

**BASIC ASSESSMENT REPORT
&
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

PROSPECTING RIGHT APPLICATION BY RILAMA(PTY) LTD FOR COAL ON RE OF PORTION 21 OF THE FARM RONDEBOSCH 304 JS, SITUATED UNDER MAGISTERIAL DISTRICT OF STEVE TSHWETE (MIDDELBURG), MPUMALANGA PROVINCE.

MP 30/5/1/1/2/17351PR

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2022



mineral resources & energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

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DOCUMENT CONTROL

Project Title: Prospecting Right Application on RE of Portion 21 of the Farm Rodenbosch
304 JS

Mineral Coal

Site Location Steve Tshwete Magisterial District (Middelburg), Mpumalanga Province.

Compiled on behalf of Rilama (Pty) Ltd

Compiled By Mr Abel Mojapelo

Reviewed By Dr Kenneth Singo

Submission to Department of Mineral Resources and Energy

Version Draft

Date 2022

Disclaimer

The opinion expressed in this, and associated reports are based on the information provided by Rilama (Pty) Ltd to Singo Consulting (Pty) Ltd ("Singo Consulting") and is specific to the scope of work agreed with Rilama (Pty) Ltd. Since the Rilama (Pty) Ltd 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 the Rilama (Pty) Ltd 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.

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 Rilama (Pty) Ltd and also referred to other outside sources (includes historical site investigation information and third-party expert research).

Singo Consulting (Pty) Ltd ("Singo Consulting") takes reasonable care and diligence when providing services and preparing documents, but it has been assumed that the information provided to Singo Consulting (Pty) Ltd ("Singo Consulting") is accurate.

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.

EXECUTIVE SUMMARY

Rilama(Pty) Ltd (the Applicant) has applied for a Prospecting Right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and an Application for Environmental Authorization in terms of Chapter 6 of GNR 326 promulgated under the National Environmental Management Act (Act 107 of 1998) (NEMA) to prospect for coal resource.

The proposed project will aim to ascertain if economically viable mineral deposit exists within the applied area. To undertake prospecting activities, Rilama(Pty) Ltd will require a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act (MPRDA, Act No.28 of 2002). The Applicant is also required to obtain an Environmental Authorisation (EA) in terms of the National Environmental Management Act (NEMA, Act No. 107 of 1998) which involves the submission of a Basic Assessment Report (BAR) and Environmental Management Programme Report (EMPr). Singo Consulting (Pty) Ltd has been appointed by Rilama(Pty) Ltd to compile the BAR (this report) in support of the Prospecting Right application submitted by Rilama(Pty) Ltd, which in turn will be submitted to the DMRE for adjudication.

This BAR has been designed to meet the requirements for a BAR and Environmental Management Programme report (EMPr) as stipulated in the 2014 EIA Regulations promulgated under the NEMA. The adjudicating authority for this Application will be the Department of Mineral Resources and Energy (DMRE), and this report has been compiled in accordance with the applicable DMRE guidelines and reporting template. The proposed Prospecting Right Area is situated approximately 6.31 km East of Middelburg, about 21.04 km East of Presidentsrus and approximately 29.79 km North-East of Emalahleni. It can be accessed via R104 in the Steve Tshwete Local Municipality under the Steve Tshwete Magisterial District. DMRE Ref: MP 30/5/1/1/2 (17351) PR.

During site assessment the area was found to be heavily modified due to cultivation and Livestock farming species. Infrastructures like farmhouse, powerline and railway line were observed onsite. The proposed area is currently used for agricultural purposes like maize cultivation and livestock

farming. The BAR (this report) will be made available to Interested and Affected Parties (I&AP's) for comment for 30 days period. All comments received during this period will be included in the final BAR & EMPr to be submitted to the DMRE for adjudication.

IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

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

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PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. Contact person and correspondence address

a) Details of Principal Reviewer



**DR NDINANNYI
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MANAGING DIRECTOR

QUALIFICATIONS

- Ph.D. Geology, Applied Environmental Mineralogy and Geochemistry (UJ)
- MSc Environmental Management (University of South Africa (UNISA))
- BSc (Hons) in Mining and Environmental Geology (UNIVEN).

AFFILIATIONS

- South African Council for Natural Scientific Professions (SACNASP: Earth Science)
- Geological Society of South Africa (GSSA) [Geologist and Hydrogeologist]
- Land Rehabilitation Society of Southern Africa (LaRSSA)
- South African Affiliates of the International Association for Impact Assessment (IAIASa)
- WESSA (People Caring for the Earth)
- Environmental Assessment Practitioners Association of South Africa (EAPASA)

EXPERIENCE

Dr. Singo is a Principal Consultant (Earth Science), and REAP (EAPASA) in the Mining, Agricultural and Construction sector and currently works for Singo Consulting, an advisory firm based in eMalahleni. He has over 11 years' experience in diverse areas of natural resources including Geology, Geochemistry and Environmental Geochemistry. He is a coal expert with extensive experience of the Waterberg, Soutpansberg, Witbank, Highveld, and Springbok flats, as well as the Tete (Moatize) coalfield in Mozambique.

Kenneth holds an MSc in Environmental Geochemistry (University of South Africa (UNISA)), BSc (Hons) in Mining and Environmental Geology (the University of Venda), and Ph.D. (Geology, Applied Environmental Mineralogy and Geochemistry) at the University of Johannesburg. Dr. Singo has knowledge of Mine Water and Mine Environmental Management (acid mine drainage, heavy metal assessments and tailings management) in various commodities including coal, gold, magnesite and base metals (Cu, Pb, Zn). He has extensive knowledge of defunct mining waste and waste water impact assessments in communities residing in the vicinity of those mines. This knowledge was gained through MSc. Kenneth has sound knowledge of risk assessment, both in terms of human health and the environment. He is experienced in the appraisal of potential constraints, as well as devising means of mitigation through remedial strategy development, feasibility and validation.

During his PhD studies, Dr. Singo has learned how to operate within contaminated lands. His PhD largely focused on disused mines (gold, copper and magnesite) ranging from Phase I and Phase II investigations to development of remedial strategies (i.e. Phase III). His PhD further equipped him to intensively understand the waste classification, profiling and understanding of the implications associated with the management of waste, landfill disposal profiling and development of beneficiation strategies.

Expertise of the EAP

In the year 2008, Singo Consulting (Pty) Ltd was established as an Independent Consulting Company focused to create opportunities within the Mining and Environmental Industry. With time, Singo Consulting (Pty) Ltd has diversified its services, it provides high value Geological, Hydrological, Environmental, Cleaning and Rehabilitation specialized services to Rilama (Pty) Ltd's across a range of industries that are primarily natural resource based.

The company aims to be a consulting firm that communicates sound environmental services solutions. Singo Consulting (Pty) Ltd takes pride in the fact that it holds no equity in any project and is owned by the staff, enabling it to offer Rilama (Pty) Ltd's objective support on crucial issues.

2. Location of the overall activity

Farm name	RE of Portion 21 of the Farm Rodenbosch 304 JS
Application area (ha)	Approximately 633.942Ha
Magisterial district	Magisterial district of Steve Tshwete (Middelburg)
Distance and direction from nearest town	Approximately 6.31 km East of Middelburg, about 21.04 km East of Presidentsrus and approximately 29.79 km North-East of Emalahleni. It can be accessed via R104
21-digit Surveyor General codes for each farm portion	TOJS00000000030400021

2.1 General description of the project location

The Farm Rodenbosch 304 JS is situated in the Steve Tshwete (Middelburg) Magisterial district in Mpumalanga province, South Africa. The proposed Prospecting Right Area is situated Approximately 6.31 km East of Middelburg, about 21.04 km East of Presidentsrus and approximately 29.79 km North-East of Emalahleni. It can be accessed via R104 (see Figure 1).

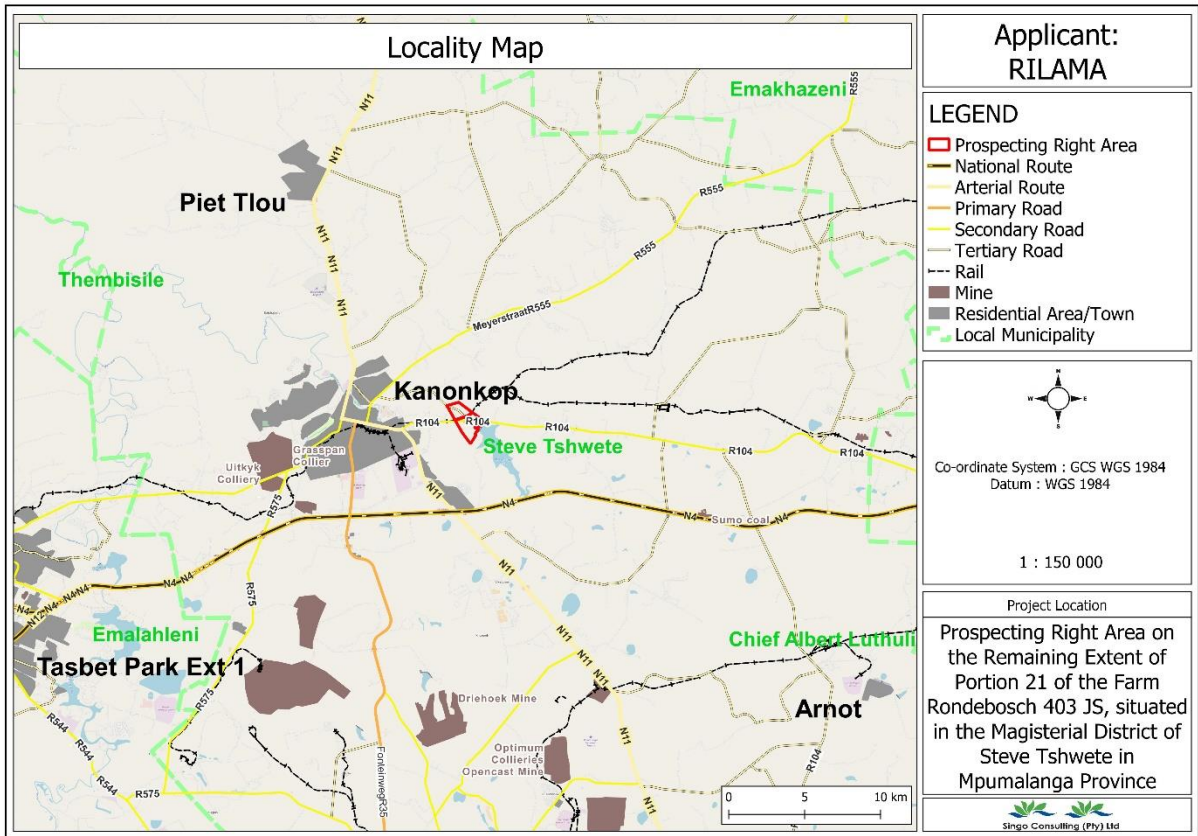


Figure 1: Locality map of the proposed project area.

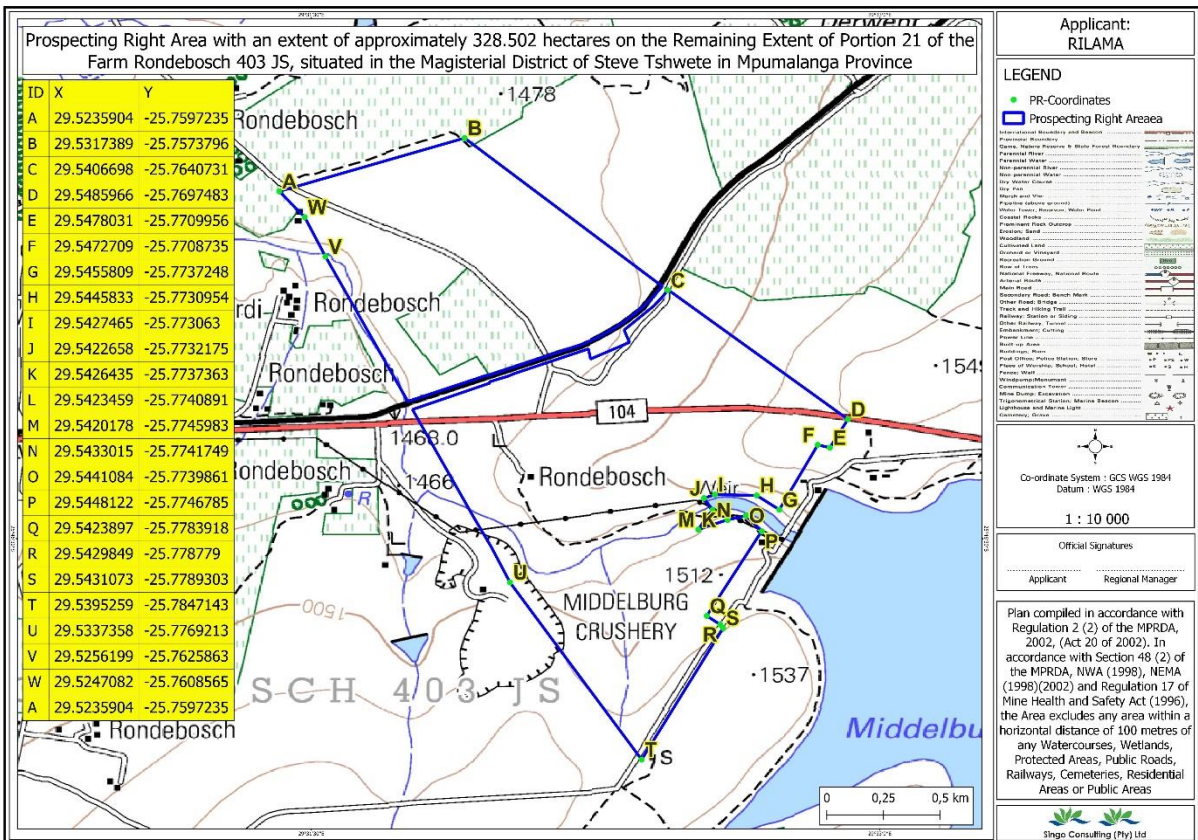


Figure 2: Map showing the exact location of project area in the Farm Rondebosch 304 JS.

2.2 Description of the scope of the proposed overall activity

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

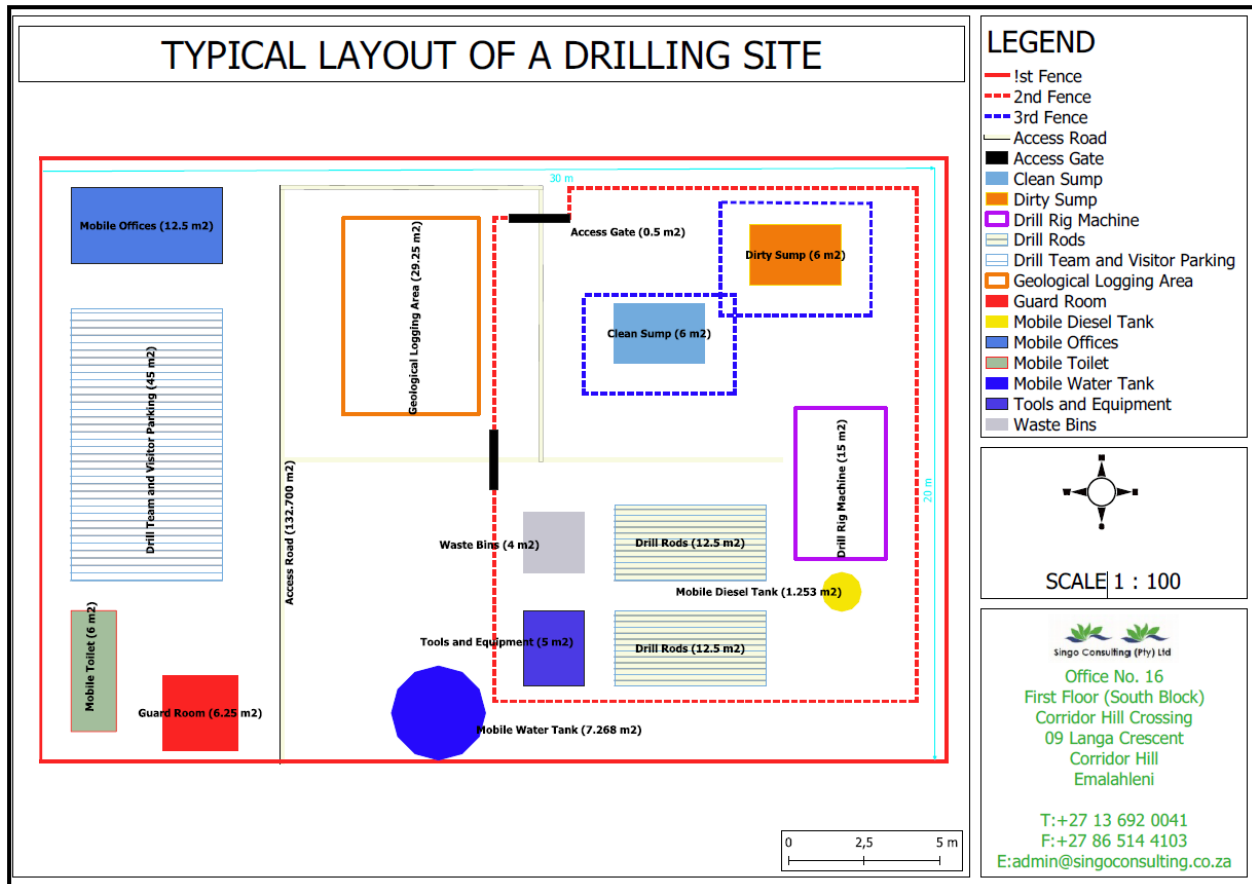


Figure 3: The drill site layout plan showing areas where specific activities will take place in the project area.

2.3 Listed and specified activities

Table 1: Listed and specified activities.

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
(E.g. For prospecting - drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc. E.g. for mining , - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)				
Prospecting Area	633.942Ha	X	GNR 327, 325 & 324 GN 517 Listing	

			Notice 1, Activity 20.	Not required
Vegetation clearing	0.9 ha		Not Listed	
Drilling	0.9 ha		Not Listed	
Access Road	3322.84 m ²		Not Listed	

Total area to be disturbed

$$15000 \text{ m}^2 \div 10000 = 1.5 \text{ ha}$$

$$30 * 20 = 600 \text{ m}^2$$

$$15 \text{ boreholes} * 600 \text{ m}^2 = 9000 \text{ m}^2$$

Table 2: Summary of drilling activities.

Drilling method	Diamond drilling
Number of boreholes	15
Depth of boreholes	100m
Duration of drilling	A borehole takes about 4 days to complete a borehole; 15 will take at least 60 days.
Demarcated working area	0.9 ha for all 15 drilling sites

2.4 Description of the activities to be undertaken

Describe methodology or technology to be employed, including the type of commodity to be prospected/mined, a linear activity, and a description of the route of the activity.

Background

Rilama(Pty) Ltd is requesting a Prospecting Right without bulk sampling to prospect for coal mineral on the aforementioned properties. The prospecting area is approximately 633.942Ha (see Figure 2). Prospecting work will begin with a high-level desktop study and potential desktop resource evaluation. This will include a data search for any previous drilling, trenching, sampling, exploration, existing maps, and relevant historical data. Following the successful completion of this desktop study, additional drilling, trenching, and resource estimations may be performed if the results warrant it.

Coal prospecting activities will be conducted over a period of five years in the following phases:

Phase 1A: Data collection and review

This phase includes data collection and review of all available information relating to the project, such as property description, tenure and prospecting, accessibility, climate, environmentally sensitive areas, historical work and geology. A site visit will be conducted during this phase.

Phase 1B: Data review report and gap analysis

This phase involves confirming adequacy of baseline project data available to support preparation of a Bankable Feasibility Study (BFS). Upon gap analysis completion, recommendations will be made to fill the shortfall in any technical or study area that may directly impact the quality of the Bankable Feasibility study. Phase 1A and 1B (combined) will be conducted for about 1- 2 months.

Phase 2: Geology and resources

This phase includes drilling, geochemical sample analysis, data verification and mineral resource estimation according to international reporting codes, such as the South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC). Data acquisition and test work in the form of diamond, percussion or directional drilling (for geochemical assay and metallurgical test work) is required to support the study. Once the geochemical analytical results have been obtained, the generation of a geological and resource model and resulting SAMREC-compliant (or similar) mineral resource estimate may be completed. The drilling programme will include at least fifteen (15) boreholes mainly aimed at verifying the acquired historical data by obtaining reliable samples from different depths below surface. The three potential drilling methods are described in the following.

2.4.1.1 Diamond drilling

Diamond core drilling uses a diamond-studded drill bit that is mounted on a cylindrical rotating shaft. A hydraulic or mechanical chuck securely holds the drill shaft and mounted drill bit, allowing it to rotate at the desired speed. The feed frame provides the necessary force to apply to the bit in order for it to cut effectively. The flush pump pushes water or other flushing fluids down the rod string, past the core barrel and core bit. This cools the bit and moves the cutting up to the surface outside the drill rod, reducing friction between the drill string and the borehole wall. The bit removes a core of rock, which moves up into the core barrel until the barrel is full. When the rod string is full, it is hoisted until the core barrel reaches the surface, where it can be emptied.



Figure 4: A typical example of diamond core drilling rig.

2.4.1.2 Directional drilling

Directional drilling directs the borehole's direction and deviation to a predetermined underground target, in this case the coal seam. A mud motor, specialized bit, and a bend near the bit are among the tools used to drill directional wells. When the entire string is not rotating, the bend directs the bit in different directions from the well bore axis; this is accomplished by pumping drilling fluid through the mud motor, which rotates the bit. Once the desired angle is reached, the entire drill string is rotated. Horizontal drilling is employed in coal prospecting. The well is drilled horizontally across the coal bed at an angle greater than 800 degrees. Core samples and strata thickness information can be obtained with this type of drilling.



Figure 5: Schematic illustration of directional drilling.

2.4.1.3 Reverse circulation drilling

A pneumatic reciprocating piston (known as a "hammer") drives a tungsten-steel drill bit in the Reverse Circulation (RC) drilling mechanism. RC drilling employs much larger rigs and machinery, and depths of up to 500 meters are routinely attained. Dry rock chips are ideal for RC drilling because large air compressors dry the rock out ahead of the advancing drill bit. By blowing air down the rods, the differential pressure creates air lift of the water and cuttings in the inner tube of each rod, resulting in RC. It travels through a sample hose attached to the top of the cyclone until it reaches the bell at the top of the hole. Drill cuttings travel around the inside of the cyclone until they fall through a bottom opening and are collected in a sample bag. Although RC drilling is powered by air, water is used to reduce dust and keep the drill bit sharp.



Figure 6: An example of a truck mounted RC drill rig.

Phase 3: Topographic survey

This phase includes a topographic survey. A detailed Digital Elevation Model (DEM) with 2m accuracy contour levels is required (existing LIDAR survey results to 5cm in the xyz space with a 1cm orthoimage is available).

Phase 4: Geophysical investigations

This phase involves collection of sub-surface information relative to Witbank coalfield stratigraphy; this will affirm the exact location of the coal seams and its depth; the nature and effects of dolerite intrusions; and the characteristics of the bed rock and overburden. Geophysical survey results will be interpreted with geological and drilling data to provide a firm basis for analysis of the coal seam characteristics and its potential of being converted from resource to reserves.

Phase 5: Mineral processing and metallurgical testing

This phase involves following standard procedures for Feasibility studies to obtain test work results to determine the Run of Mine (RoM) ore quality. RoM ore quality is needed to establish basic beneficiation plant design criteria and start with basic engineering, layout planning, preliminary tendering and cost

estimates of initial capital costs for each of the main components, production planning and operating cost estimates.

Phase 6: Reporting

This phase includes review, interpretation, peer review, conclusions and recommendations, and the compilation of the final BFS report signed off by the Competent Person. The Mineral and Ore Reserve Report produced during this phase, will be SAMREC-compliant.

2.5 Ancillary activities

2.5.1 Access roads

The proposed project area will be accessed through existing gravel road connecting R103 which travers through the proposed site. There will be no construction of new access roads for the proposed project. Following the grant of the prospecting right, the applicant will negotiate access with the landowner to conduct a thorough technical assessment of the prospecting area. There will be negotiations and agreement with the landowner regarding the access, appropriateness and time of the year preferred for prospection.



Figure 7: Access Road to the proposed project area.

2.5.2 Water supply

Drilling mechanisms to be employed using compressed air instead of water, and therefore water will only be required by personnel onsite for drinking purposes. A temporary storage tank of portable water for drinking and general usage will be provided onsite. This water will be bought in water

containers from water distributors such as Oasis. During the prospecting operations, best practice guidelines will be implemented to prevent future pollution in waterbodies.



Figure 8: Typical example of a temporary storage tank on site.

2.5.3 Ablution facilities

Portable toilets for ablution purposes will be put in place, minimizing potential contamination associated with underground waste pipe system. portable toilets are strong, they can be moved around during prospecting and be removed from site after prospecting activities has been completed.



Figure 9: Shows an example of portable toilets on site.

2.5.4 Temporary office area

Temporary office shades will be erected onsite. No electricity will be generated on site. Meals will be provided to staff and staff as no heating and / or cold facilities will be available. A shady restaurant will be provided.



Figure 10: An example of a temporary office shades.

2.5.5 Accommodation

Accommodation will not be provided on site, but on nearby towns (Middelburg) and areas near the proposed area. Night security will be employed once the drilling equipment has been established on site.

2.5.6 Blasting

Blasting is the process of using explosives to break or disintegrate rocks so that they can be excavated. Blasting is out of the scope of this prospecting project as the Prospecting Works Programme (PWP) does not allow for bulk sampling, no blasting will take place. Instead, the project will entail geological mapping, exploration drilling (i.e Percussion, Diamond core, and Directional), sampling, resource modelling and resource reporting.

2.5.7 Storage of dangerous goods

During prospecting / drilling activities, a limited amount of diesel, oil and lubricants will be stored in the area. The only hazardous materials will be stored in any appropriate metal containers with concrete slabs next to them to prevent soil contamination. Less than 30m³ will be stored in above ground diesel storage tanks.



Figure 11: Diesel storage.

2.6 Policy and legislative context

Table 3: Applicable legislation to this application.

Applicable Legislation and Guidelines	Reference Where Applied (i.e. where in this document has it been explained how the development complies with and responds to the legislation and policy context)	How does this Development Comply with and Respond to the Legislation and Policy Context
National Environmental Management Act (No. 107 of 1998)(NEMA):	This entire report is prepared as part of the prospecting right application under the NEMA, section 24	In terms of the National Environmental Management Act an Application for Environmental Authorisation subject to a Basic Assessment Report and Environmental Management Programme Report. The application was lodged at the DMRE
Minerals and Petroleum resources Development Act (No.28 of 2002) (MPRDA): In support of the Prospecting Right Application submitted by Rilama (Pty) Ltd, the applicant is required to conduct a NEMA BAR process in terms of Section 5A and Chapter 16 of the MPRDA.	This entire report is prepared as part of the Prospecting Right Application under the MPRDA, section 16.	In terms of the Mineral and Petroleum Resources Development Act a Prospecting Right Application has been applied for coal resource. The application was submitted and waiting for response. DMRE Ref: MP 30/5/1/1/2 (17351) PR
National Water Act (No. 36 of 1998) (NWA): Water may not be used without prior authorisation by the DWS. Section 21 of the National Water Act (No.36 of 1996) the NWA water uses for which authorisation is required.	No Water Use Licence has been applied for this prospecting project.	No water use license is required for this Application. Any water required for drilling activities will be obtained from a legal source within the area or brought in via mobile water tanker. Appropriate dust extractions /suppression equipment

		will be a condition imposed on the drill contractor for their drill rigs.
The National Environmental Management: Biodiversity Act (Act No. 10 of 2004 – NEMBA) Section 57 and 87	Regulations published under NEMBA provides a list of protected species (flora and fauna), according to the Act (GN R. 151 dated 23 February 2007, as amended in GN R. 1187 dated 14 December 2007) which require a permit in order to be disturbed or destroyed	No applications have been submitted in terms of the National Environmental Management: Biodiversity Act.
Steve Tshwete Local Municipality Integrated Development Plan (IDP)	Land Claims	This department was consulted February 2018 to ensure that the project does not take place where there is a land claim the claimants not knowing about the project. In addition to acquire the claimant's information to consult them before the project commence. No correspondence has been received.
Strategic Development Framework (SDF)	Alternatives	In terms with the SDF of the Steve Tshwete Local Municipality, various strategies and associated policies should be adopted to ensure effective spatial development. The municipality must provide alternative means of support for rural/informal population in order to decrease dependence on the environment and subsistence agriculture. For this purpose, the following policies are adopted: Maximise economic benefit from mining industrial, business, agricultural and tourism development within the area. Promote a climate for economic development. Improve public and investor confidence in the region through crime reduction and infrastructure development.

