant establishment.
Soils and Sediment Management	Negative	• Where possible, mining activities in river and wetlands should proceed during the dry winter months (low or zero flow periods) in order to limit the potential for erosion linked to high runoff rates. • All soil stockpiles should be placed in an up-slope direction from the trench so that that any surface wash is directed into the trench and not further downslope. • Any erosion points created during mining activity construction should be filled and stabilized immediately. Stockpiles must be protected from erosion, stored on flat areas where possible, and be surrounded by appropriate berms.

		• No stockpiling of soils or materials should take place within a watercourse, including wetlands and the riparian zone of streams/rivers. • Periodic visual inspections of on-site water quality, identifying the source of any rapid increases in turbidity of surface waters and remedying this where necessary such be performed by a qualified Environmental Officer. Water must be pumped out into a well-vegetated area some distance from any watercourse to facilitate sediment trapping and reduce the chance of sediment entering wetlands/streams. • Excavated and imported material should be stored away from streamlines / areas of concentrated flow to limit the risk of sediment wash to downstream areas. • Any topsoil removed from wetlands must be stockpiled separately from subsoil material and replaced once mining is complete to facilitate re-colonization of the site. • Stripped topsoil from wetlands must not be buried or in any other way be rendered unsuitable for further use by mixing with spoil or subjected to compaction by machinery. • Exposed soils should be rehabilitated as soon as practically possible to limit the risk of erosion. The channel embankments must be rehabilitated to ensure both longitudinal and cross-sectional stability against summer floods.
Pollution		
Waste Management/Pollution Control	Negative	• Storage of potentially hazardous materials (e.g. fuel, oil, etc.) should be outside of the 100-year flood line, or within a horizontal distance of 50m from a watercourse or wetland. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas. • Operation and storage of machinery and mining-related equipment must be done outside of wetlands and rivers wherever possible, unless authorised by a WUL. • Spillages of fuels, oils and other potentially harmful chemicals should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the site must be removed and rehabilitated timeously and appropriately. • Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any watercourse (including river and wetlands). • Provide adequate waste disposal facilities (bins) and encourage workers not to litter or dispose of solid waste in the natural environment but to use available facilities for waste disposal. • Ensure that any rubbish is regularly cleared from the site, especially from wetlands/streams.

		• Routinely check machinery/plant for oil or fuel leaks each day before mining activities begin. No stockpiling should take place within a watercourse, including wetlands and the riparian area of the river. • Sanitation – portable toilets (1 toilet per 30 users is the norm) to be provided where mining is occurring. Workers need to be encouraged to use these facilities and not the natural environment. Toilets should be located outside of the 1:100 yr. flood line of a watercourse or 50m or from any natural water bodies including streams and wetlands. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor.
Social		
Recruitment strategies for the mine	Positive	N/A
Advantage to previously disadvantage individuals	Positive	N/A
Community development programmes	Positive	N/A
Upgrades and expansion of services will benefit local area	Positive	N/A
Increased income generation for local community	Positive	N/A
Increased job opportunities for local mining communities	Positive	N/A
Economic injection to the area and Mpumalanga	Positive	N/A
Noise		
Noise emanating from heavy machinery and transport vehicles	Negative	• Noise barriers in the form of berms should be constructed as close to the noise sources as possible. • Mining-related machines and vehicles must be serviced regularly to ensure noise suppression mechanisms are effective, e.g. installing exhaust mufflers where possible. • Noisy machinery must be used predominately during daylight hours. • Grievance mechanism to record complaints should be kept on site and investigated. • Regular monitoring of noise to take place.
Noise from blasting	Negative	• Blasting operations are generally intermittent and should be limited to the day when ambient noise levels are highest.
Infrastructure (e.g. contractor's yard,	Negative	• To reduce the visual impact of permanent structures, colours for roofing, walls, etc. should have a matt finish to reduce reflection.

weighbridge, workshop and stores)		• Infrastructure must be located away from sensitive and elevated areas.
Location of stockpiles, pollution control dams and discard dumps	Negative	• Place as far away as possible from roads and settlements. • Topsoil stockpiles must be vegetated as soon as possible, to reduce erosion and decrease visual disturbance. • Keep stockpiles as low as possible to reduce visual impac • Plant fast-growing indigenous trees around the dams to enhance visual.
Lighting pollution	Negative	• Avoid up-lighting of structures but rather direct the light downwards and focused on the object to be illuminated. • Use non-UV lights where possible, as light emitted at one wavelength has a low level of attraction to insects. This will reduce the likelihood of attracting insects and their predators specifically in the site camps. • '' Noise level discussions have commenced between the Applicant and neighbouring mine which have already conducted the studies and continuously monitor the noise level on the area at about 3km radius''.
Heritage and cultural		
Heritage resources disturbed/destroyed	Negative	From an archaeological and heritage point of view, the proposed Mining Right application site may be approved subject to mitigation measures implemented on the identified burial site. ▪ The identified burial site must be preserved in situ and properly mapped before any mining activity commences. ▪ The planners for the proposed mine must provide for a 100m buffer zone for the recorded burial site. ▪ No heritage mitigation work is allowed without the consent of descendant families. ▪ The mining right application site may be approved to proceed as planned under observation that project work does not extend beyond the surveyed site. ▪ Should chance archaeological materials or human burial remains be exposed during subsurface mining work on any section of the proposed development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in mining scheduling
Paleontological sites disturbed/destroyed	Negative	
Cultural places disturbed/destroyed	Negative	

		while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations. ▪ Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMPr, there are no other significant cultural heritage resources barriers to the proposed mining development. The Heritage authority may approve the Mining Right application site to proceed as planned with special commendations to implement the recommendations here in made. ▪ If during development, operational or closure phases of this project, any person employed by the applicant, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the site manager. ▪ The site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing an archaeological practitioner. ▪ It is the responsibility of the applicant to protect the site(s) from publicity (i.e., media) until a mutual agreement is reached. ▪ Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by MPHRA. ▪ The applicant is reminded that unavailability of archaeological materials (e.g., pottery, stone tools, remnants of stonewalling, graves, etc.) and fossils does not mean they do not occur, archaeological material might be hidden underground, and as such the client is reminded to take precautions during mining. ▪ Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is

		thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that detailed heritage monitoring procedures are included in the project EMPr for the mining phase, include chance archaeological finds mitigation procedure in the project EMPr (See Appendix 1 on heritage report). ▪ The findings of this report, with approval of the MPHRA, may be classified as accessible to any interested and affected parties within the limits of the laws.
Traffic		
Increased traffic volumes on the existing road networks	Negative	• Implement speed limits and safety controls on-site. • Construct access roads within safety limits from other crossings. • Possible road upgrades where required. • Create safe environment for pedestrians, animals and motorists. • Create fauna underpasses where necessary (e.g. bridge crossings).
Blasting and vibration		
Blasting and vibration	Negative	• Pre-blast survey of all structures in the mining area. • Ground vibration survey in the form of signature trace study to be done for determination of ground vibration constants that can be used for accurate ground vibration prediction. • Investigate the possibility of alternative methods to blasting.
Safety		
Blasting	Negative	• Clearly demarcated areas and erect signs to indicate blasting zones.
Roads and vehicles	Negative	• Speed limits must be in place on site and before access roads on a provincial or national road. • Ensure drivers are trained in road safety.
Surrounding neighbours	Negative	• Personnel are not permitted on other properties without permission. • Avoid conflict with surrounding landowners. • Safety specialist will be appointed, and assessments will be conducted. Recommendations will be implemented.
Air quality		
Dust pollution		• The removal of vegetation will be minimised during stripping to reduce the effects of dust pollution as a result of exposed soil. • Water or dust control agents must be used in working areas, and roads will be sprayed for dust suppression

	Negative	on a regular basis in designated susceptible areas during heavy usage. • Dust monitoring must be undertaken in accordance to the monitoring programme. It is recommended that topsoil stockpiles be vegetated to sustain biological components and prevent dust emissions. • Reduction of dust fallout levels and particulate matter. • All coal haul trucks must be covered by a tarpaulin. • The overland conveyor belt should be covered and coal on the conveyor should be sprayed to reduce emissions. • '' Air quality discussions have commenced between the Applicant and neighbouring mines which have already conducted the studies and continuously monitor the Air on the area at about 3km radius''..

18.2 Mitigation measures

The impacts that are generated by development can be minimised if measures are implemented to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts to minimise impacts and achieve sustainable development. This will be assessed and discussed in more detail during the EIA phase., however some recommendations as part of mitigations are listed in Table 28.

18.3 Motivating the preferred site

As a result of the scoping phase impact assessment and the sensitivity mapping exercise, a preferred layout enclosing stormwater design from WULA engineers alternative will be identified and assessed in the EIA phase.

19 PLAN OF STUDY

The scoping phase identified potential environmental impacts and discussed alternatives considered. The following section outlines the proposed plan of study which will be conducted for the various environmental aspects during the EIA phase. It is important to note that the plan of study will be guided by comment obtained from I&APs and other stakeholders during the PPP of Scoping Phase.

19.1 Impact assessment phase objectives

The impact assessment phase will have the following objectives:

- Identify and assess the environmental (biophysical and social) impacts of the construction, operation, decommissioning and post closure impacts of the proposed development. The cumulative impacts of the proposed development will also be identified and evaluated.
- Determine and assess alternative activities and locations in parallel with the proposed activity.
- Identify and evaluate potential management and mitigation measures that will reduce the negative impacts of the proposed development and enhance the positive impacts.
- Compile monitoring, management, mitigation, and training needs in the EMPr.
- Provide the decision-making authorities with sufficient and accurate information to make a sound decision on the proposed development.

19.2 Impact assessment phase tasks

The impact assessment phase has four key elements, namely:

- ***Specialist studies****:* Specialist studies identified in the scoping phase and any additional studies that may be required by the authorities, will be conducted during the initial phase of the EIA. The relevant specialists will be appointed to conduct the various assessments. They will gather baseline information relevant to the study and assess impacts associated with the development. Specialists also make recommendations to mitigate negative impacts and optimise benefits. The resulting information is synthesised into the draft EIA report that will be made available to I&APs for review.
- ***EIAr****:* The main purpose of this report is to gather environmental information and evaluate the overall impacts associated with the project, consider mitigation measures and alternative options, and make recommendations in choosing the best development alternative. The EIAr identifies mitigation measure/management recommendations to minimise negative impacts and enhance benefits.

  The draft EIAr and associated reports will be made available for public and authority review and comment for a period of thirty days as it was for scoping phase. The availability of the draft EIAr will be communicated to all registered I&APs and will be easily accessible. After comments have been received, the final EIAr will be compiled and submitted to the competent authority (DMRE) for review. This report will assist the DMRE in making an informed decision.
- ***EMPr****:* The EMPr provides guidelines to the proponent and the technical team on how to best implement the mitigation measure/management recommendations outlined in the EIAr during the construction, operational and decommissioning/rehabilitation phase. The EMPr is a legally binding document, and once approved cannot be amended without permission from the DMRE.

