

# **Rietspruit Coal Pits (Pty) Limited**

## **Draft Scoping Report**

### **Rietspruit Colliery**

**Compiled and Submitted as contemplated in Appendix 2 and Regulation 21 of the amended Environmental Impact Assessment Regulations, 2014 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA EIA Regulations, 2014)**

**For the application for an Environmental Authorisation and a Waste Management Licence in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), Amended Environmental Impact Assessment Report Regulations 2014,**

**Government Notice No. 327 - Listing Notice 1 of 2017,  
Government Notice No. 325 - Listing Notice 2 of 2017,  
Government Notice No. 324 - Listing Notice 3 of 2017 and  
Government Notice R921 – List of Waste Management Activities**

**DMRE Reference No.: MP 30/5/1/2/2/10378 MR**  
**January 2023**

Report Type: Draft Scoping Report  
Project Title: Rietspruit Colliery  
Compiled for: Rietspruit Coal Pits (Pty) Limited  
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2. I have no bias with regard to this project or towards the various stakeholders involved in this project.
3. I have not received, nor have I been offered, any significant form of inappropriate reward for compiling this report.

---

(Electronic signature)

P. P. Mthimunye, BSc. Of Earth Sciences in Mining and Environmental Geology)

This report was reviewed by:

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(Electronic signature)

T. Shakwane, B.Sc. Hons. (Professional Natural Scientist no: 117080)

# Executive Summary

Rietspruit Coal Pits (Pty) Limited is an emerging coal mining company, which intends to undertake a coal mining operation on a portion of portion 21 of the farm Roodepoort 40 IS, situated in the Magisterial District of Kriel, Mpumalanga Province. See Regulation 2 (2) plan attached as **Appendix A**.

Based on the depth of the coal seam within the proposed mining area, the proposed mining area can be optimally mined using opencast mining method. The opencast mining method will be utilising the sequential lateral rollover mining technique. A reputable mining contractor will conduct the mining and crushing and screening of coal will be conducted in-house. The coal to be mined will be transported by tipper trucks from the mining areas to the R.O.M. coal stockpile area. After the processing of the R.O.M coal, the product coal will be hauled by haulage trucks via the road networks to destined clients. All necessary surface infrastructures required to undertake the proposed mining operation will be constructed at the proposed Rietspruit Colliery.

The opencast coal will be dry crushed and screened (sized) on site in a dedicated R.O.M coal stockpile area and transported via roads to the Eskom and/or the inland markets. Some R.O.M coal may also be supplied to offsite coal washing clients to augment the income of the planned coal mining operation.

Associated infrastructure and facilities that will be constructed, include access/haul roads, water management structures (storm water diversion structures and pollution control dams with silt traps), overburden material stockpiles, box-cuts, R.O.M./product stockpiles, crushing/screening, workshop, diesel storage facility, washing plant and weighbridge.

In view of the above, Rietspruit Coal Pits (Pty) Limited has lodged a mining right application (Ref. No.: MP 30/5/1/2/2/10378 MR) with the Department of Mineral Resources and Energy (Mpumalanga Regional Office) in accordance with the relevant guidelines and regulations under the Mineral and Petroleum Resources Development Act, 2002 as amended.

In addition to the above, the National Environmental Management Act, 1998 (Act 107 of 1998), (NEMA), and the National Environmental Management: Waste Act, 2008 (Act 59 of 2008), (NEMWA), requires that any person or entity that intends to undertake activities listed in the NEMA listing notice regulations (Government Notices No. 983, 984 and 985) as amended in 2017 and waste management activities listed under GN 921 must obtain an Environmental Authorisation in terms of section 24D of the NEMA and a waste management licence in terms of part 4 of chapter 4 of the NEMWA before undertaking such activities. Activities that will require an Environmental Authorisation and a waste management licence in terms of the above-mentioned acts were identified and are listed in a table contained in this report.

According to the NEMA EIA Regulations 2014, as amended in 2017, under Government Notice No. 326 (NEMA EIA Regulations 2014), an application for an Environmental Authorisation together with an application for a waste management licence for the above-mentioned listed activities and waste management activities, respectively, must be submitted to a competent authority in line with the requirements of the above-mentioned regulations. Since both the applications for the environmental authorisation and waste management licence were submitted as one application to the DMRE, the application will be referred to in this report as an integrated environmental authorisation application. The Department of Mineral Resources and Energy (eMalahleni Office) is the competent authority for the above-mentioned applications.

In view of the above, Rietspruit Coal Pits (Pty) Limited appointed Geovicon Environmental (Pty) Limited, an independent environmental consulting company, to prepare and submit the IEA application and

manage the Environmental Impact Assessment process for the proposed Rietspruit Colliery Project. The above-mentioned IEA for activities listed under Table 4 in this report, has been submitted to the DMRE, Mpumalanga Regional Office (Competent Authority) for their consideration.

Regulation 21 of the NEMA EIA Regulations, 2014, requires that if a Scoping and Environmental Impact Reporting process (S&EIR) must be applied to an application, the applicant must submit a Scoping Report, an Environmental Impact Report (EIR) and an Environmental Management Programme (EIR/EMPr) to the competent authority which has been subjected to a public participation process and which reflect the incorporation of comments received, including any comments of the competent authority. The Draft Scoping Report (this document), which has been compiled to meet the requirements of Appendix 2 and Regulation 21 of the NEMA EIA Regulations, 2014 and is made available to the competent authority, potential and registered interested and affected parties (I&AP's) as part of the public participation process for their review and comments.

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SECTION ONE

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## **Introduction**

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# 1 INTRODUCTION

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## 1.1 WHO IS DEVELOPING THE SCOPING REPORT?

## 1.2 Name and contact details of the EAP's who prepared the Scoping Report

EAP: Miss P. Mthimunye (BSc. Of Earth Sciences in Mining and Environmental Geology)

IAIA Membership No.: 6233

Reviewer: Mr. O.T Shakwane (BSc. Honns.)

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## 1.3 Expertise of the EAPs who prepared and reviewed the Scoping Report

Geovicon Environmental (Pty) Limited has been appointed by Rietspruit Coal Pits (Pty) Limited as an independent environmental consultant to compile this Scoping Report and has no vested interest in the project.

Geovicon Environmental (Pty) Limited is a geological and environmental consulting company. The company was formed in 1996, and currently has twenty-five years' experience in the geological and environmental consulting field. Geovicon Environmental (Pty) Limited has successfully completed consulting projects in the Mining sector (coal, gold, base metal and diamond), Quarrying sector (sand, aggregate and dimension stone), Industrial sector and Housing sector. Geovicon Environmental (Pty) Limited has undertaken contracts within all the provinces of South Africa and in Swaziland, Botswana and Zambia. During 2001 Geovicon Environmental (Pty) Limited entered the field of mine environmental management and water monitoring.

Geovicon Environmental (Pty) Limited is a Black Economically Empowered Company with the BEE component owning 60% of the company. Geovicon Environmental (Pty) Limited has three shareholders i.e., O.T. Shakwane, J.M. Bate and T.G. Tefu.