<p>Constitution of South Africa, Specifically, everyone has the right:</p> <p>a) to an environment that is not harmful to their health or wellbeing; and</p> <p>b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that</p> <p>i) prevent pollution and ecological degradation.</p> <p>ii) promote conservation; and</p> <p>iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>	<p>BAR & EMPr</p>	<p>Prospecting activities will only proceed after effective consultation. All activities will be conducted in a manner that does not violate the Constitution of the Republic of South Africa.</p>
<p>National Heritage Resources Act, 1999</p>	<p>Management measures</p>	<p>Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be stopped, and SAHRA should be notified in order for an investigation and evaluation of the find(s) to take place.</p>

2.7 Need for and desirability of the proposed activities

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

<p align="center">NEED AND DESIRABILITY OF THE PROPOSED PROJECT</p>		
<p align="center">PART I: NEED</p>		
	<p align="center">Questions (Notice 792, NEMA, 2012)</p>	<p align="center">Answers</p>
<p align="center">1.</p>	<p>Is the land use associated with the activity being applied for considered within the timeframe intended by the existing approved SDF agreed to be the relevant environmental authority?</p>	<p>Yes, prospecting is an integral part of its rationale to make use of the abundant natural resources in the area to create strong, resilient, and prosperous district.</p> <p>However, the objectives of the Steve Tshwete 's integrated development plan for 2020/2021 section: re-generate – to achieve environmental well-being Fights with:</p> <ul style="list-style-type: none"> • High carbon emissions from electricity generation.

		<ul style="list-style-type: none"> • Unsustainable natural resource usage; and • Uncontrolled pollution
2.	Should the development, or if applicable, expansion of the town/area concerned in terms of this land use occurs here at this point in time?	The planned activities would allow Rilama (Pty) Ltd to extend mine life (LOM) for a large number of years and thus the benefits to local communities and South Africa as a whole for e.g., work provision and social upliftment would continue for a longer period.
3.	Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	<p>According to the STATSA unemployment figure has drastically increased with 8600 jobs in the municipality between 2001 and 2011.</p> <p>The Rilama (Pty) Ltd prospecting will have a positive impact on the socio-economic conditions of the local communities involved once operations commence. The prospecting will sustain the proposed areas and once the stage of mining has been reached, it will contribute to the socio-economic development of the region as a whole through social upliftment and the creation of jobs as key agents.</p>
4.	Are the necessary services with adequate capacity currently available (at the time of application) or must additional capacity be created to cater for the development?	Yes. All infrastructure for services and capacity is sufficient for the existing and proposed prospecting/drilling activities.
5.	Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of the services and opportunity cost)?	The development is not provided for in the infrastructure planning of the municipality as it is a small development of local importance. Thus, the proposed project will not have any implications for the infrastructure planning, as no services and/or infrastructure needs to be upgraded or created to cater for this project. The proposed project will be making use of mobile structures.
6.	Is the project part of a national programme to address an issue of national concern or importance?	The cited IDP indicates that the community sector contributed 37.1 % of all the sectors' contribution to the GDP of Steve Tshwete Local Municipality. Mining contributed 7.9% , Agriculture contributed 11.2 % trade/retail figure was at 13.6 % and construction contributed 2.9 %.
PART II: DESIRABILITY		
7.	Is the development the best practicable environmental option for this land/site?	Yes. Much of the region under review is undergoing transformed cultivation activities which have already had an impact on environmental management.
8.	Would the approval of this application compromise the	Partially. The project is not completed in accordance with the Local Spatial Development

	integrity of the existing approved and credible IDP and SDF as agreed to by the relevant authorities?	System (SDF) and Integrated Development Plan (IDP) goals in terms of land use but does not compromise the credibility of these respective forward planning documents. In South Africa, as in Steve Tshwete Local Municipality, unemployment is a big problem and prospecting should be able to provide continuity of existing employment in the prospecting area for a substantial period of time.
9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	No, the integrity of the existing environmental management priorities for the area will not be compromised by this development.
10.	Do location factors favour this land use at this place? (this relates to the contextualization of the proposed land use on this site within its broader context).	Yes, the current infrastructure suffices for the process of prospecting. The planned prospecting right application doesn't need any new infrastructure.
12.	How will the development impact on people's health and well-being? (E.g. In terms of noise, odours, visual character and sense of place, etc.)?	In summary, due to the fact that this area has a high density of residents and also the military base, which is closer to the proposed area, the impacts on well-being, following mitigation, will be as follows: <ul style="list-style-type: none"> • Visual: Low • Dust: Low-Medium • Noise: Medium • Sense of place: Medium However, environmental good practice compliance policies would have limited effects.
13.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	No. The mining industry in South Africa has been a cornerstone of the economy for a long period of history. South Africa offers ongoing proof that mineral revenues can create sizeable benefits to the economy in countries where they are sourced. In South Africa coal has contributed to funding impressive economic growth and stability.
14.	Will the proposed land use result in unacceptable cumulative impacts?	No. The proposed project has only been identified to have minimal cumulative impacts that can be mitigated to an acceptable level. The measures outlined in the EMPr attached will serve as a method to keep the proposed project from having any serious long term cumulative impacts on the receiving environment.

2.8 Process followed to reach the proposed preferred alternatives within the site

This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having considered the issues raised by I&APs, as well as alternatives to the initially proposed site layout.

Prospecting is conducted in phases, where the activities and location of drilling and trenching to sample soil are dependent on the previous phase. Therefore, the specific locations and extent of soil sampling and diamond core drilling cannot be predetermined. The overall prospecting area is indicated in Figure 3. Areas to be avoided in terms of sensitivities are also indicated on the sensitivity maps in this report. Positioning of invasive prospecting planned in the sensitive areas and buffer zones should be conducted with a suitably qualified ecologist to avoid and/or minimize the destruction of any sensitive vegetation or habitats occurring in these areas.

Details of all alternatives considered

With reference to the site plan provided as Figure 2 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

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

The assessment is done in phases, where the activities and location of drilling and soil sampling are based on the previous phase. Therefore, the specific location and level of soil sample and basic drilling cannot be determined in advance.

The following alternatives were investigated as feasible alternatives:

- The property on which or location where it is proposed to undertake the activity
- The type of activity to be undertaken

Main activity conducted to determine the coal resources available in an economic feasible quality and quantity is drilling. The boreholes will be drilled using the diamond drilling method so the geologists can get a clear understanding of the actual subsurface setting of the lithologies. As outlined in the PWP all activities will be conducted in a phase approach whereby the execution of a new phase will depend on the results of the preceding phase. Prospecting activities will not compromise any future land uses on the study area as the applied activities are temporary.

- The design or layout of the activity

Since exploration is temporary in nature, no permanent structures will be constructed. Negotiations and agreements will be made with the farm owners to use any existing infrastructure like access roads.

- Portable ablution facilities will be used.
- Activities will be limited to the drilling of 15 boreholes to be determined by the geological formations found during prospecting.
- It is planned to use one rig for all drill holes.
- Rehabilitation will be closely controlled, and supervision will be focused.
- No changes to the layout are considered but with the geophysical survey information, the boreholes can be orientated to match the shape of the good quality of resource.

- The technology to be used in the activity

The technologies listed in the PWP have been selected as they are proven effective in the determination of resource viability within the proposed prospecting area. Some of the techniques employed in the non-invasive prospecting will include a literature survey, field reconnaissance/mapping, and geophysics survey of the geology, outcrops. Invasive technology alternatives have also been considered. It is hereby noted that the different phases and timeframes of the prospecting herein envisaged are, by their nature, dependent on the results obtained during the preceding phases of such prospecting. The proposals set out in the Prospecting Work Programme are therefore made on the basis that results obtained during the preceding phases may necessitate reasonable changes and adaptations to such proposals, which will be reported as prescribed.

- The option of not implementing the activity

The Information available is not enough sufficient. The additional information on the resource quality, depth and thickness is need. There is a need to further investigate the presence of the resource within the project area due to unknown historic mining activities. The proposed activities have very low significance since are short term activities. The probability of occurrence of an impact was determined and most of these activities can be controlled and impacts can be reduced or avoided. The probability was also used basing on looking at other prospecting activities of similar nature.

Generally prospecting activities have low impact on the environment, these planned activities have negative impacts and can be controlled and avoided or minimised therefore the layout does not require revision. Changes In plans will be discussed with the farms and approvals will be singed.in addition to this, should economical reserves be present, and the applicant does not have the opportunity to prospect, the opportunity to utilize the said reserves for future phases will be lost.

2.8.1 Development footprint alternatives considered

With reference to the site plan and the location of the individual activities on site, provide details of the alternatives considered.

Prospecting work is a two staged process; it entails invasive activities and non-invasive activities. Non-invasive activities do not have footprints because they do not include land disturbance while invasive activities cause land disturbance hence, they have footprints. In prospecting activities, footprints are caused by drilling. To mitigate the footprints of drilling activities on alternative sites identified, buffers have been developed (Figure 12) to ensure protection of water resources, infrastructures, and ecosystems onsite. The following buffers must be applied, and all buffered out areas are no-go areas (i.e. prospecting activities must not be conducted in those areas):

- No drill site must be positioned within 500m of a wetland
- Drilling activities must be conducted out of 1:100 m from flood line of a stream
- Drilling activities must be done at least 100m away from infrastructures
- Existing access road must be utilised to access the identified alternative sites to conduct exploration activities rather than developing new gravel roads onsite.

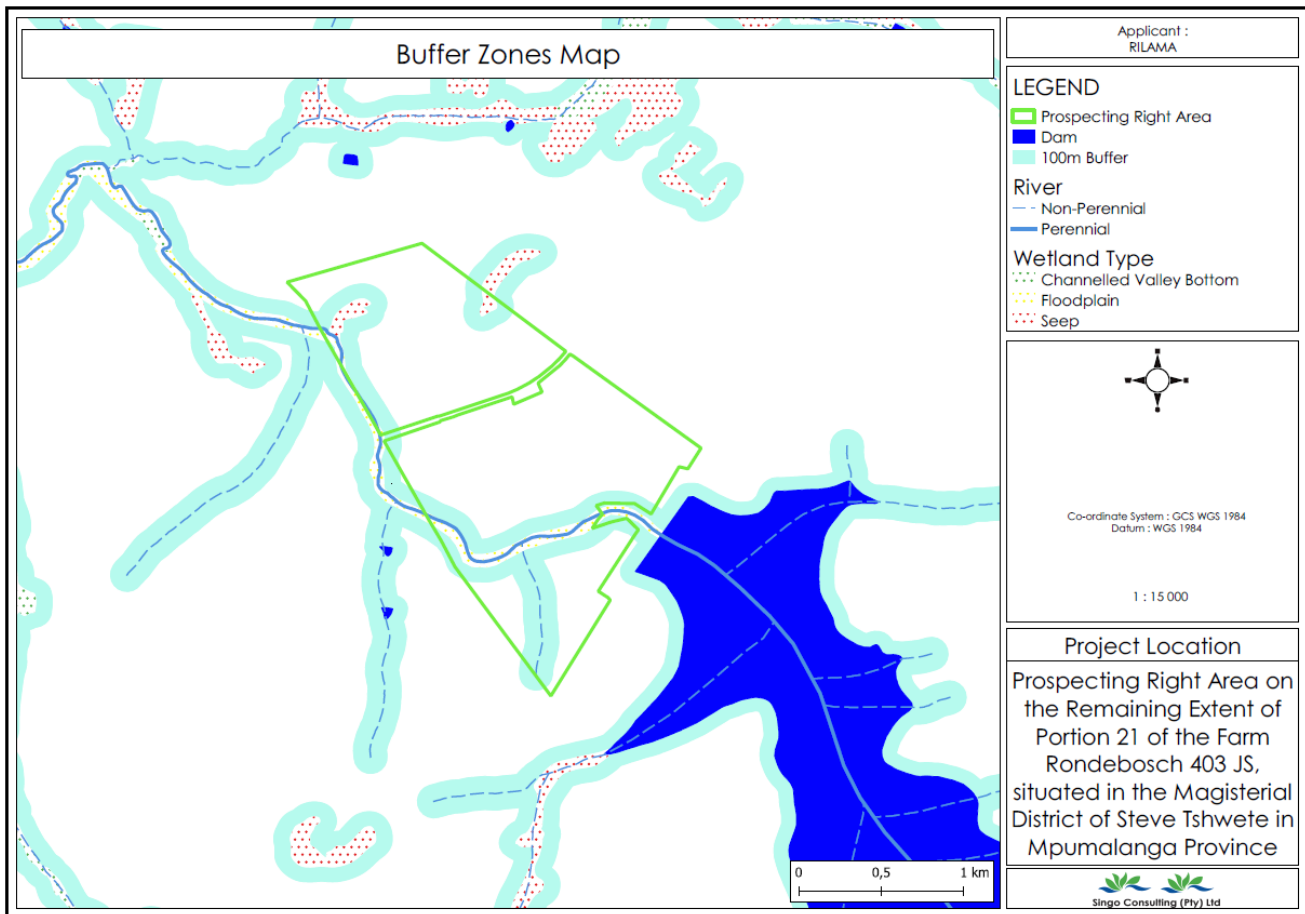


Figure 12: Shows developed buffer zone around the river with associated wetlands.

2.8.2 Type of activity to be undertaken

Main activities conducted to determine the coal resources present in an economic feasible quality and quantity is drilling. The boreholes will be drilled with the diamond drilling method so the geologists can get a clear understanding of the actual subsurface setting of the lithologies. As outlined in the PWP all activities will be conducted in a phase approach whereby the execution of a new phase will depend on the results of the preceding phase. Prospecting activities will not compromise any future land uses on the study area.

2.8.2.1 Activity design/layout

No permanent structures will be constructed since exploration is temporary in nature. Landowners will be consulted duly for access and usage to access road.

- Portable ablution will be used.

- It is planned to use one drill rig for 15 drill holes.
- Rehabilitation will be closely controlled, and supervision will be focused.
- No changes to the layout will be considered, however, the holes can be orientated to match the shape of the resources

2.8.2.2 Activity technology

The technology chosen is deemed effective for exploration for this type of deposit, resource, definition and evaluation. This is inclusive of non-invasive and invasive technology. The non- invasive includes Desktop studies, Geological field mapping and Geophysical Survey whilst invasive includes prospecting boreholes for resource estimation. Prospecting will be done in interrelated phases. Alternatives will be considered once the preceding necessitate reasonable changes and adaptations.

2.8.2.3 Operational aspects of the activity

Operational aspects that have been considered for the positive implementations of the PWP. Financial arrangements, appropriate equipment available and technical skills available. The proposed work plan finances will be from Rilama (Pty) Ltd over the next 5 years. Rilama (Pty) Ltd has insured that the financial personnel to execute prospecting work programme and tools desired.

2.8.2.4 Option of not implementing the activity

Drilling is required to investigate the potential and feasibility of a resource. It also serves as a DMRE-compliant mineral resource statement. There is no potential for any future investment in a mine without the confirmation of the mineral resources, which can only be obtained by drilling. Should the prospecting right be refused, a potential coal resource development will be sterilised. The socio-economic benefit and future employment potential of mine development will also be lost if the prospecting activities are not implemented to determine the feasibility of a coal deposit that occurs within the area.

2.8.3 Details of the public participation process followed

Describe the process undertaken to consult I&APs, including public meetings and one-on-one consultation. Affected parties must be consulted, regardless of whether they attended public meetings. Information provided to affected parties must include sufficient detail of the intended operation to enable them to assess its impact on them or on the use of their land.

The Basic Assessment Report will be submitted for review to the Competent Authority (DMRE), commenting authorities, non-governmental organizations (NGOs), landowners, surrounding property owners and other identified stakeholders (see Table 4).Comments that will be received will be recorded and will reflect in the Final Basic Assessment Report and Environmental Management Programme Report.

The following public participation activities will be conducted for the proposed project to date:

- Identification of stakeholders, including property occupiers, owners and occupiers of land adjacent to the site, municipal officials and relevant state departments. All respondents have will added to the project database, which will be used throughout the process to inform the stakeholders of the project.
- Canvassing issues and concerns of the public and ensuring that all I & APs can comment on the application. The proposed project was announced as follows:
 - A newspaper advert was published on the local newspaper Middelburg Observer on the 22nd of July 2022 giving notice to I & APs of the applicant's intention to prospect for Coal in the area as well as inviting all affected parties to comment on the proposed project.
 - A copy of the Draft Basic Assessment Report will be made available for public review for a 30-days period from the 22nd of August 2022 until the 20th of September 2022.
 - All comments received during the review period will be incorporated into the final BAR & EMPr.
 - Once the DMRE has decided on Environmental Authorisation, all registered I&APs will be notified of the outcome.

Windeed Search

PORTION LIST				
Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
18	BOSHOFF JACOBUS NICOLAAS			
19	RAUMIX AGGREGATES PTY LTD			
21	NOGWATSHA COMMUNAL PROP ASSOC			
22	PIETER & HANNA-LOUISE ERASMUS FAMILIE TRUST			
23	DYK ERENS PHILLIPUS VAN			
24	PIETER & HANNA-LOUISE ERASMUS FAMILIE TRUST			
25	** FOR INFO REFER TO REGISTRAR OF DEEDS **			
26	** FOR INFO REFER TO REGISTRAR OF DEEDS **			
27	** FOR INFO REFER TO REGISTRAR OF DEEDS **			
28	WILGE TRUST			
29	MANJERICO GLENDA			
30	BAASLIN FAMILY TRUST			
32	SUTTON LEONARD HILTON			
33	MEDINA MEATS II CC			
34	BATELEUR TRUST			
35	GRAAFF JACOBA BOUDEVINA			
36	DU TOIT TRUST			
37	PIETERSE JANINE ELIZABETH			
38	PIETERSE JANINE ELIZABETH			
39	MOLL YOLANDE			
40	ERICHSEN VILHELM FREDERICK			
41	STEENKAMP JACOMINA HENDRINA			
43	OCTO TRADING 235 CC			
44	** FOR INFO REFER TO REGISTRAR OF DEEDS **			
47	** FOR INFO REFER TO			

Figure 13: Windeed results.



Figure 15: Plugging of site notices

The following have been identified as I&Aps:

Table 4: Identified key stakeholders.

Names of I&Aps	Organization	Position
Rhulani Chavalala	Department of Agriculture, Forestry and Fisheries	Assistant Resource Auditor
Vusi Khoza	Department of Rural Development and Land Reform	Official
Seani Nevondo	Department of water and sanitation	Official
Tsholofelo Sekonko	Department of Environmental Affairs	official
Thomas Sambo	Department of Agriculture, Land Reform and Rural Development	Official
Eskom General Email: 'wayleavesmou@eskom.co.za'	ESKOM	Enquiry database
Yuza Chabalala Tshilidzi Mavulwana	Transnet	Official
Oliver J	SANRAL	Official
George Becker	Private	I&AP

Details of the public participation process followed

Describe the process undertaken to consult I&APs, including public meetings and one-on-one consultation. The affected parties must be specifically consulted regardless of whether or not they attended public meetings. Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

Public Participation Process was conducted by Singo consulting (Pty) Ltd from the 22nd of July 2022 until to date for the project.

Summary of issues raised by I&APs

The table below will be completed after the 30-day review and comments period of the Draft BAR and EMPr. The comments received will form part of the Final BAR and EMPr to be submitted to the DMRE for decision making.

Table 5: Summary of issues raised during the public comment period.

Interested and Affected Parties		Date Comments Received	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
List the names of persons consulted in this column, and					
Mark with an X where those who must be consulted were in fact consulted					
AFFECTED PARTIES					
Landowners/s					

<p>Interested and Affected Parties</p> <p>List the names of persons consulted in this column, and</p> <p>Mark with an X where those who must be consulted were in fact consulted</p>	<p>Date Comments Received</p>	<p>Issues Raised</p>	<p>EAPs response to issues as mandated by the applicant</p>	<p>Section and paragraph reference in this report where the issues and or response were incorporated</p>	
<p>Adjacent Landowners</p>					
<p>Lawful occupiers of the land</p>					
<p>Local Municipality</p>					

Interested and Affected Parties		Date Comments Received	Issued Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
List the names of persons consulted in this column, and					
Mark with an X where those who must be consulted were in fact consulted					
Councillor					
District Municipality					
Community					
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA					

<p>Interested and Affected Parties</p> <p>List the names of persons consulted in this column, and</p> <p>Mark with an X where those who must be consulted were in fact consulted</p>	<p>Date</p> <p>Comments</p> <p>Received</p>	<p>Issues Raised</p>	<p>EAPs response to issues as mandated by the applicant</p>	<p>Section and paragraph reference in this report where the issues and or response were incorporated</p>	

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted	Date Comments Received	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated	

<p>Interested and Affected Parties</p> <p>List the names of persons consulted in this column, and</p> <p>Mark with an X where those who must be consulted were in fact consulted</p>	<p>Date</p> <p>Comments</p> <p>Received</p>	<p>Issues Raised</p>	<p>EAPs response to issues as mandated by the applicant</p>	<p>Section and paragraph reference in this report where the issues and or response were incorporated</p>	

Interested and Affected Parties		Date	Issued	EAPs response to issues as	Section and
List the names of persons consulted in this column, and		Comments	Raised	mandated by the applicant	paragraph
Mark with an X where those who must be consulted were in fact consulted		Received			reference in
					this report
					where the
					issues and or
					response were
					incorporated
OTHER INTERESTED AND AFFECTED PARTIES					

2.9 The environmental attributes associated with the alternatives

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

2.9.2 Baseline environment

Describe the environment's current geographical, physical, biological, socio- economic and cultural character.

2.9.2.3 Topography

The proposed prospecting area is characterized by flat topography with no hills or mountains as shown on the topography map below. The contour lines are further to each other, and the slope of the land is gentle. Water can flow in the project area from the north north-easterly direction to the south south-westerly direction down the slope to the depression, for example, according to the contour lines.

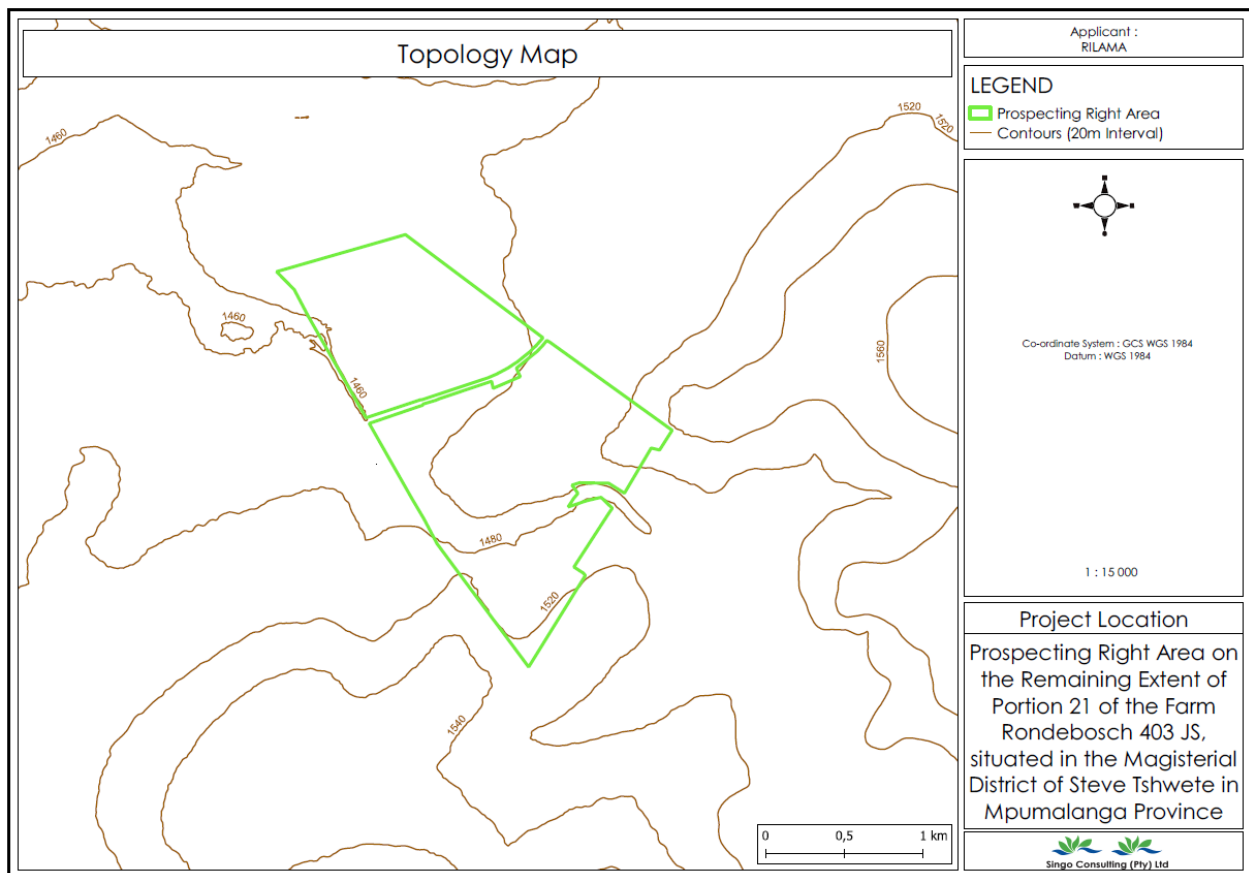


Figure 16: Topographic map of the proposed project area.

2.9.2.4 Soil types

From the study conducted in house prospecting area is covered with Association of Classes 1 to 4: Undifferentiated structureless soils. The area outside the proposed site is covered with Freely drained, structureless soils and Red yellow structures soils with a plinthic horizon can be defined based on their soil depth, Soil Drainage and erodibility.

Soil depth

Depth of the soil profile is from the top to the parent material or bedrock. This type of soil can be classified as a restricted soil depth. A restricted soil depth is a nearly continuous layer that has one or more physical, chemical, or thermal properties.

Soil Drainage

Soil drainage is a natural process by which water moves across, through, and out of the soil because of the force of gravity. The soils in the proposed area have an excessive drainage due to the soils having very coarse texture. Their typical water table is less than 150.

Erodibility

Erodibility is the inherent yielding or non-resistance of soils and rocks to erosion. The freely drained structureless soils have high erodibility. A high erodibility implies that the same amount of work exerted by the erosion processes lead to a larger removal of material.

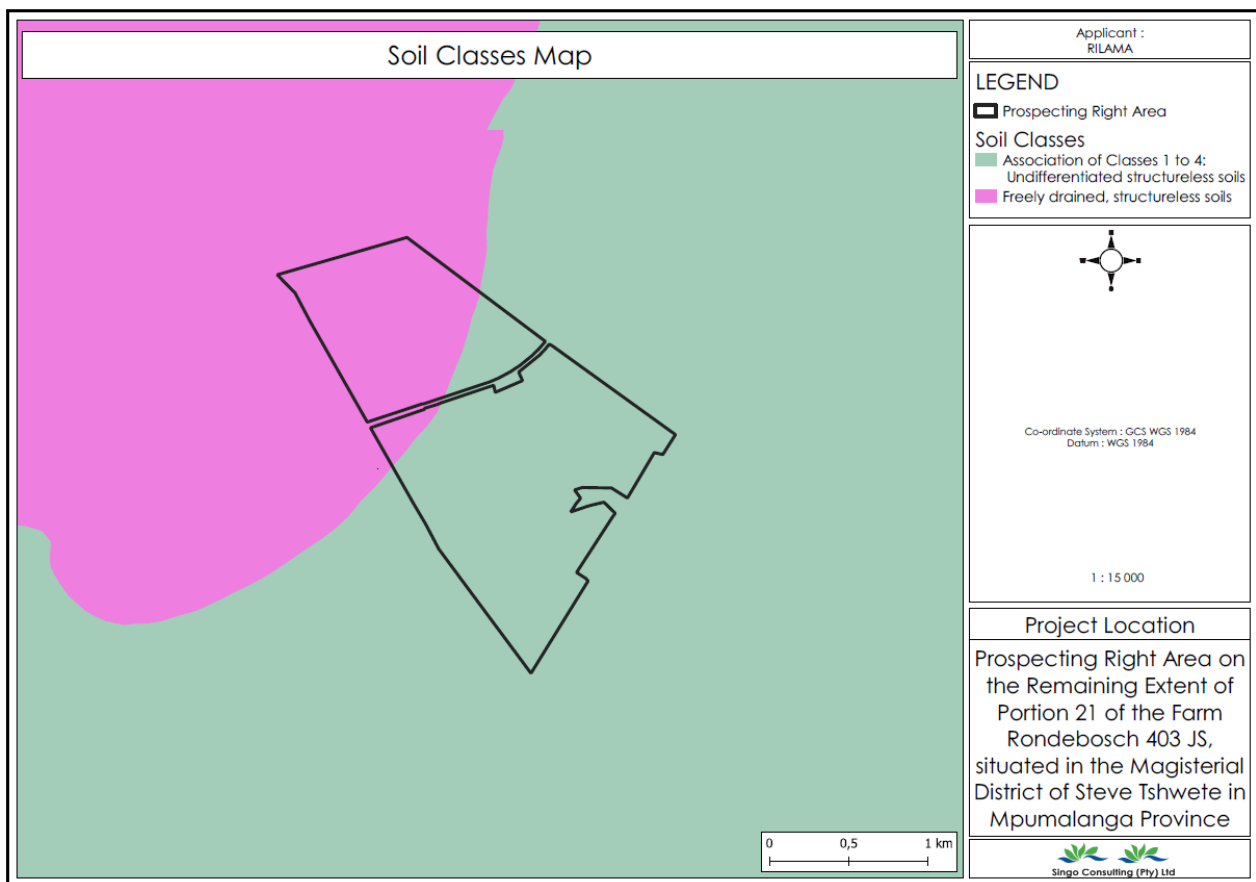


Figure 17 : Soil type map of the proposed project area.