- ***PPP:*** The PPP initiated during the scoping phase, is continued. This includes continuous engagement with I&APs and stakeholders, which includes meetings, receiving comments, issues and concerns raised by I&APs and the authorities during the review period, and also provides relevant responses to these comments.

19.3 Alternatives to be considered, including no-go option

According to the MPRDA and NEMA regulations, feasible alternatives need to be considered and assessed during the scoping and impact assessment phase of the project. During the scoping phase, based on professional judgement of the EAP, the engineering designs, specialist inputs, and I&AP comments, must be considered. The alternatives identified must achieve the triple bottom-line of sustainability, i.e., they must meet the social, economic, and ecological needs of the public. The alternatives must aim to address the key significant impacts of the proposed project by maximising benefits and avoiding or minimising the negative impacts. The primary objective must be to avoid all negative impacts, rather than minimise them. The "feasibility" and "reasonability" of and the need for alternatives must be determined by considering:

- The general purpose and requirements of the activity
- Need and desirability
- Opportunity costs
- The need to avoid negative impact altogether
- The need to minimise unavoidable negative impacts
- The need to maximise benefits
- The need for equitable distributional consequence

A comparative assessment (of all alternatives identified) will be conducted in accordance with the aforementioned criteria, as part of the impact assessment.

19.4 Aspects to be assessed as part of the EIA

The following specialist studies will be assessed during the EIA phase:

- Soil, Land Capability and Land Use
- Surface Water
- Geohydrology
- Cultural and Heritage Resources
- Paleontological Impacts
- Social Impacts
- Waste Classification
- Closure (rehabilitation)
- Terrestrial ecology
- Traffic Impacts
- Blasting and Vibration

In addition, the following will continue during the EIA phase:

- Public participation and consultation
- Environmental Management Programme
- Site layout designs and Mining Works Programme

19.5 Proposed method of assessing environmental aspects and alternatives

Refer to section 20 for more details.

19.6 Stages at which the competent authority will be consulted

Competent authorities stated being consulted during the initial notification period, scoping phase and during the EIA phase. A scoping phase meeting was not held with the DMRE and DWS, however, draft Scoping reports will be submitted to their offices. The purpose of the authority meeting is to explain the project in detail to authorities and clarify the process anticipated. Stakeholders include the district and local municipalities, ward councillors, and others. Thus, a meeting will be held with Mkhondo Local municipality. Comments will be expected after reviewing the draft scoping report.

The consultation process to be followed as part of the review and decision-making stages include:

- Scoping review and decision-making stage
- Environmental impact assessment review and decision-making stage
- The environmental authorisation decision making and appeal process stage

19.7 Public participation process for the impact assessment

Competent authorities, stakeholders and I&APs will be consulted during the initial notification period, scoping phase, and EIA phase.

19.7.1 Steps to be taken to notify interested and affected parties

A detailed description of the PPP conducted for the scoping phase.

I&APs will be notified of the proposed application via newspaper advertisement, emails, site and public notices. The PPP will be undertaken in accordance with the NEMA process and the 2014 Regulations (as amended). A minimum of thirty days is provided to the public to register as I&APs and provide initial comments. Thirty days is provided to comment on the draft scoping report. The information submitted by

I&APs will be utilised in the final Scoping and will be utilised more in detail during the Impact Assessment and compilation of the EIAr. Should the final scoping report be accepted by the competent authority, an EIA will be undertaken. During the EIA phase I&APs, stakeholders and the competent authorities will be notified of the process to be undertaken (as described in Section 7 and outlined in the NEMA regulations (2014, as amended). They will also be provided an opportunity to comment on the draft EIAr (which will include specialist studies) and attend public meetings as they have also attended for this scoping phase.

19.7.2 Details of the engagement process

The process of identifying and contacting landowners, stakeholders and I&APs will commence when I&APs are notified via site and public notices, newspaper adverts, emails, and distribution of the Draft Scoping Report. Landowner was identified through Title Deed search for the property was done. Proof of notifications and documentation pertaining to the PPP during scoping phase have been recorded and will be recorded also during environmental impact assessment phase and will only be shared with the competent authority to the POPIA.

During the EIA phase, I&APs will be afforded the following opportunities in order to participate in the project:

- I&AP'S will be notified of the following phase and acceptance of the Scoping Report.
- I&APs will be asked to provide their comments on the project, notified when the draft EIAr is available for review and notified of a public meeting that will take place.
- The EIAr and EMPr will be available for comment for a period of thirty days at the same public places in the project area that the scoping report will be made available. Report copies will be sent to stakeholders who request it.

All comments and issues raised during the public comment period will be incorporated into the final EIAr and EMPr to be submitted to the competent authorities for review and the final decision-making stage. I&APs will be notified of the decision of the competent authority within fourteen days of receiving written letters and will specify any further process to be undertaken, like the appeal process.

❖ Grievance Mechanism

In accordance with international good practice the mine shall establish a specific mechanism for dealing with grievances. A grievance is a complaint or concern raised by an individual or organisation that judges that they have been adversely affected by the project during any stage of its development. Grievances may take the form of specific complaints for actual damages or injury, general concerns about project

activities, incidents and impacts, or perceived impacts. The IFC standards require Grievance Mechanisms to provide a structured way of receiving and resolving grievances. Complaints should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities and is at no cost and without retribution. The mechanism should be appropriate to the scale of impacts and risks presented by a project and beneficial for both the company and stakeholders. The mechanism must not impede access to other judicial or administrative remedies.

The proposed grievance mechanism shall be based on the following principles:

- Transparency and fairness.
- Accessibility and cultural appropriateness.
- Openness and communication regularity.
- Written records.
- Dialogue and site visits.
- Timely resolution

Based on the principles described above, the grievance mechanism process involves four stages:

- Receiving and recording the grievance.
- Acknowledgement and registration.
- Site inspection and investigation.
- Response.

❖ Internal Grievance Procedure

The mine shall develop a detailed internal grievance mechanism designed to receive and facilitate resolution of workplace concerns and grievances raised by employees (and their organizations, where they exist). Employees must be informed of the grievance mechanism at the time of recruitment, and it must be made easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism should also allow for anonymous complaints to be raised and addressed. The mechanism should not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

Document Control

A formal document control system should be established during the development of the ESMS. The document control system must provide for the following requirements:

- Documents are approved for adequacy prior to use.
- Review and update documents as necessary and re-approve documents.
- Ensure that changes and the current version status of documents are identified.
- Ensure that relevant versions of applicable documents are available at points of use.
- Ensure that documents remain legible and readily identifiable.
- Ensure that documents of external origin necessary for the ESMS are identified and their distribution controlled.
- Prevent unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose.

19.7.3 Information which was provided during Scoping and will be t provided to interested and affected parties during EIA phase.

The following information was and/or will be made available to I&APs:

- BID: The aim of the BID is to inform all I&APs of the proposed project and process followed during the scoping and which will be followed during EIA phase, which were/or are; the undertaking of the PPP and EIA for the compilation of the EIA, Environmental Management Programme and Waste Management Licence for the proposed mining activities.
- The site plan, scale and extent of activities to be authorised.
- The draft scoping report, which includes:
    - The plan of study:
        - List of activities to be authorized according to NEMA, NEM:WA and NWA
        - Indication and discussion of the impacts of activities to be authorised
        - The proposed specialist studies that will be undertaken as part of the project
        - The proposed mining methods to be used
        - Discussion of alternatives, including location, process and methodology and no-go
        - Details of the MPRDA, NEMA, NEM:WA and NWA Regulations (including a list of other applicable regulations) that must be adhered to

- Draft EIR and EMPr (including results from the specialist assessments) will be made available for public review and comment for a period of thirty days.
- Information will be made available as requested by the I&APs throughout the process.

19.8 Tasks that will be undertaken during the EIA

The following tasks will be undertaken as part of the EIA phase of the project:

- Finalisation of the legislative context in which the activities will take place and documentation of the proposed activity and how it complies with this legislation.
- Finalisation of the activities triggered under NEMA and NEM:WA based on the specialist assessments and final design layout and specifications.
- Identification of the location of the development footprint in the preferred site based on impact and risk assessment process. This includes cumulative impacts and ranking of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment.
- Identification of the most ideal location for the activities in the preferred site based on the lowest level of environmental sensitivity identified during the assessment, especially with the proposed sitting of the mining infrastructure.
- Determination of the nature, significance, consequence, extent, duration and probability of the impacts occurring to identify preferred alternatives and the degree to which these impacts can be reversed, may cause irreplaceable loss of resources, can be avoided, managed or mitigated.
- Identification of suitable measures to avoid, manage or mitigate identified impacts
- Detailed specialist studies
- Continued PPP
- Compilation of the draft EIAr and EMPr and, once the consultation, review and commenting period has finished, the finalisation of the EIAr and EMPr, which will be submitted to the CA (Competent Authority) for review and final decision making.

❖ SUMMARY OF NEXT STEPS IN THE EIA PROCESS.

The next step will be to finalise the specialist studies that will inform the impact assessment. During the impact assessment phase, the issues raised by stakeholders and the potential impacts of the proposed project on the environmental and socio-economic status of the area will be examined in detail. Stakeholder issues will therefore assist to drive the EIA process. When complete, the findings of the specialist studies

will be integrated into a single report, the Draft EIA Report and EMPR. The report will then be made available for stakeholder comment, after which it will be finalised and submitted to the decision-making Authorities for a final decision. It must also be noted that the approval of scoping report also comes with conditions or guidelines on h an EA[P can approach EIA process.

19.9 Measures to avoid, reverse, mitigate, or manage identified impacts and determine the extent of the residual risks

Please refer to Table 30: Anticipated impacts.

19.10 Financial Provision

Notre Coal (Pty) Ltd will have an agreement with the respective landowners to either lease or purchase the farms for the mining purposes. The Company is financing itself.

20 OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

Compliance with the provision of Section 24(4)(a) and (b) read with Section 24 (3) (a) and (7) of the NEMA, the EIA report must include the following.

20.1 Impact on the socio-economic condition of any directly affected person

This depends on the results of the Social and Labour Plan. Full details will be made available during the EIA phase after the specialist studies and consultation with the community, stakeholders and other I&APs have been concluded. The proposed Notre Coal Mine will provide employment opportunities, skills development, social development programmes, community upliftment and economic injection to the local area. Furthermore, impacts including traffic, service delivery, land use changes and security and safety will be assessed and discussed during the EIA phase.

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

A specialist will be appointed by Singo Consulting (Pty) Ltd. The appointed specialist will conduct the first assessment during the scoping phase and the second phase of assessment during the EIA phase whereby full result of different phases will be made available.

20.3 Other matters required in terms of Section 24(4) (A) and (B) of the Act

Section 24(4)(b)(i) of the NEMA (as amended), stipulates that an investigation must be undertaken to determine the potential consequences or impacts of the alternatives on the environment and assess the significance of these consequences or impacts, including the option of not implementing the activity. Alternatives have been discussed in Section 6 of this report and will be addressed in detail during the EIA phase once all specialist assessments and comments from I&APs, stakeholders and the competent authorities have been received.