The following include Curriculum Vitae of the Environmental Assessment Practitioner (EAP) and the reviewer who were involved in the compilation of this report:

Ms. Phangisile Mthimunye is a member of the International Association for Impact Assessment South Africa (IAIAsa). She obtained her degree of Bachelor of Earth Sciences in Mining and Environmental Geology in

2016 from University of Venda. She currently works for Geovicon Environmental (Pty) Ltd as a Senior Environmental consultant. Her responsibilities include but limited to: compilation of mining rights, mining permits and prospecting right applications, environmental reports (EMPr, Scoping Reports, BARs, EIRs, and Public Participation Reports), Water Use Licence applications with Integrated Water and Waste Management Plans, environmental assessment audits, Integrated Water Use Licence audits, environmental inspections and Water Quality Reports.

Mr. O.T. Shakwane obtained his BSc (Microbiology and Biochemistry) from the University of Durban Westville in 1994, and completed his honours degree in Microbiology in 1995. Mr O.T. Shakwane has also completed short courses on environmental law, environmental impact assessment, environmental risk assessment and environmental management systems with several tertiary institutions. He has worked within the three state departments tasked with mining and environmental management i.e., Department of Water and Sanitation (Gauteng and Mpumalanga Region), Department of Mineral Resources (Mpumalanga Region) and Department of Agriculture, Conservation and Environment (Gauteng Region). Mr. Shakwane has been in the consulting field since 2004 and has undertaken environmental impact assessments for mining operations similar to the proposed Rietspruit Colliery coal mining project. Mr. Shakwane is the appointed environmental assessment practitioner (reviewer) for the NEMA IEA application and environmental impact assessment process for the proposed Rietspruit Colliery coal mining project. Mr. Shakwane has been involved in the field of environmental impact assessment for the past twenty-one years.

He is registered with the Environmental Assessment Practitioners Association of South Africa and South African Council for Natural Scientific Professions as an Environmental Assessment Practitioner and a Professional Natural Scientist in terms of section 24H of the National Environmental Management Act, (Act 107 of 1998) and section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), respectively. He is also a member of the International Association for Impact Assessment, South Africa.

Mr. Ornassis Tshepo Shakwane and Ms. Phangisile Mthimunye of Geovicon Environmental (Pty) Limited, hereby declares that they are independent environmental assessment practitioners and that they and Geovicon Environmental (Pty) Limited have no business, financial, personal or other interest in this project in respect of which Geovicon Environmental (Pty) Limited is appointed. Furthermore, no circumstances exist that may compromise the objectivity of Geovicon Environmental (Pty) Limited, excluding fair remuneration for work performed in connection with this environmental audit.

#### **1.4 WHO WILL EVALUATE THE SCOPING REPORT?**

Before the proposed project can proceed, an EAP must compile an application for an IEA for the proposed activities. An Environmental Impact Assessment must be undertaken in support of the application for an IEA where a Scoping Report must be compiled and an Environmental Impact Assessment (EIA) be carried out for the activities applied for, in terms of the NEMA EIA Regulations, 2014. The above-mentioned application must be made to the competent authority in terms of Section 24 of NEMA, Section 45 and Section 20(b) of the NEMWA and in terms of Regulations 16 of the NEMA EIA Regulations, 2014. The Minister responsible for Mineral Resources and Energy is the competent authority for this application. In view of the above, the IEA for the proposed Rietspruit Colliery coal mining project was submitted to the DMRE, eMalahleni Regional Office for their consideration and decision making.

In the spirit of co-operative governance and in compliance with Regulation 7(2) the NEMA EIA Regulations, 2014, the competent authority (Department of Mineral Resources and Energy) will, during the processing of the IEA application, consult with other organs of state that administers laws that relate to matters affecting the environment relevant to this application. These include:

- Mpumalanga Tourism and Parks Agency (MTPA)
- Department of Water and Sanitation (DWS)

- Emalahleni Local Municipality

In addition to the above, all organs of state which have jurisdiction in respect of the activity applied for and all potential, or, where relevant, I&AP's will also be given an opportunity to evaluate and comment on the documents to be submitted to the authorities. Before the proposed listed activities applied for can proceed, the environmental impacts that may result from the proposed project must be assessed. The Department of Mineral Resources and Energy (DMRE) is the competent authority for this environmental authorisation application.

In addition to the above, the public will also be given an opportunity to evaluate and comment on the documents to be submitted to the authorities.

## **1.5 LEGAL REQUIREMENTS**

### **The National Environmental Management Act, 107 of 1998 (NEMA)**

NEMA requires that a Scoping Report be conducted and that the Environmental Impact Assessment (EIA) be carried out for the listed activities applied for in terms of the NEMA EIA Regulations 2014.

In addition to the NEMA, the following key legislations are also relevant to the IEA application the Scoping Report:

- Minerals and Petroleum Resources Development Act (MPRDA), No. 28 of 2002
- Environment Conservation Act (ECA), No. 73 of 1989
- The National Environmental Management Act (NEMA), No. 107 of 1998
- The Mine Health and Safety Act (MHSA), No. 29 of 1996, as amended
- The National Water Act (NWA), No. 36 of 1998, as amended
- The National Environmental Management Biodiversity Act (NEMBA), No. 10 of 2004
- The National Environmental Management Air Quality Act (NEM: AQA), No. 39 of 2004.
- National Environmental Management: Waste Act (Act No. 59 of 2008)

The Draft Scoping Report (this report) will be finalised after the public participation process.

### **1.6 The National Water Act, 36 of 1998 (NWA)**

The NWA requires that any person who intends on or who undertakes an activity that has been defined as a water use in terms of the NWA, apply for a Water Use Licence for that activity. Based on the proposed Rietspruit Colliery, water uses were identified in terms of the NWA. In an effort for Rietspruit Coal Pits (Pty) Limited to legally carry out the intended water uses at the proposed project area, a Water Use Licence Application will be compiled and submitted to the Department of Water and Sanitation (Mpumalanga Regional Office, Bronkhorstspuit).

## **1.7 PURPOSE OF THE SCOPING REPORT**

The Draft Scoping Report addresses the requirements as contemplated in Appendix 2 of the amended Environmental Impact Assessment Regulations published in Government Notice No. 326. This report also allows for I&APs to raise issues and concerns during the consultation phase which will then be addressed in the Final Scoping Report. The aim of this Scoping Report is to:

- Provide background information on the proposed mining project,
- Provide information regarding alternatives that have been considered,

- 
- Show how authorities and interested and affected parties were afforded the opportunity to contribute to the project, and to indicate the issues raised and the responses to those issues,
  - Describe the receiving environment that might be affected by the proposed mining project,
  - Describe the extent of environmental consequences for the construction and operating phases of the proposed project
  - Describe the environmental studies that are going to be conducted
  - Present findings in a manner that facilitates decision-making by the relevant authorities.



SECTION TWO

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## **Project Background & Context**

## 2 PROJECT BACKGROUND AND CONTEXT

### 2.1 OVERVIEW OF THE PROJECT

#### 2.1.1 Name of the Applicant

Rietspruit Coal Pits (Pty) Limited

#### 2.1.2 Name of the Proposed Project

Rietspruit Colliery

#### 2.1.3 Address of proposed Project

Portion 21 of the farm Roodepoort 40 IS.