Figure 18: Pictorial depiction of soil type in the project area.

2.9.2.5 Geology

Karoo Supergroup

The proposed project area follows under the main Karoo supergroup, under Eccca group. The sedimentary part of the Karoo Supergroup is subdivided into four main lithostratigraphic units, which from the base up are the Dwyka, Eccca, Beaufort and Stormberg (Molteno, Elliot and Clarens formations) groups (Johnson et al., 1996; SACS, 1980;). These are capped by some 1.4 8 km of basaltic lavas of the Drakensberg Group (Johnson et al., 1996; Veevers et al., 1994), the extrusion of which is related to the break-up of Gondwana (Cox, 1992). The basement to the Karoo Supergroup fill in both the MKB and in the northern basins is heterogeneous (Bordy et al., 2004a; Hancox, 1998; Rutherford, 2009) and this heterogeneity plays a significant control on the nature of the fill, particularly during the early phases of the deposition of the Karoo Supergroup.

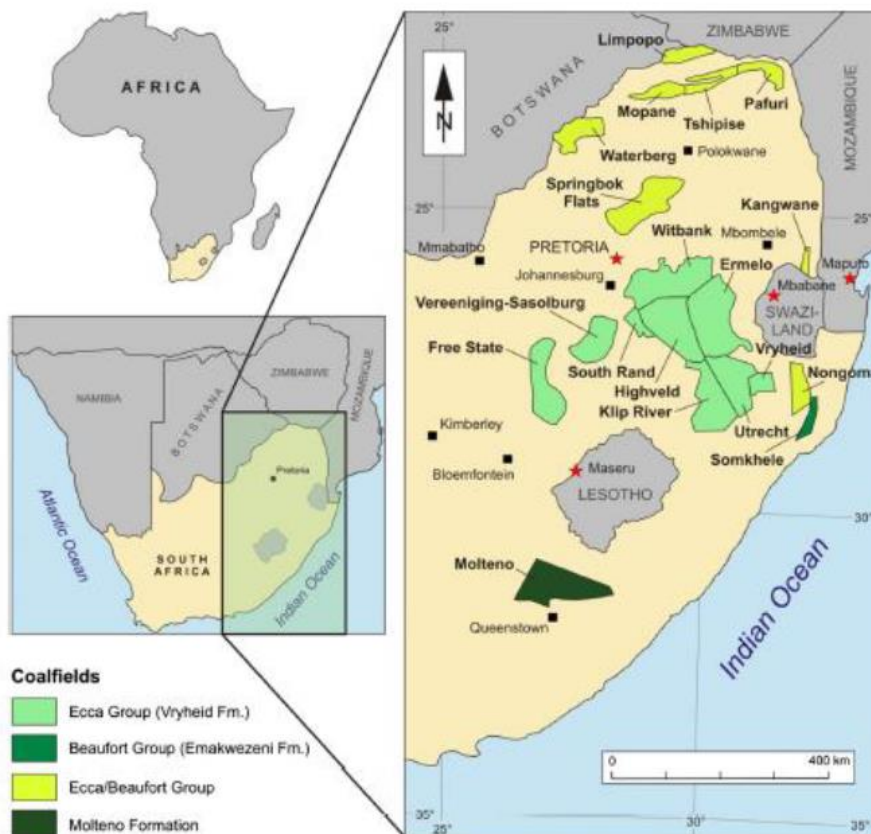


Figure 19: Coalfield map of South Africa.

Dwyka Group

The rocks of the Dwyka Group in South Africa are amongst the most important glaciogenic deposits from Gondwana. This Group is named for exposures along the Dwyka River east of Laingsburg and forms the basal succession of the Karoo Supergroup. Dwyka Group strata are mostly contained within bedrock valleys incised into Archean to lower Palaeozoic bedrock (Visser, 1990; Visser and Kingsley, 1982; Von Brunn, 1996). The lithologies in the areas underlying the coalfields of South Africa consist of a heterolithic arrangement of massive and stratified polymictic diamictites, conglomerates, sandstones and drop stone-bearing varved mudstones. The easily identifiable lithologies form a good marker below the coal bearing Ecca Group. In the distal sector of the MKB these sedimentary strata accumulated largely as ground moraine associated with continental ice sheets and is generally composed of basal lodgement and supraglacial tills. These deposits are generally massive, but crude horizontal bedding occurs in places towards the top (Tankard et al., 1982).

Ecca Group

In the 1970s a number of studies (Cadle, 1974; Hobday, 1973, 1978; Mathew, 1974; Van Vuuren and Cole, 1979) showed that the Ecca Group could be subdivided into several informal units based on the cyclic nature of the sedimentary fills. In 1980 the South African Committee for

Stratigraphy (SACS, 1980) introduced a formal lithostratigraphic nomenclature for the Eccca Group in the northern, distal sector of the MKB, which replaced the previously used informal Lower, Middle and Upper subdivisions with the Pietermaritzburg Shale Formation, the Vryheid Formation and the Volksrust Shale Formation.

Vryheid Formation

The majority of the economically extracted coal in South Africa occurs in rocks of the Vryheid Formation, which ranges in thickness in the MKB from less than 70.0 m to over 500.0 m. It is thickest to the south of the towns of Newcastle and Vryheid, where maximum subsidence took place (Du Toit, 1918; Cadle, 1975; Whateley, 1980a; Stavrakis, 1989; Cadle et al., 1982) and where the basin was the deepest. According to SACS (1980) the basic concept, distinguishing features and boundaries of the Vryheid Formation are those of the "Middle Eccca" as described by Du Toit (1954) and others. Prior to 1973 studies of the Vryheid Formation were largely stratigraphic. This situation changed when Hobday (1973) postulated deltaic depositional systems for the Vryheid Formation, and academic studies became more depositional process orientated.

The stratigraphy of the Vryheid Formation in the Witbank coalfield is described as a succession of five coarsening upward sequences which display a remarkable lateral continuity across the entire distal region of the Karoo Basin (Cadle et al., 1982). In a complete succession each of the five coarsening-upward sequences starts with fine-grained marine facies, which grade upwards into coarser delta front and delta plain-fluvial facies. Several coal seams occur in the Vryheid Formation, and these are associated predominantly with the coarser-grained fluvial facies at the top of each sequence.

This formation has been subdivided into three different lithofacies arrangements. They are dominated by fine-grained mudstone, carbonaceous shale with alternating layers of bituminous coal seams, and coarse-grained, bioturbated immature sandstones respectively. The rock sediments are predominantly arranged in upward-coarsening cycles, although some fining-upward cycles are found in this formation's easternmost deposits. The alternating rock types observed in the Vryheid Formation indicate seasonal variations of storms and fairer weather in a pro-delta setting. The carbonaceous shales were formed below the water surface in anoxic conditions and the coal formed from compacted plant matter deposited at the bottom of peat swamps. These swamps formed on abandoned alluvial plains where stagnant water accumulated.

The Vryheid Formation consists mainly of sandstone and shale with some subordinate coal seams associated with it (SACS, 1980). The change from stable margin to subsiding foreland basin confirmed the Vryheid Formation and the shales of the succession to "pinch-out" to the north. This "pinching-out" results in a gradation of a fluvial valley-fill sequence into sediments of deltaic origin (Van Vuuren, 1981). According to Cadle et al. (1990) the sandstones become interfingered with the deeper water shales, a so-called "shale-out", approximately 500 km from the present northern

basin margin. They state that this is due to rapid basin-ward facies migration down the southerly dipping paleo slope.

A shifting balance between sedimentation and the rates of base level rise most likely explains the cyclic nature of the Vryheid Formation. The transgressive units which occur at the base of each coarsening-upward sequence are some of the most widespread and laterally continuous beds in the Vryheid Formation in the northern part of the basin (Cadle et al., 1982, 1993; Cairncross, 1986). Such units form good markers for stratigraphic correlation and are discussed below for the individual coalfields. Trace fossils have also played a role in the understanding of the palaeo-environmental history and correlation of the Vryheid Formation (Hobday and Taverner Smith, 1975; Stanistreet and LeBlanc Smith, 1980; Mason and Christie, 1986; Christie, 1988; Roberts, 1988).

➤ **Local Geology**

According to the geological map of the project area below, it can be observed that large area of the proposed site is underlain by the Kwaggasnek Formation and small area of the proposed site is underlain by the Loskop Formation. The areas outside the proposed site are underlined by Vryheid Formation.

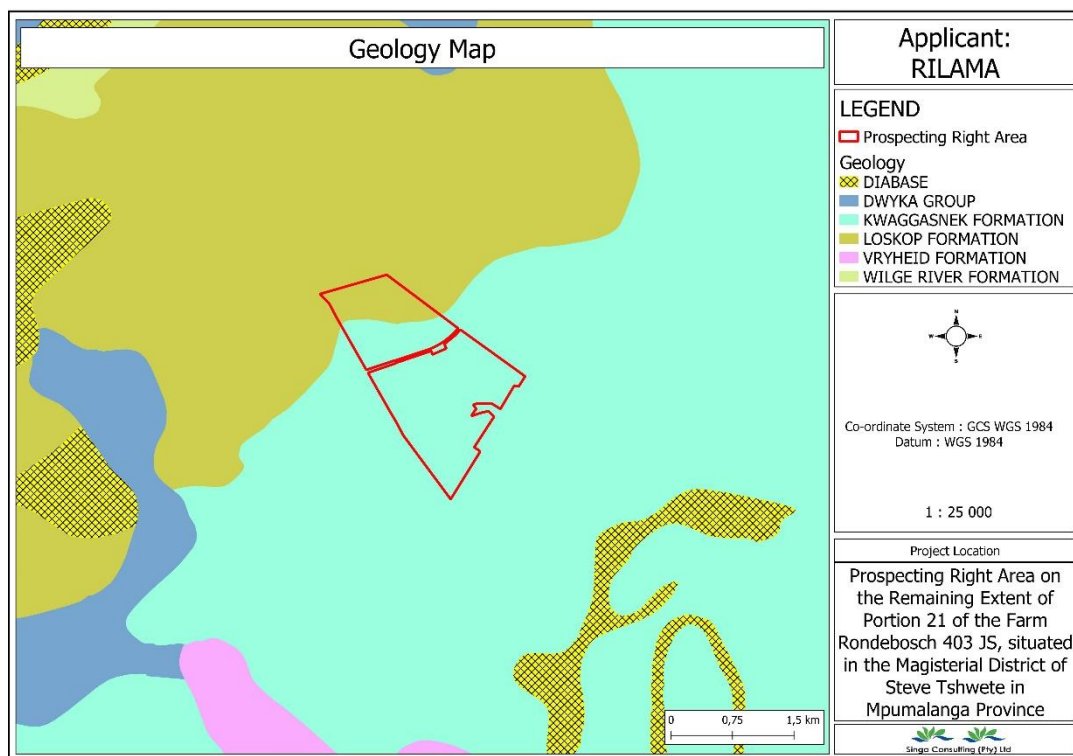


Figure 20: Geological Map of the project area.

Witbank Coalfield

The project area is situated within the Northern part of the Witbank Coalfield. It covers an area of over 568,000 ha and it extends 90 km in a west-east direction, from the towns of Springs in the west

to Belfast in the east, and 50 km in a north-south direction, from the town of Middelburg in the north to Rietspruit in the south. The northern boundary of the coalfield is formed by pre-Karoo basement rocks, while the southern boundary in the central portion of the basin is widely considered to be the sub-outcrop against a basement palaeo high known as the Smithfield Ridge. The northern boundary is a very irregular sub-crop against the pre-Karoo basement rocks of predominantly Waterberg sandstones with the most northerly limit about 15 km NW of Witbank, with many inlets to the east and west.

The basin is a multiple seam deposit type with the development of five major seam horizons which may in places be composite seams. The major controls for the development of the coal are proximity to undulations of the basement topography, through erosion channelling and sediment influx into swamp beds and finally erosion of the current erosion. A generalised stratigraphic column of the Vryheid Formation in the Witbank with lithologies, coal seams and interpreted depositional environments. In the Witbank Coalfield the pre-Karoo rocks pre-dominantly consist of Rooiberg felsites of the Proterozoic Bushveld Complex forming palaeo topographic ridges and valleys. The pre-Karoo basement owes its rugged topographical character to the scouring effect of the Permo Carboniferous Dwyka glaciers and continental ice sheets prior to the deposition of the coal bearing Vryheid Formation sediments (Snyman, 1998). According to the work of Cairncross (1989), the sediment dispersal and distribution of the coal seams was largely controlled by the undulating preKaroo topography.

The primary economic coal seams have been the No. 2 Seam and No. 4 Lower Seam and, in places, the No. 5 Seam. Structurally, the coal horizons are un-deformed with each displaying a very slight dip to the southeast of less than a degree and minor discrete faulting events that have a southwest to northeast trend of graben features and other minor faulting events. The most distinctive post-depositional feature is the intrusion of dolerites related to the Lesotho Basalts that have resulted in a variety of sills and dykes of various ages. The most prominent of the dykes is the Ogies dyke, a 12 to 20m thick essentially vertical intrusion with an east-west strike. The No. 4 Dolerite sill, a 20 to 70m thick multiple flow event, has a preferential intrusion horizon above the No. 5 coal Seam, but in places it transgresses through the coal bearing strata to the pre-Karoo basement and forms in other places a barrier to erosion.

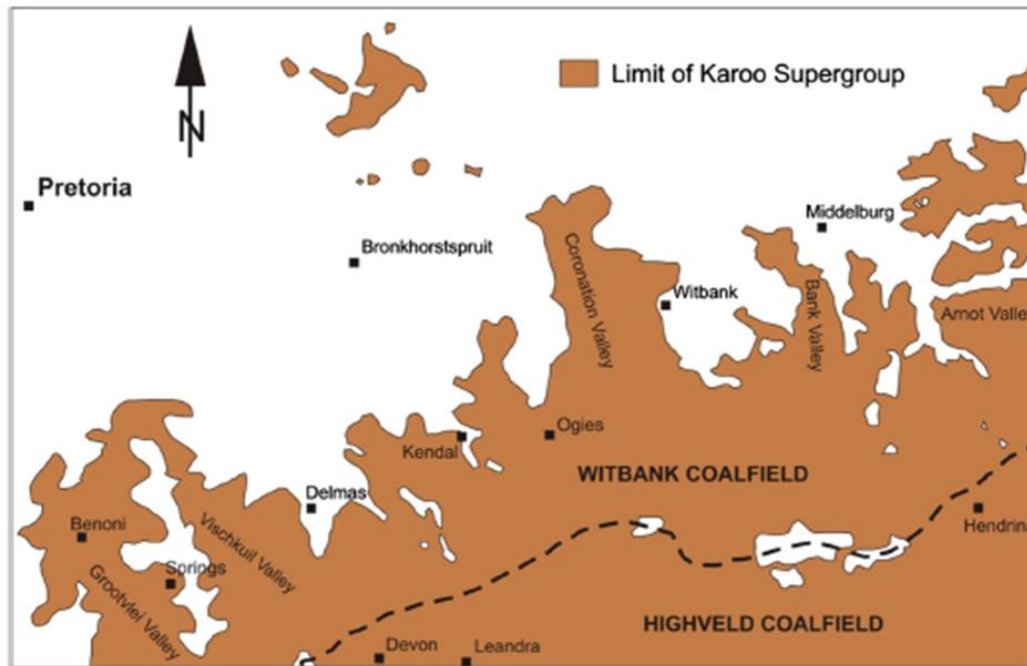


Figure 21: Geographic extent of Witbank Coalfield.

Five coal seams occur in the Vryheid Formation, and these are associated predominantly with the coarser-grained fluvial facies at the top of each sequence. These coal seams can be traced laterally across the entire area of occurrence of the Vryheid Formation in the MKB; however, some disagreement exists as to the exact correlation in the various coalfields. Regional differences allow for the considerable diversity of coal types (organic content), mineral matter composition, and rank (maturity) that is found within the coalfields of South Africa (Falcon, 1986b). The majority of the economically extracted coal in South Africa occurs in rocks of the Vryheid Formation, which ranges in thickness in the MKB from less than 70.0 m to over 500.0 m. It is thickest to the south of the towns of Newcastle and Vryheid, where maximum subsidence took place (Du Toit, 1918; Cadle, 1975; Whateley, 1980a; Stavakis, 1989; Cadle et al., 1982) and where the basin was the deepest.

The No. 2 Seam Sequence (Figure 6) includes the succession from the top of the basement to the top of the No. 2 Seam, which may be up to a maximum development of 60 m in places (Le Blanc Smith, 1980a). It incorporates the rocks of the Dwyka Group, as well as the overlying No. 1 and No. 2 coal seams. It should be noted that we accept that the Dwyka has separate Group status, but that it is described as the basal part of the No. 2 Seam Sequence. The thickness of the Dwyka Group in the Witbank Coalfield also varies considerably dependant on the nature of the underlying topography. It ranges from being thin or absent over the most prominent pre-Karoo topographic highs, to over 25 m thick in the central part of the Witbank Coalfield (Le Blanc Smith and Eriksson, 1979) to 30 m thick (Glasspool, 2003) in the deeper palaeo valleys. Le Blanc Smith and Eriksson (1979) note that the fill consists of poorly sorted matrix rich diamictites, laminated sandstones and siltstones, stratified pebbly mudstones and cross-stratified conglomerates.

Coal Seams

The coal Seams are flat lying to gently undulating; sills (15–50 m) transgress seams; dykes (0–1 m) common (trends east, northeast, north); most prominent dyke: Ogies dyke (15 m thick, 100 km long and strikes east-west) Transgressive sills caused tilting and displacement of seams—mining blocks at different elevations, causing major problems with mining (Smith and Whittaker⁴).

- Coal seam 1 0–3 m; patchily developed due to pre-Karoo topography. the seam averages 6.5 m in thickness in the main-central part of the Coalfield and thins to approximately 3 m towards the east. In the Delmas region it may be up to 7 m thick. The seam generally displays well-defined zoning, with up to seven zones of coal of differing quality (Jeffrey, 2005a). Historically the basal three zones have been mined for low ash metallurgical and thermal export coal and in places the basal five zones are still mined for production of thermal coal for the export market.

- In Coal seam 2 majority of the coal resources in the Witbank Coalfield are attributed to the No. 2 Seam, which also contains some of the best quality coal. The seam averages 6.5 m in thickness in the main-central part of the Coalfield and thins to approximately 3 m towards the east. In the Delmas region it may be up to 7 m thick. The seam generally displays well-defined zoning, with up to seven zones of coal of differing quality (Jeffrey, 2005a). In places the No. 2 Seam is split into a No. 2 Lower (2L) and No. 2 Upper (2U) by an intra-seam parting (lens) of clastic sediment deposited from a braided river system during peat accumulation (Fig. 13). The clastic lens deleteriously affects coal thickness and quality (Cairncross and Cadle, 1988). This No. 2 Seam split is also documented for the central part of the Witbank Coalfield by Holland et al. (1999) and is known to be up to 15 m in thickness in the Kendal-Oogies area (Hancox, 2011). In the central sector there is sometimes an additional intra seam parting, creating an upper No. 2A Seam as well

- Coal seam 3 is only poorly developed and when present is usually less than 0.5 m thick. It is often of a good quality coal but is not generally economically extracted due to its thin development. Where it attains a thickness greater than 0.5 m, it may represent a potential shallow resource for opencast mining. The roof to the No. 3 Seam is variously formed by medium- to coarse-grained sandstones or carbonaceous siltstones. The interburden succession between the top of the No. 3 Seam and the base of the No. 4 Seam comprises a second coarsening upwards sequence from carbonaceous siltstones, or fine-grained sandstones through medium- to coarse-grained arkosic sandstones.

- Coal seam 4 is the second most important source of coal in the Witbank Coalfield and varies in thickness from approximately 2.5 m in the central Witbank Coalfield to around 6.5 m elsewhere. In places, the Seam is divided into a No. 4 Lower (No. 4L), No. 4 Upper (No. 4U) and No. 4A seams, separated by sandstone and or siltstone partings. At the Kendal Colliery the interburden sequence between the No. 4L and No. 4U seams is formed by a coarse to very coarse, well-cemented sandstone, which changes in thickness from 7.5 m to over 20 m within the confines of the mine. The No. 4 Seam usually contains dull to dull lustrous coal, and because of the poor quality of the No.

4U Seam the mining horizon is generally restricted to the No. 4L Seam. The coal is used predominantly as a local power station feedstock.

- Coal seam 5 generally lies some 25 m above the No. 4 Seam and the sequence between the No. 4 and base of the No. 5 Seam is formed by a thick succession of interbedded sandstones and siltstones, culminating in the rocks that form the immediate floor to the No. 5 Seam. Over most of the Witbank Coalfield the immediate floor to the No. 5 Seam is composed of carbonaceous fines. This poor quality floor has caused significant issues with the mining of the No. 5 Seam, particularly in underground situations. Where present the No. 5 Seam has an average thickness of around 1.8 m, being developed between 0.5-2 m. The seam consists of mixed, mainly bright, banded coal with thin clastic partings in a few localities.

Coal Quality

The quality of the coal in the No. 5 Seam is generally fairly high (except in the extreme western parts of the coalfield where it is not of economic quality) generally being a high-vitrinite bituminous coal. As for the No. 2 and No. 4 seams, there is significant variability, with company data for the western sector suggesting raw calorific values for the No. 5 Seam that vary from 5.1 MJ/kg to 26.26 MJ/kg. The volatiles are usually quite high, except where devolatilised by dolerite, or through weathering. In places the No. 5 Seam is of high quality (Smith and Whittaker, 1986b) and may be a source of metallurgical coal for both the domestic and export markets, including the ferro manganese industry.

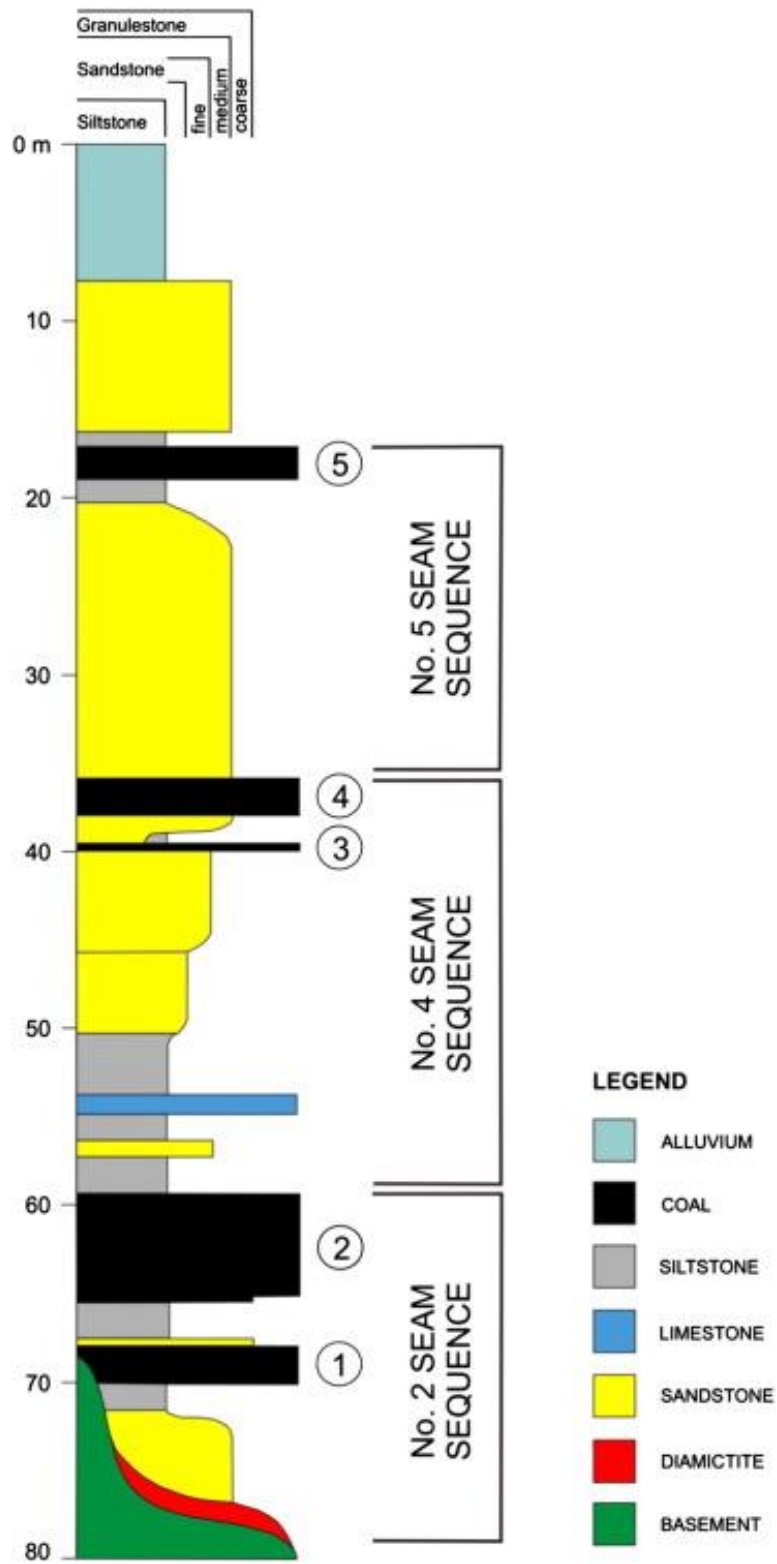


Figure 22: Stratigraphic column of the Witbank coalfield.

2.9.2.6 Climate

The regional climate of Steve Tshwete is an oceanic subtropical highland climate. The climate is classified as Cwb by Köppen-Geiger system. The average temperature of Steve Tshwete for the year is 14.4 °C. January is the warmest month of the year with an average of 18.2 °C. The coolest month of the year is June with an average of 8.8 °C. The mean annual rainfall is between 601– 800 mm. July is the driest month with only 5.1 mm of rainfall with January's precipitation reaching the peak of an average of 162.6 mm.

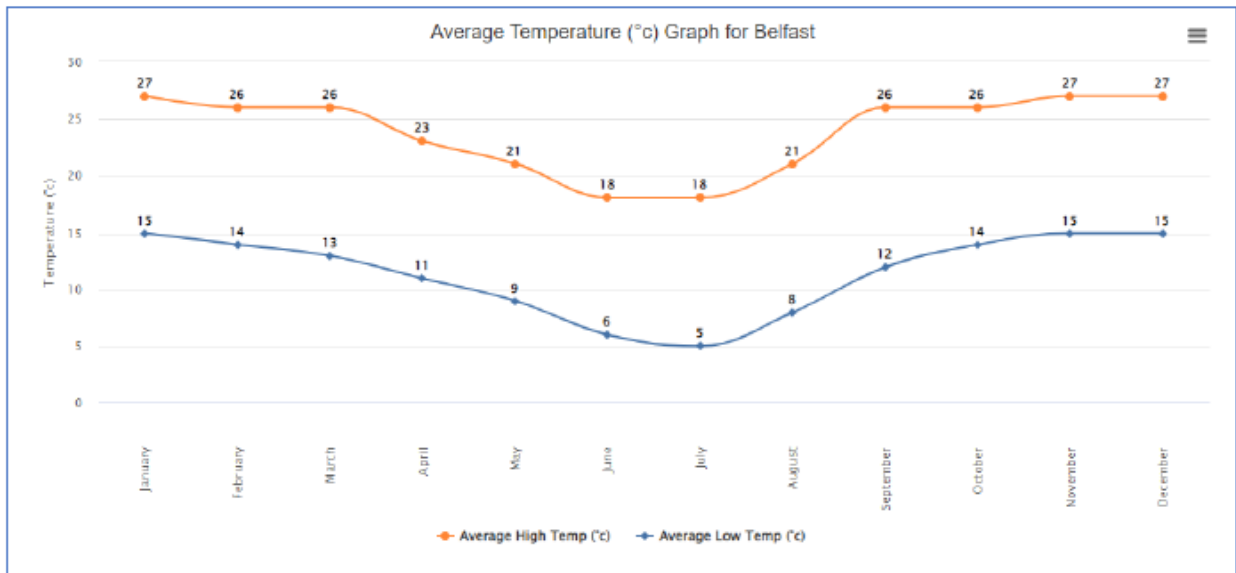


Figure 23: Average Temperature graph for Steve Tshwete.