21 ASSUMPTIONS, LIMITATIONS AND UNCERTAINTIES

Certain assumptions, limitations, and uncertainties are associated with the scoping phase. This report is based on information that is currently available. The following limitations and assumptions are applicable:

- • The client's information about the project served as the basis for this report.
- • Only studies on heritage, ecology, soil, and water resources have been completed so far as specialist studies for the scoping phase. Based on desk research and the literature that is currently accessible for the location, descriptions of the natural, economic, and social surroundings are provided. The results of the expert studies will be used to inform the EIA phase's more in-depth information. For this report's inclusion, just a small amount of expert input from the scoping phase was gathered.
- Several sources were used to compile the description of the baseline environment and, when applicable, the updated data. Based on the findings of the expert studies, the completion of the Mining Works Program, and design layout, more specific information will be provided throughout the EIA phase.
- A thorough impact analysis was partially completed as of this writing, but the level of confidence is thought to be too low. Once the I&APs have provided detailed expert input and comments, which will be presented and discussed in more detail during the EIA phase, a full, detailed impact assessment will be completed.

22 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.
d) That the information provided by the EAP to I&APs and any responses by the EAP to comments or inputs made by I&APs are correctly reflected herein.

-END-

23 EAP DECLARATION

I, ... declare that:

General declaration:

- I act as the independent EAP in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- I declare that there are no circumstances that may compromise my objectivity in performing such work.
- I have expertise in conducting Environmental Impact Assessments ("EIAs"), including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity.
- I will comply with the Act, Regulations and all other applicable legislation.
- I will take into account, as far as possible, the matters listed in Regulation 8 of the Regulations when preparing the application and any report relating thereto.
- I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to I&APs and the public and that participation by I&APs is facilitated in such a manner that all I&APs will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application.
- I will ensure that the comments of all I&APs are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that

comments made by I&APs in respect of a final report may be attached to the report without further amendment to the report.

- I will keep a register of all I&APs that participated in a PPP.
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.
- All the particulars furnished by me in this form are true and correct.
- I will perform all other obligations as expected from an EAP in terms of the Regulations.
- I realise that a false declaration is an offence in terms of Regulation 71 of the Regulations and is punishable in terms of section 24F of the Act.

Disclosure of vested interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity other than remuneration for work performed in terms of the Regulations.
- I do not have any vested interest in the proposed activity other than remuneration for work performed in terms of the NEMA regulations.

Signature of the EAP

Singo Consulting (Pty) Ltd

Name of company

09/11/2022

Date

Appendix 1: DMRE Letters

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Appendix 2: Landowner letter and correspondence

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Correspondence with neighbouring occupiers

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Appendix 3: Proof of notification (email); and responses received from stakeholders

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Community Members Comments/ Concerns/Consultation

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Business Database of I&AP's

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

COMMENT FORMS FROM COMMUNITY MEMBERS

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Appendix 4: Curriculum Vitae's

Complier

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

1st Reviewer EAP

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

2nd Reviewer EAP

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Appendix 5: Public participation process (Community meeting, Attendance registers of I&APs, Meeting Images, Presentation and comment forms)

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Comment Forms from I&AP's

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Appendix 6: Proof of placement of site notices in English and newspaper advert.

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

NEWSPAPER PLACEMENT
(Excelsior Nuus/News)

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Appendix 7: Background information document (BID)

Background Information Document (BID)

FOR COAL MINING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION ON PORTION 1 OF THE FARM ANNYSSPRUIT 140 HT AND THE REMAINING EXTENT OF THE FARM MOOIHOEK 168 HT SITUATED UNDER THE MAGISTERIAL DISTRICT OF MKHONDO (PIET RETIEF), MPUMALANGA PROVINCE WITH DMRE REF: MP 30/5/1/2/2/10379 MR

Prepared by:

Singo Consulting (Pty) Ltd

Office 870,

5 Balalaika Street,

Tasbet Park Ext 2,

Witbank,

1040.

Prepared on behalf of:

Plot 106, Road 4, Delmas,

Gauteng, 2210,

Cell No: +27 66 211 8714

Email: eddi@notrecom.co.za

MINING RIGHT BACKGROUND INFORMATION

1.1 INTRODUCTION

Notre Coal (Pty) Ltd has applied for a mining right in terms of the Minerals and Petroleum Resources Development Act (Act No.28 of 2002) (MPRDA) (as amended) on portion 1 of the farm Annysspruit 140 HT and the remaining extent of the farm Mooihoek 168 HT situated under the magisterial district of Mkhondo (Piet Retief), Mpumalanga Province with DMRE REF: MP 30/5/1/2/2/10379 MR.

This application for a mining right is subject to an application for an Environmental Authorization in terms of the National Environmental Management Act (NEMA), Act 107 of 1998. In addition to this, the project will also require a waste management license in terms of the National Environmental Management: Waste Act (NEM: WA), Act 59 of 2008, (amended in 2017), a water use license in terms of the National Water Act, Act No. 36 of 1998 (NWA) Reference number: CT23304 and a Waste Management License (WML) for waste management activities in terms of section 45 of the National Environmental Management Waste Act 2008 (Act,1998 (Act 107 of 1998)(NEMA).

Notre Coal (Pty) Ltd appointed Singo Consulting (Pty) Ltd as an independent Environmental Assessment Practitioner (EAP), to complete the necessary environmental applications and oversee the various specialist studies:

Various Specialist studies:	
Geohydrology study	Heritage study
Biodiversity study	Hydrological Study
Blasting and vibration Assessment	Integrated Water and Waste Management
Mining Right Layout	Wetland Delineation Study
PCD and General Engineering Design	Soil study
Rehabilitation Plan	Surface and Storm Water Management Report
Traffic Management Study & Geotechnical Study	Water Balance Report

2. LOCATION

The mining right area falls in the Gert Sibande District Municipality and Mkhondo Local Municipality, Mpumalanga Province. The mining right application will be on portion 1 of the farm Annysspruit 140 HT and the remaining extent of the farm Mooihoek 168 HT. Please refer to Figure 1 and Figure 2 on page 4.

3. PURPOSE OF THE BACKGROUND INFORMATION DOCUMENT

- ***The purpose of this document is to:***

- Provide background information to landowners and interested and affected parties (I&APs) on the proposed prospecting activities

- Consult stakeholders and provide them the opportunity to register as I&APs

- Announce the availability of a draft Scoping Report available for public review and comment

- Obtain I&AP comments and contributions to incorporate these into environmental reporting

Please complete the attached Comments and Registration Form if you wish to register as an I&AP or contribute comments. Register / comment and return the form to Singo Consulting (Pty) Ltd by Friday the 11th of November 2022.

- ***THE ROLE OF I&AP's***

Communities, neighbours, government representatives, stakeholders such as community leaders, non-governmental organizations (NGO) are being invited to participate in the EIA process by means of published advertisements, site notices and written correspondence. I&APs are invited to assist in:

- Identifying issues of concern to be investigated, as well as possible impacts of the project on the natural & social environment;
- Suggesting alternative means in which to mitigate possible negative impacts and enhance positive impacts.

You are hereby invited to participate freely and submit any questions or information you feel may contribute to the process. All comments received will be recorded and addressed as part of the environmental impact assessment process. Please complete the attached comment form (APPENDIX A).

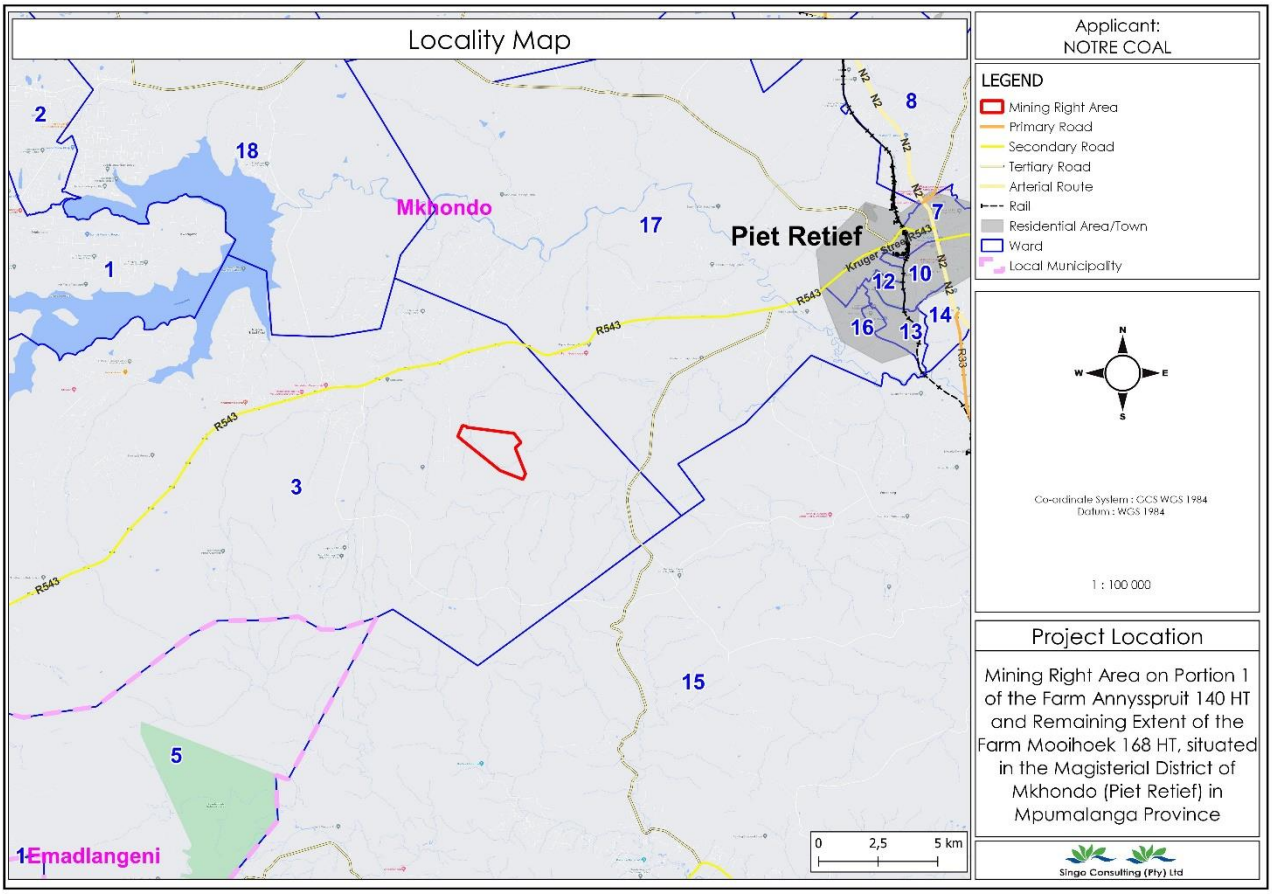


Figure 53: Locality Map of the project area

Figure 54: Google Earth View of the project area, showcasing the absence of housing nearby.