**Table 1: Company contact details**

ITEM	COMPANY CONTACT DETAILS
Applicant: Rietspruit Coal Pits (Pty) Ltd	Reg No: 2021/702659/07
Contact Name	Mr. Mojalefa Douglas Mongwe
Tel no	
Fax no:	
E-mail address	douglas@xakwa.com
Physical address	Menlyn corporate park Block C 4 <sup>th</sup> floor Cnr garsfontein and Corobay ave Waterkloof Glen Gauteng 0181
Postal address	P.O Box 90512 Garsfontein Gauteng Pretoria 0181

#### 2.1.4 Surveyor General Code

**Table 2: Surveyor General Code for the project area**

Farm name	Surveyor General Code

Portion 21 of the farm Roodepoort 40 IS	T0IS 000000000040 00021
---	-------------------------

## 2.2 LOCATION

Rietspruit Colliery is situated within the Magisterial district of Kriel, approximately 10 km north west of Kriel and 20 km south east of Ogies, access to the area is via the R545 provincial road (Bethal- Ogies) that connects to an unnamed road that passes right through the Rietspruit Colliery area. The geographic coordinates for the location are given in Table 3, below.

**Table 3: Geographic coordinates of the project area**

Farm name	Coordinate
Portion 21 of the farm Roodepoort 40 IS	26 09 40.19 S    29 14 00.31 E

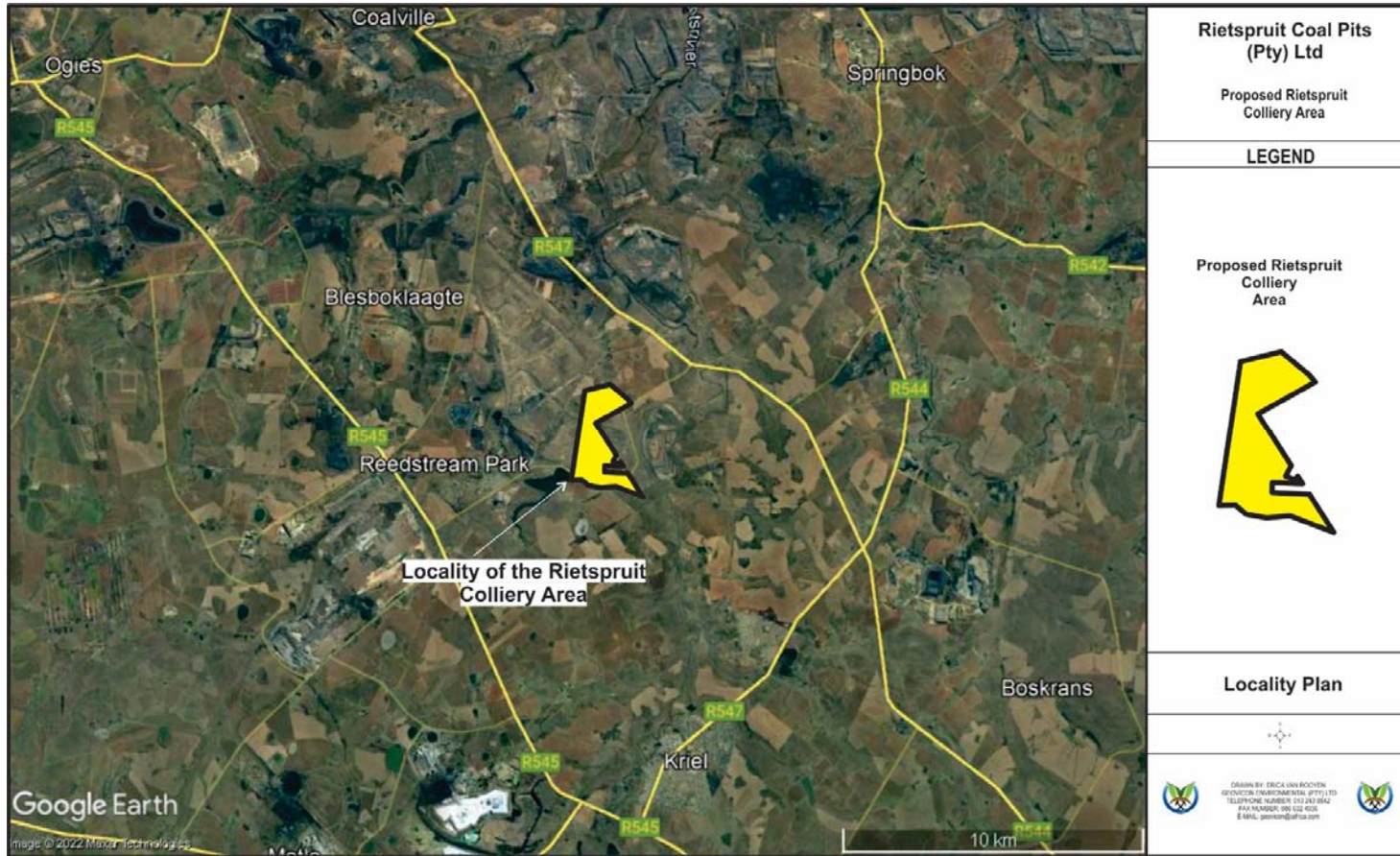


Figure 1: Locality Plan for the proposed Rietspruit Colliery

### 2.2.1 Magisterial District & Regional Services Council

Magisterial: Kriel, Mpumalanga  
 District Municipality: Nkangala District Municipality  
 Local Municipality: Emalahleni Local Municipality

### 2.2.2 Direction and Distance to Nearest Towns

**Table 4: Direction and Distance from the Nearest Towns to the mine.**

TOWN (Surrounding nearest towns from the proposed area)	DIRECTION	Distance (KM) from the Surrounding towns
Kriel	North west	10km
Ogies	South east	20km
Witbank	South	31km

### 2.2.3 Surface Infrastructure

The proposed Rietspruit Colliery covers an area of approximately 344,56 hectares. The proposed mining project will be using the opencast mining method. Opencast mining will be using the truck and shovel lateral sequential rollover mining method. Mining will commence from the initial box cut and proceed to the successive cuts. Surface infrastructure associated with this coal mining project will include: office/workshop complex, water management facilities, crushing and screening plant, washing plant, overburden stockpiles, R. O. M. stockpile, access and haul roads and opencast area.

### 2.2.4 Presence of Servitudes

An irrigation canal servitude (approximately 300 m wide) is present on the southern side of portion 21 of the farm Roodepoort 40 IS. There are three Electric Power transmission servitudes present on portion 21 of the farm Roodepoort 40 IS, which vary in size.

### 2.2.5 Name of River Catchments

In terms of the Department of Water Affairs demarcations, the proposed Rietspruit Colliery mining project area falls in the Olifants Water Management area. Rietspruit Colliery falls into primary drainage regions B and quaternary drainage regions B11D and B11E. See Figure 2 for the location of the proposed mine in relation to the tertiary and quaternary drainage regions within the Olifants River catchment. The Rietspruit Colliery catchment area drains into the Steenkoolspruit that flows in a northern direction, east of the Rietspruit Colliery which drains into the Olifants River.