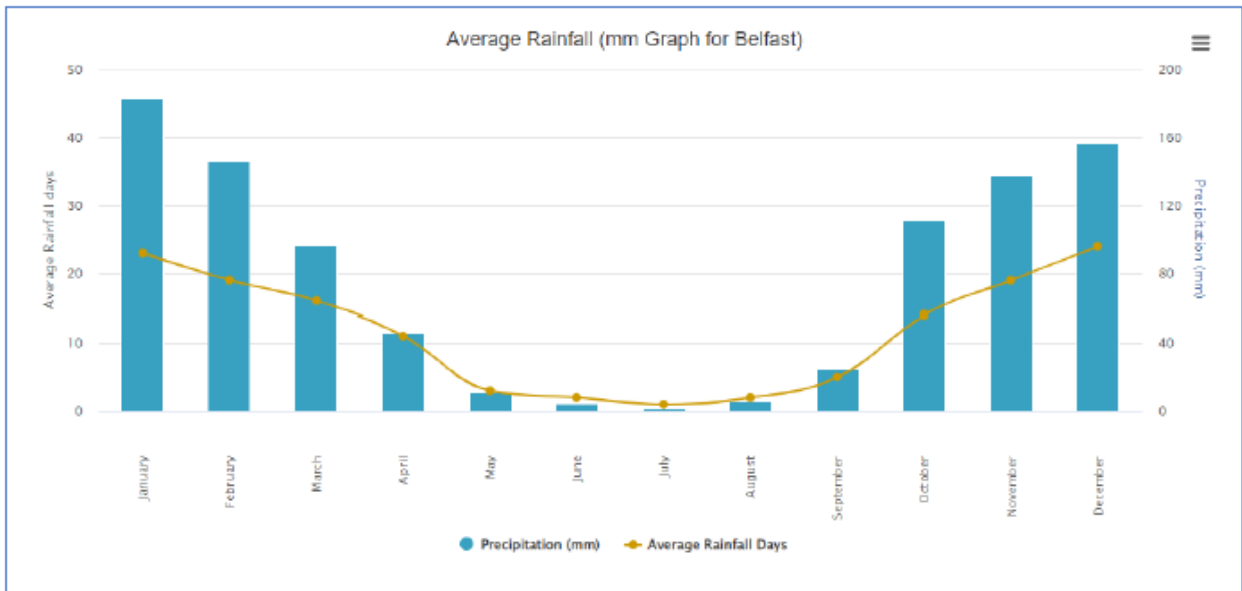


Figure 24: Average Rainfall graph for Steve Tshwete.

2.9.2.7 Surface & Ground Water Resources

Groundwater

From the baseline studies conducted in house the hydrological map depicts that there are waterbodies onsite and outside the proposed area. During ground truthing, water bodies were observed onsite and outside the proposed site, prospecting activities will be monitored to avoid contamination of water bodies by prospecting process. The water bodies will be buffered by 100m, and no prospecting activities will be conducted in the buffer zone.

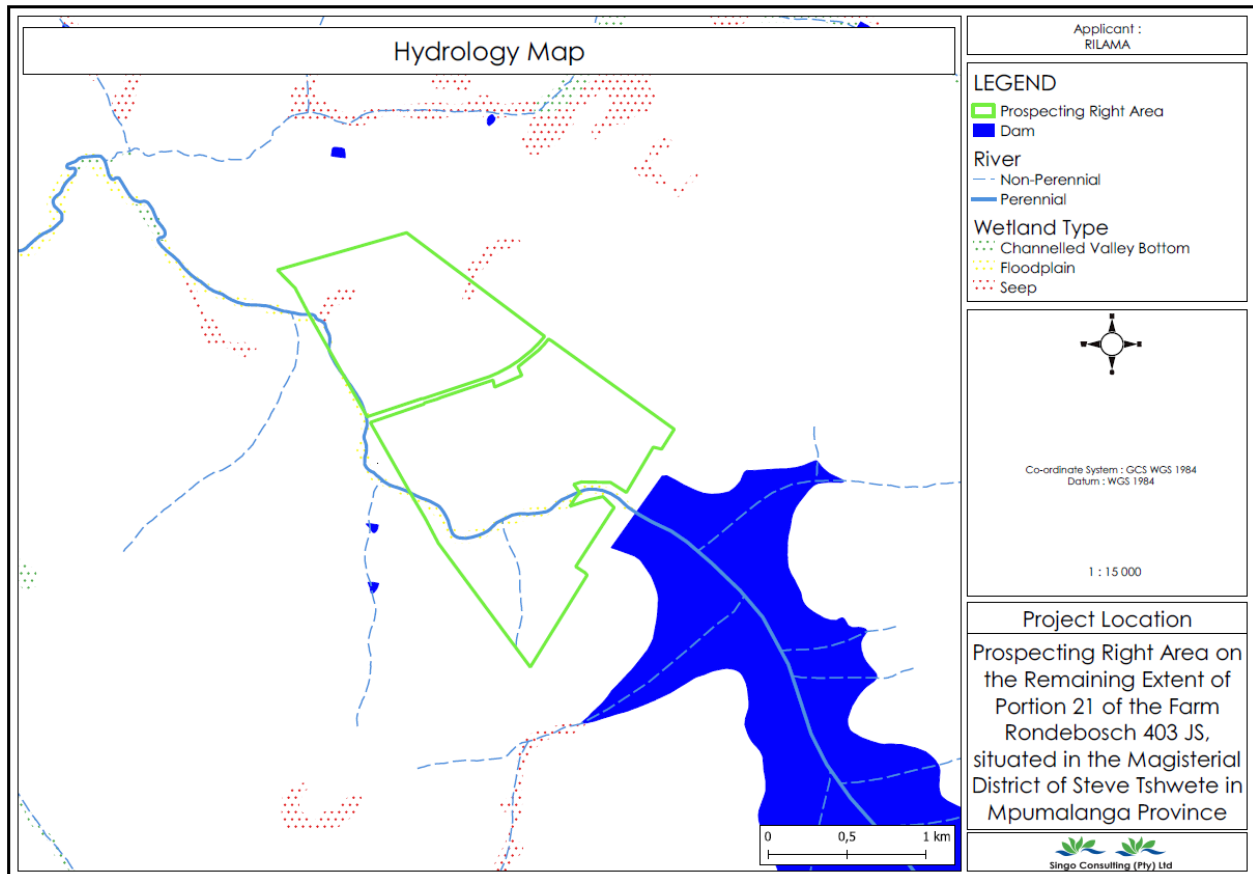


Figure 25: Hydrology map of the project area.



2.9.2.8 Critical biodiversity areas

The proposed prospecting area is situated in a heavily modified and moderately modified old lands, other natural area and CBA Optimal (see Figure 24). During site assessment, it was found that the proposed prospecting area is heavily modified due to maize cultivation, and biodiversity function has been lost to an extent that it is not worth considered for conservation (see Figure 25). There are no species of conservation concern observed onsite that will be affected by the proposed project. If species of conservation concern might be observed onsite during prospecting process the area will be demarcated to avoid unnecessary disturbance of the protected plant species and prospection process will not be conducted on the demarcated area.

Proposed prospecting will only take place on the heavily modified , moderately modified old lands and other natural area. CBA optimal be left intact.

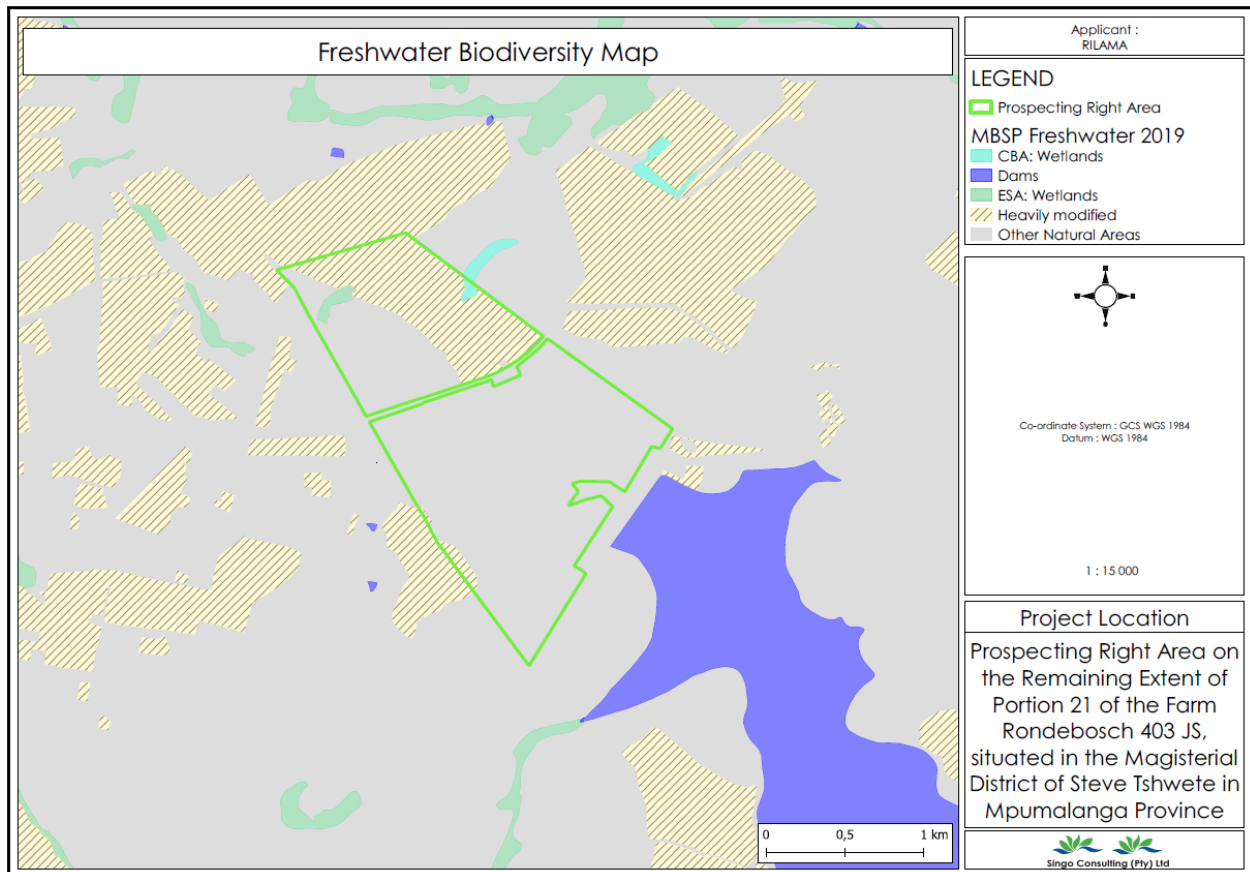


Figure 26: Biodiversity Map of the proposed area.

2.9.2.8.1 Flora

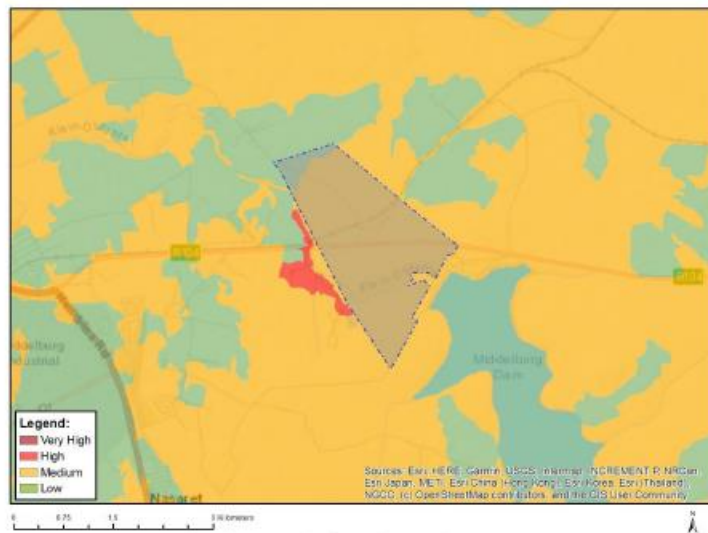
The proposed prospecting areas is situated within the Moist Sandy Highveld Grassland vegetation type (Van Rooyen & Bredenkamp, 1998). The Moist Sandy Highveld Grassland is found in the sandy plains west of the Steve Tshwete Carolina-Ermelo area, and north of Volksrust in Mpumalanga, at an altitude of 1,600 to 1,800 m. The grassland is dominated by *Eragrostis plana*, *E. curvula*, *Heteropogon contortus*, *Trachypogon spicatus* and *Themeda triandra*. Dicotyledonous forbs are not abundant, though many species occur in the area. The distribution of this vegetation type 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 hence transformed. The Nootgedacht Dan Nature Reserve is the only official conservation area, but the Ermelo Game Park represents a good example of this vegetation type.

The proposed site falls in the Moist Sandy Highveld Grassland. The vegetation classifications describe the vegetation of the area as that belonging to the Rand and Eastern Highveld Grassland vegetation types (Mucina and Rutherford, 2006). The area has woody species component, however, the majority of wood species in the area are exotic which include *Pinus* sp., *Eucalyptus camaldulensis* and *Acacia mearnsii*. Some of the areas in the proposed site are home to terrestrial grasslands as they have not been cultivated due to a very stony. However, the areas by

Hyparrhenia dissoluta, Eragrostis rotifer, E. gummiflua, E. curvula, Pogonarthria squarrosa, Aristida congesta and Stoebe vulgaris, species that are common in sandy, disturbed veld.

The Screening report shows that the proposed project area is of medium sensitivity with the following floral species: *Pachycarpus suaveolens*. During ground truthing, *Pachycarpus suaveolens* or any other species of conservation concern were not observed onsite. The proposed area is heavily modified due to maize cultivation (see Figure 28). The heavily modified and moderately modified old lands onsite provided the necessary conditions for the mixture of floral species and alien and invasive plant (AIP) species to proliferate and dominate the disturbed areas. The following floral species and alien invasive species were observed scattered onsite during ground truthing, *Cosmos bipinnatus Cav*, *Eucalyptus camaldulensis*, *Seriphium plumosum*, *Bidens Pilosa*, *Themeda triandra*, *Tagetes minuta L*, *Melinis repens*, *Cynodon dactylon (L) pers.* Some of the floral species observed onsite, namely A *Seriphium plumosum* B *Tagetes minuta L* C *Eucalyptus camaldulensis* D *Cosmos bipinnatus Cav*.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Figure 27: Map of relative plant species theme sensitivity. Screening report.

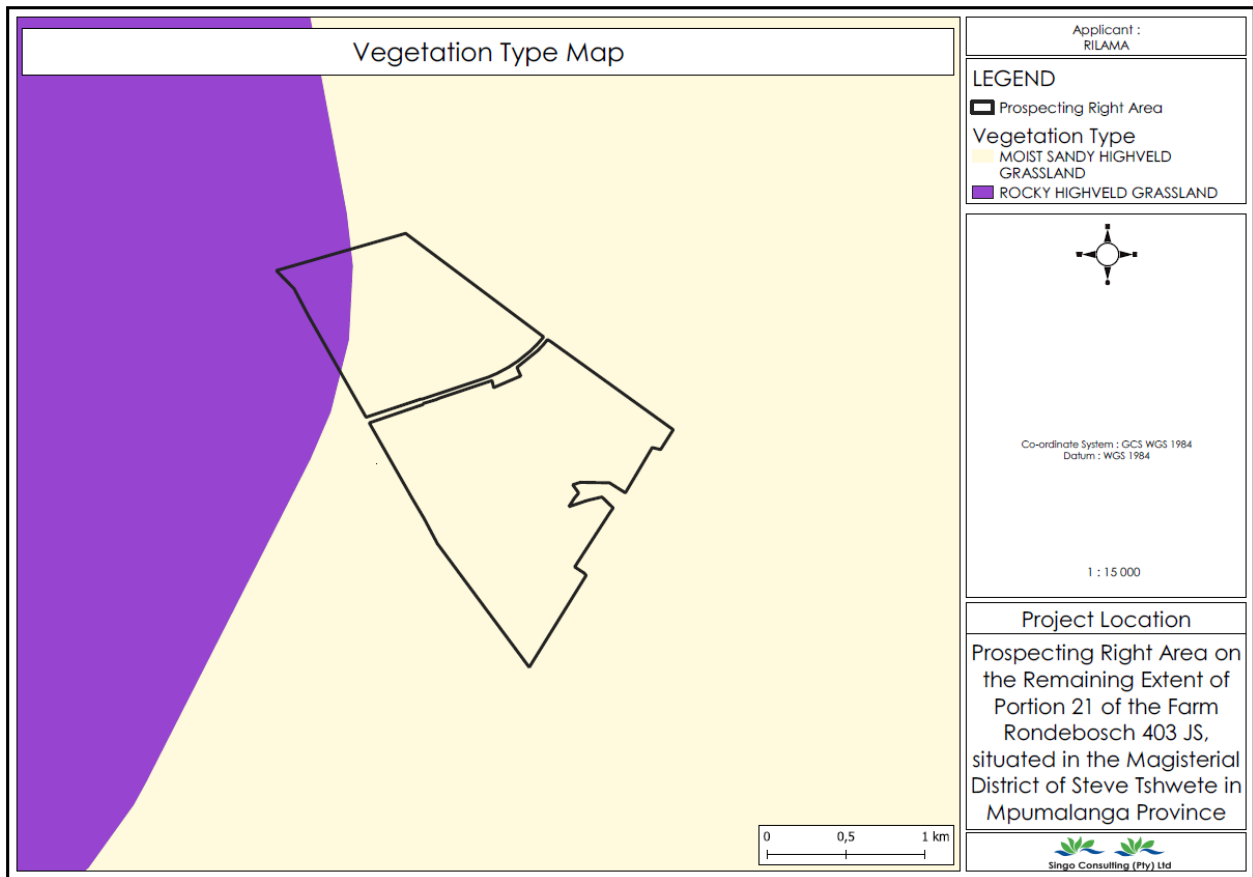


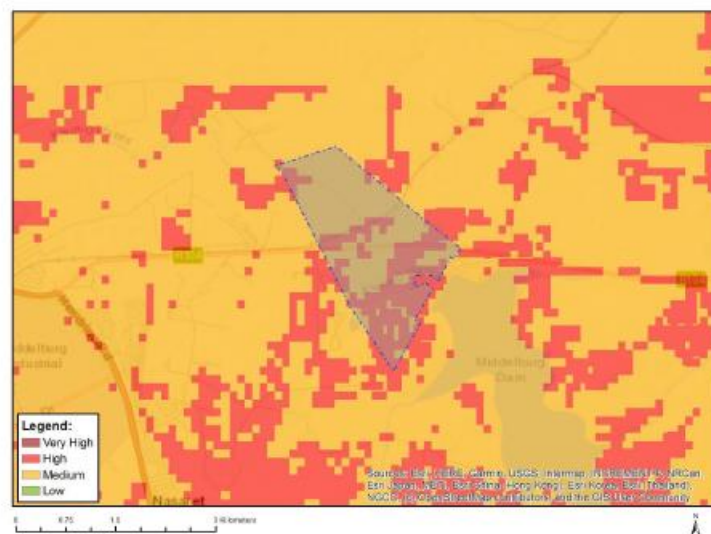
Figure 28: Vegetation map of the project area.



Figure 29: Vegetation observed on site.

The screening report shows that the proposed project area is of medium sensitivity with the following mammal species: *Mammalia-Ourebia ourebi ourebi*, *Mammalia-Hydrictis Maculicollis*, *Mammalia-Crocidura maquassiensis* and *Mammalia-Chrysospalax villosus* (see Figure 31). During site assessment no medium sensitivity or domestic fauna species observed onsite. Should any fauna species enter the prospecting area, they will be able to move away or through the site, without being harmed. Environmental awareness should be conducted to ensure that faunas are not harmed or killed onsite by workers. Upon commencement of the processing activities, the proposed area will be fenced off to prevent livestock, such as cattle from entering the work area.

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Figure 30: Animal Species Theme Sensitivity Map from Screening Tool.



Figure 31: fauna observed onsite.

2.9.2.9 Cultural and heritage

The proposed prospecting area is located within the cultivated area, and according to the screening report the area has low sensitivity in archaeological and cultural resources. During site assessment, the no archaeological and cultural heritage were observed.

2.9.3 Description of the current land uses

The proposed prospecting area is currently used for agricultural purposes namely, **(A)** maize cultivation, **(B)** Cattle farming and **(C)** Ostrich farming (see Figure 33).waterbodies were also observed onsite during ground truthing.



Figure 32: Pictures depicting current land use on the proposed project area.

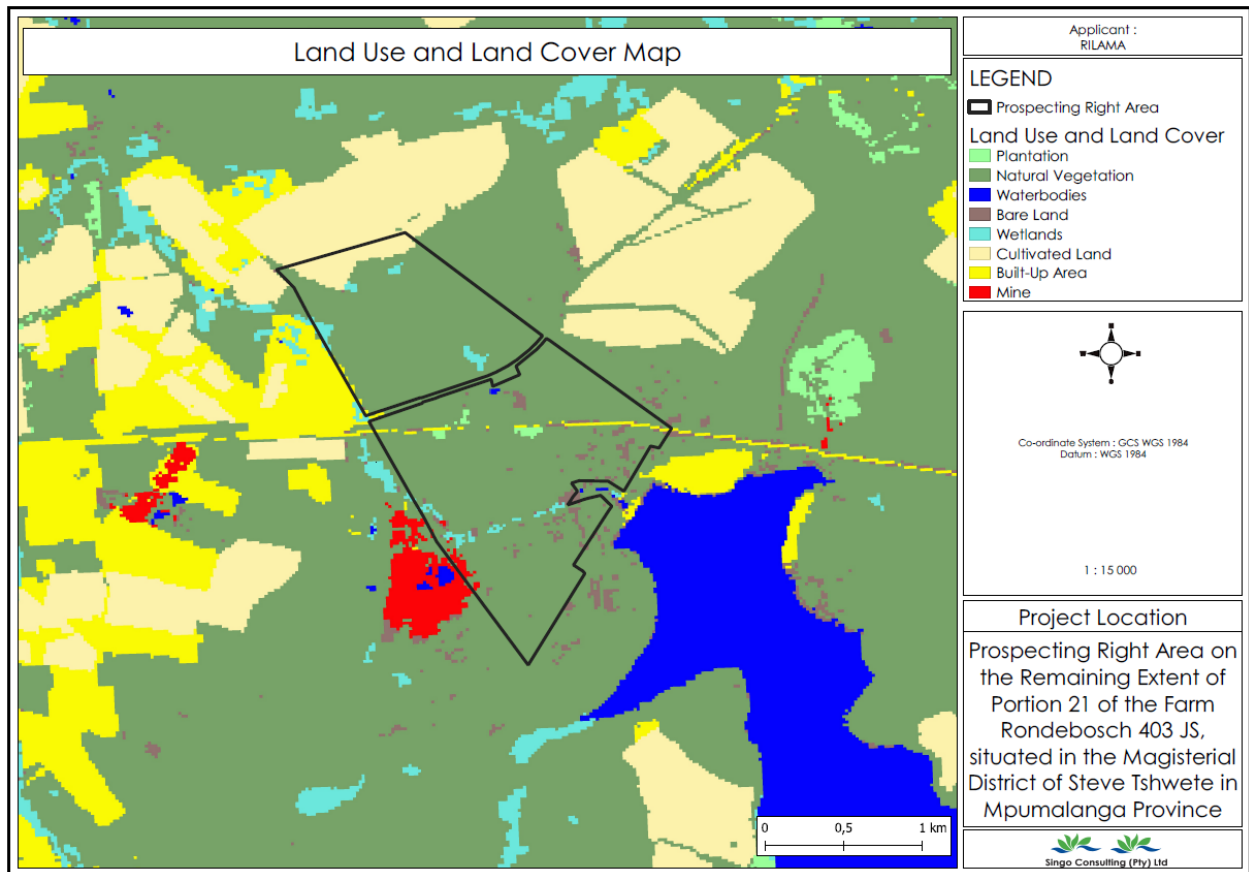


Figure 33: Land use and Land cover map of the proposed project area.

2.9.4 Description of specific environmental features and infrastructure on the site

The proposed project area has a gravel/unpaved road cutting through the proposed area, waterbody was observed in the proposed project during ground truthing. The access roads, powerlines, Railway, Waterbody and houses(farmstead) are among the major infrastructures observed onsite.





Figure 34: Infrastructures observed on site during ground truthing.

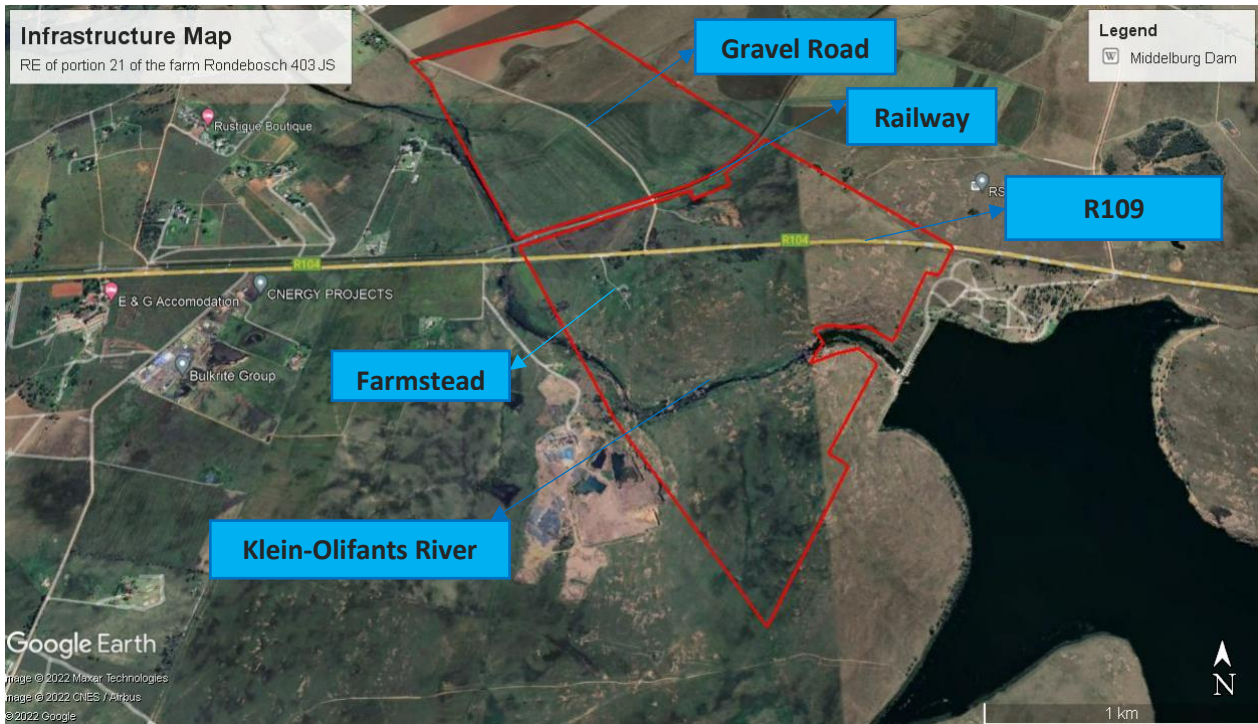


Figure 35: Infrastructure map of the proposed project area.

2.9.5 Environmental and current land use map

2.9.5.3 Impacts and risks identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts

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

The following are potential impacts associated with the prospecting activity:

It is not anticipated that the prospecting activities will have any lasting material effects on existing land uses in the prospecting areas or any other areas in their vicinity.

2.9.6 Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks

Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process were determined to decide the extent to which the initial site layout needs revision.

The requirements of the NEMA 2014 EIA Regulations guide the impact assessment process (as amended). The Environmental Risk (ER) is calculated by comparing the Consequence (C) of each effect (which includes Nature, Extent, Duration, Magnitude, and Reversibility) to the Probability/Likelihood (P) of the impact occurring. The Environmental Risk is determined by this.

Other criteria, including as cumulative impacts, public concern, and the risk of irreversible resource loss, are also considered when determining a Prioritization Factor (PF), which is then applied to the ER to establish the overall Significance (S).

2.9.7 Determination of Environmental Risk

The significance (S) of an impact is determined by applying a Prioritization Factor (PF) to the Environmental Risk (ER).

The Environmental Risk is dependent on the Consequence (C) of the particular impact and the Probability (P) of the impact occurring. Consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M) and Reversibility (R) applicable to the specific impact.

For the purpose of this methodology the Consequence of the impact is represented by:

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years)
	3	Medium term (6-15 years)
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected)
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected)
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way)
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease) or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease)
Reversibility	1	Impact is reversible without any time and cost

	2	Impact is reversible without incurring significant time and cost
	3	Impact is reversible only by incurring significant time and cost
	4	Impact is reversible only by incurring prohibitively high time and cost

Each individual aspect in the determination of the Consequence is represented by a rating scale as defined in **table 6..**

Table 6: Criteria for determination of impact Consequence.

Aspect	Score	Definition
	5	Irreversible Impact

Once the C has been determined the ER is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated/scored as per **table 7.**

Table 7: Probability scoring.

Probability	1	Improbable (the possibility of the impact materializing is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows (**table 8**):

$$ER = C \times P$$

Table 8: Determination of Environmental Risk.

Consequence	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
	Probability					

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in **table 9 .**

Table 9: Significance classes.

Environmental Risk Score	
Value	Description
< 10	Low (i.e. where this impact is unlikely to be a significant environmental risk),

≥ 10; < 20	Medium (i.e. where the impact could have a significant environmental risk),
≥ 20	High (i.e. where the impact will have a significant environmental risk).

The impact ER will be determined for each impact without relevant management and mitigation measures (pre- mitigation), as well as post implementation of relevant management and mitigation measures (post-mitigation). This allows for a prediction in the degree to which the impact can be managed/ mitigated.

2.9.8 Impact Prioritization

In accordance with Appendix 3(1)(j) of the NEMA 2014 EIA Regulations (as amended) (GNR 326 of 2017), and in addition to the assessment criteria presented in the Section above, each potentially significant impact must be evaluated in terms of cumulative impacts and the degree to which the impact may cause irreplaceable resource loss.