4. Project Overview

Mineral Applied For: Coal resources

Mining Methods: Open Cast Mining

Life of Mine: 30 years lifespan

Potential Market: International markets, Eskom, other domestic (i.e., coal stove & power generation) and (i.e. for steel production, liquid fuel and for cement manufacturing).

The main components of the database included spreadsheets describing each of the following data formats, collar, lithological, raw quality and the wash product quality database.

- Mineral and Land Tenure

The mining right is applicable for on portion 1 of the farm Annysspruit 140 HT and the remaining extent of the farm Mooihoek 168 HT. The Figure below shows identified landowners using Windeed Search. As observed on the Windeed results below, portion 1 of the farm Annysspruit 140 HT belongs to Reheivo Boerdery CC. During the Windeed Search, it was discovered that the remaining extent of the farm Mooihoek 168 HT does not exist, hence the Department of Land Reform and Rural Development Restitution will be consulted regarding this farm portion.

- HISTORICAL INFORMATION;

According to the geological map of the project area below, it can be observed that the area is underlain by Vryheid Formations which forms part of the Ecca Group within the Karoo Supergroup. The Vryheid Formation is composed of shales, sandstones, and coal seams. According to the studies that were conducted by XMP Consulting available online, Ermelo coal field stretches from Carolina in the north to Wakkerstroom in the south, a distance of 150 km and the east-west extent of the field is about 80km, about 25km east of Standerton, eastwards to Sheepmoor. It is bounded by the Witbank Coalfield in the northwest, Highveld in the west and Utrecht Coalfield to the south.

Previous studies show that anthracite has been mined before in areas such as Piet Retief, Ermelo and Wakkerstroom. There are four coal seams that are most important namely, the A seam, B Seam, C Seam and Dundus. The surface geology over the project area is dominated by outcrops and sub-crops of sedimentary rocks of the Ecca Group (Vryheid Formation), with Transvaal Supergroup (Hekpoort Formation) outcrops also present at the surface in the far east of the project area.

From the data gathered from CGS on the respective farms, it clearly indicates and can be confirmed that there are coal commodities on the area of interest.

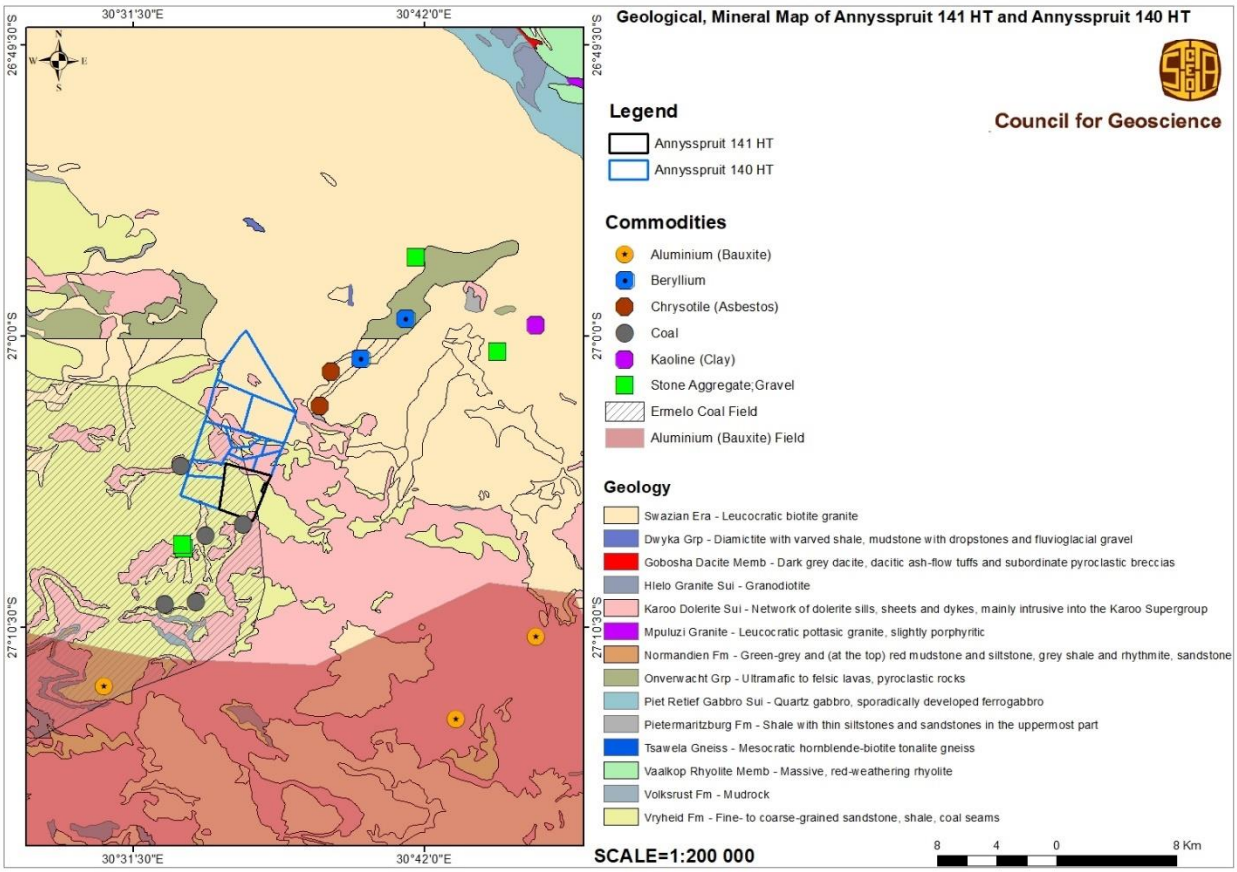


Figure 55: Geological, Mineral Map of Annyspruit 141 HT, and Annyspruit 140 HT (Counsel of GeoScience, 2021).

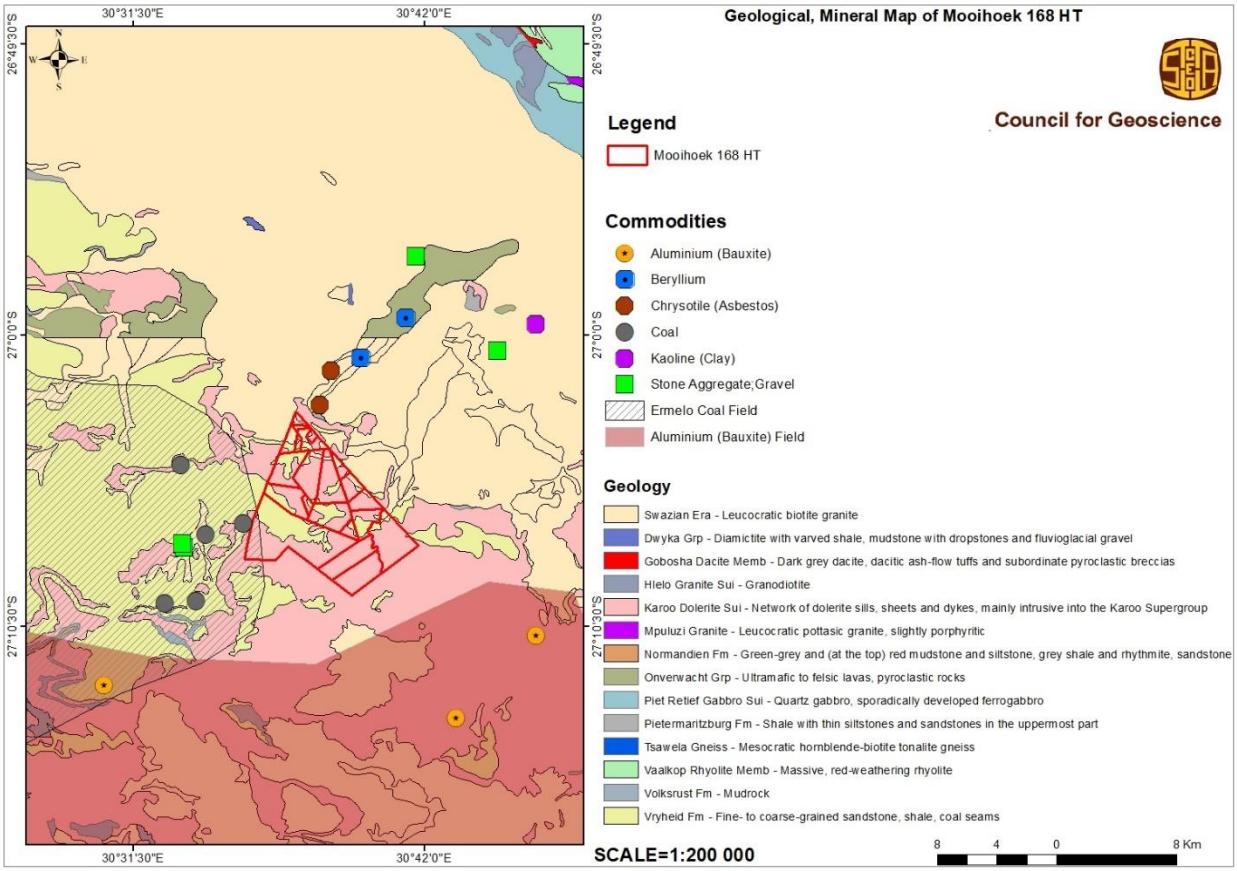


Figure 56: Geological, Mineral Map of Mooihoek 168 HT (Counsel of GeoScience, 2021)

Open cast coal mining recovers a greater proportion of the coal deposit than underground methods, as more of the coal seams in the strata may be exploited. The proposed infrastructure required on site includes the following:

Proposed Infrastructure:	
Access & Haul roads (with necessary security) including the upgrading of the access point to the gravel road.	Contractor's Yard with septic/chemical ablution facilities
Offices	Weighbridge
workshop and stores (with septic/chemical ablution facilities)	Discard Facility
Diesel facilities and a hardstand	Power and Water
Boxcut	Stockpiles (topsoil, overburden, subsoil/softs, ROM)

Surface water management measures (stormwater diversion berms and trenches, pollution control dams etc.)	Processing plant

The proposed mining method and sequence comprised of the following main mining activities for both waste and coal:

• Initial topsoil and soft overburden removal which will be stockpiled to ensure it can be replaced back in the initial box cut;

• The physical mining of the coal seam which includes drilling of hard overburden material, charging and blasting;

•The coal is loaded into trucks and hauled to the crushing and screening facility;

•Discard coal will be extracted and replaced in the bottom of the opencast pit, while the product will be taken to the weighbridge via trucks and then removed off site;

• The overburden is replaced back into the pit as mining progresses leaving a minimum area open at a single time;

• The topsoil which was stripped and stockpiled separately before mining commenced is then replaced. The findings of the land capability study will determine the optimal composition to ensure pre-mining conditions for utilisation.