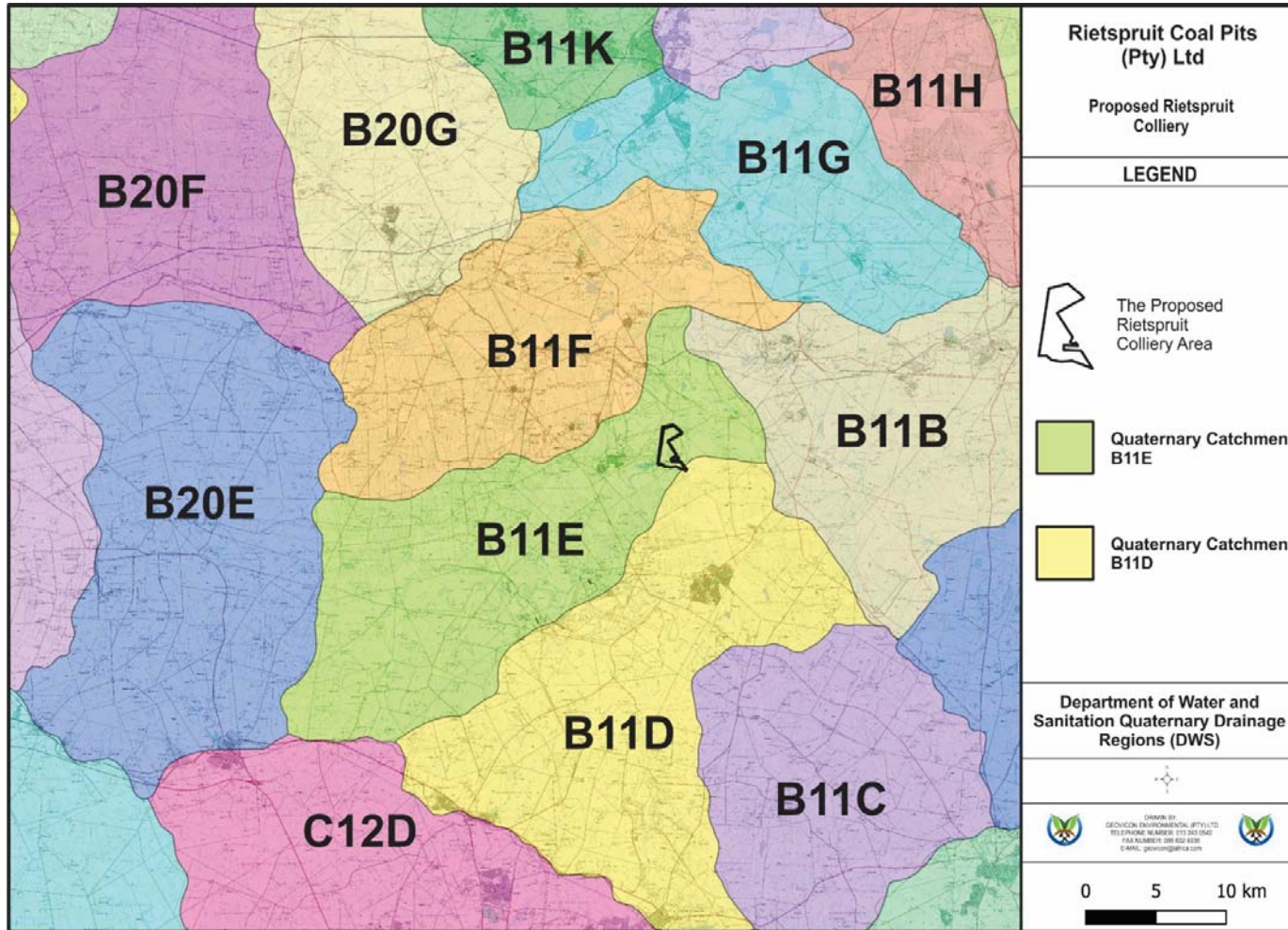


Figure 2: Location of the proposed project in relation to the tertiary and quaternary drainage regions

**Table 5: Summary of the Quaternary Catchments associated with the proposed Rietspruit Colliery area**

	<b>B11E</b>	<b>B11D</b>
<b>Drains into</b>	Olifants River	Olifants River
<b>Size in km<sup>2</sup></b>	470	555
<b>Mean annual precipitation (mm)</b>	682	671,20
<b>Evaporation (mm)</b>	2043,30	2036,40
<b>Mean annual surface runoff (mm)</b>	51,40	59,60

**2.3 NAME AND ADDRESS OF LAND OWNER & FARM DESCRIPTION**

Table 6 and Figure 3 indicates the immediate and adjacent surface owners on the proposed Rietspruit Colliery area.

**Table 6: Description of immediate and adjacent landowners and their property**

<b>Farm</b>	<b>Portion</b>	<b>Surface Right Owners</b>
<b>DIRECT AND ADJACENT SURFACE OWNERS</b>		
Roodepoort 40 IS	21	Manhattan Syndicate (Pty) Ltd
Roodepoort 40 IS	11	Burjan Boerderye (Pty) Ltd
Roodepoort 40 IS	15	Manhattan Syndicate (Pty) Ltd
Roodepoort 40 IS	17	LIZE TRUST
Roodepoort 40 IS	23	Manhattan Syndicate (Pty) Ltd
Rietspruit No. 597 IS	RE	Tavistock Collieries (Pty) Ltd
Hartbeestfontein 39 IS	3	Manhattan Syndicate (Pty) Ltd
Hartbeestfontein 39 IS	7	Manhattan Syndicate (Pty) Ltd
Diepspruit 41 IS	2	Glencore Operations South Africa (Pty) Ltd
Diepspruit 41 IS	9	Glencore Operations South Africa (Pty) Ltd
Middeldrift 42 IS	1	Glencore Operations South Africa (Pty) Ltd

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Middel drift 42 IS	4	Glencore Operations South Africa (Pty) Ltd
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\* Indicate farm portions on which the proposed Rietspruit Colliery activities will be undertaken.