Furthermore, public opinion and attitude about a potential development, as well as its potential consequences, must be considered during the decision-making process.

An impact Prioritization Factor (PF) will be assigned to each impact ER in order to ensure that these considerations are considered (post-mitigation). This element is used to direct the attention of the decision-making authority on the higher priority/significant issues and impacts, rather than to distract from the risk assessments. The PF will be applied to the ER score assuming that all recommended management/mitigation measures are executed.

Table 10: Criteria for the determination of prioritization.

Public response (PR)	Low (1)	Issue not raised in public response.
	Medium (2)	Issue has received a meaningful and justifiable public response.
	High (3)	Issue has received an intense meaningful and justifiable public response.
Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable loss of resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).

The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criterion. The impact priority is therefore determined as follows:

$$\text{Priority} = \text{PR} + \text{CI} + \text{LR}$$

The result is a priority score which ranges from 3 to 9 and a consequent PF ranging from 1 to 2 (**table 11**).

Table 11: Determination of prioritization factor.

Priority	Ranking	Prioritization Factor
3	Low	1
4	Medium	1.17
5	Medium	1.33
6	Medium	1.5
7	Medium	1.67
8	Medium	1.83
9	High	2

In order to determine the final impact significance the PF is multiplied by the ER of the post mitigation scoring. The ultimate aim of the PF is to be able to increase the post mitigation environmental risk rating by a full ranking class, if all the priority attributes are high (i.e. if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential, significant public response, and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance (**table 12**).

Table 12: Environmental significance rating.

Environmental Significance Rating	
Value	Description
≤ 1	Very low (impact is negligible. No mitigation required)
>1≤2	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
>2≤3	Moderate negative (i.e. where the impact could influence the decision to develop in the area).
>3≤4	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
>4≤5	Very high negative (impact is of highest order possible. Mitigation is required to lower impacts to acceptable levels. Potential fatal flaw)

0	No impact
>1≤2	Low positive (i.e. where this impact would not have a direct influence on the decision to develop in the area).
>2≤3	Moderate positive (i.e. where the impact could influence the decision to develop in the area).
>3≤4	
>4≤5	High positive (i.e. where the impact must have an influence on the decision process to develop in the area)

The impact significance will be rated in the prescribed way, with and without the effective implementation of the recommended mitigation measures.

2.9.9 The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community

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

There is currently an alternate layout. To avoid negative consequences, Rilama (Pty) Ltd will make changes to the site. Because the drill site will be confined to an area of approximately 0.9 ha of the 385.166 ha property, the invasive activities involving the drilling of at least 15 exploration holes will have a minimal environmental and social impact. This must be considered in the context of the entire prospecting license area under consideration, and it must be remembered that some of the identified impacts will occur for a limited time and will have localized effects. The identified impacts can be adequately mitigated, and the residual impact ratings are insignificant. After drilling activities have been completed and the drill pads rehabilitated to predrilling status, the impacts will cease to exist.

2.10 Assessment of each identified potentially significant impact and risk

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

Table 13: Impact assessment

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked Appendix – Please refer to Table 8 for the full impact assessment.

2.11 Summary of baseline specialist reports

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

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
N/A			

3. Environmental impact statement

3.8 Key findings of the EIA

Most of the prospecting activities are non-invasive and will have very low to negligible environmental or social impact. The invasive activities that entail the drilling of approximately 15 exploration holes will have a minimal environmental and social impact as each drill site will be confined to an area of 0.9 ha. This must be viewed in the context of the entire prospecting license area under application, which covers just 633.942 ha. Table 14 summarises the assessed impact ratings after mitigation measure implementation.

Table 14: Summary of identified impacts

Potential impacts (Positive: +ve; Negative: -ve)	Impact significance pre-mitigation	Impact significance post-mitigation
Site establishment activities		
Cultural and Heritage (-ve)	Very Low	Negligible
Noise (-ve)	Low	Very Low
Visual (-ve)	Low	Very Low
Traffic (-ve)	Very Low	Very Low
Dust fall (-ve)	Very Low	Very Low
Soil and vegetation (-ve)	Medium	Low
Animal life (-ve)	Medium	Low
Social (-ve)	Low	Very Low
Job creation (+ve)	Very Low	Very Low
Exploration drilling		
Noise (-ve)	Very Low	Very Low
Visual (-ve)	Very Low	Very Low
Traffic (-ve)	Low	Very Low
Dust fall (-ve)	Very Low	Very Low
Soil and Vegetation (-ve)	Low	Very Low
Animal life (-ve)	Low	Very Low
Social (-ve)	Low	Low
Job creation (+ve)	Low	Low

All identified impacts will occur for a limited time and the extent of the impacts will be localised. All identified impacts can be suitably mitigated with the residual impact ratings being of low significance. After drilling activities have been completed and the drill pads rehabilitated to predrilling status, the impacts will cease to exist.

3.9 Final site map

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

Please refer to **Appendix 1** for the Environmental Sensitivities Map including site layout map.

3.10 Positive and negative impacts, and risks of the proposed activity and alternatives

- Destruction/loss of cultural and heritage resources during the construction/set-up phase (unlikely, as no features of cultural/heritage significance have been identified on site).
- Noise generation from construction/set-up and operational activities of drilling.
- Visual intrusion caused by the drilling activities in the largely rural setting.
- Increased traffic near the drilling site during site establishment and prospecting.
- Dust fall and nuisance from construction/set-up and drilling activities.
- Soil and vegetation disturbance from drill pad preparation during construction/set-up and operations, as contractors rehabilitate one site and move to the next.
- Animal life will be affected in the immediate vicinity of the drilling rig. It is expected that the noise and general activity will keep them away from the prospecting site.
- Friction between residents/landowners and construction personnel during.
- Employment will be created for land clearing and drilling site establishment.

3.11 Proposed impact management objectives and outcomes for inclusion in the EMPr

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

The objectives of the EMPr will be to:

- Provide enough information to strategically plan the prospecting activities as to avoid unnecessary social and environmental impacts.
- Provide enough information and guidance to plan prospecting activities in a manner that would reduce impacts (both social and environmental) as far as practically possible.
- Develop an approach that ensures environmental compliance.
- Provide a management programme that is effective and practical for implementation.

Through the implementation of the proposed mitigation measures it is anticipated that the identified social and environmental impacts can be managed and mitigated effectively. Heritage/cultural resources can be managed by avoidance of known resources and through consultation with landowners/stakeholders. Contractor personnel will also be briefed of these sensitivities and consequences of any damage/removal of such features. Through the implementation of the mitigation and management measures, it is expected that:

- Noise generation can be managed through consultation, restriction of operating hours, by maintaining equipment and applying noise abatement equipment if necessary.

- Visual intrusion can be managed through consultation with landowners/ stakeholders and by suitable siting of drill pads and use of screens (natural vegetation or shade cloth, etc.).
- Traffic is managed to minimise congestion in and around the drilling site.
- Dust fall can be managed by application of wet suppression on exposed surfaces and use of water during drilling.
- Soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required and disturbed areas will be re-vegetated with indigenous species as soon as possible.
- Animal life is always protected and preserved, and the prospecting activities have limited impact on the surrounding habitat.
- Social friction with landowners can be managed by employing strong, experienced personnel with public consultation and conflict resolution skills during stakeholder consultation. All prospecting personnel will be made aware of local conditions and sensitivities and trained to treat residents with respect and courtesy.
- Employment is created during the prospecting, contributing to the local economic even if it is only on a temporary basis.

3.12 Aspects for inclusion as conditions of authorisation

Any aspects which must be made conditions of the Environmental Authorisation.

- Maintain a buffer of at least 100m from any water body and 100m away from infrastructure/ dwelling.
- Landowners and land occupiers should be engaged (re-consulted) at least 14 days prior to any site activities being undertaken once drill sites are known.
- A map detailing the drilling locations should be provided to the landowners, as well as the DMRE prior to commencement of prospecting activities.

3.13 Description of any assumptions, uncertainties and gaps in knowledge

Which relate to the assessment and mitigation measures proposed?

- It is assumed that the proposed project description provided by the applicant is enough in providing the authorities with the right information regarding the project.
- It is assumed that the public consultation process to be undertaken as part of the EIA will suffice and that the application will be considered objectively based on stakeholders' response to the proposed activities.

3.14 Reasoned opinion as to whether the proposed activity should be authorised

3.14.2 Reasons why the activity should be authorised

The EAP recommends that the proposed prospecting activities be authorised:

- The environmental impacts associated with the limited drilling activities are minimal, provided that the proposed mitigation is implemented.
- The spatial extent of the physical impact is less than 1 ha per drill site over a prospecting right license area of over 633.942 ha; 15 drill sites will be established during the drilling phase.
- With appropriate care and consideration, the impacts resulting from drilling can be suitably avoided, minimised or mitigated.
- By implementing the appropriate rehabilitation activities, the impacts associated with drilling can be reversed.
- Without implementation of prospecting activities, the knowledge concerning the potential mineral resource within the prospecting right area will not be confirmed.

3.14.3 Conditions that must be included in the authorisation

- Maintain a minimum 100m buffer from any water and 100m away from infrastructure/ dwelling.
- Landowners and occupiers should be consulted again at least 1 month prior to any site activities being undertaken once drill sites are known.
- A map detailing the drilling locations must be provided to the landowners and the DMRE prior to commencement of prospecting activities.
- Record must be kept of the implementation of the EMPr measures and monitoring of the efficiency of the implemented measures.
- A closure plan must be submitted to show measures to avoid, manage and mitigate environmental impacts associated with decommissioning of proposed activities.

3.15 Period for which the Environmental Authorisation is required.

The authorisation is required for the duration of the prospecting right, which is an initial 5 years plus potential to extend the right by 3 years. A total period of 8 years is required.

3.16 Undertaking

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

An undertaking is provided at the end of this report.

3.17 Financial provision

State the amount required to manage and rehabilitate the environment.

A financial provision of approximately R 40 874.00 which includes rehabilitation activities, has been made by **Rilama (Pty) Ltd**. A breakdown of these costs is presented in Appendix 7. The applicant undertakes to provide financial provision through funding from the personal account.

CALCULATION OF THE QUANTUM							
Applicant: Antwi Supplier General Services (Pty) Ltd				Ref No.: MP30/5/1/1/2/ 17372 PR			
Evaluator: Khodani Mathako				Date: 11-Jul-22			
No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	2151,36	49	0,02	1	2108,3328
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	267	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	238054	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,2	1	27024,84
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							29133,1728
1	Preliminary and General		3495,980736		weighting factor 2		3495,980736
						1	
2	Contingencies			2913,31728			2913,31728
Subtotal 2							35542,47
Singed: Khodani Mathako Date: 07/11/2022							
VAT (15%)							5331,37
Grand Total							40874

3.17.2 Explain how the aforesaid amount was derived

Confirm that this amount can be provided for from operating expenditure. Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the PWP.

The drilling contractor will be responsible for rehabilitating the drill pad once the drilling activities have been completed at each drill hole. The responsible exploration geologist will confirm the quality of rehabilitation conducted by drilling contractor and sign it off. The financial guarantee was calculated using the DMRE official financial quantum calculator. This information has been provided in the PWP that was submitted to the DMRE.

An amount of R2 295 796.00 is required to finance the PWP over a period of 3 years. The extended 2 years will be based on the results of the first 3-year drilling programme. Work will be approved on a phase-by-phase basis, dependent on the results obtained i.e, although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified. Table 15 shows a breakdown of the expected costs throughout the exploration process. The amount is also reflected in the PWP submitted to the DMRE.

Table 15: Expenditure per activity.

ACIVITY	YEAR 1 Expenditure (R`)	YEAR 2 Expenditure (R`)	YEAR 3 Expenditure (R`)	YEAR 4 Expenditure (R`)	YEAR 5 Expenditure (R`)
Phase 1 (Months 0 to 12)					
Literature surveys	R 2 500.00	R1 500.00			
Desk top studies	R 10 000.00	R 5 000.00			
Geophysical or geotechnical work	R 10 000.00	R 4 000.00			
Research and target identification		R 5 000.00			
Phase 2 (Months 13 to 24)					
Invasive work, (Drilling 05 boreholes a depth of 50m)		R48 024 9.00	R48 024 9.00	R48 024 9.00	R48 024 9.00
Sampling work		R 25 000.00	R 15 000.00	R 9 000.00	R 5 000.00
Laboratory work		R 22 800.00	R 11 200.00	R 8 800.00	R 4 800.00
Analytical and modelling work			R 40 000.00	R 20 000.00	R 7 000.00
Infill work			R 25 000.00	R 15 000.00	
Bulk sampling and testing to be carried out					
Phase3 (Months 25 to 60)					

EIA and EMPr for mining right application				R 40 000.00	R 20 000.00
Pre-feasibility studies				R 25 000.00	R 10 000.00
Investment decision making application for mining rights				R 22 800.00	R 10 400.00
Annual Total	R 22,500.00	R 543 549.00	R 571 449.00	R620 849.00	R 537 449.00
				Total Budget	R2 295 796.00

Specific Information required by the competent Authority.

3.18 Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998)

The EIA report must include the:

3.18.2 Impact on the socio-economic conditions of any directly affected person

Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix.

A full consultation process was implemented during the environmental authorisation process. The purpose of the consultation is to provide affected persons the opportunity to raise potential concerns. Concerns raised have been captured and addressed in the public participation section of this report. As the final positioning of the drill sites cannot be confirmed without completion of phase 1 of the prospecting programme, a recommendation has been made to ensure that the directly affected landowners are re-consulted a minimum of one month prior to implementing invasive activities (drilling). The purpose of the re-consultation is to ensure that socio-economic impacts on directly affected persons can be raised and, where possible, addressed.

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

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

Mitigation measures proposed in this report include that no drill site will be located within 100m of any identified heritage site (which may occur during the prospecting programme) based on desktop work. Furthermore, from desktop studies undertaken, no heritage sites have been identified in the area. However, comment from the South African Heritage Agency (on a national level) and from Local Heritage Resources offices will be sought to confirm the need for a Heritage Impact Assessment.

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

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

The proposed site was selected based on extensive research and following information from previous prospecting activities in the area. There are known coal deposits in the area. In terms of the technologies proposed, the proposed prospecting has been chosen based on the long-term success of the company in terms of their prospecting history. The prospecting activities proposed in the PWP is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

4. Environmental management programme

4.8 Details of the EAP

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

The requirements for the provision of the details and expertise of the EAP are included in PART B, section (1) (h).

4.9 Description of the aspects of the activity

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

The requirement to describe the aspects of the activity covered by the environmental management programme report is included in PART B, section (1)(h).

4.10 Composite map

Provide a map (attached as an Appendix) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers) Please refer to Appendix 1 for the Composite Map.

4.11 Description of impact management objectives including management statements

4.11.2 Determination of closure objectives

Ensure that the closure objectives are informed by the type of environment described.

After prospecting is complete at each drill site, the site will be rehabilitated to be safe, stable, re-vegetated, non-polluting, and non-eroded and in a state that is suitable for agreed post-closure land use.

4.11.3 Volumes and rate of water use required for the operation.

After careful consideration of the scale of operation it has been deduced that approximately 40 L will be used as potable water. It is anticipated that water will be purchased from a private water filter dealer such as Oasis and brought onto the site.

4.11.4 Has a water use license has been applied for?

No, the main prospecting right activities that will take place includes Drilling, Logging, Sampling and Mapping. It should be noted that these activities do not include any mining activities nor bulk sampling, and No PCD, Trenches and Berms will be constructed. The drilling activity will only take up about 0.9ha per planned borehole, and all the planned exploration boreholes

will be outside the 500m DWS regulated radius from the watercourses. No water will be abstracted from the drilled exploration boreholes.

4.12 Impacts to be mitigated in their respective phases

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

Table 16: Impact mitigation and rehabilitation

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Implementation period
E.g. for prospecting: Drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc. E.g. for mining: Excavations, blasting, stockpiles, discard dumps/dams, loading, hauling, transport, water supply dams, boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure and post-closure.	Volumes, tonnages and ha/m ²	Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.	A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.	Describe the period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. Rehabilitation must take place at the earliest opportunity. With regard to rehabilitation, state whether it will take place upon cessation of the individual activity or cessation of mining, bulk sampling or alluvial diamond prospecting.
Site establishment activities <ul style="list-style-type: none"> • Vegetation clearance • Topsoil stripping and stockpiling • Drill pad compaction • Placement of temporary portable toilets and resting place • Vehicle movements • Waste management 	Construction/set-up and operational phase	20m ² diamond drill holes	Any buried artifacts that may be uncovered during site activities will require such activities to stop and a qualified archaeologist will be commissioned to assess their significance and determine appropriate mitigation measures.	Heritage Act	Before and during drilling activities
	Construction/set-up and operational phase	20m ² diamond drill holes	Control noise generation by maintaining equipment. Limited to daylight hours on Mondays-Saturdays and no activities on Sundays and public holidays. Maintain a buffer of 500m between drill sites and dwellings. The resting	SANS 10103 guideline	Before and during drilling activities

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Implementation period
			place will be located outside the 82dB Zone of the drill site.		
Exploration drilling: Drilling <ul style="list-style-type: none"> • Drill maintenance and refuelling • Core sample collection and storage • Vehicle movements • Waste generation and management 	Construction/set-up and operational phase	20m ² diamond drill holes	The drilling rig and other visually prominent items on the site will be in consultation with the landowner. Use existing vegetation as far as possible to screen the prospecting operations from view. If necessary, operations can be screened from view by erecting a shade cloth barrier.	N/A	Before and during drilling activities
	Construction/set-up and operational phase	20m ² diamond drill holes	Control dust emission by ensuring drill rig employs dust suppression system. Low vehicle speeds will be enforced on unpaved surfaces. Maintain a buffer of 500m between drill sites and dwellings.	GN R. 827 (NEMAQA)	Before and during drilling activities
	Construction/set-up and operational phase	20m ² diamond drill holes	Soil disturbance and vegetation clearance at drill pads will be limited to the absolute minimum required and will not be dozed/ scraped with vegetation roots left intact for later re-growth. Disturbed areas will be re-vegetated with indigenous species as soon as possible.	N/A	Before and during drilling activities

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Implementation period
	Construction/set-up and operational phase	0.9 ha per drill site	All operations will be carried out under the guidance of a strong, experienced manager with public consultation and conflict resolution skills, and environmental coordination where applicable. All prospecting personnel will be made aware of local conditions and sensitivities in the prospecting area and the fact that some residents may not welcome the prospecting activities.	NEMA	Before and during drilling activities

4.12.2 Impact Management Outcomes

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

Table 17: Impact management

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
E.g. for prospecting: Drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc. E.g. for mining: Excavations, blasting, stockpiles, discard dumps/dams, loading, hauling, transport, water supply dams, boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	Including the potential impacts for cumulative impacts. E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.		In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure and post-closure.		
Site establishment activities (-ve) <ul style="list-style-type: none"> • Vegetation clearance • Topsoil stripping and stockpiling • Drill pad compaction • Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage • Vehicle movements • Waste management 	Cultural and heritage	Destruction or loss of Cultural and Heritage Resources: No cultural/ heritage artefacts have been identified on site.	Construction/ set-up	If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately. The find must be reported to a heritage specialist so that systematic and professional investigation/ excavation can be undertaken.	Heritage Act
	Noise	Noise generation	Construction/ set-up	<ul style="list-style-type: none"> • Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays from 08h00 – 17h00 and no activities on Sundays and public holidays. • Separation of distance of minimum 500m to be maintained between drill sites and dwellings. • Noise abatement equipment, like 	SANS 10103

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<p>mufflers on diesel engines, will be maintained in good condition.</p> <ul style="list-style-type: none"> If intrusive noise levels are experienced by any person at any point, the source will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient. 	
	Visual	Visual intrusion	Construction/ set-up	<ul style="list-style-type: none"> The drilling rig and other visually prominent items on site will be in consultation with the landowner. Make use of existing vegetation as far as possible to screen the prospecting operations from view. If necessary, the operations can be screened from view by erecting a shade cloth barrier. 	N/A
	Traffic	Increase in traffic volumes in drilling site vicinity	Construction/ set-up	<ul style="list-style-type: none"> Traffic signs to be erected around the site to notify motorists of activities. Construction vehicles to make trips on/off site only when necessary. Construction vehicles to adhere to local speed limits as far as possible when driving in around site. 	National Traffic Act Regulations
	Dust fall	Dust fall and nuisance from activities	Construction/ set-up	<ul style="list-style-type: none"> Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations. Distance of at least 500m to be maintained between drill sites and 	GN R. 827 (NEMAQA)

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				dwelling. <ul style="list-style-type: none"> Low vehicle speeds will be enforced on unpaved surfaces. 	
	Soil and vegetation	The potential impact of the proposed prospecting on the vegetation would occur at proposed drilling sites and the access routes used to get to these sites.	Construction/ set-up	<ul style="list-style-type: none"> The soil disturbance and vegetation clearance at drill pads will be limited to the absolute minimum required. No clear scraping (dozing) to be carried out unless necessary to establish a level drill pad. Clear surface vegetation to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow. Disturbed areas will be re-vegetated with indigenous species as soon as possible. 	NEMBA
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Construction/ set-up	<ul style="list-style-type: none"> Environmental awareness training sessions must be part of the workers induction and site workshops. If any animals are encountered, they must not be killed or injured, but removed or chased away from the site with the assistance of an animal specialist. 	NEMBA
	Social	Friction between residents/land owners and construction personnel.	Construction/ set-up	<ul style="list-style-type: none"> All operations will be carried out under the guidance of a strong, experienced manager with public consultation and conflict resolution skills. All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some 	NEMA

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<p>residents may not welcome the prospecting activities.</p> <ul style="list-style-type: none"> There will always be a strict requirement to treat residents with respect and courtesy. 	
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Construction/ set-up	No mitigation measures required.	NEMA
Exploration drilling (ve) <ul style="list-style-type: none"> Drilling Drill maintenance and refueling Core sample collection and storage Vehicle movements Waste generation and management 	Noise	Noise generation	Operations	<ul style="list-style-type: none"> Activities will be limited to daylight hours, Mondays-Saturdays from 08h00 – 17h00 and no activities on Sundays and public holidays. A distance of at least 500m to be maintained between drill sites and dwellings. Noise abatement equipment, like mufflers on diesel engines, will be maintained in good condition. If intrusive noise levels are experienced by any person at any point, the source will be moved if practical, or placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient. 	Heritage Act
	Visual	Visual intrusion	Operations	<ul style="list-style-type: none"> The drilling rig and other visually prominent items on site will be in consultation with the landowner. Use existing vegetation as far as possible to screen prospecting operations from view. If necessary, operations can be 	SANS 10103

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				screened from view by erecting a shade cloth barrier.	
	Traffic	Increase in traffic volumes in the drilling site vicinity	Operations	<ul style="list-style-type: none"> Traffic signs to be erected on site to notify motorists of the activities. Construction vehicles to make trips on/off site only when necessary. Construction vehicles to adhere to local speed limits as far as possible when driving in around site. 	N/A
	Dust fall	Dust fall and nuisance from activities	Operations	<ul style="list-style-type: none"> Wet suppression will be applied to ensure that no visible dust is raised by the prospecting operations. A distance of at least 500m to be maintained between drill sites and dwellings. Low vehicle speeds will be enforced on unpaved surfaces. 	National Traffic Act regulations
	Soil and vegetation	Soil and vegetation disturbance from drill pad preparation	Operations	<ul style="list-style-type: none"> The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required. No clear scraping (dozing) will be carried out unless necessary to establish a level drill pad. Surface vegetation to be cleared to make way for the drilling rig, leaving the roots intact so that vegetation can coppice and regrow. Disturbed areas will be re-vegetated with indigenous species as soon as possible. 	GN R. 827 (NEMAQA)
	Animal life	Animal life will be affected	Operations	Measures implemented during site	NEMBA

Activities	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.		establishment must apply in this phase as well.	
	Social	Friction between residents/landowners and construction personnel	Operations	<ul style="list-style-type: none"> • All operations will be carried out under the guidance of a strong, experienced manager with public consultation and conflict resolution skills. • All prospecting personnel will be made aware of local conditions and sensitivities in the prospecting area and the fact that some residents may not welcome the prospecting activities. • There will always be a strict requirement to treat residents with respect and courtesy. 	NEMBA
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Operations	No mitigation measures required.	NEMA

4.13 Impact Management Actions

A description of impact management actions, identifying the way the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved.

Table 18: Impact management actions

Activities	Potential impact	Mitigation type	Implementation period	Compliance with standards
Whether listed or not. E.g. excavations, blasting, stockpiles, discard dumps/dams, loading, hauling and transport, water supply dams/boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, ground water contamination, air pollution, etc.	Modify, remedy, control or stop through, e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity, etc. E.g., modify through alternative method, control through noise control, control through management and monitoring, and remedy through rehabilitation.	State when the environmental management programme measures must be implemented. Measures must be implemented when required. This must take place as soon as possible. Regarding rehabilitation, state upon cessation of the individual activity or mining, bulk sampling or alluvial diamond prospecting.	A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.
Site establishment activities <ul style="list-style-type: none"> Vegetation clearance Topsoil stripping and stockpiling Drill pad compaction Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage Vehicle movements Waste management 	Cultural and heritage	Undertake heritage survey prior to site activities to identify cultural/heritage features and cordon these off with Chevron tape. Avoid cultural/heritage impacts by maintaining 100m buffer from any identified heritage feature. Any buried artifacts that may be uncovered during site activities will require such activities to stop and a qualified archaeologist will be commissioned to assess their significance and determine appropriate mitigation measures.	Before and after drilling activities.	Heritage Act
Exploration drilling <ul style="list-style-type: none"> Drilling Drill maintenance and refuelling Core sample collection and storage 	Noise	Control noise generation by maintaining equipment and limiting operation hours to daylight hours from Mondays to Saturdays (no activities on Sundays and public holidays) from 08h00 – 17h00. Maintain a buffer of 500m between drill sites and 100m away from any dwellings/infrastructure. If intrusive noise levels are experienced by any person at any point,	Before and after drilling activities.	SANS 10103

Activities	Potential impact	Mitigation type	Implementation period	Compliance with standards
<ul style="list-style-type: none"> • Vehicle movements • Waste generation and management 		the source will be moved if practical, or placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.		
	Visual	The drilling rig and other visually prominent items on site will be placed in consultation with the landowner. Existing vegetation will be used as far as possible to screen the prospecting operations from view. Operations can be hidden from view by erecting a shade cloth barrier.	Before and after drilling activities.	N/A
	Dust fall	Control dust emission by ensuring drill rig employs dust suppression system. Low vehicle speeds will be enforced on unpaved surfaces.	Before and after drilling activities.	GN R. 827 (NEMAQA)
	Soil and vegetation	Soil disturbance and vegetation clearance at drill pads will be kept to the minimum required and not be dozed/scraped; vegetation roots will be left intact for regrowth. Disturbed areas will be re-vegetated with indigenous species as soon as possible.	Before and during drilling activities; disturbed areas to re-vegetated as soon as possible.	N/A
	Social	Operations will be carried out under the guidance of an experienced manager with public consultation and conflict resolution skills. All prospecting personnel will be made aware of conditions and sensitivities in the prospecting area and of the fact that some residents may not welcome the prospecting activities. Residents will always be treated with respect and courtesy.	Before and after drilling activities.	NEMA

5. Determination of the amount of financial provision.

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

The closure objectives are to record and communicate the results of the monitoring programme during decommissioning to the participating stakeholders, and to receive an effective closure certificate (should the prospect indicate that the resource(s) would not support a sustainable mining operation).

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

Minimise the area to be disturbed and to ensure that the areas disturbed during the prospecting activities are rehabilitated and stable, as per the commitments made in the EMPr. Sustain the pre-prospecting land use and return the site to its near natural state as far as possible.

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

After drilling has been completed in one area, the drilling team will ensure the site is reverted to its original state by implementing the measures listed in Table 19.