Service Requirements:

- Electricity for the operation will be sourced from Eskom (8MVA required).
- Process water will be sourced from the River and tributaries around through a WUL.
- It is envisaged that potable/ domestic water will be sourced from boreholes on site, other alternatives are also being considered.
- General waste will be collected for disposal at the Municipal dump.

Industrial waste will be collected for disposal at a suitably licensed facility.

- Sewage will be collected within conservancy tanks to be emptied by honey sucker for treatment at a suitably licensed facility. Alternatively, a small, package sewage plant will be installed on site.

Employment:

- The project will create employment for approximately 48 people.

5. LEGISLATIVE PROCESS

In order for the proposed mine to operate, the applicant is required to submit an application for a mining right in terms of Section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) with the DMRE. In support of the application to obtain the mining right, the applicant is required to

conduct a Scoping and Environmental Impact Assessment (S&EIA) process that needs to be submitted to the DMR for adjudication, which includes activities triggered under the Environmental Impact Assessment Regulations of 2014 (as amended) promulgated under the National Environmental Management Act, 1998 (Act 107 of 1998) and activities triggered under the National Environmental Management: Waste Act, 2008 (NEM:WA) (Act 59 of 2008).

The extent of the mining right entails a life of mine of 30 years and covers the above-mentioned farm portions. The proposed Notre Coal opencast coal mining operations constitutes various listed activities which have been listed within the scheduled activities in Government Notice Regulation No 324, 325 and 327 (amended 7 April 2017) now amended GNR 517 as of 11 June 2021 and therefore require an integrated Scoping and EIA process to be followed. Prior to any listed activity being approved by the DMR, it is required that an environmental process is undertaken, and a report is submitted to the relevant environmental authority for consideration. The purpose of the S&EIA process is to ensure that potential environmental, economic, and social impacts associated with operation and closure/ rehabilitation of a project are identified, assessed and appropriately managed. There are two primary phases, namely the scoping phase and the impact assessment phase. These two phases are discussed in more detail below:

- ✓ Scoping Phase

The scoping phase is conducted as the precursor to the Environmental Impact Assessment (EIA) process during which:

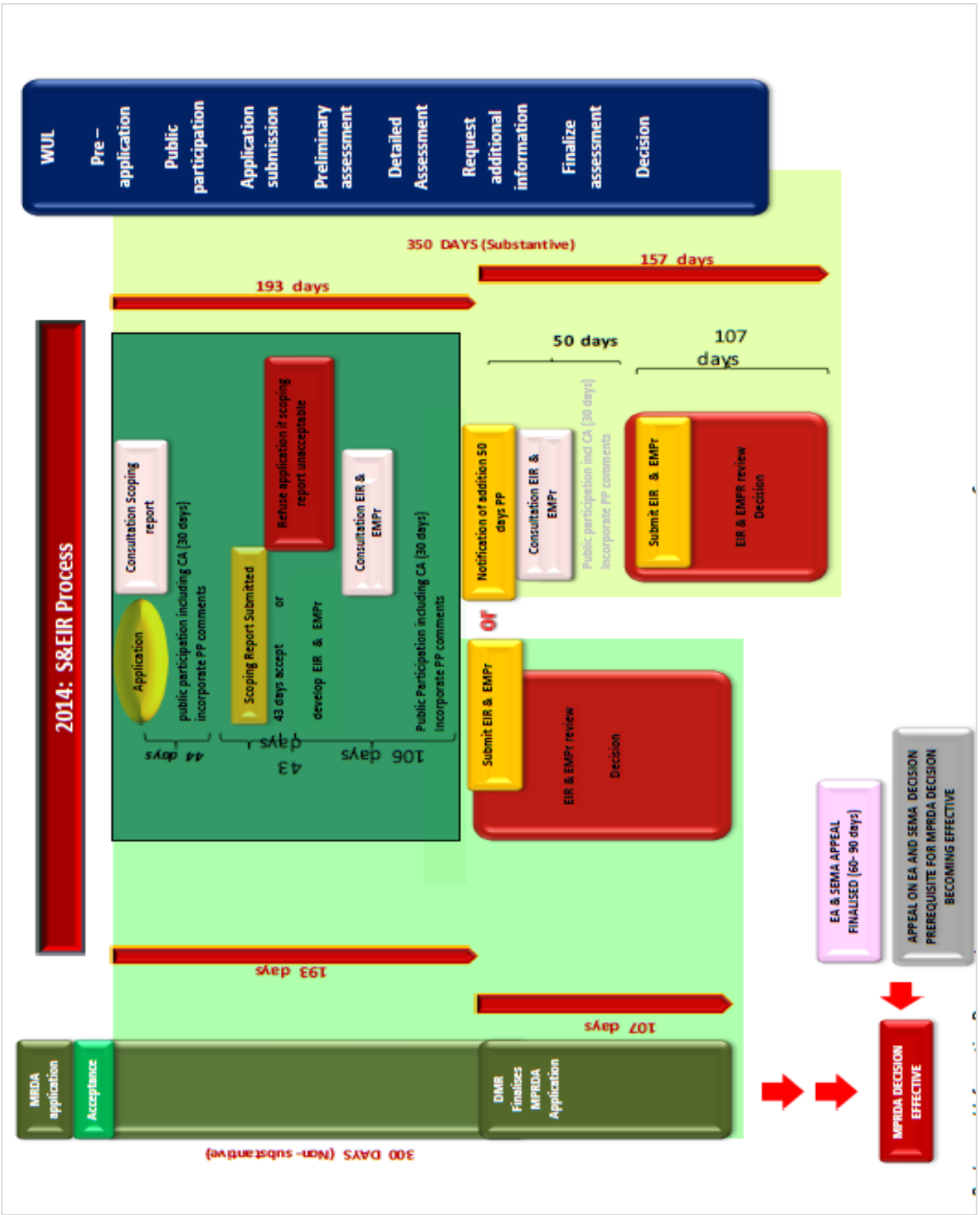
- Project and baseline environmental information is collated. Baseline information for the scoping report is gathered through visual inspections during field visits of the proposed project area and surroundings, desktop studies which include GIS mapping, and review of existing reports, guidelines, and legislation.
- Landowners, adjacent landowners, local authorities, environmental authorities, as well as other stakeholders which may be affected by the project, or that may have an interest in the environmental impacts of the project are identified.
- Interested and affected parties (I&APs) are informed about the proposed project.
- Environmental authorities are consulted to confirm legal and administrative requirements.
- Environmental issues and impacts are identified and described.
- Development alternatives are identified and evaluated, and non-feasible development alternatives are eliminated.
- The nature and extent for further investigations and specialist input required in the EIA phase is identified.
- The draft and final scoping reports are submitted for review by authorities, relevant organs of state and I&APs.
- Key I&AP issues and concerns are collated into an issues and response report for consideration in the EIA phase.

- ✓ EIA Phase Process

After the initial scoping phase, the EIA phase of the application includes:

- Specialist investigations are undertaken in accordance with the terms of reference established in the scoping assessment (plan of study for EIA appended to the scoping report). The scope for specialist work is determined accordingly to the nature and scale of the project impacts.
- An evaluation of development alternatives and identification of a proposed option.
- An assessment of existing impacts (no-go development option), environmental impacts that may be associated with the proposed project option, and cumulative impacts using the impact assessment methodology.
- Identification of mitigation measures to address the environmental impacts and development of actions required to achieve the mitigation required.
- Consultation with I&APs.
- Incorporation of public comment received during scoping and the draft EIA into the final EIA report.
- Issuing of the final EIA report for review.
- After the draft EIA report was reviewed, comments received are incorporated in the final EIA report and final Environmental Management Program (EMPr).

The requirements for the S&EIA process are specifically contained in Chapter 4 Part 3 of the NEMA Reg No 326 (amended on 7 April 2017). The EIA process can take up to 300 days to complete (87 days for scoping phase, 106 days for EIA phase, and 107 days for competent authority to review). In addition, an Integrated Water Use License Application (IWULA) will be submitted to the Department of Water and Sanitation (DWS) in accordance with the National Water Act 1998 (Act No. 36 of 1998) (NWA) for listed water uses. See illustration below;



6. PUBLIC PARTICIPATION PROCESS (PPP)

6.1 OBJECTIVES OF PUBLIC PARTICIPATION

- Provides Interested and Affected parties (I&APs) with an opportunity to voice their support, concerns and questions regarding the project, application or decision;

- Provides an opportunity for I&APs, EAP, and the Competent Authority (CA) to obtain clear, accurate and understandable information about the environmental, social, and economic impacts of the proposed activity or implications of a decision;
- Provides I&APs with the opportunity of suggesting ways of reducing or mitigating negative impacts of an activity and for enhancing positive impacts
- Enables the applicant to incorporate the needs, preferences, and values of affected parties into the application;

6.2 LEGISLATION

The PPP must comply with the several important sets of legislation that require public participation as part of an application for authorisation or approval; namely:

• The Mineral and Petroleum Resources Development Act (Act No. 28 of 2002 - MPRDA);

• The National Environmental Management Act (Act No. 107 of 1998 - NEMA);

• The National Environmental Management Waste Act (NEM: WA, Act No. 59 of 2008); and

• The National Water Act (NWA, Act No. 36. Of 1998).

Adherence to the requirements of the above-mentioned Acts will allow for an Integrated PPP to be conducted, and in so doing, satisfy the requirement for public participation referenced in the Acts. The details of the Integrated PPP are provided below.

6.3 IDENTIFICATION OF I&APS

An Interested and Affected Parties (I&AP) database will be compiled of key stakeholders and I&APs identified for notification of the Environmental Authorisation Application. The I&AP database includes, amongst others; landowners, communities, regulatory authorities, and other specialist interest groups. I&APs are notified of the proposed project through site notices, public notices, and newspaper advertisements. Where contact information is available email notifications has also been sent out.

6.4 NOTIFICATION AND REGISTER OF I&APS

The PPP has commenced, and I&APs are encouraged to send through their concerns or comments and call to register.

The notification procedure includes:

- Newspaper advertisement;
- Site Notices;
- Public Notices; and
- Letters and emails.

6.5 NOTIFICATION OF AVAILABILITY OF SCOPING REPORT AND SCHEDULED MEETING

With submission of the application to the DMRE, the formal 300 day EIA process has been initiated, as per the NEMA Regulations (2014, as amended). The Draft Scoping Report (DSR) will be available to stakeholders and I&APs for a period of 30 days to review and provide comments. All registered I&APs will be notified via email of the **availability of the DSR from 11th of November 2022 to 11th of December 2022** at the following locations:

Areas	Contact Person	Addresses
Public library Piet Retief	N/A	Piet Retief, 2380
Driefontein Police Station	Constable Simuzwane (072 5064 324)/ (076 9546 203)	141/129 Driefontein Road, Daggakraal, 2431
Dirkiesdorp Police Station	Serg L.D Luyele (072 5064 324)	1 Main Street Dirkiesdorp Piet Retief 2386
KwaNgema Clinic	Simphiwe Mavuso (017 8266 946)	Unnamed Road, Ngema Tribal Trust
Mkhondo Local Municipality	Vusi Dube (087 630 0180/082 065 4597)	33 Mark & De Wet Streets, eMkhondo

A public meeting to be scheduled for November 2022, either though face to face or virtual.