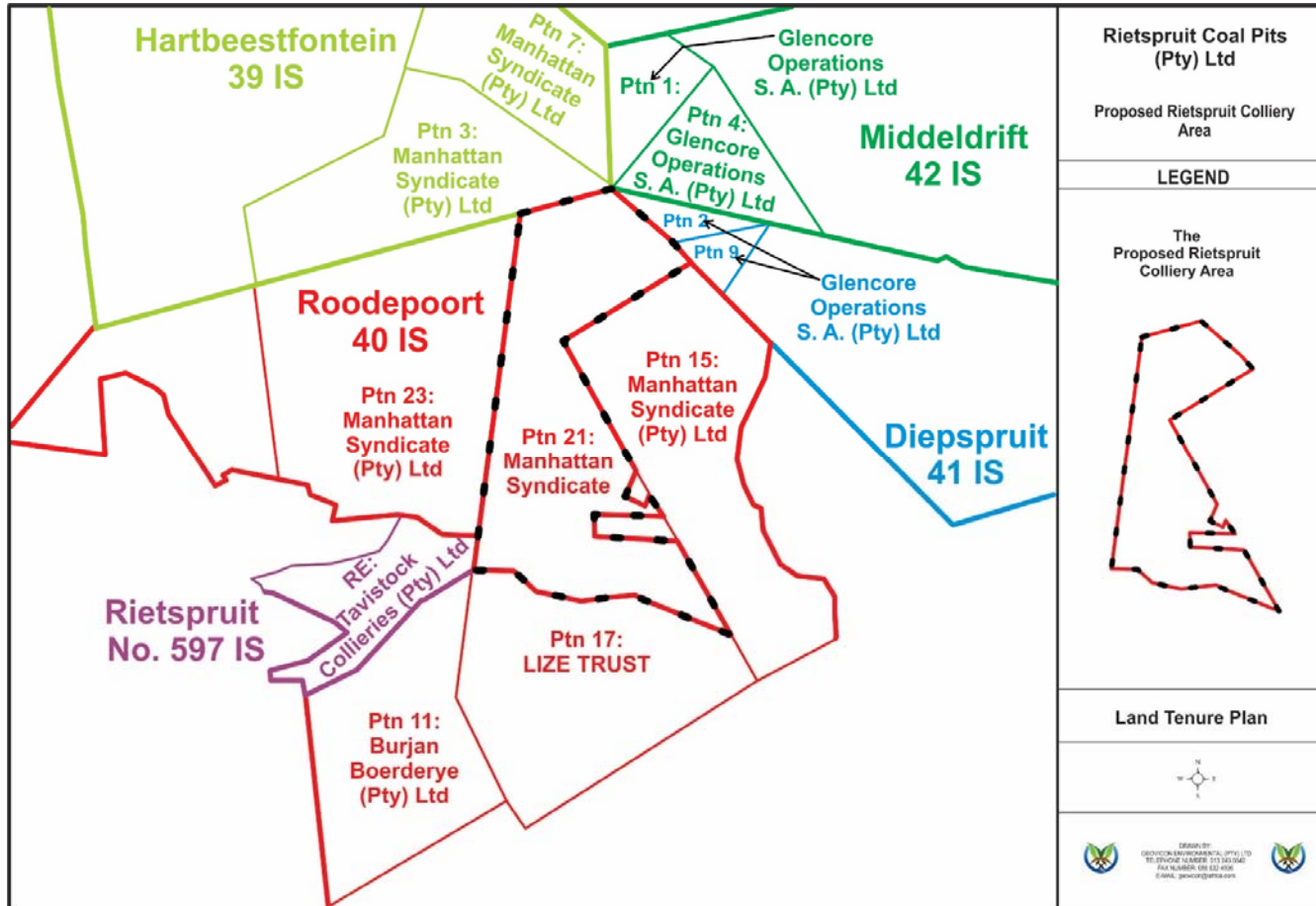


Figure 3: Rietspruit Colliery Land Tenure Plan

## 2.4 BRIEF PROPOSED PROJECT OVERVIEW

The proposed mining project will be using opencast mining method. Opencast mining using the truck and shovel lateral sequential rollover mining method will be undertaken.

### 2.4.1 NEMA Listed Activities to be authorised.

**Table 7: Listed activities in relation to the proposed mining activities**

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
<b>PROJECT LISTED AND SPECIFIC ACTIVITIES</b>			
<b>NATIONAL ENVIRONMENTAL MANAGEMENT ACT</b>			
<b>NEMA EIA AMENDED Regulations Listing Notice 1</b>			
The construction and operation of storm water diversion trenches. The dirty water trenches will channel dirty water to the pollution control dam and the clean water trench will be diverted to the nearby clean water environment and associated watercourses.	The storm water diversion trenches will cover an area of 2,620 m in length.	Activity 9 of Listing Notice 1: The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water- (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or (b) where such development will occur within an urban area.	GNR 327
The development and related operation of water pipelines exceeding 1000 metres in length for the transportation of waste water from the pit to the pollution control dam.	The length of the pipeline for transportation of wastewater located in pit will be approximately 1 km.	Activity 10 of Listing Notice 1: The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes? (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where-	GNR 327

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
		(a) such infrastructure is for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve; or (b) where such development will occur within an urban area.	
The lined pollution control dams will be constructed for the containment of polluted water emanating from the mining operation and will have a capacity of more than 35 000 cubic meters. Since more than one dam may be constructed, the combined capacity of the dams may exceed the 50 000 m <sup>3</sup> threshold.	The lined pollution control dam facility will cover an area of approximately 0.8 hectares.	<u>Activity 13 of Listing Notice 1:</u> The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.	GNR 327
The development of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres. The goods to be stored include all hydrocarbon liquids (oils, petrol, diesel etc.), chemicals that may be used at the mine and all waste considered as dangerous goods.	80 square meters	<u>Activity 14 of Listing Notice 1:</u> The development of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres	
The construction and operation of access roads for accessing the proposed mining operation.	The access and haul roads will cover a length of approximately 1.1 km.	<u>Activity 24 of Listing Notice 1:</u> The development of- (i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding- (a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or (b) roads where the entire road falls within an urban area.	GNR 327

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
<b>NEMA EIA AMENDED Regulations Listing Notice 2</b>			
The development of the proposed Rietspruit Colliery Opencast Mining Project and associated infrastructure will require an integrated water use licence in terms of the National Water Act, 1998 (Act 36 of 1998).	The development of the mining operation with its associated infrastructure will cover an area of approximately 243 hectares.	<u>Activity 6 of Listing Notice 2:</u> The development of facilities or infrastructure for any process or activity which requires a permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding- <ul style="list-style-type: none"> <li>• activities which are identified and included in Listing Notice 1 of 2014;</li> <li>• activities which included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or</li> <li>• the development of facilities or infrastructure for the treatment of effluent, wastewater or sewage where such facilities have a daily throughput capacity of 2000 cubic metres or less.</li> </ul>	GNR 325
The development of the mining operation and associated infrastructure will result in the clearance of indigenous vegetation from the project area.	The proposed operation with its associated infrastructure will cover an area of approximately 243 hectares.	<u>Activity 15 of Listing Notice 2:</u> The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- <ol style="list-style-type: none"> <li>(i) the undertaking of a linear activity; or</li> <li>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</li> </ol>	GNR 325
Opencast mining which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	The development of the mining operation with its associated infrastructure will cover an area of approximately 243 hectares.	<u>Activity 17 of Listing Notice 2:</u> Opencast mining which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	GNR 325
Crushing and screening of ROM coal to produce products required by the markets.		<u>Activity 21 of Listing Notice 2:</u>	GNR 325

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
		Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource.	
<b>NEMA EIA AMENDED Regulations Listing Notice 3</b>			
The development of access and haul roads within the proposed mining area.	The access and haul roads will cover a length of approximately 1.1 km.	<p><u>Activity 4 of Listing Notice 3:</u> The development of a road wider than 4 metres with a reserve less than 13, 5 metres.</p> <p><u>In Free State, Limpopo, Mpumalanga and Northern Cape provinces:</u></p> <ul style="list-style-type: none"> <li>• In an estuary;</li> <li>• Outside urban areas in: <ul style="list-style-type: none"> <li>(aa) A protected area identified in terms of NEMPAA, excluding disturbed areas;</li> <li>(bb) National Protected Area Expansion Strategy Focus areas;</li> <li>(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</li> <li>(dd) Sites or areas identified in terms of an International Convention;</li> <li>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</li> <li>(ff) Core areas in biosphere reserves;</li> <li>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas.; or</li> <li>(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined;</li> </ul> </li> </ul> <p>or</p> <p>(iii) In urban areas:</p> <ul style="list-style-type: none"> <li>(aa) Areas zoned for use as public open space;</li> </ul>	GNR 325