Table 19: Rehabilitation measures

Aspect/Impact	Rehabilitation measure	Monitoring frequency and responsibility
Removal of construction structures	<ul style="list-style-type: none"> Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary fencing, temporary services, fixtures and any other temporary works. Ensure that all access roads utilized during construction (which are not earmarked for closure and rehabilitation) are returned (as far as possible) to their state prior to construction. 	Once-off, Rilama(Pty) Ltd
Vegetation clearing/ Replanting	<ul style="list-style-type: none"> Remove any emerging alien and invasive vegetation to prevent further establishment. All planting work is to be undertaken by suitably qualified personnel making use of the appropriate equipment. Transplant during the winter (between April and September). Plant indigenous plants to minimize the spread of alien and invasive vegetation. 	When re-vegetation is done and in bloom
Topsoil replacement	<ul style="list-style-type: none"> Replace and redistribute stockpiled topsoil and herbaceous vegetation, overlying grass and other fine organic matter in all disturbed areas of the prospecting site, including temporary access routes and roads. Replace topsoil to the original depth (i.e. as much as was removed prior to construction). Prohibiting the use of topsoil suspected to be contaminated with the seed of alien vegetation. Alternatively, the soil is to 	Once-off, Rilama(Pty) Ltd

Aspect/Impact	Rehabilitation measure	Monitoring frequency and responsibility
	<p>be sprayed with specified herbicides.</p> <ul style="list-style-type: none"> • Backfill planting holes with excavated material / approved topsoil, thoroughly mixed with weed free manure or compost (per volume about one quarter of the plant hole), one cup of 2:3:2 fertilizer and an approved ant and termite poison. • Where local soil has poor drainage, broken rock (Approx. 75 mm in diameter) must be placed to a depth of 150mm at the bottom of the planting hole prior to planting and backfilling with approved plant medium mixture. 	
Waste and rubble removal	<ul style="list-style-type: none"> • Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates. • Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site. 	Once-off, Rilama(Pty) Ltd
Solid and hazardous waste	<ul style="list-style-type: none"> • Store hazardous waste as indicated on the approved Environmental Management Programme Report (EMPr). • Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site. • Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner. • Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment. • Dispose of all visible remains of excess cement and concrete after the completion of tasks. Dispose of in the approved manner (solid waste concrete may be treated as inert construction rubble, but wet cement and liquid slurry, as well as cement powder must be treated as hazardous waste). 	Once-off, Rilama(Pty) Ltd
Erosion protection	<ul style="list-style-type: none"> • Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site. • Retain shrubbery and grass species wherever possible. Perform regular monitoring and maintenance of erosion control measures. 	After rainfall events

5.9.2 Explain why the rehabilitation plan is compatible with the closure objectives

The Company is required to make the prescribed financial provision for the rehabilitation or management of negative environmental impacts. If the Company fails to rehabilitate or manage any negative impact on the environment, the DMRE may, upon written notice to the Company, use all or part of the financial provision to rehabilitate or manage the negative environmental impact in question. The Company will specify that the drilling contractor is required to comply with all the environmental measures specified in the EMPr. This will include avoiding unnecessary disturbance of natural vegetation and the rehabilitation of each drill site, immediately after drilling

has been completed. All tracks to the drill sites must be rehabilitated at the end of the prospecting programme. The financial provision provides for the final checking of all sites before site clearance.

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

The quantum of the financial provision required is R 42485. The Company must annually update and review the quantum of the financial provision (as per Regulation 54 (2) of the MPRDA). See **Error! Reference source not found.** for the financial Quantum Calculation.

5.11 Confirm that the financial provision will be provided as determined

Please refer to Appendix 7

for more details on the financial provision for the proposed activity.

5.12 Compliance monitoring against the Environmental Management Programme

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including: i) Monitoring of Impact Management Actions ii) Monitoring and reporting frequency iii) Responsible persons iv) Time period for implementing impact management actions v) Mechanism for monitoring compliance.

Table 20: Monitoring mechanisms

Source activity	Impacts requiring monitoring programmes	Functional monitoring requirements	Roles and responsibilities for monitoring programme execution	Monitoring and reporting frequency and periods for impact management actions implementation
All prospecting activities	N/A	Ensure that the prospecting programme is being implemented in line with the approved PWP.	Rilama (Pty) Ltd Geologist	Submit an annual prospecting progress report to DMRE
	All commitments contained in the BAR and accompanying EMPr	Ensure commitments made within the approved BAR and EMPr are being adhered to.	Internal environmental control officer and independent EAP.	Undertake and submit an environmental performance audit every two years to DMRE.
Drilling activities	Noise	Weekly inspections will cover the following: <ul style="list-style-type: none"> • Implementation of effective waste management • Establish and implement a stakeholder compliant register on site and ensure that all complaints are responded to promptly. • Ensure that an oil spill kit is readily available. • Ensure that all chemicals and hydrocarbons are stored within bund walls. Ensure that the fire brake is maintained. • Rehabilitation of drill pads. • Records of water intersections on 	Appointed drilling contractor.	Weekly inspection and reporting.
	Dust fall			
	Visual			
	Soil and vegetation			
	Social			
	Housekeeping and maintenance			
	Waste management			
Rehabilitation				

Source activity	Impacts requiring monitoring programmes	Functional monitoring requirements	Roles and responsibilities for monitoring programme execution	Monitoring and reporting frequency and periods for impact management actions implementation
		borehole logs. <ul style="list-style-type: none"> • Control and minimize the development of new access tracks. • Appropriate storage and handling of topsoil. 		
Post-drilling	Groundwater Re-vegetation Stability Soil erosion Alien invasive species	Monitor the external boreholes within 100m from drill post drilling (if any). The drill site must be monitored 6 months until closure certificate is obtained.	Environmental Coordinator	Monitoring Report

5.13 Indicate performance assessment/environmental audit report submission frequency

Environmental management procedures and mitigation measures will be monitored regularly by the Company to ensure adherence to EMPr provisions. Formal EMPr monitoring and performance assessment will be undertaken annually. Photographs taken before drilling commences and after site rehabilitation must be included in the reports.

5.14 Environmental Awareness Plan

5.14.2 Informing employees of environmental risk that may result from their work

Environmental awareness training courses will be provided to all personnel on site. The environmental training courses will include, amongst others:

- Awareness training for contractors and employees
- Training for staff whose tasks might have significant environmental impact
- Comprehensive training – on emergency response, spill management, etc.
- Specialised skill
- Training verification and record keeping
- Environmental issues on site
- Roles and responsibilities
- The construction environmental management measures
- Cultural awareness
- Heritage discovery procedures

All attendees must complete the entire course and, on completion, sign an attendance register. A copy of the register shall be kept on record by Rilama (Pty) Ltd

5.14.3 Manner in which risks will be dealt with to avoid pollution/environmental degradation

All employees must undergo environmental awareness training, in conjunction with EMPr implementation, to inform them of environmental risks that may result from their work and how the risks must be dealt with to avoid pollution/environmental degradation.

5.14.4 Specific information required by the Competent Authority

Among others, confirm that the financial provision will be reviewed annually.

Not applicable at this stage.

6. Undertaking

The EAP herewith confirms:

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

Signature of the Environmental Assessment Practitioner (Singo Consulting (Pty) Ltd)

Name of Company :

Date :

-END-

Appendix 1: Competent Authority Letters



mineral resources & energy

Department
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X7279, Witbank, 1035, Tel: 013 653 0500, Saveways Centre, First Floor, Mandela Drive, Witbank, 1035, **From:** Directorate: Mineral Regulation: Mpumalanga Region, **Enquiries:** Mr TV Mphahlele Email Address: Vincent.Mphahlele@dmre.gov.za Manager **Ref:** MP 30/5/1/1/2/17351PR.

EMAILED TO

Kenneth@singoconsulting.co.za

The Director/s

Rilama (Pty) Ltd

P/Bag X7297

Highveld Mall

Emalahleni

1033

FAX NO: 0865144103

Dear Sir/Madam

ACCEPTANCE OF AN APPLICATION FOR PROSPECTING RIGHT IN TERMS OF SECTION 16(4) OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) [HEREIN AFTER REFERRED TO AS THE ACT] AS AMENDED BY SECTION 12(d) OF THE MINERALS AND PETROLEUM RESOURCES DEVELOPMENT AMENDMENT ACT, 2008 (ACT 49 OF 2008) [HEREINAFTER REFERRED TO AS THE AMENDMENT ACT]

1. Please be informed that your application for prospecting of **Coal on the remaining extent of portion 21 of the farm Rondebosch 403 JS , Situated in the Magisterial district of Nkangala** is hereby accepted in terms of section 16(2) of the Act as amended by section 12(b) of the Amendment Act.
2. Please take notice that in terms of section 16(4) of the Act as amended by section 12(d)(a) and 12(d)(b) of the Amendment Act, you are required to:-

Acceptance of a prospecting right under file reference number 17351PR.

- 2.1. to consult in the prescribed manner with the landowner, lawful occupier and any interested and affected party, the Land Restitution Commission and submit the result of such consultation within 30 working days from the date of the signature below.

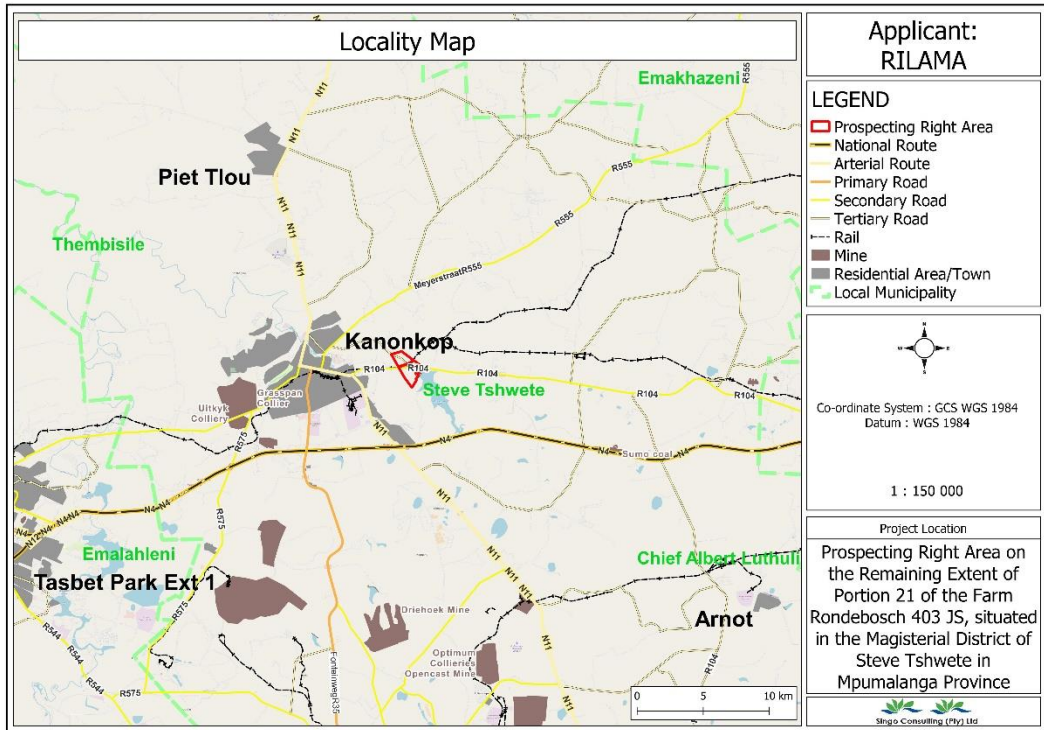
3. You are in terms of section 17(1) of the Act as amended by section 13(c) of the Amendment Act required to give effect to the objects referred to in section 2(d) of the Act **to ensure that you are BBBEE compliant**. Therefore, please submit on or before 30 June 2022 to this office for the attention of the writer hereon any documentation proving such including but not limited to: -
 - 3.1. Certified copies of share certificates and share holders register
 - 3.2. Certified copies of Shareholders agreements
 - 3.3. Certified copies articles and memorandum of association of the company
 - 3.4. Trust deed documents and letters of authority for any trust holding shares
 - 3.5. Details relating to funding (all relevant agreements)
 - 3.6. Any other information that may be necessary to explain and serve as evidence that the applicant meets the appropriate HDSA ownership and/or compliance requirements of the aforesaid Act and Mining Charter; **thereby including women and communities in your structure.**

4. Please submit **within 14 days** from date of this letter for the attention of **Mr Ntshale Phasha 3 copies of a complete prospecting work programme prepared in terms of regulation 7 of the Mineral and Petroleum Resources Development Act, 2002 (Act no 28 of 2002): Mineral and Petroleum Development Regulation.**

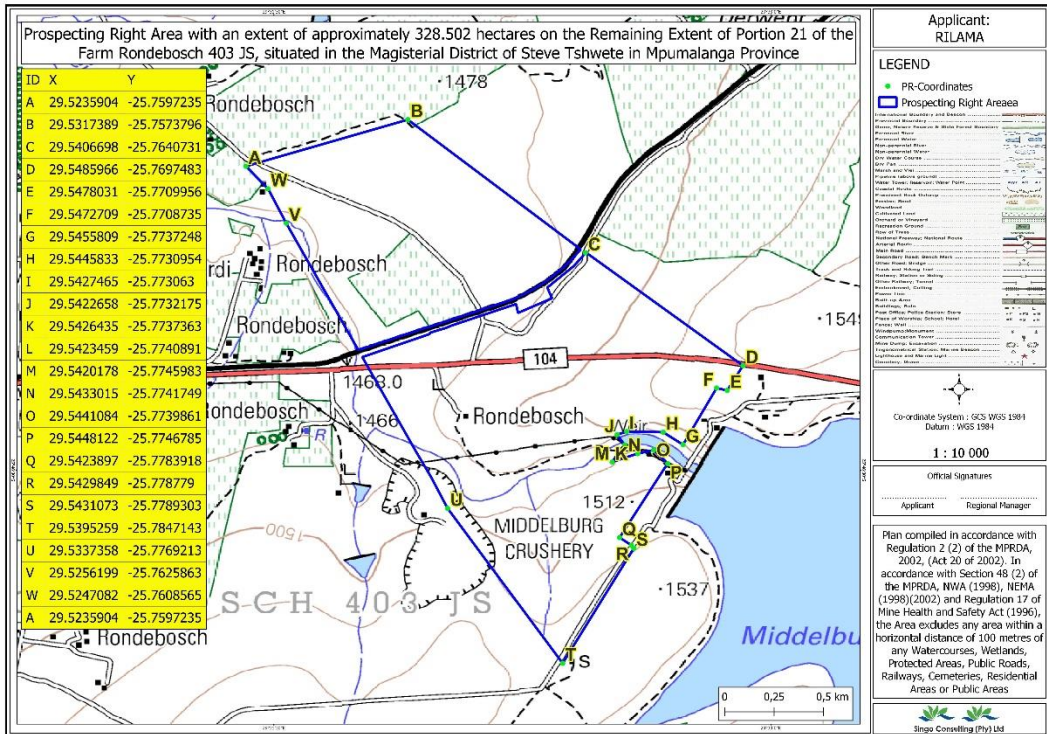
5. Your attention is also drawn to the provisions of Section 17(1) (e) of the MPRDA, which provides that the minister may grant an application for a prospecting right if the applicant is not in contravention of any relevant provision of this Act. Section 19(2) (f) places an obligation on the holder of a prospecting right to pay the prescribed prospecting fees, as per regulation 76 of the MPRDA. You are therefore reminded to ensure that payment of all prospecting fees for all the prospecting right that you hold, are up to date, failing which this may have a negative impact on the outcome of your current application.

Acceptance of a prospecting right under file reference number 17351PR.