Venue: To be announced

Time: To be confirmed

"Registered I&APs will be informed about availability of reports and scheduled stakeholder meetings. Comments raised by stakeholders will assist in informed decision-making for authorities and provides

Appendix A: REGISTRATION AND COMMENT FORM SHEET

NOTICE OF COAL MINING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION ON PORTION 1 OF THE FARM ANNYSSPRUIT 140 HT AND THE REMAINING EXTENT OF THE FARM MOOIHOEK 168 HT SITUATED UNDER THE MAGISTERIAL DISTRICT OF MKHONDO (PIET RETIEF), MPUMALANGA PROVINCE WITH DMRE REF: MP 30/5/1/2/2/10379 MR.

Please complete this form and return it to **Singo Consulting (Pty) Ltd** to ensure that you are registered as an Interested and Affected Party (I&AP).

By answering the questions below you will help us to develop a better understanding of your information requirements. The form also gives you the opportunity to make comments regarding the project. Additional pages may be attached.

I&AP Details:

Full Names and Surname:							
Contact Details:							
Tel(w):		**Tel(h):**		**Fax No:**		**Cell No:**	
Email:							
Physical Address:							
Postal Address:							
Preferred method of communication: ☐ fax ☐ e-mail ☐ post **Preferred telephonic communication:** ☐ cell ☐ home ☐ work							
Organisation/Representative:							

Farm name, number and subdivision or Street Address (if applicable):	

Questions(s):

1. Where did you get information about the project?

Newspaper advertisement ☐ notice board ☐ flyer ☐ other (please specify)

2. Do you represent a company/organization or is your interest on behalf of yourself?

3. Do you know of anyone that is affected by the proposed activity who was not informed of the project? (Please provide contact details)

Name:	Organization:

Contact details		
Address:		
Tel No:	Fax No:	Cell No:
Email address:		

Do you have any specific concerns or comments regarding the project?

YES	NO

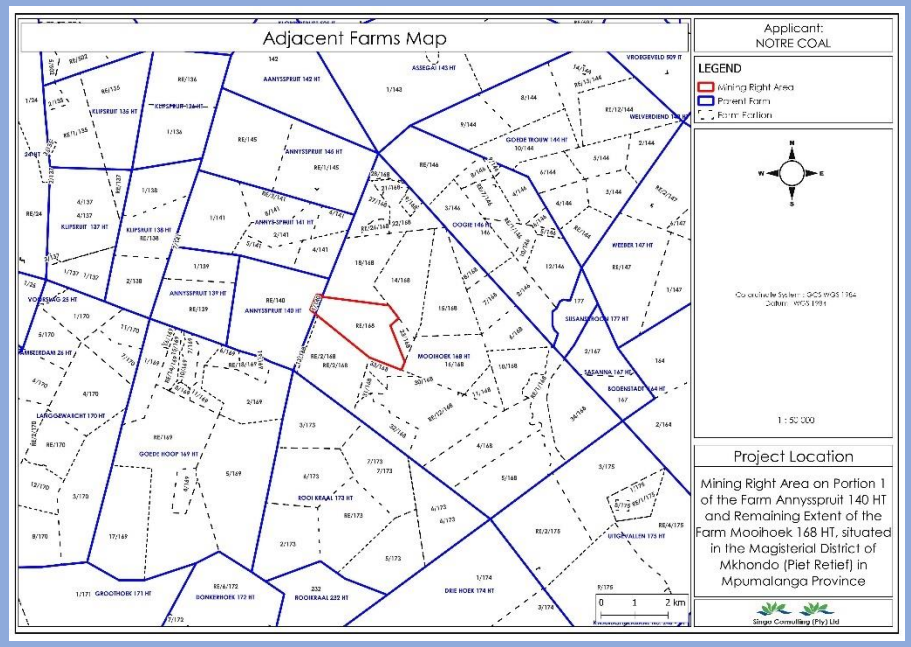
If yes, please indicate what the comments are?

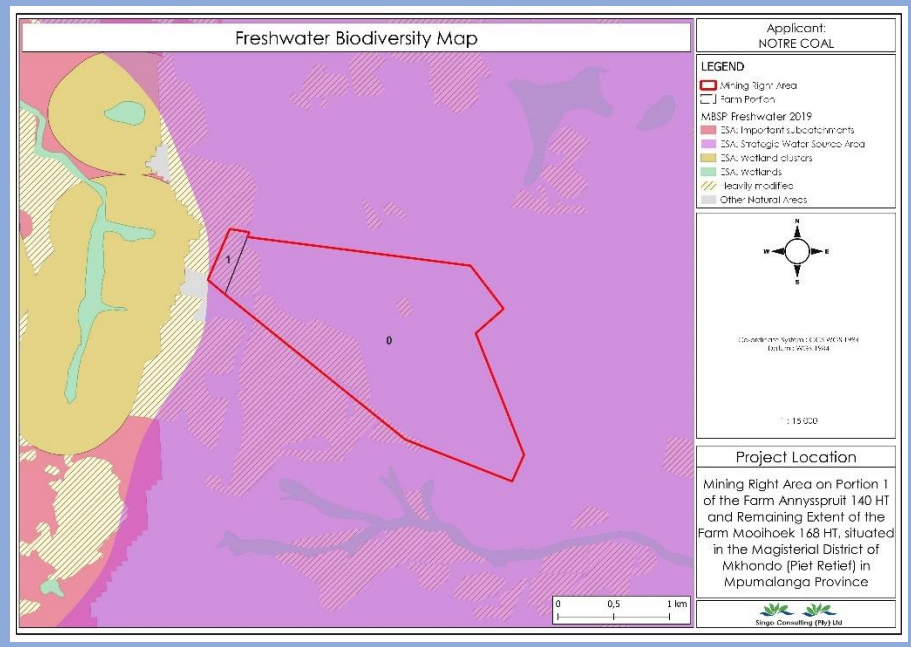
…… ……

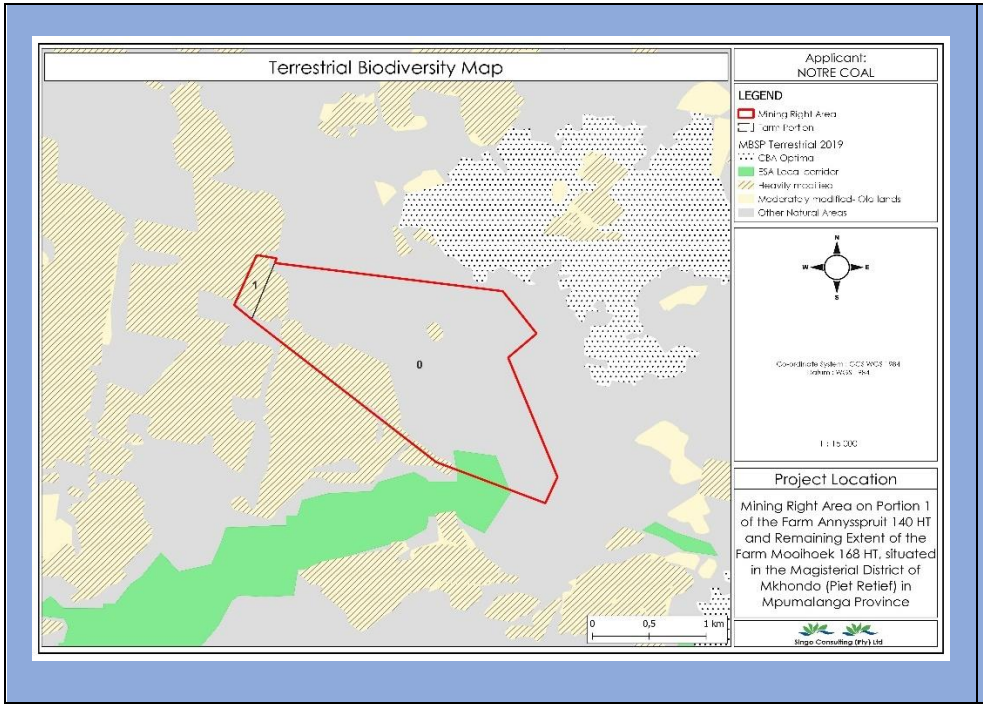
Signed Date

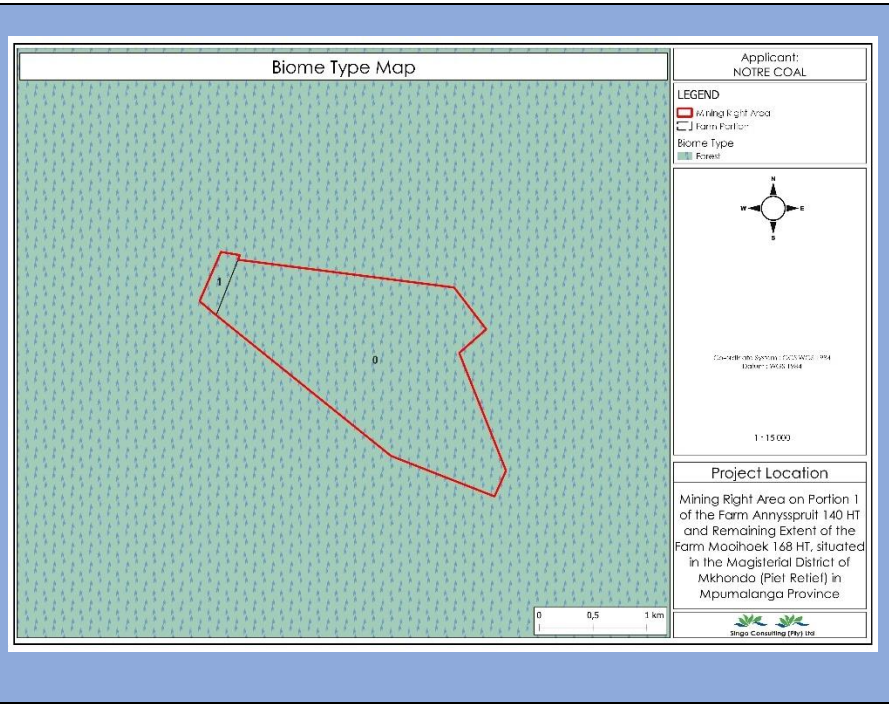
Appendix 8: Project Maps and Site conditions (pictures)