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
		(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; or (cc) Seawards of the development setback line or within urban protected areas.	
The development of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres	80 square meters	<u>Activity 10 of Listing Notice 3:</u> The development of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 30 cubic metres or more but not exceeding 80 cubic metres.	
Clearance of indigenous vegetation for the mining operation and for the construction of infrastructure associated with the mining project.	The proposed operation with its associated infrastructure will cover an area of approximately 243 hectares.	<u>Activity 12 of Listing Notice 3:</u> The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. <u>(c) in Mpumalanga</u> (i) within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; (ii) within critically biodiversity area identified in bioregional plans; (iii) within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone; whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas (iv) on land, where, at the time of the coming into effect of this Notice or thereafter such land was zone open space, conservation or had an equivalent zoning or proclamation in terms of NEMPAA.	GNR 324
New access and haul roads will be constructed to connect to the existing road infrastructure. This will result in the extension	The access and haul roads will cover a length of approximately 1.1 km	<u>Activity 18 of Listing Notice 3:</u> The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. a) In Free State, Limpopo, Mpumalanga and Northern Cape	GNR 324

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
of the current road by more than one kilometre.		provinces: (i) In an estuary; (ii) Outside urban areas, in: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an International Convention; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; or (ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; or iii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.	
<b>NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT</b>			
The disposal of overburden material (carbonaceous) into the mined out areas.	The overburden stockpile material will cover an area of approximately 0.45 hectares.	Activity 7 under category B: Disposal of any quantity of hazardous waste on land.	GNR 921

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
Disposal of dirty water from opencast pits, ROM coal stockpile, overburden stockpile areas and any dirty water area of the mine into the line pollution control dam.	The pollution control dams facility will cover an area of approximately 0.8 hectares.	Activity 7 under category B: Disposal of any quantity of hazardous waste on land.	GNR 921
The establishment and maintenance of the overburden material stockpiles and associated pollution control dam.	The associated infrastructure will cover an area of approximately 3.55 hectares.	Activity 10 under category B: The construction of a facility for a waste management activity listed under Category B of this Schedule (not in isolation to associated waste management activity).	GNR 921
Reclamation of the overburden material for rehabilitation.	As much of the material as possible will be reclaimed and used for rehabilitation.	Activity 11 under category B: The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right, exploration right or production right in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	GNR 921/ GNR 632



SECTION THREE

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## **Baseline Information**

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## 3 BASELINE INFORMATION

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### 3.1 GEOLOGY

#### 3.1.1 Regional Geology

The Rietspruit Colliery mining area falls within the Witbank coalfield. Several coalmines have been, or are operating within this coalfield.

The Witbank coalfield extends from Springs in the west to Belfast in the east and from Middelburg in the north to Rietspruit in the south. The Witbank Coalfield includes the districts of Benoni, Nigel, Brakpan/Springs, Delmas, Dryden, Bronkhorstspuit, Kendal, Ogies, Witbank, Middelburg, Arnot and Belfast encompassing a surface area of approximately 568 000 ha. The Witbank Coalfield bounds the Highveld coalfield to the south, the South Rand coalfields to the southwest and the Ermelo coalfield to the southeast.

The Witbank coalfield is the centre of the coal mining industry in South Africa. It has been mined since 1890 and is presently producing more than 50% of the South African coal production, and will remain of great importance for the economy for a considerable time.

The coal seams of the Witbank coalfield are at a shallow depth, with the lowest seam seldom reaching 100 metres in the deepest lying parts of the field. Due to erosion of the sediments, all that remains of the Karoo System in this area is that portion from the lower part of the Middle Ecca Stage to the Dwyka tillite. Within the Witbank coalfield, the Karoo System un-conformably overlays the Witwatersrand System, the Waterberg System and the Bushveld Igneous Complex.

The strata in which the coal seams (Middle Ecca Stage) occur consist predominantly of fine, medium and coarse-grained sandstone with subordinate mudstone, shale, siltstone and carbonaceous shale. Ideally there are seven coal seams with varying degrees of persistence numbered from below as No. 1, No. 2, No. 3, No. 4 lower, No. 4 upper, No. 4 A and No. 5 Seams.

The layers of carbonaceous shale are usually confined to the beds between the No. 2 and No. 4 A Seams, with a glauconite sandstone marker present immediately above the No. 4 A Seam.

The coal seams identified and to be mined occur in the Vryheid Formation of the Ecca Group which is located in the Witbank Coal field of the Karoo Basin.

The Witbank coal field host coal seams that are regarded as one morphological province, because of a marked consistency in the coal succession stratigraphy.



Figure 4: Regional Geological Map of the proposed mining area

### 3.1.2 Climate

#### 3.1.2.1 Regional Climate

The proposed mining area falls into the Eastern Plateau Highveld climate zone, characterised by relatively warm wet summers and cold dry winters.

The average rainfall per year is 631 mm, with the wetter months occurring from October to March. Maximum recorded rainfall for 60 minute and 24-hour periods ranges from 6.4 mm to 50.1 mm (60 minutes) and 17.4 mm to 80.0 mm (24 hours) with November and February having the highest precipitation for the 60 minutes and 24-hour events respectively.

During the summer months the wind direction is generally north to northeast. During winter, the winds are somewhat more northeast to northwest.

#### 3.1.2.2 Mean Monthly Rainfall

Average monthly rainfall and the number of days experiencing rainfall are presented in Table 7. The average rainfall per year is 670 mm, with the wetter months occurring from November to March.

**Table 8: Average Rainfall for the proposed Rietspruit Colliery mining area**

MONTH	MM	AVERAGE NO OF RAIN DAYS
October	73.2	6.5
November	122.5	9.0
December	110.2	8.1
January	115.6	9.0
February	87.5	6.4
March	77.0	6.0
April	41.6	3.8
May	17.8	1.5
June	7.6	0.7
July	4.9	0.5
August	8.8	0.8
September	22.0	2.2
<b>Mean Annual</b>	<b>670*</b>	

#### 3.1.2.3 Mean Monthly Maximum and Minimum Temperatures

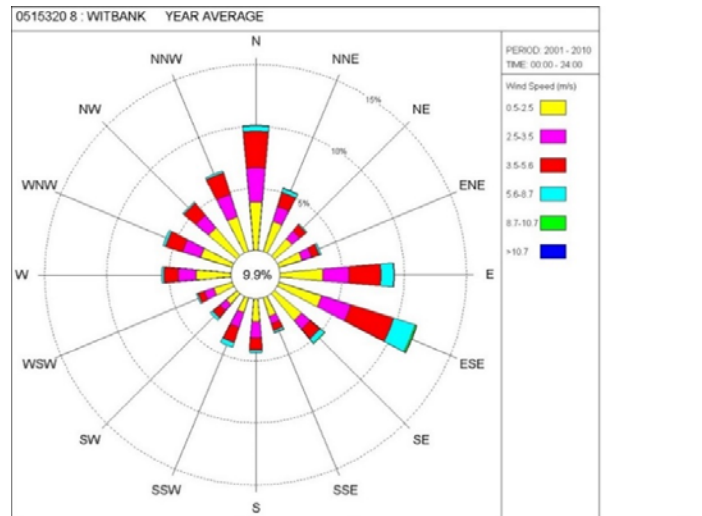
No weather stations are located in close proximity to the proposed project area. The closest weather station is located in Witbank. Temperature data from the Witbank weather station (Station number 0515320 8) was analysed and a summary of the data is presented in Table 9. The temperature data spanned 2001 to 2010.