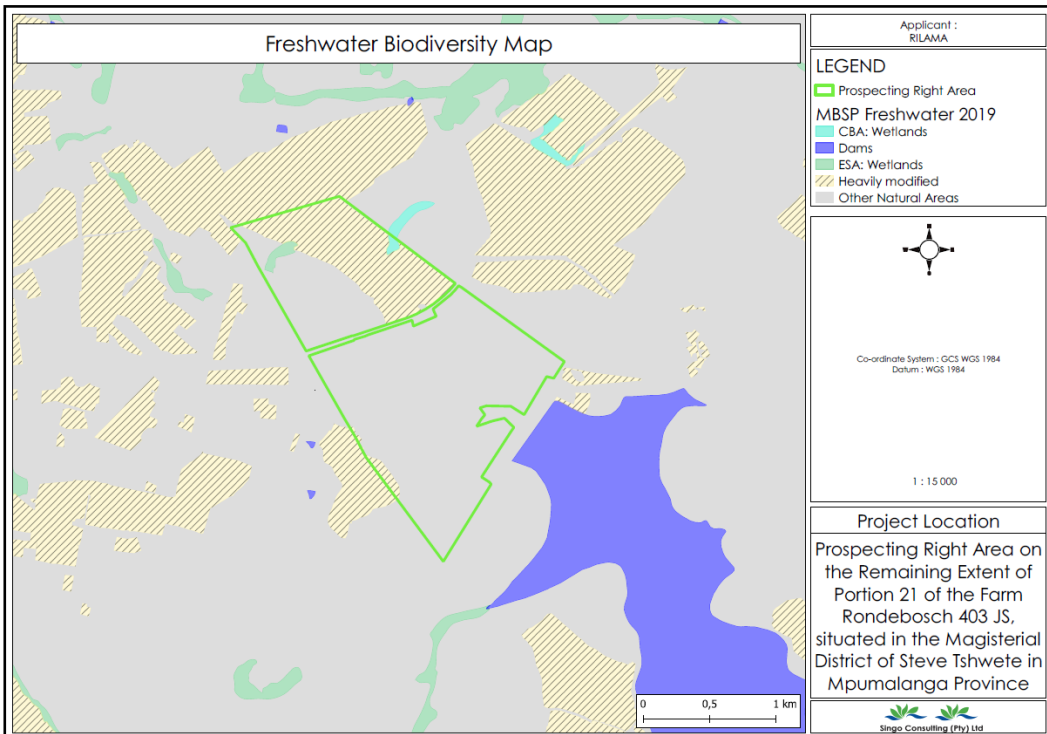
Appendix 2: Project Maps



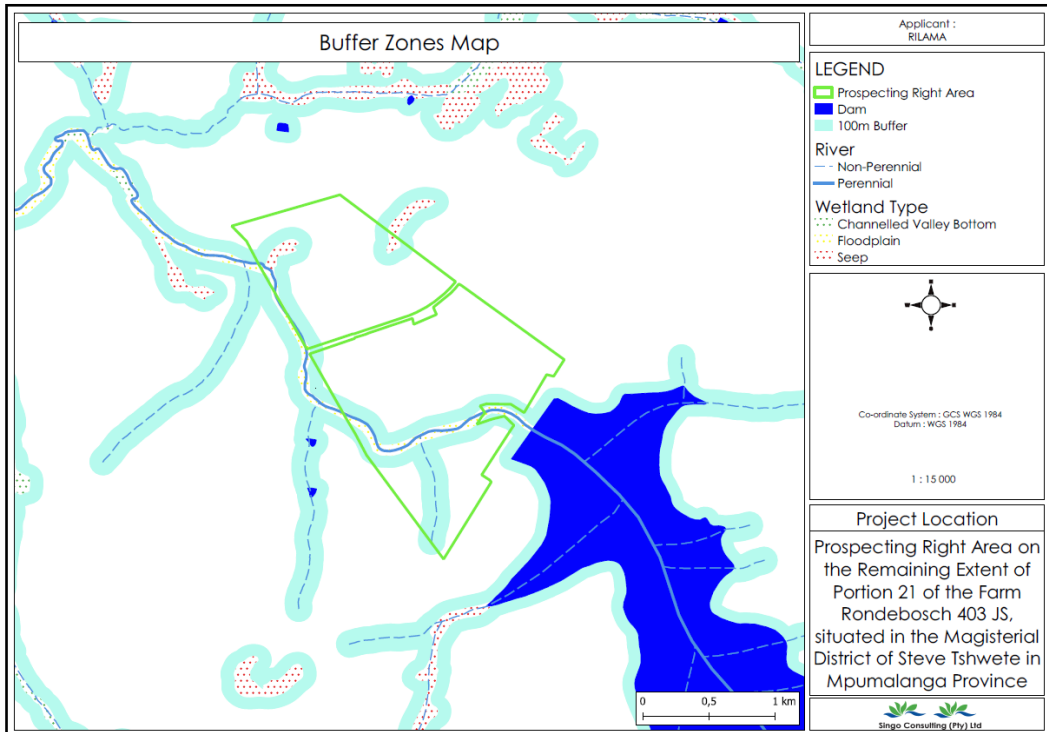
Locality Map



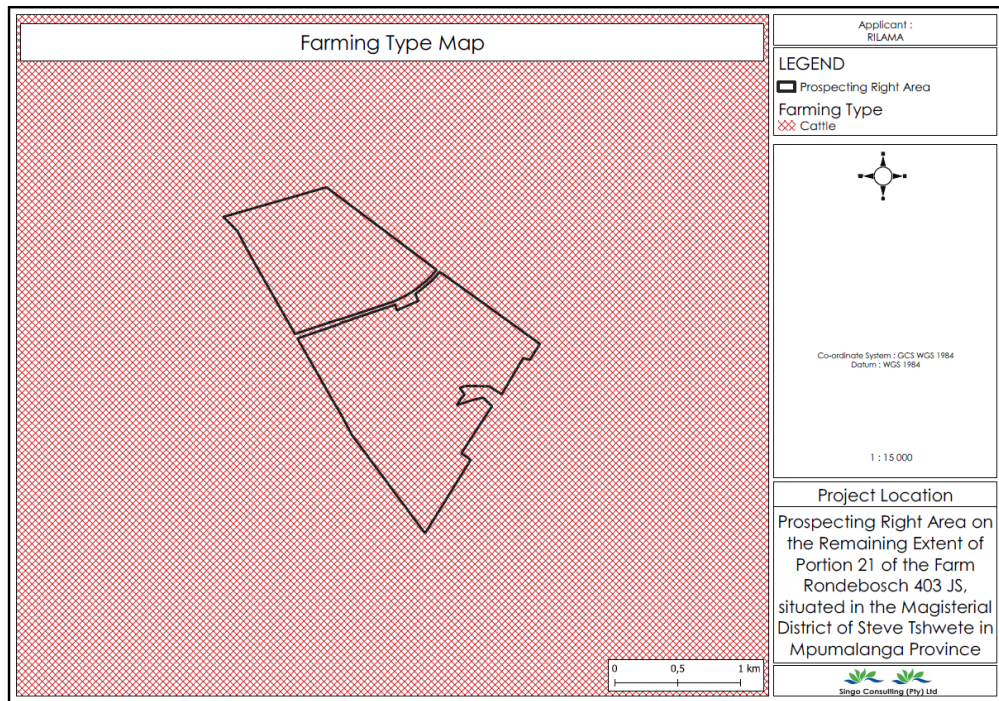
Regulation Map



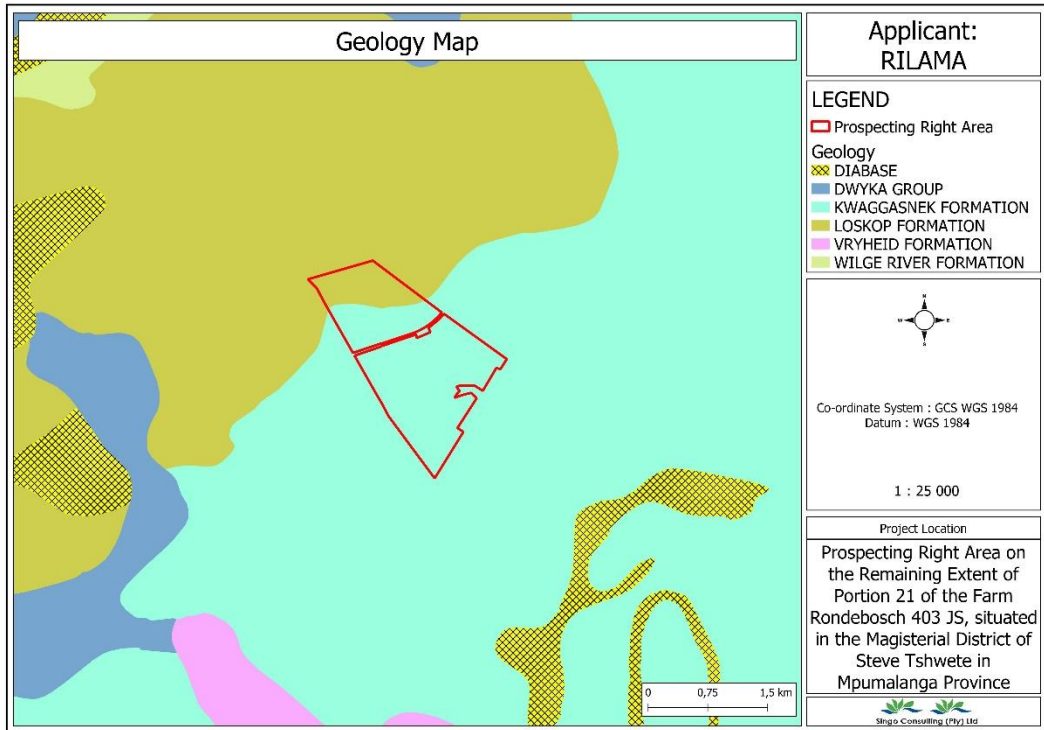
Biodiversity Map



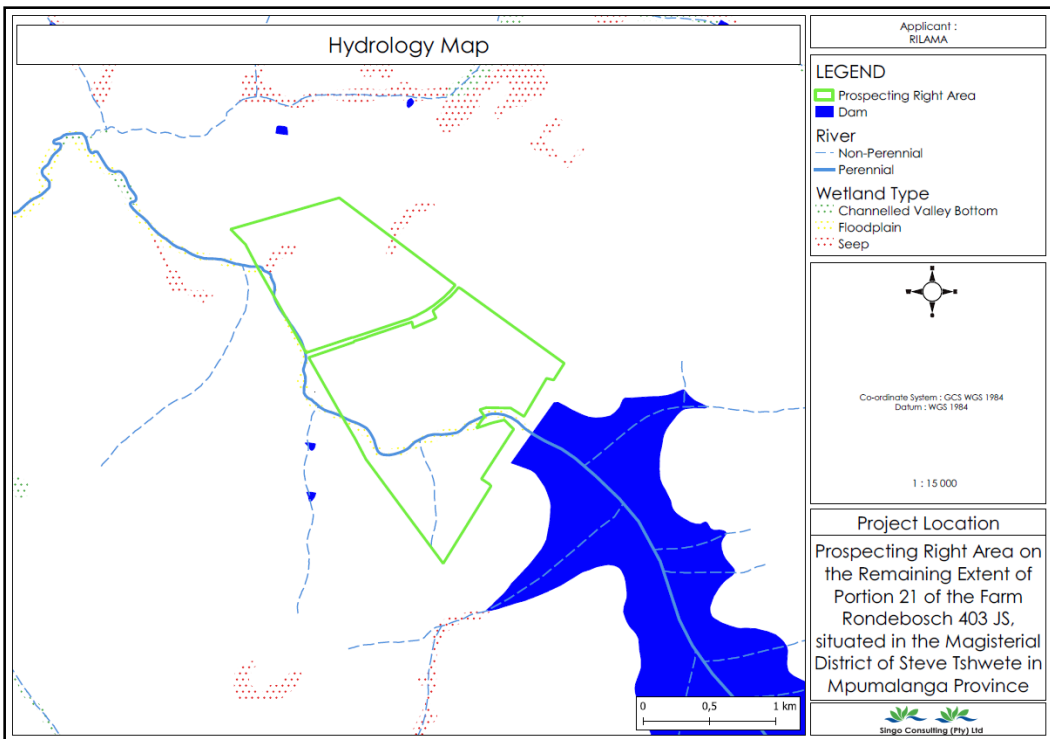
Buffer Map



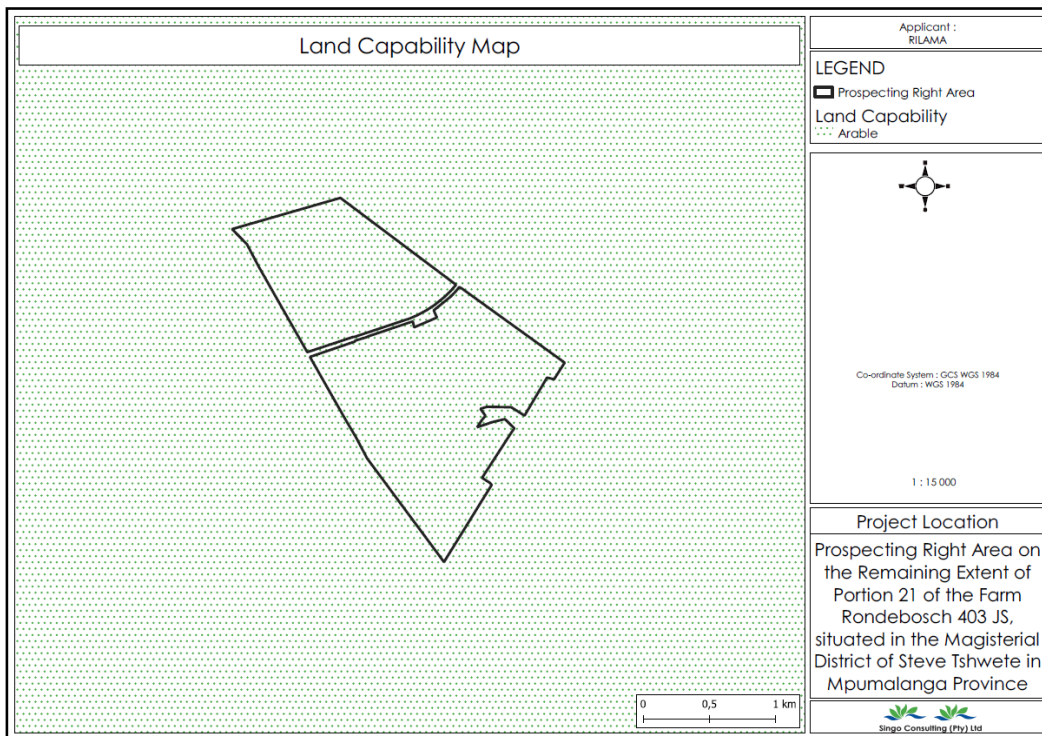
Farming type Map



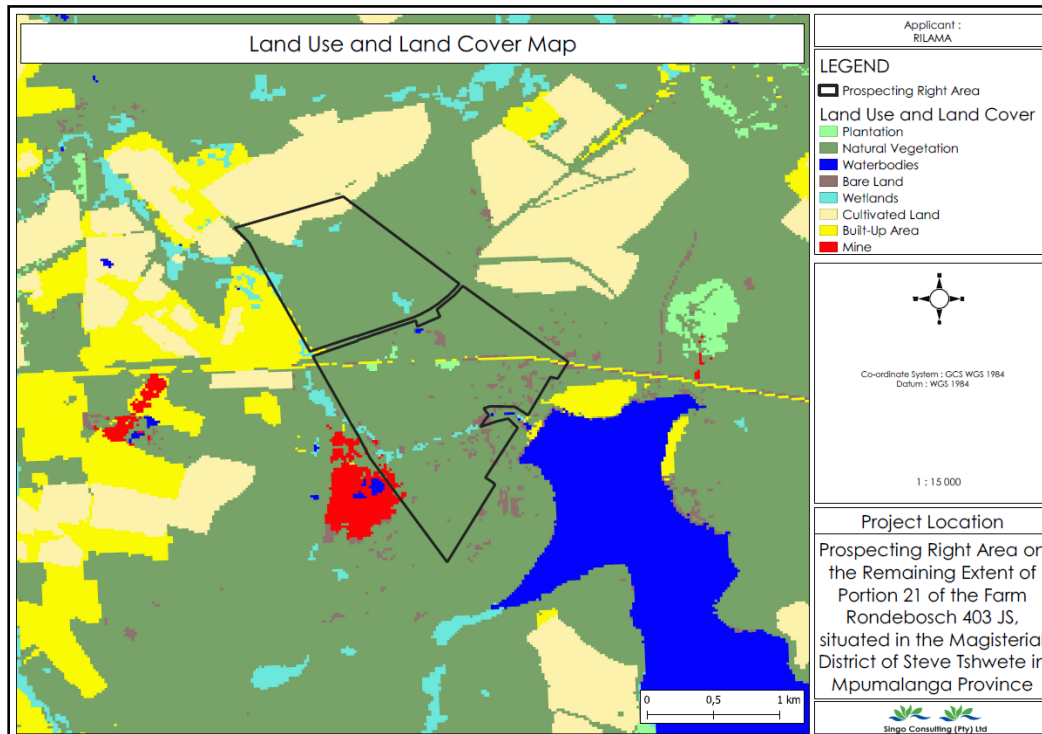
Geology Map



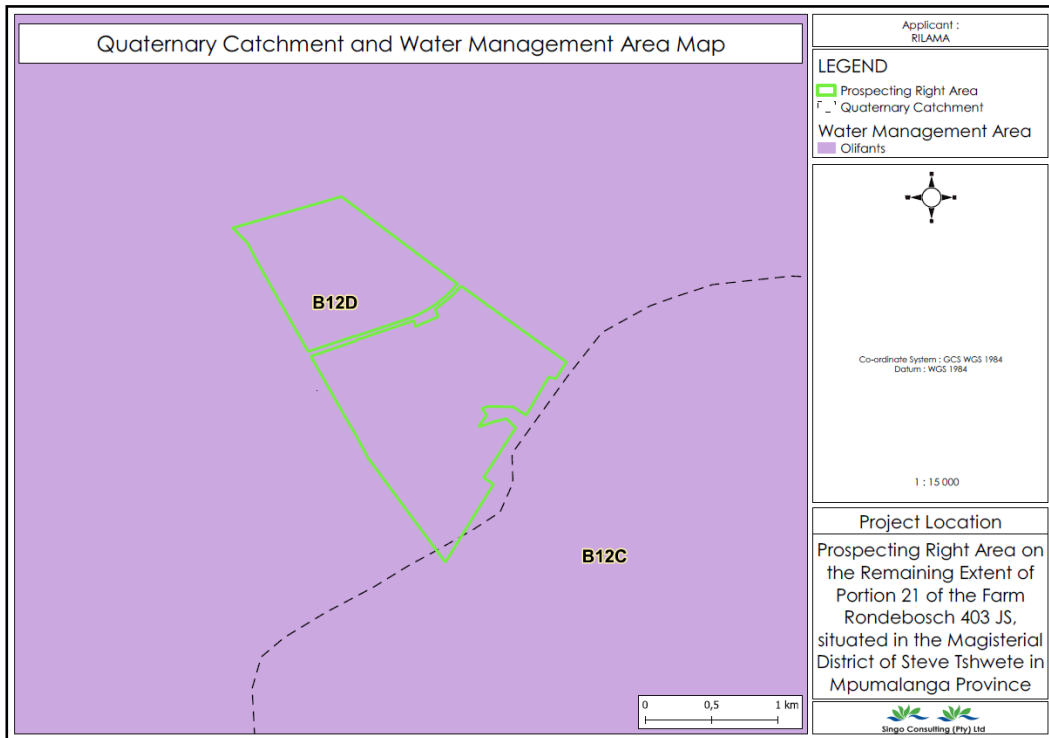
Hydrology Map



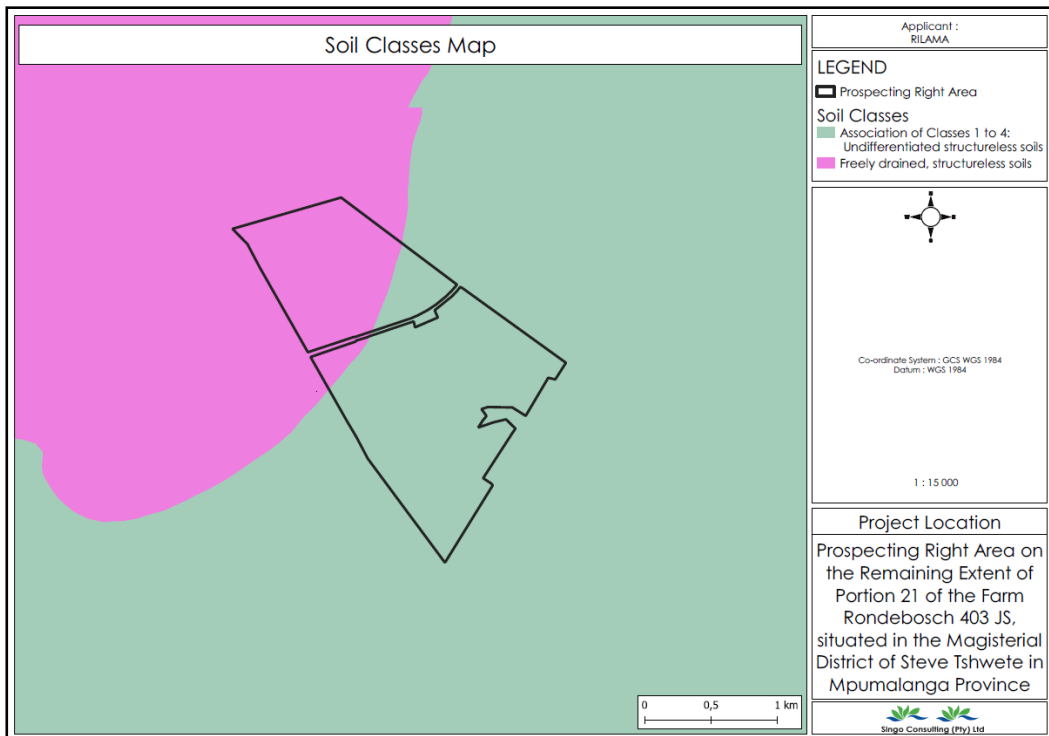
Land Capability Map



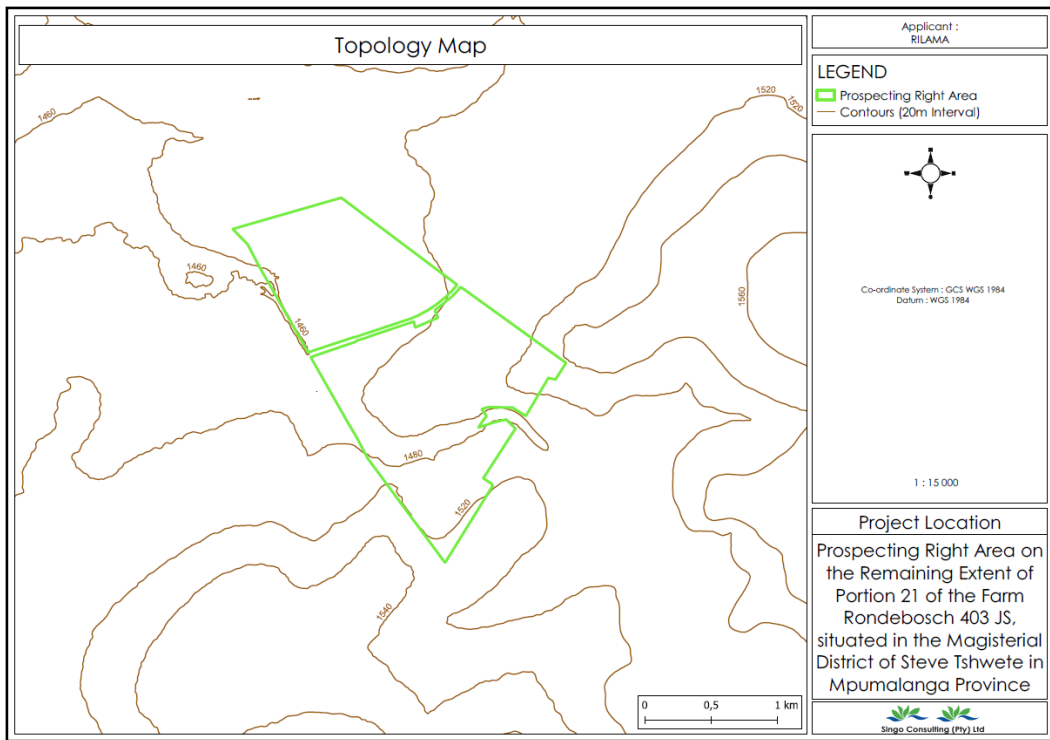
Land Use and Land Cover Map



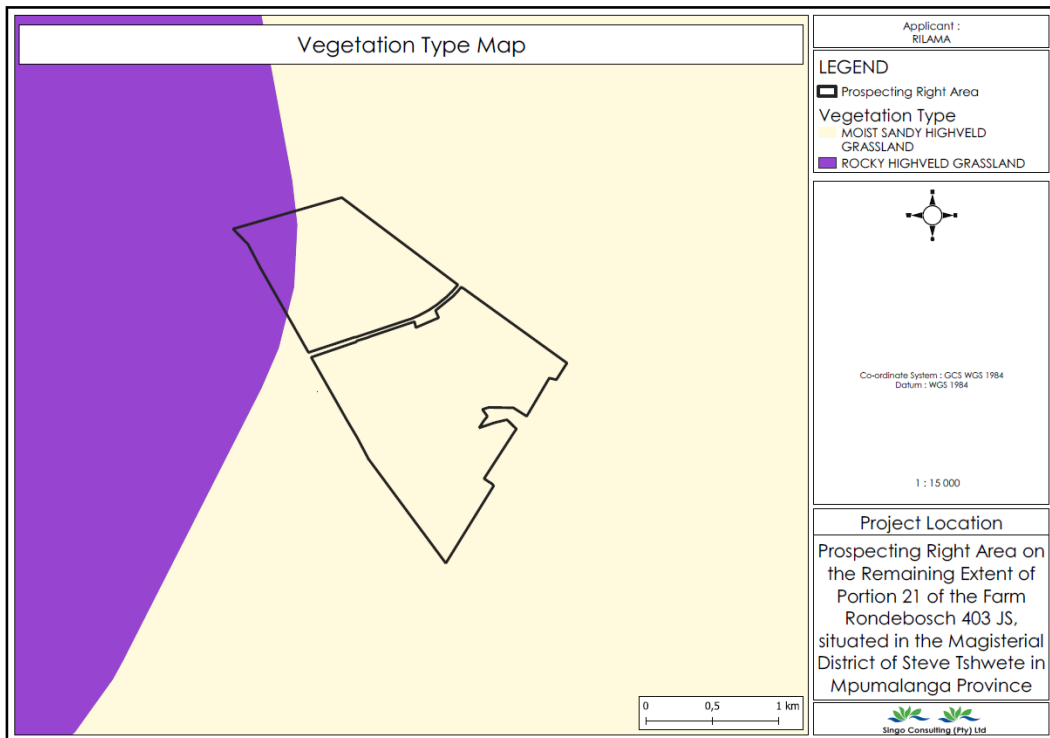
Quaternary Catchment and Water Management Area



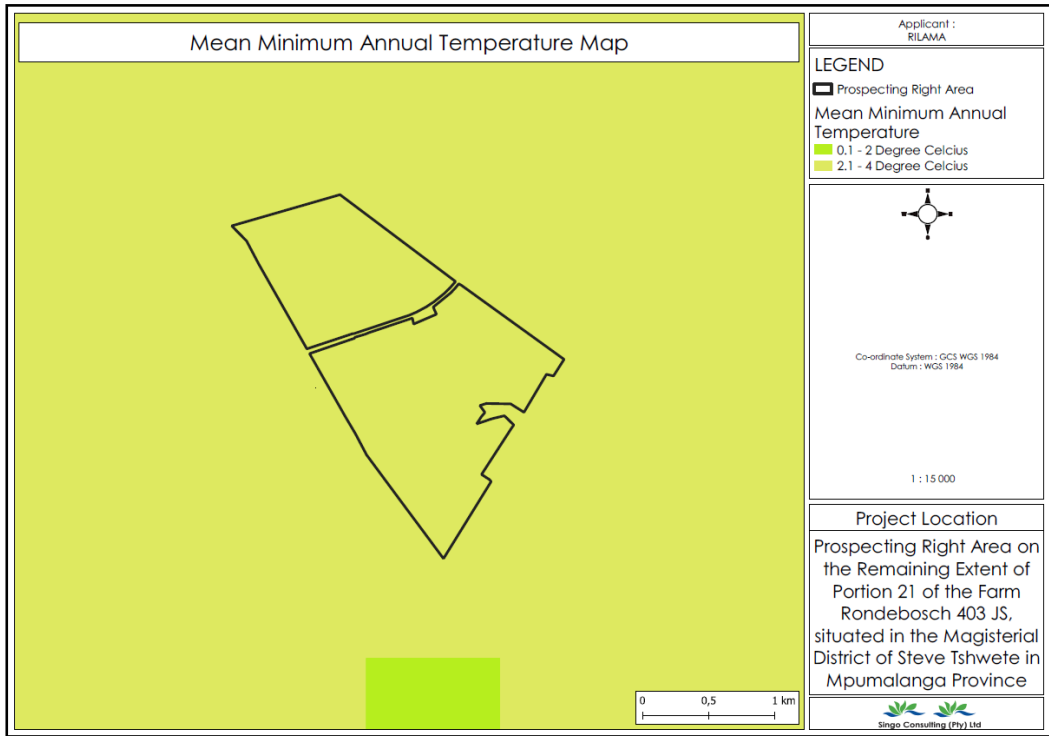
Soil Class Map



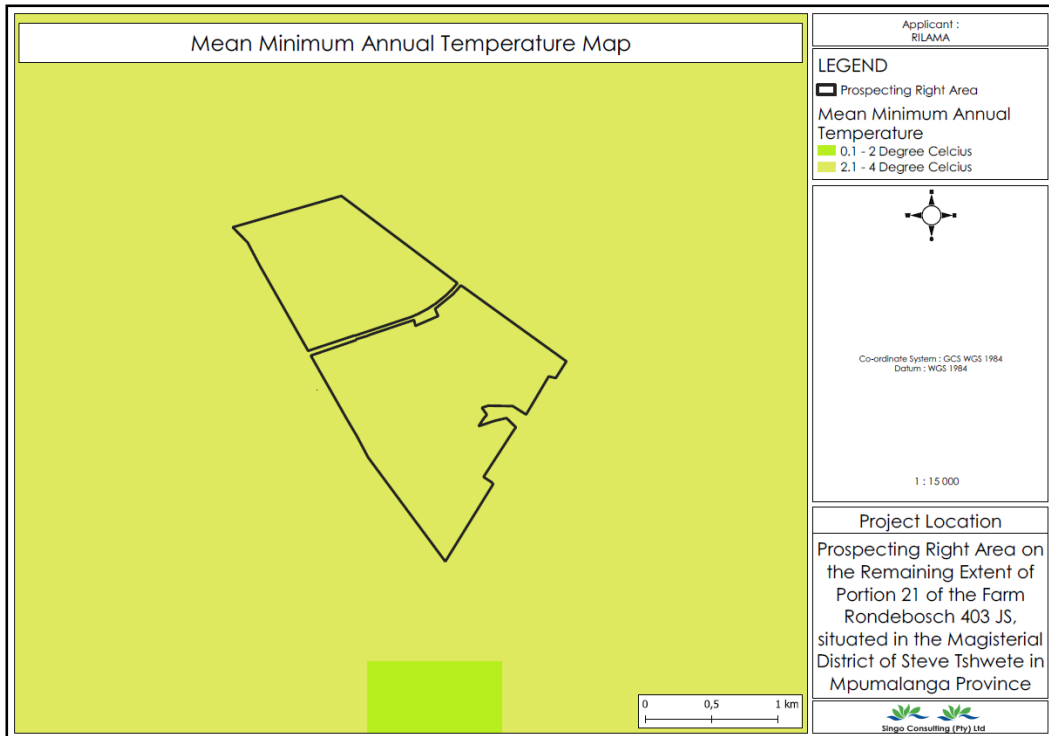
Topology Map



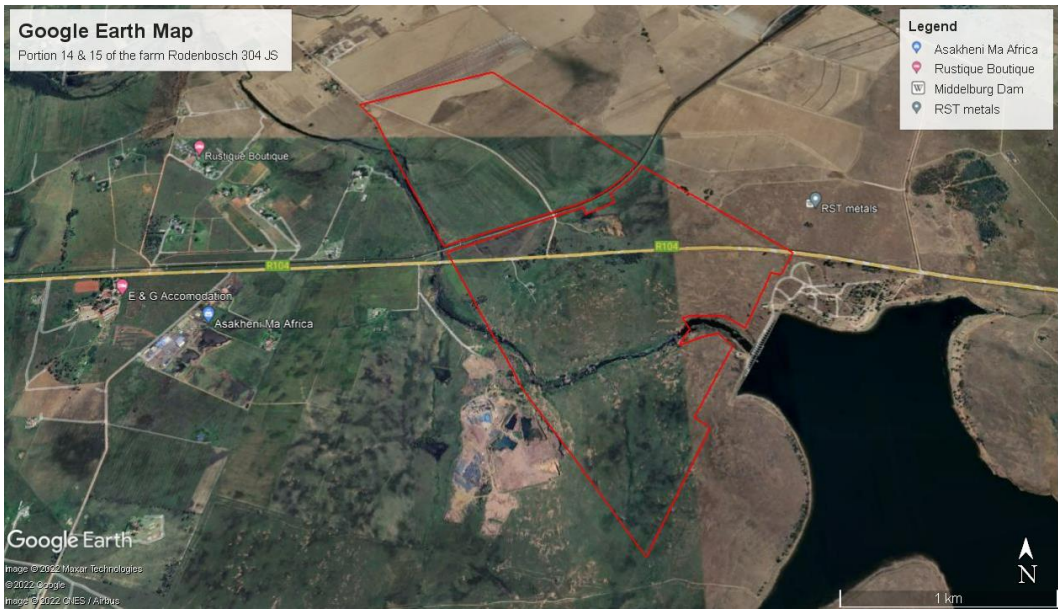
Vegetation Map



Mean Minimum Annual Temperature Map



Mean Annual Rainfall Map



Google Earth Map



Infrastructure Map

Appendix 3: Proof of Newspaper Publication.

Facebook was aan die gons die week

Vier helikopters land naby kragstasie Rita Coetzee: Hulle gaan die kragstasie net so lani en aan 'n skootweef' verloop. **Janie Smith:** The Gigan are back! **Gerhard Burger:** Hulle het net kom kyk hoe om nog 35 jaar uit 'n kragstasie te kry wat al in 1990 gedraan was. Meeting with municipal workers raises tension – services to resume. **Mueliso Mahlonbe:** Striking to them seems like a hobby nowadays. **Achille Snyders:** Ek's almost payday. So they will return like every other month to work until payday and start to strike again the day after they received their salaries. Why doesn't anybody see this pattern? They strike for weeks and just before payday return to work for a few days to collect a whole month's salary for week and a half's work and then they strike again! Please I need a job like this that will pay me a month's salary for maybe 10 days of work. **Frik Buitendijk:** Elke Vrydag en maak dan oortyd Saterdag en Sondag. En so doner hulle aan met geen optrede nie! **Zeynep Myhrhaug:** So datsenaar ek het Middelburg verlaat. Moeg vir die menses in die dorp en niemand doen niks. **Madelon Nkabinde:** We also need to exercise our right. No service, no payment. **Shariette van der Merwe:** The usual Friday tactics. **Mabel Makgoane:** They resume towards payday. **CPF backed into a corner by escalated**

crime in Aerorand
Elmarie E Peggler: We live in Aerorand and never hear of any break-ins! We belong to the radio group but there are never any calls for help. Is there no way that we can be kept up-to-date on a daily basis so that everyone can be on the lookout? Load-shedding is also not helping!
Kaïlo Ebersohn: Hulle kom weg met alles. Ons burglar jurs is oorgeeek. Baie goed gesteel was daar terwyl SAPS opdaag, maar hulle het gestaan en kyk hoe hulle wegjaardoop en dis wat hulle nog try wat het neergesgooi. Ongelukkig is die SAPS te bang om op te tree, want hulle word aangevat as hulle optree. Die skelms het meer regte. **Vanil maalde en dwelms ek 'ny**
Magda Oosthuizen Faber: So bitter jammert vir julie verlies, jou verhaal is tragies en ek bid die Vader bring verlossing en aanvaarding. **Sierke**
Reinette Voozer: Ek dink aan jou liewe Mamma, jy is in my hart en gebiede. **Harriet Jacobs:** Ai ek weet hoe dit voel. Sit self met 'n seun van 34 wat Tik gebruik. **Maryna Smille:** Ja dis hartseer. Ek het 'n soort van boek geskryf. My seun ook op 35 verloor. Dis sewe jaar terug. Mens kan nie beskryf wat ouers deur gaan nie. **Anastjie Bredtswaade:** More, ek het my een seun ses jaar terug verloor deur dwelms, hy was 30. Sy broer gebruik ook. Praai help nie, ek is al moeg dit gaan al aan vandag sy broer 15 jaar was. Dese mense alies probeer maar see, laister nie. **Sierke**

Vrouwees is 'n fees!

Suid-Afrika se bekende sangeres, Cordelia, kom kuier in Middelburg! Op Saterdag 6 Augustus, bed Cordelia die damesoggend. "Vrouwees is 'n fees" aan by die Middelburg Buitelklub. Buiten vir haar musiek waarmee sy die vroue gaan vermaak, gaan sy inspirasie uitdeel. Daar sal 'n ligte eet wees sook 'n paar tafels met plaaslike produkte soos oorbelle, kuddies en beskuit om te koop. Terwyl mamma saam met Cordelia kuier, is daar ook 'n veilige plek vir die kinders om te baljaar. Die fees stap om 11.00 af. Die kaartjies beloop R220 per persoon, of R2000 per tafel. Kaartjies sal nie beskikbaar wees op die dag nie. Vir kaartjies en meer inligting, kontak gens vir Annelize by 082 827 9838.



Cordelia bied die damesoggend, "Vrouwees is 'n fees", aan op Saterdag 6 Augustus by die Middelburg Buitelklub.

Save these dates

If you are hosting a social or sporting event that you would like to be advertised in the *Middelburg Observer* diary, please call Sjaan Campbell on 013 243 1434 or send an email to sjaan@mobservers.co.za. As jy jou geselligheid of sportgeleentheid wil adverteer, bel Daleen Naudé by 013 243 1434 of stuur 'n e-pos na sjaan@mobservers.co.za. **Elke Vrydag**
•Die Hoopievennigings lek pannekook by hul kantoor in Kogstrat. R6 per pannekook. Bestellings by sr. Judy Toib by 083 231 5831 of bel die kantoor by 013 243 6713. **30 Julie**
•Maatsgeesek blyksud by Fams Inn en Kantonkop Spar. Dawn van Baelen 082 337 5902. ***Oppie Sussie Vlootmaat by die Middelburg Stasie.** 08.00. Musiek en ander vermaak, stalletjies met suisetteye en enjoo. Liest 084 990 5844.

Inwoner / Doring van die week

Inwoner van die week: Isabel Barnard is die ma van bekende dwelmslaaf, Pieter Buys, wat onlangs weens sy dwelmsgebruik gesterf het. Ons lani om hoed af vir Isabel di dorf om die washeid agter haar kind se dood skamteloos met die wêreld te deel dit die hoop dat sy ander verlaasdes se lewe kan red. Isabel, niks kan 'n ma wat haar kind aan die dood afgestaan het werklik trossie nie, maar jou storie het baie mense aangeraak en daarom nooi ons jou om jou Hobo's Cafe enswyes ter waarde van R250 by die Middelburg Observer se redaksiekantoor af te lani. **Doring van die week:** Inwoners se oetroekkenheid by plaaslike veiligheids-groep. Dit is dadelik dat die polisie ons nie meer kan beskerm nie en dat inwoners ook nooit sal weet waar die brandpunte in ons dorp is nie, omdat die polisie nie meer misdaadstatistieke bekend maak nie. Vir die eerste keer as 45 jaar is daar ook nie meer 'n plaaslike skoolbeheerre by die polisieinstansie. Die skool is aan die mure. Ons moet bande van en saam staan. Ons ste oet en oet wees of oorgeel word aan die genade van misdad.

Radio Nsizwa turns one!

When Greater Middelburg FM silenced its airwaves in 2019, residents were left hungry for a radio station. So Mfundo Lindokuhle Makhubo decided to start Radio Nsizwa in 2021, which broadcasts from Springfield College, Middelburg. Mfundo, who is a seasoned broadcaster, was hit when the radio bug seven years ago. He has since worked for GFM, Chronicles Radio, and Radio 702, and is very passionate about uplifting the youth. The station has programmes hosted by the youth, and it also caters for "mature listeners". In June, the station and Springfield College ran a free programme for 400 young unemployed residents who will be graduating in August. For more details, visit Radio Nsizwa on Twitter and Instagram, Radio Nsizwa on Facebook, or WhatsApp 082 789 8769.



Mashudu Muryal (owner of Springfield College Middelburg), Siphelele Nkabinde, Nqobile Mkhango, Siphelele Nompumelelo Mkhweni, Meli Ramonatedi, Mfundo Lindokuhle Makhubo, Bolumiso Tsosol, Devide 'The Legend' Mokoena, Pastor Lemelo Senemela, Kevin Simele Esopha, Unathi Madidi, Nkoko Mashiyine and Sipho Mtsweni.

NOTICE OF PUBLIC PARTICIPATION FOR PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORISATION APPLICATION

ISIZWILI	ENGLISH
<p>Kuzisa simezo sokhokho lwele kungqinile sokhokho amabhini ngokomthetho Wezokhokho phantsi kweziintleleko eziqhelekileyo ze-EMPA (Umlawulo 28 ka 2002) ngokubandakanya Amabhini kwaneezintleleko ezilungileyo 21 ze Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p> <p>COMING SOON: MIZWILI KUNQINILE KOKHOKHO AMABHINI KWANEEZINTLELEKO EZIQHELEKILEYO ZE-EMPA (Umlawulo 28 ka 2002) ngokubandakanya Amabhini kwaneezintleleko ezilungileyo 21 ze Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p> <p>Ngokomthetho wezokhokho lwele kungqinile ngokomthetho Wezokhokho phantsi kweziintleleko eziqhelekileyo ze-EMPA (Umlawulo 28 ka 2002) kwaneezintleleko ezilungileyo 21 ze Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p> <p>Ngokomthetho wezokhokho lwele kungqinile ngokomthetho Wezokhokho phantsi kweziintleleko eziqhelekileyo ze-EMPA (Umlawulo 28 ka 2002) ngokubandakanya Amabhini kwaneezintleleko ezilungileyo 21 ze Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p> <p>Ngokomthetho wezokhokho lwele kungqinile ngokomthetho Wezokhokho phantsi kweziintleleko eziqhelekileyo ze-EMPA (Umlawulo 28 ka 2002) ngokubandakanya Amabhini kwaneezintleleko ezilungileyo 21 ze Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p> <p>Ngokomthetho wezokhokho lwele kungqinile ngokomthetho Wezokhokho phantsi kweziintleleko eziqhelekileyo ze-EMPA (Umlawulo 28 ka 2002) ngokubandakanya Amabhini kwaneezintleleko ezilungileyo 21 ze Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p>	<p>Notice of the Prospecting Right Application Process as per the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002) for the prospecting of Coal or R6 of petroleum 21 of the Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p> <p>Notice is hereby given in terms of the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002) for the prospecting of Coal or R6 of petroleum 21 of the Fama (Umlawulo 304 ka 1955, ezinxulumene noze Simezo sibekele Magisterial District, ezinxulumene noze Muzwazi).</p> <p>As part of the EA process, an opportunity for public participation process for this proposed project, interested and Affected Parties (APs) are invited to register and lodge any comments or concerns to Mr Abel Mqophelo by no later than the 20th of September 2022, using the contact details provided below. The public are also invited to review and comment on the Social Impact Assessment Report and Environmental Management Programme Report (SEAI & EMP). The report will be available for review for 30 days calendar period as of 22nd of August 2022 – 20th of September 2022. This report will be available at Gerard Seleke Library (Wardens Avenue, Middelburg, 1955) and/or self copy upon request from Stage Consulting (Pty) Ltd using LMP's contact details below.</p> <p>Comments on the SEAI & EMP should be submitted no later than the 20th of September 2022. For more information, to register as Interested or Affected Party, please contact:</p>

CONSULTANT

Singo Consulting (Pty) Ltd

Physical address: Office No. 875, Sakhakalo Street, Tshakhuma East 2, Middelburg 5340
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APPLICANT

RILAMA (PTY) LTD

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 Fax No: 086 638 1702
 Email: marabel@rylmail.com

Quiet Time

Weekly Thought: Admitting Mistakes
 "No one should be ashamed to admit he is wrong, which is but saying, in other words, that he is wiser today than he was yesterday."
 – Alexander Pope

Sometimes, we all battle to admit when we were wrong or made a mistake. Have you ever wondered why this is the case?
 This certainly isn't a matter of age – both young and old battle with this issue. The culprit is most likely our pride.
 "What will people say or think of me if I admit that I was wrong?"
 Each one of us has faced this question innumerable times throughout our lives.