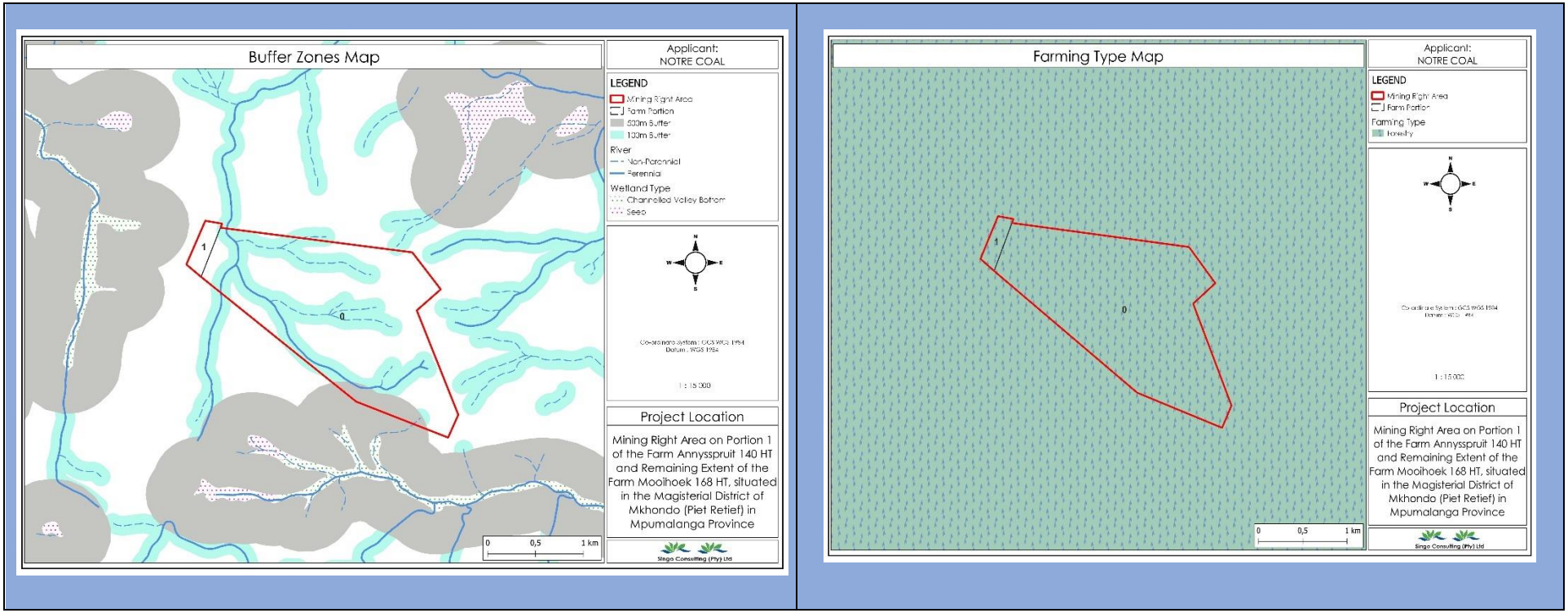
Project Maps

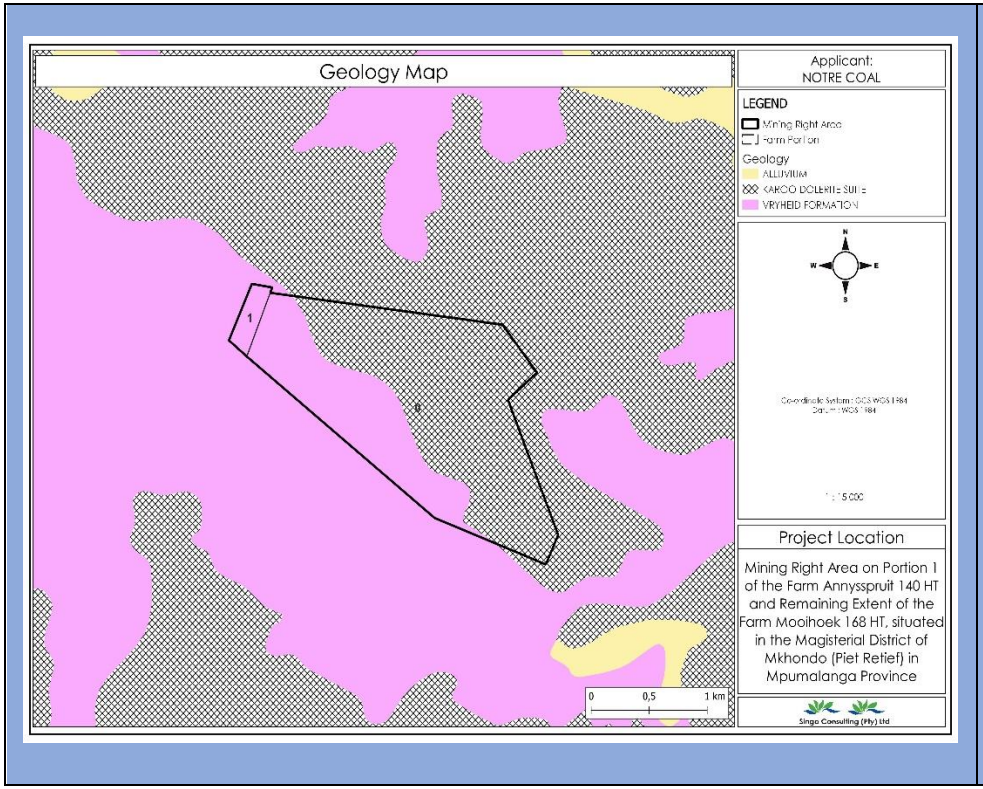


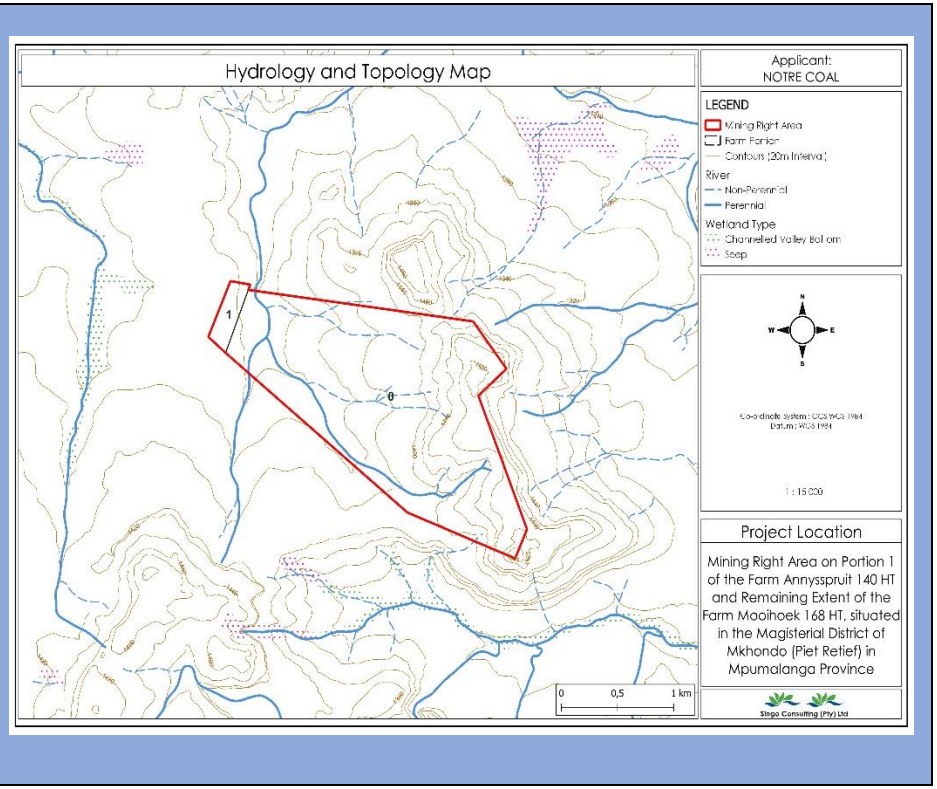


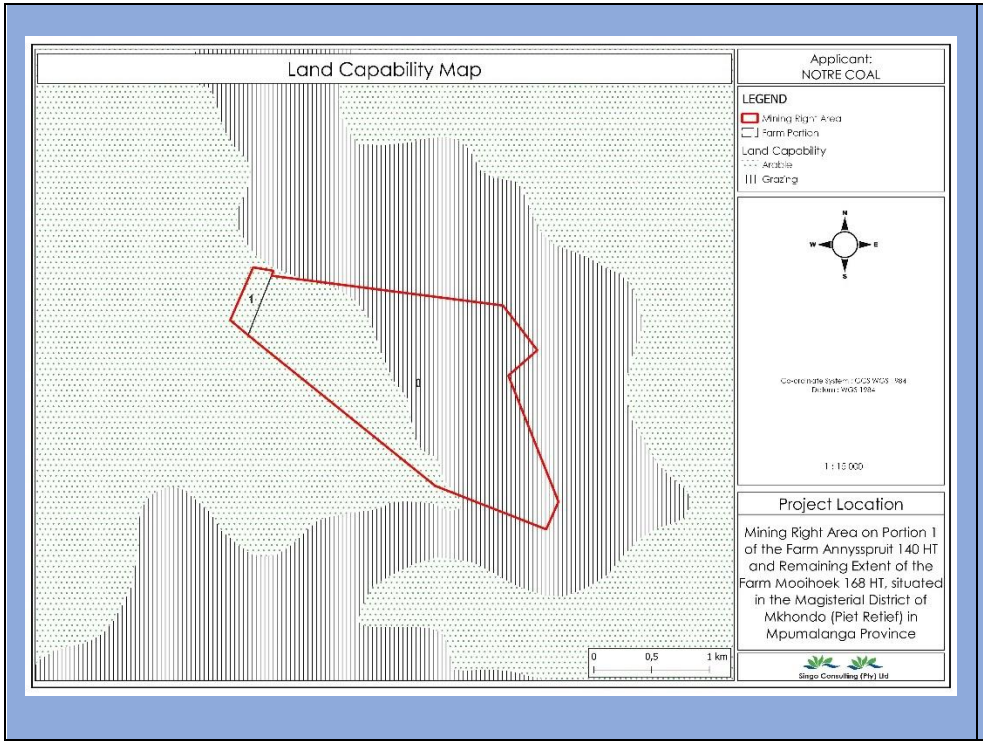

Terrestrial Biodiversity Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
MBSP Terrestrial 2019
CBA Optima
ESA Loca corridor
Heavily modified
Moderately modified- Old lands
Other Natural Areas
1 : 15 000
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0
0,5
1 km
Singo Consulting (Pty) Ltd