**Table 9: The mean maximum and minimum temperatures**

Month	Average daily minimum temperature (°C)	Average daily maximum temperature(°C)
January	15.3	26.1
February	14.9	26.3
March	13.3	25.0
April	10.7	23.2
May	7.1	20.8
June	4.8	18.3
July	4.1	18.5
August	6.6	21.3
September	9.3	24.9
October	12.3	26.0
November	13.5	25.2
December	14.7	26.1

#### 3.1.2.4 Wind Direction and Speed at the Project area

Owing to the location of the site, the gentle undulating topography and the non-existence of mountain ranges and ridges, no localised wind systems will be generated. The wind patterns at the proposed Rietspruit Colliery mining area will conform to the regional wind patterns. Wind data from the Witbank weather station (Station number 0515320 8) was analysed and a summary of average wind speeds and directions is presented in Figure 7 below.



**Figure 5: Yearly average wind speeds and directions from the Witbank weather station**

**3.1.2.5 Mean Monthly Evaporation**

The mean monthly evaporation for the proposed project is presented in Table 9. The mean annual evaporation of the proposed Rietspruit Colliery mining area is 1599 mm (S-Pan).

**Table 10: Mean monthly evaporation for the region.**

MONTH	MM
October	172.4
November	162.6
December	179.1
January	175.9
February	146.6
March	144.7
April	111.3
May	93.7
June	76.1
July	83.3
August	110.3
September	143.0
<b>Mean Annual</b>	<b>1599</b>

### **3.1.2.6 Extreme weather conditions**

Thunderstorms occur frequently in summer and are usually accompanied by lightning, heavy rain, strong winds and occasional hail. Average of 13.8 hail incidents per annum can be expected at any particular site. Frost occurs in the winter months, peaking with an average occurrence of nine days in July.

## **3.2 TOPOGRAPHY**

### **3.2.1.1 Local topography**

The topography of the proposed mining area is flat to slightly undulating, dipping towards the local streams. Surface elevations across the proposed mining area range from 1530 to 1580 meters above sea level

## **3.3 Soils**

Plinthic Catena: Upland duplex and Margalitic soils rare (Dystrophic and/or mesotrophic; red and/or yellow soils). Mainly red (Ba) or yellow (Bb), apedal (= structureless) soils, moderately (mesotrophic) to highly (dystrophic) leached (low to moderate fertility status), with a wide textural range, mostly sandy loam to sandy clay loam.

Red to yellow sandy soils of the Ba and Bb land types found on shales and sandstones of the Madzaringwe Formation (Karoo Supergroup). Land types Bb (65%) and Ba (30%).

A detailed soil survey over the areas to be affected by the proposed mining project will be conducted. The soil survey will be used to determine the distribution, types, usage and suitability of the soils. This information will be used during the compilation of the Environmental Impact Assessment and Environmental Management Programme Report.

## **3.4 Land Use**

The current land use within and around the proposed Rietspruit Colliery is depicted in Figure 6 below. The land uses within the proposed mining right area include the following land uses i.e., crop production, and grazing.

A detailed assessment of the land uses within and around the mining right area and more specially the mining area will be undertaken during the Environmental Impact Assessment stage of the IEA application process.

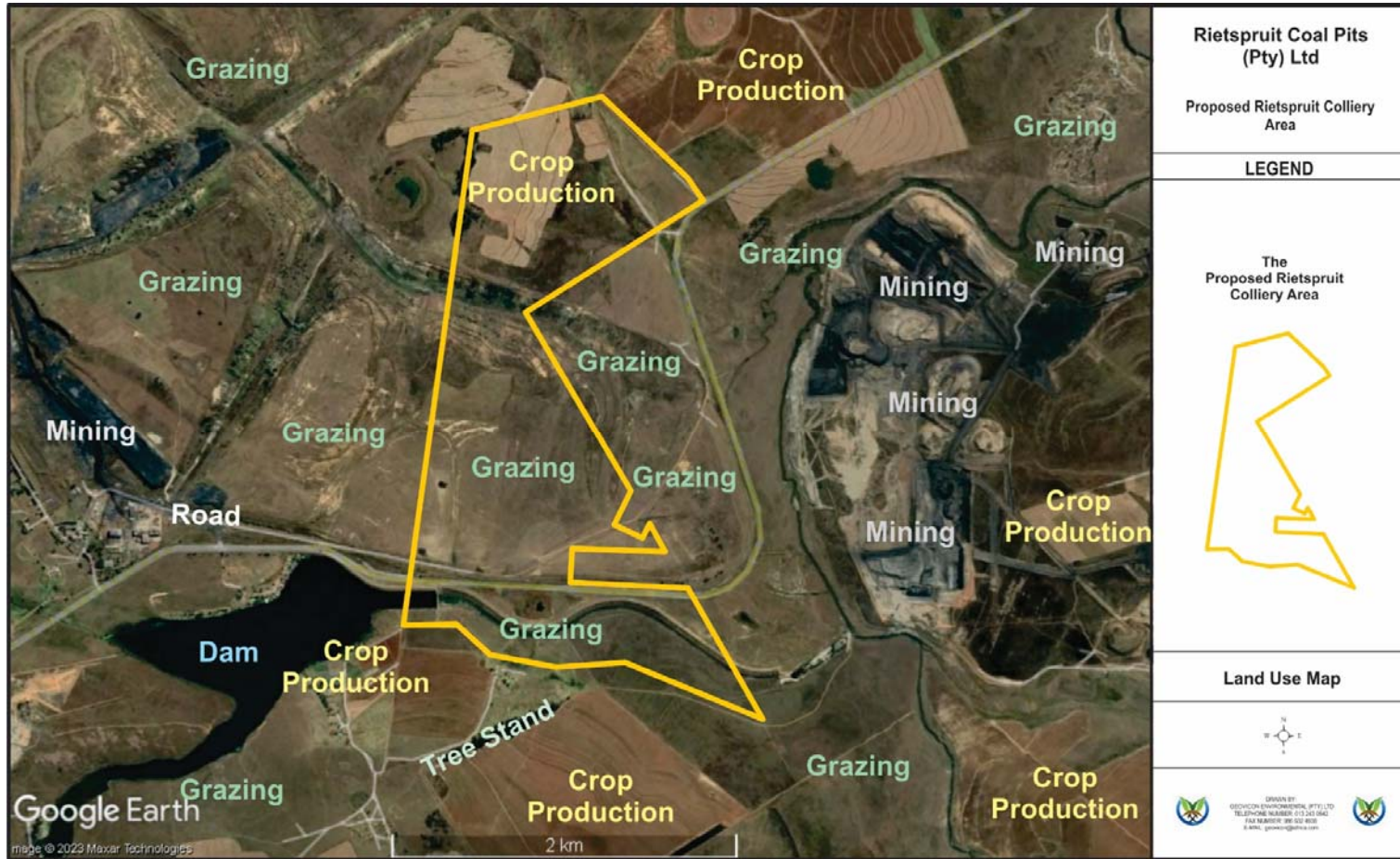


Figure 6: Current Land use map for the proposed Rietspruit Colliery



## Natural Vegetation / Plant Life

Mucina et al., (2006) which is the most recent vegetation map for South Africa, Lesotho and Swaziland describes the study area as 'Eastern Highveld Grassland'. This vegetation type is endemic to Mpumalanga, where it occurs on slightly to moderately undulating plains with some low hills and pan depressions. The climate is temperate with strongly seasonal summer rainfall and very dry, cold winters.