Pope provides a possible antidote or cure for our dilemma by suggesting that when we admit we were wrong, it shows that we are growing and learning. It is a sign that we are wiser today than we were yesterday.

His suggestion is truly brilliant, as it also addresses the attack on our dignity that we often face when admitting we were wrong. By swinging things around and saying, "Although I was wrong, I am happy to admit it. I am wiser now than I was before." We actually end up more dignified than embarrassed.

Teaching our children that it is the wise man who more easily admits his failures and incorrect views could well be one of the most valuable lessons they're ever taught.

Pieter Coffee by Lighuis

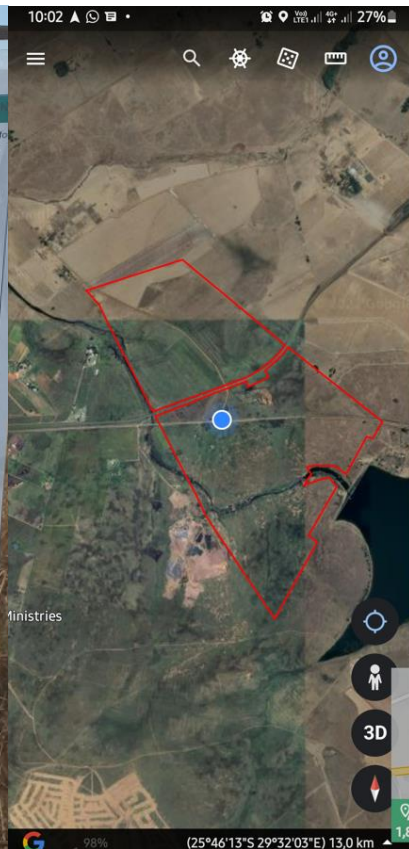
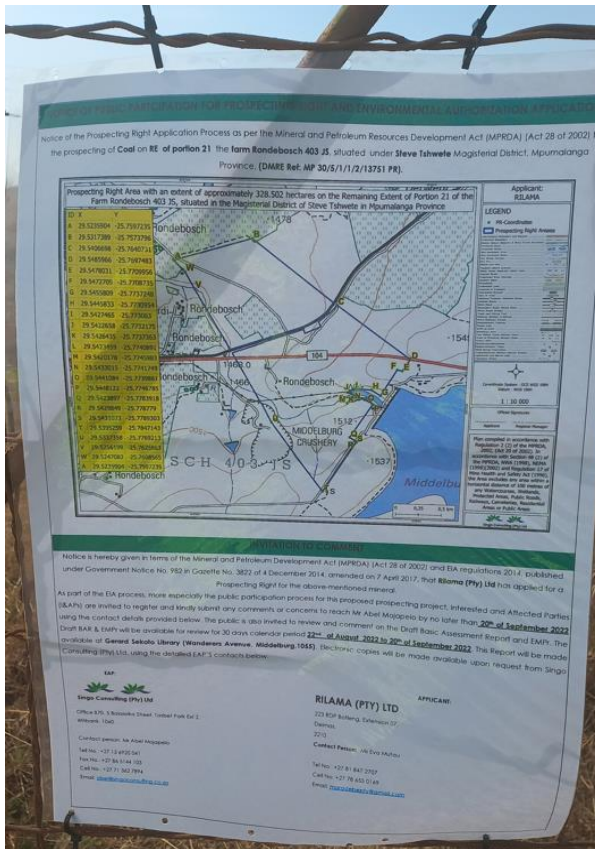
Gospel sanger en skrywer, Pieter Coffee, besoek Lighuis gemeente die naweek.

Met die fokus op gebed, is Pieter heemte Sondag om 09.00 en 18.00 by Lighuis gemeente.

Maandag, om 19.00, is sy laaste sessie en Vrydag 29 Julie volg daar 'n deurnag gebed vanaf 18.00 tot Saterdag 06.00 waar daar verskillende gebedsessies gaan wees.

Gospel sanger en skrywer, Pieter Coffee, kom gesels oor gebed by Lighuis Gemeente eerskommene naweek.

Appendix 4: Proof of Site Assessment



Appendix 5: Impact Management Outcomes

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
Whether listed or not, e.g. excavations, blasting stockpiles, discard dumps/dams, loading, hauling, transport, water supply dams/boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control berms, roads, pipelines, power lines, conveyors, etc.	Including the potential impacts for cumulative impacts, e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.		In which impact is anticipated e.g. construction, commissioning, operational, decommissioning, closure, post-closure.	Modify, remedy, control or stop through e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. E.g. modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.	Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Planning and Project Management	EMPr	Project Management	Planning	A finalized EMPr must address all authorization conditions stipulated by the DEA (and other commenting authorities). EMPr must encompass all environmental impact mitigation measures as identified in the final BAR.	MPRDA & NEMA
	Appointment of Environmental Officer	Project Management	Planning	The Rilama(Pty) Ltd environmental geologist will serve as the Environmental Officer during construction, given the short duration of construction and the low Rilama(Pty) Ltd environmental geologist will be responsible for monitoring the compliance of the construction workers and employees on site with the EMPr and ensure their co-operation.	MPRDA & NEMA
	Prospecting and Permissions		Planning	Steve Tshwete Local Municipality must ensure that all licensing, prospecting's or certificates required for the project are obtained and in place prior to the commencing of any construction activities on site.	MPRDA & NEMA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Emergency Response Planning	Safety and health personnel on site	Planning	Plan all emergency responses including: <ul style="list-style-type: none"> • Response procedures to fires, explosions, or any accidents that will require rapid medical responses; and • Responses to community and stakeholder concerns and communication procedures with potentially affected parties (I&AP). 	MPRDA & NEMA
	Project Schedule	Undertaking the project in a timeous manner	Planning	Plan and develop a construction sequence to alleviate noise generation during the construction phase.	N/A
	Method statement	Project Management	Planning	Ensure that a method statement has been compiled and submitted to the Site/Construction manager.	N/A
	Grievances	Project Management	Planning	Develop grievance mechanisms for the recording and management of complaints and grievances specifically including (but not limited to) grievances from those living in the area.	N/A
	Records and Administration	Project Management	Planning	Ensure the following are up to date and available on site: <ul style="list-style-type: none"> • A complaint registers. • An approved method statements. • Copies of the EMPr. • Environmental Prospecting and authorizations. • Copies of weekly checklists, compliance reports, incidence reports and corrective action reports. • Photographs of areas of concern (photos of non-compliance areas as well corrective action). • Attendance registers of environmental awareness training. 	

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Recruitment of Labour	Project Management	Planning	<ul style="list-style-type: none"> Where possible, the contractor must make use of local labour in support of the local economy. Advertise employment opportunities adequately, so as not to limit application opportunities. Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria. 	Basic Conditions of Employment Act, No. 75 of 1997 (as amended)
PRE-DRILLING/EXPLORATION					
	Site establishment	Project Management	Planning	<ul style="list-style-type: none"> The Contractor must, in agreement with the Construction Manager, decide upon an area for the location of a construction camp. The construction camp should be properly demarcated and fenced, and be adequately sized, with enough space for site offices, construction vehicles, equipment, material and waste storage areas The construction camp must be located in an area with minimal damage or disturbance to the environment. Establish 'NO-GO' areas- where no construction personnel, equipment/machinery or vehicles are prospected. Any identified Environmental Sensitive or important areas should be designated as 'NO-GO' areas. 	
	Site Housekeeping	Project Management	Planning	<ul style="list-style-type: none"> The construction camp should always be kept clean and orderly. 	
	Ablution Facilities	Project Management	Planning	<ul style="list-style-type: none"> Enough toilet facilities should be provided near construction camp. The toilets should be 	

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<p>properly covered and ventilated and should contain hand washing facilities.</p> <ul style="list-style-type: none"> • Portable toilets should be properly secured to the grounds to avoid toppling in the case of a wind/storm event. • Ensure that all toilets function properly and are in a hygienic state. The toilets should be cleaned and emptied regularly. • Ensure that there are no spillages when toilets get cleaned and emptied. • Urination on site should be strictly prohibited. 	
<p>Site establishment activities (-ve):</p> <ul style="list-style-type: none"> • Vegetation clearance • Topsoil stripping & stockpiling • Drill pad compaction • Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage • Vehicle movements <p>Waste management</p>	Cultural and heritage	Destruction or loss of Cultural and Heritage Resources: No cultural/heritage artefacts have been identified on site	Construction/set-up	<ul style="list-style-type: none"> • Environmental Prospecting and authorizations. • Copies of weekly checklists, compliance reports, incidence reports and corrective action reports. 	Heritage Act
	Noise	Noise Generation	Construction/set-up	<ul style="list-style-type: none"> • Photographs of areas of concern (photos of non-compliance areas as well corrective action). 	SANS 10103
	Visual	Visual intrusion	Construction/set-up	<ul style="list-style-type: none"> • Attendance registers of environmental awareness training. 	N/A
	Traffic	Increase in traffic volumes near the drilling	Construction/set-up	<ul style="list-style-type: none"> • Traffic signs to be put around the site to notify motorist of the activities 	National Traffic Act Regulations

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		site		<ul style="list-style-type: none"> Construction vehicles to make trips on/off site only when necessary Construction vehicles to adhere to local speed limits as far as possible when driving in around site 	
	Signage	Traffic volumes, safety	Construction/ set-up	<ul style="list-style-type: none"> The construction management needs to communicate the commencement and duration of construction activities to the community. Clear signage needs to be put up to make and keep the community awareness of construction activities to prevent any hazardous occurrences. Provide adequate safety warning signage on the roads. 	National Traffic Act Regulations
	Dust fall	Dust fall and nuisance from activities	Construction/ set-up	<ul style="list-style-type: none"> Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations; Separation of distance of minimum 100m, to be maintained between drill sites and dwellings; and Low vehicle speeds will be enforced on unpaved surfaces. 	GN R. 827 (NEMAQA)
	Soil and vegetation	The potential impact of the proposed prospecting on the vegetation would occur at proposed drilling sites and the	Construction/ set-up	<ul style="list-style-type: none"> The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required; No clear scraping (dozing) be carried out unless necessary to establish a level drill pad. Rather that surface vegetation is cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and 	NEMBA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		access routes used to get to these sites.		regrow; and <ul style="list-style-type: none"> Disturbed areas will be re-vegetated with locally indigenous species as soon as possible. 	
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Construction/ set-up	<ul style="list-style-type: none"> Environmental awareness training sessions should be part of the workers' induction and site workshops; and If any animals are encountered they must not be killed or injured, but should rather be removed or chased away from the site with the assistance of an animal specialist 	NEMBA
	Social	Friction between local residents/land owners and construction personnel	Construction/ set-up	<ul style="list-style-type: none"> All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution; All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the residents may not welcome the prospecting activities in the area; There will always be a strict requirement to treat residents with respect and courtesy. 	NEMA
	Job creation	Employment will be created for the clearing of the land and	Construction/ set-up	<ul style="list-style-type: none"> No mitigation measures required. 	NEMA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		establishing the drilling site.			
	Storage and Disposal of Waste	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practices	Construction/ set-up	<ul style="list-style-type: none"> • Litter generated by construction workers must be collected in containers that are clearly labelled and disposed of weekly at registered waste disposal sites. • Enough weather- and vermin- proof bins should be placed on site for the disposal of solid waste. Littering on site should be strictly prohibited. The burning of waste on site should also be prohibited. • All waste generated from construction activities (building rubble, solid and liquid waste etc.), should be disposed of as frequently at an appropriately licensed refuse facility. • Minimize waste generation, e.g. by providing re-usable items and refillable containers (e.g. for drinking water) and adopt a 'cradle to grave' responsibility for wastes. • Comply with legal requirements for waste management and pollution control and employ "good housekeeping" and monitoring practices. 	National Waste Act
	Hazardous Waste	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practices.	Construction/ set-up	<ul style="list-style-type: none"> • Any hazardous waste that may be generated should be separated from general waste and stored in clearly marked and properly sealed secondary containers. • Any hazardous waste generated should be disposed of accordance with the Hazardous Chemical Substances Regulations, 1995 (Regulation 15). 	National Waste Act

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Spills and Leaks	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practices.	Construction/ set-up & Operation	<ul style="list-style-type: none"> Any equipment that is leaking should be temporarily decommissioned and removed from the construction site to a surface with an impermeable surface and waste water collection system. Spill response kits must be readily available and accessible to all personnel on site. 	National Waste Act
	PPE			<ul style="list-style-type: none"> Always Ensure that all persons on site use Personal Protective Equipment (PPE) , this including safety boots, safety vests, protective masks etc. 	Employment Act
	Illegal Fires			<ul style="list-style-type: none"> Ensure that no fires are ignited on site unless required for construction purposes, in which case the EC should designate areas for the fires. The designated areas should be as far as possible from vegetation. 	NEMA
	Erosion	The properties of the receiving environment and ensuring that the ground is not susceptible to erosion beyond that which can be rehabilitated.	Construction/ set-up & Operation	<ul style="list-style-type: none"> Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities. All topsoil stockpiles (if any) must be protected against wind, erosion and seeds, i.e. by use of shade cloth or netting. Topsoil stockpiles should not exceed 2 m in height. 	NEMA
PRE-DRILLING/EXPLORATION					
Exploration drilling (ve) <ul style="list-style-type: none"> Drilling Drill maintenance and refueling 	Noise	Noise generation	Operations	<ul style="list-style-type: none"> Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays from 08h00 – 17h00 and no activities on Sundays 	Heritage Act

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
<ul style="list-style-type: none"> Core sample collection and storage Vehicle movements Waste generation and management				and public holidays. <ul style="list-style-type: none"> Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition. If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient. 	
	Visual	Visual intrusions	Operations	<ul style="list-style-type: none"> The drilling rig and other visually prominent items on the site will be in consultation with the landowner; Make use of existing vegetation as far as possible to screen the prospecting operations from view; and If necessary, the operations can be screened from view by erecting a shade cloth barrier. 	SANS 10103
	Traffic	Increase in traffic volumes near the drilling site	Operations	<ul style="list-style-type: none"> Traffic signs to be put around the site to notify motorist of the activities Construction vehicles to make trips on/off site only when necessary Construction vehicles to adhere to local speed limits as far as possible when driving in around site 	N/A
	Dust fall	Dust fall and nuisance from activities	Operations	<ul style="list-style-type: none"> Wet suppression will be applied to ensure that no visible dust is raised by any of the prospecting operations; Separation of distance of minimum 500m, to 	National Traffic Act Regulations

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<ul style="list-style-type: none"> be maintained between drill sites and 100m from dwellings; and Low vehicle speeds will be enforced on unpaved surfaces. 	
	Soil and vegetation	Soil and vegetation disturbance from drill pad preparation	Operations	<ul style="list-style-type: none"> The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required; No clear scraping (dozing) be carried out unless necessary to establish a level drill pad. Rather that surface vegetation be cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and Disturbed areas will be re vegetated with locally indigenous species as soon as possible. 	GN R. 827 (NEMAQA)
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Operations	<ul style="list-style-type: none"> Measures implemented during site establishment should apply in this phase as well. 	NEMBA
	Social	Friction between residents/land owners and	Operations	<ul style="list-style-type: none"> All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and 	NEMBA

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		construction personnel		<p>conflict resolution;</p> <ul style="list-style-type: none"> All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the residents may not welcome the prospecting activities in the area; There will always be a strict requirement to treat residents with respect and courtesy. 	
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Operations	<ul style="list-style-type: none"> No mitigation measures required. 	Basic Conditions of Employment Act, No. 75 of 1997 (as amended)
DECOMMISSIONING AND REHABILITATION					
Rehabilitation of the drill sites and surroundings	Removal of construction structures	Ensuring the receiving environment is not impacted on any further, by dismantling machinery and equipment appropriately.	Rehabilitation	<ul style="list-style-type: none"> Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary fencing, temporary services, fixtures and any other temporary works; and Ensure that all access roads utilized during construction (which are not earmarked for closure and rehabilitation) are returned (as far as possible) to their state prior to construction. 	NEMA
	Waste and Rubble Removal	Visual aspects by preventing any further pollution.	Rehabilitation	<ul style="list-style-type: none"> Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates. Load and haul excess spoil and inert rubble to fill in borrow pits / dongas or to dump sites indicated / approved by an environmental control specialist 	National Waste Act

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
				<ul style="list-style-type: none"> Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site. 	
	Solid and Hazardous Waste			<ul style="list-style-type: none"> Store hazardous waste as indicated in the approved Environmental Management Programme Report. Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site. Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner. Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment. Dispose of all visible remains of excess material when exiting the site. 	National Waste Act
	Erosion protection		Rehabilitation	<ul style="list-style-type: none"> Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site. Retain shrubbery and grass species wherever possible. Perform regular monitoring and maintenance of erosion control measures. 	NEMA

Appendix 6: Financial Provision.

CALCULATION OF THE QUANTUM

Applicant: Rilama (Pty) Ltd
 Evaluator: Abel Mojapelo

Ref No.: MP30/5/1/1/2/ 17351 PR
 Date: 18-Jul-22

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	3322,84	49	0,02	1	3256,3832
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	L
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,2	1	27024,84
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							30281,2232
1	Preliminary and General		3633,746784		weighting factor 2		3633,746784
					1		
2	Contingencies			3028,12232			3028,12232
Subtotal 2							36943,09
VAT (15%)							5541,46
Grand Total							42485

Singed: Abel Mojapelo
 Date: 18/07/2022

Appendix 7: EAPS QUALIFICATIONS & CV

Due to POPI Act sensitive information will not be disclosed to the public.

Appendix 8: Screening report

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED DEVELOPMENT FOOTPRINT ENVIRONMENTAL SENSITIVITY

EIA Reference number: New Application


Project name: Remaining Extent of Portion 21 of the Farm Rondebosch 403 JS

Project title: Remaining Extent of Portion 21 of the Farm Rondebosch 403 JS

Date screening report generated: 30/03/2022 09:10:42

Applicant: Rilama

Compiler: Singo Consulting (Pty) Ltd

Compiler signature:  _____

Application Category: Mining|Prospecting rights



Singo Consulting (Pty) Ltd

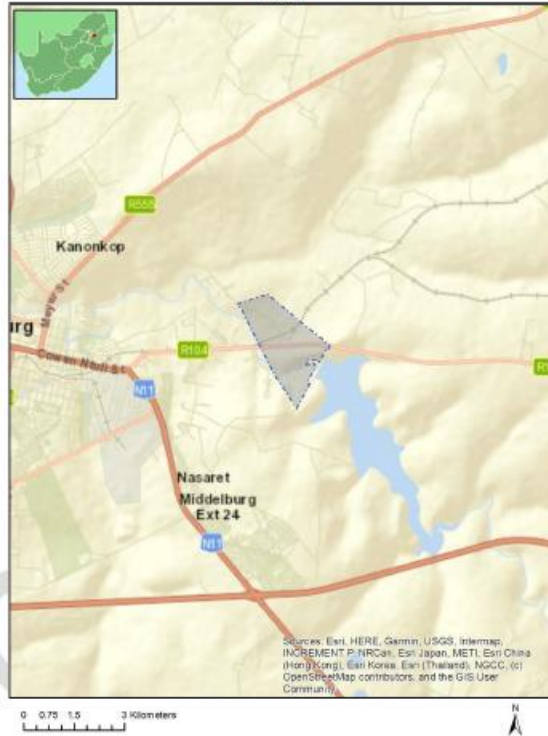
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Proposed Project Location

Orientation map 1: General location

General Orientation: Remaining Extent of Portion 21 of the Farm Rondebosch
403 JS



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	RONDEBOSCH	403	0	25°46'14.76S	29°31'58.56E	Farm
2	RONDEBOSCH	403	21	25°46'22.84S	29°32'20.43E	Farm Portion
3	RONDEBOSCH	403	83	25°46'6.82S	29°31'52.29E	Farm Portion
4	RONDEBOSCH	403	16	25°45'59.55S	29°32'17.14E	Farm Portion
5	RONDEBOSCH	403	88	25°46'25	29°31'31.74E	Farm Portion
6	RONDEBOSCH	403	72	25°46'36.57S	29°32'37.96E	Farm Portion
7	RONDEBOSCH	403	149	25°46'40.17S	29°31'33.26E	Farm Portion
8	RONDEBOSCH	403	19	25°46'49S	29°31'55.51E	Farm Portion
9	RONDEBOSCH	403	82	25°46'10.85S	29°31'38.83E	Farm Portion

Development footprint¹ vertices:

Footprint	Latitude	Longitude
1	25°45'35.01S	29°31'24.92E
1	25°45'26.57S	29°31'54.26E
1	25°45'50.66S	29°32'26.41E
1	25°46'11.09S	29°32'54.95E
1	25°46'15.59S	29°32'52.09E
1	25°46'15.15S	29°32'50.18E
1	25°46'25.41S	29°32'44.09E

¹ "development footprint", means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

1	25°46'23.14S	29°32'40.5E
1	25°46'23.02S	29°32'33.88E
1	25°46'23.59S	29°32'32.16E
1	25°46'25.45S	29°32'33.51E
1	25°46'26.72S	29°32'32.45E
1	25°46'28.56S	29°32'31.27E
1	25°46'27.03S	29°32'35.88E
1	25°46'26.35S	29°32'38.79E
1	25°46'28.84S	29°32'41.33E
1	25°46'42.21S	29°32'32.6E
1	25°46'43.61S	29°32'34.74E
1	25°46'44.15S	29°32'35.19E
1	25°47'4.97S	29°32'22.29E
1	25°46'36.91S	29°32'1.45E
1	25°45'45.31S	29°31'32.23E
1	25°45'39.08S	29°31'28.95E
1	25°45'35.01S	29°31'24.92E

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/2/759	Solar PV	Approved	27.2

Environmental Management Frameworks relevant to the application



Environmental Management Framework	LINK
Olifants EMF	https://screening.environment.gov.za/ScreeningDownloads/EMF/Zone 46, 67, 78, 80, 92, 103, 122, 129.pdf

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development footprint as well as the most environmental sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

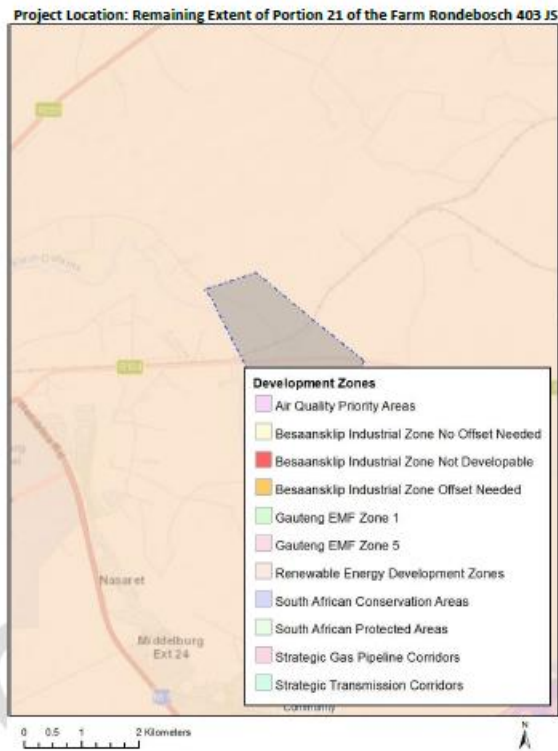
Mining | Prospecting rights.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this footprint are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-International corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined EGI.pdf
Air Quality-Highveld Priority Area	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/HIGHVELD_PRIORITY_AREA_AQMP.pdf
Renewable energy development zones 9-Emalahle ni	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined REDZ.pdf

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones



Proposed Development Area Environmental Sensitivity

The following summary of the development footprint environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme		X		

Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme				X
Paleontology Theme			X	
Plant Species Theme		X		
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the footprint situation.

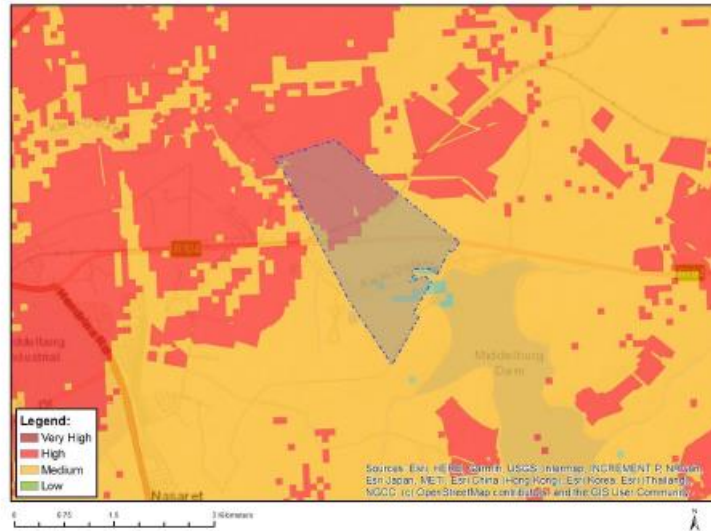
No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Paleontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf

	ment	
7	Radioactivity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
9	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed footprint for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;09. Moderate-High/10. Moderate-High
High	Old Fields;Land capability;09. Moderate-High/10. Moderate-High
High	Old Fields;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

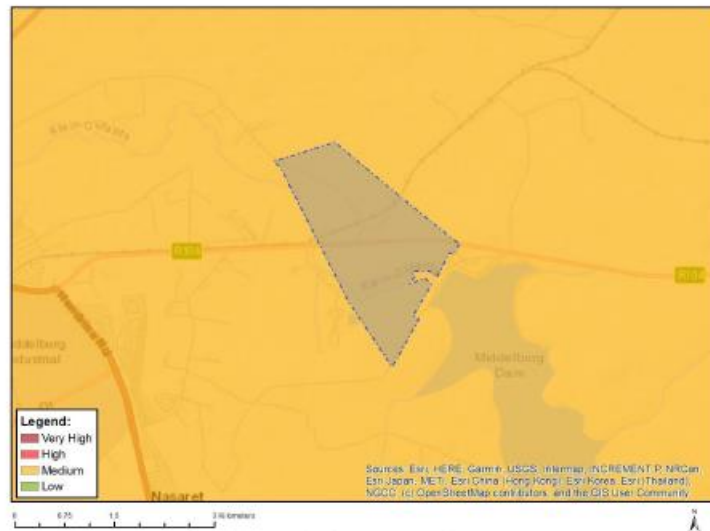


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Wetlands and Estuaries

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

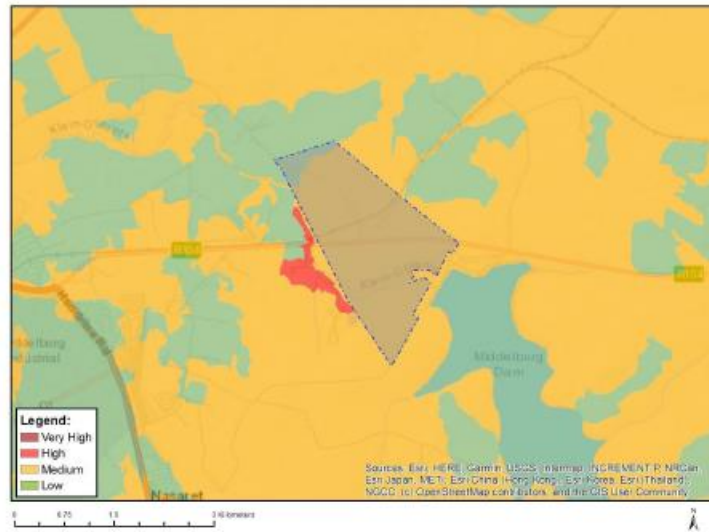


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Features with a Low paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Sensitive species 933
Low	Low Sensitivity
Medium	Sensitive species 1252
Medium	<i>Pavetta zeyheri</i> subsp. <i>middelburgensis</i>
Medium	Sensitive species 933
Medium	Sensitive species 691
Medium	<i>Pachycarpus suaveolens</i>
Medium	<i>Brachycorythis conica</i> subsp. <i>transvaalensis</i>