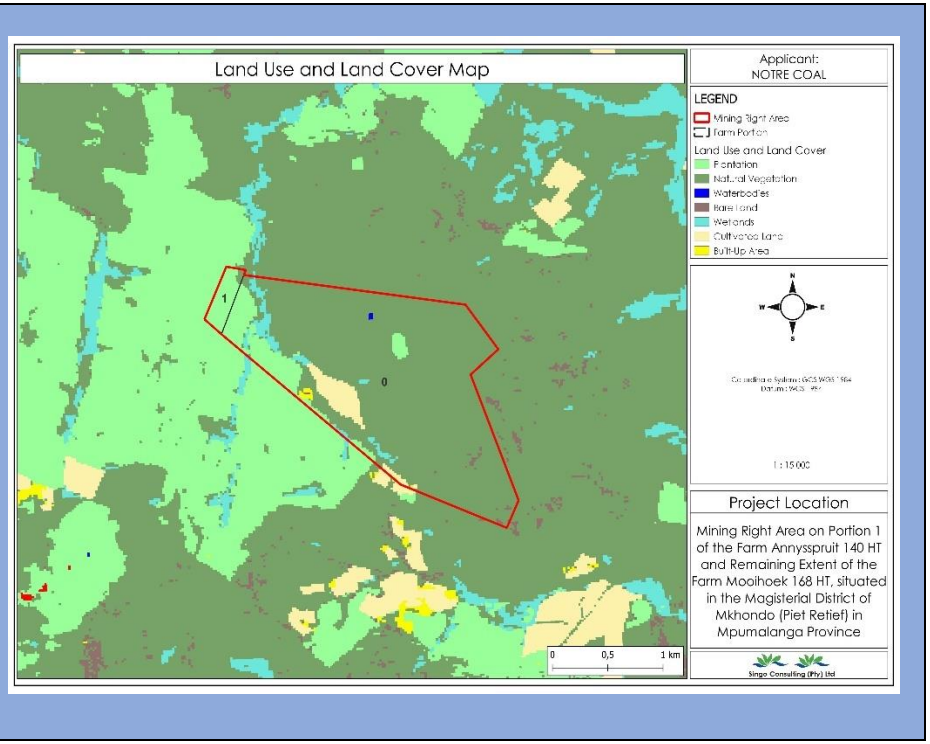

Biome Type Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
Biome Type
Forest
1 : 15 000
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0
0,5
1 km
Singo Consulting (Pty) Ltd

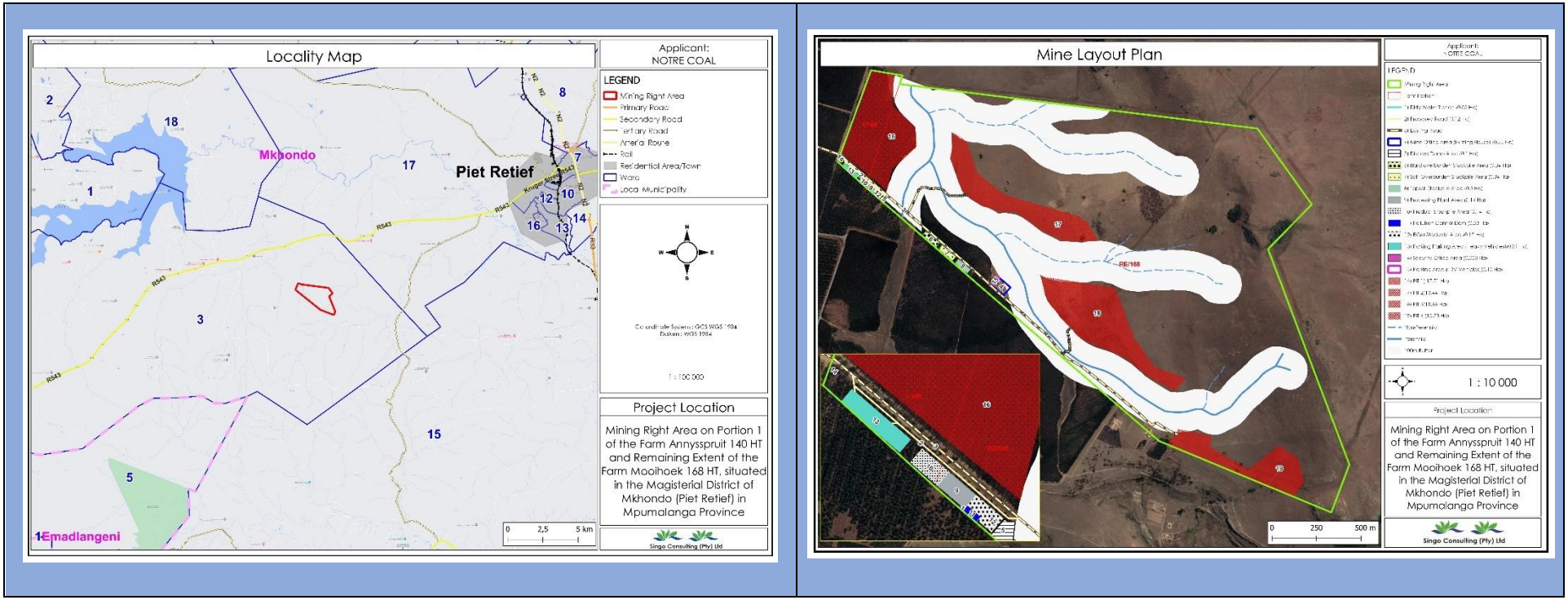

Buffer Zones Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
500m Buffer
100m Buffer
River
Non-Perennial
Perennial
Wetland Type
Channelled Valley Bottom
Seep
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0 0,5 1 km
Singo Consulting (Pty) Ltd
Farming Type Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
Farming Type
Forestry
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0 0,5 1 km
Singo Consulting (Pty) Ltd

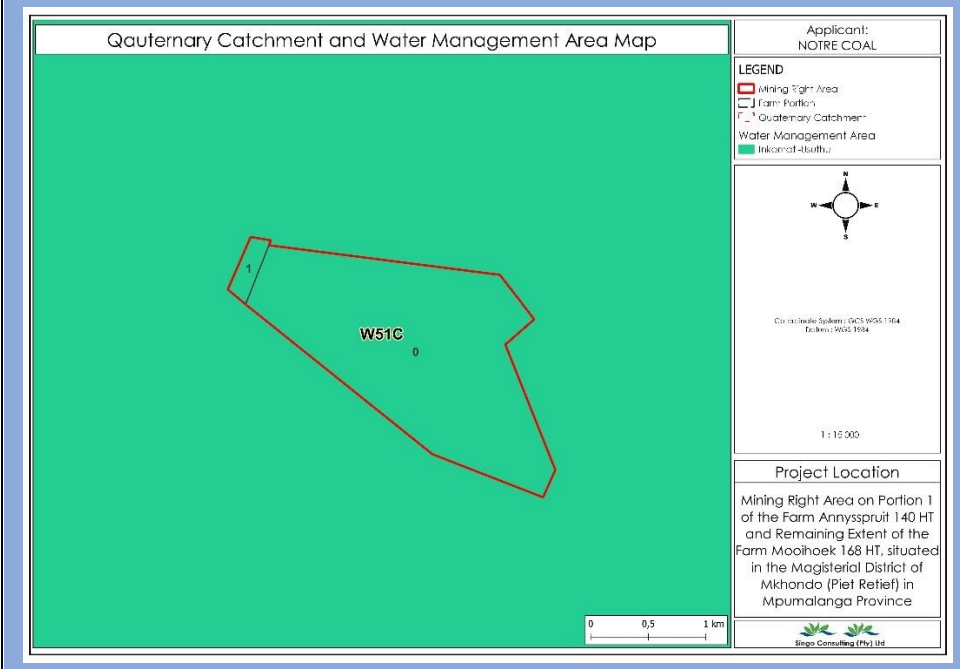

Geology Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
Geology
ALLUVIUM
KAROO DOLERITE SUITE
VRYHEID FORMATION
1
0
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0 0,5 1 km
Singo Consulting (Pty) Ltd

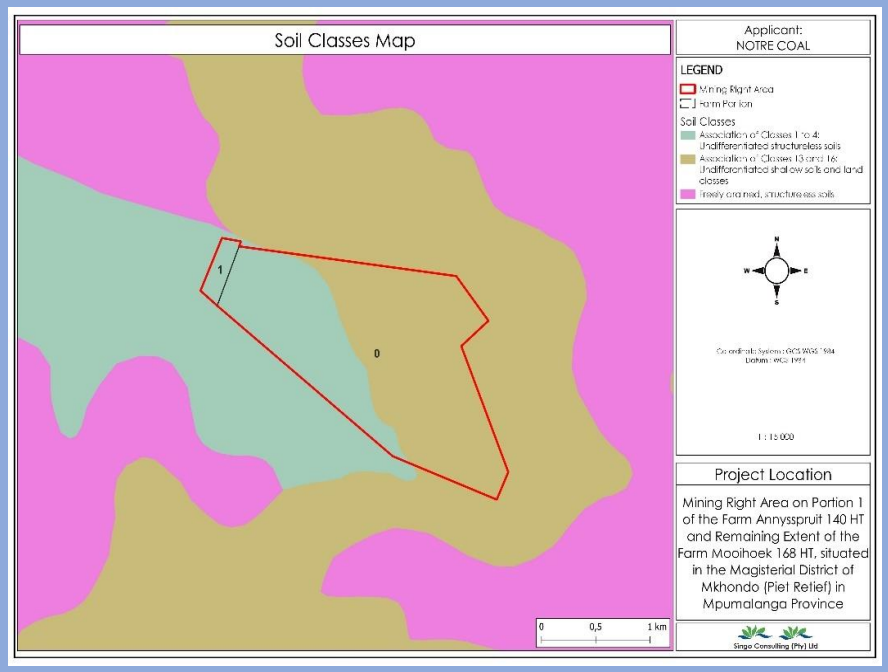

Hydrology and Topology Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
Contours (20m Interval)
River
Non-Perennial
Perennial
Wetland Type
Channelled Valley Bottom
Seep
1
0
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0 0,5 1 km
Singo Consulting (Pty) Ltd


Land Capability Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
Land Capability
Arable
III Grazing
1 : 15 000
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0 0,5 1 km
Singo Consulting (Pty) Ltd


Land Use and Land Cover Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Farm Portion
Land Use and Land Cover
Plantation
Natural Vegetation
Waterbodies
Bare Land
Wetlands
Cultivated Land
Built-Up Area
1 : 15 000
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
0 0,5 1 km
Singo Consulting (Pty) Ltd


Locality Map
Applicant:
NOTRE COAL
LEGEND
Mining Right Area
Primary Road
Secondary Road
Tertiary Road
Arterial Route
Rail
Residential Area/Town
Ward
Local Municipality
Mkhondo
Piet Retief
Emadlangeni
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
Singo Consulting (Pty) Ltd
Mine Layout Plan
1 : 10 000
Project Location
Mining Right Area on Portion 1 of the Farm Annysspruit 140 HT and Remaining Extent of the Farm Mooihoek 168 HT, situated in the Magisterial District of Mkhondo (Piet Retief) in Mpumalanga Province
Singo Consulting (Pty) Ltd





Site Condition (Pictures)

Appendix 9: Proof of draft submissions and Acknowledgments

SHARIS-SAHRA

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT SR COMMENT PERIOD

Appendix 10: Specialist Studies