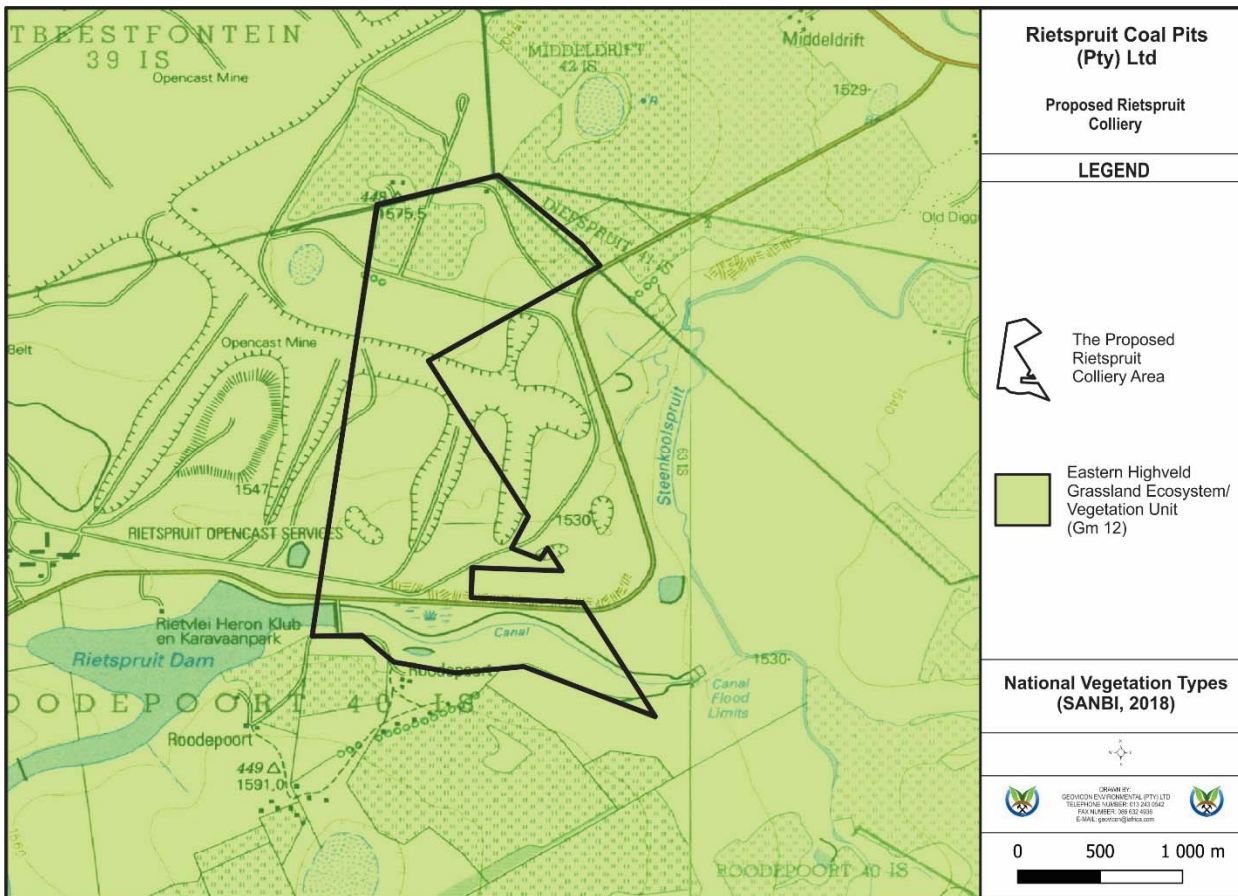
This vegetation unit is situated in the Mpumalanga and Gauteng Provinces on the plains between Belfast and the eastern side of Johannesburg in the west and extending southwards to Bethal, Ermelo and west of Piet Retief. The altitude varies from 1 520 to 1 780 mamsl but may also be as low as 1 300 mamsl in places.

The vegetation and landscape features consist of slightly to moderately undulating plains, including some low hills and pan depressions. The vegetation is short dense grassland dominated by the usual Highveld grass composition (*Aristida*, *Digitaria*, *Eragrostis*, *Themeda*, *Tristachya* etc.) with small, scattered rocky outcrops with wiry, sour grasses and some woody species (*Senegalia caffra*, *Celtis africana*, *Diospyros lycioides subsp lycioides*, *Parinari capensis*, *Protea caffra*, *Protea welwitschii* and *Searsia magalismsontanum*). The common vegetation found in this area is represented in Table 5.

**Table 11: List of the dominant taxa in the Eastern Highveld Grassland vegetation unit**

<b>Graminoids (Grass like plants)</b>	
<i>Aristida aequiglumis</i>	Three-awn
<i>Aristida congesta</i>	Tassel three-awn
<i>Aristida junciformis</i>	Gongoni three-awn
<i>Brachiaria serrata</i>	Velvet signal grass
<i>Cynodon dactylon</i>	Couch grass
<i>Digitaria monodactyla</i>	One finger grass
<i>Digitaria tricholaenoides</i>	Purple finger grass
<i>Elionurus muticus</i>	Wire grass
<i>Eragrostis chloromelas</i>	Narrow curly leaf
<i>Eragrostis curvula</i>	Weeping love grass
<i>Eragrostis plana</i>	Tough love grass
<i>Eragrostis racemosa</i>	Narrow heart love grass
<i>Eragrostis sclerantha</i>	Love grass
<i>Heteropogon contortus</i>	Spear grass
<i>Loudetia simplex</i>	Common russet grass
<i>Microchloa caffra</i>	Pincushion grass
<i>Monocymbium ceresiiforme</i>	Boat grass
<i>Setaria sphacelata</i>	Bristle grass
<i>Sporobolus africanus</i>	Ratstail dropseed
<i>Sporobolus pectinatus</i>	Dropseed
<i>Themeda triandra</i>	Red grass
<i>Trachypogon spicatus</i>	Giant spear grass
<i>Tristachya leucothrix</i>	Trident grass
<i>Tristachya rehmannii</i>	Trident grass
<b>Herbs (Forbs, plants)</b>	
<i>Berkheya setifera</i>	Rasperdissedoring
<i>Haplocarpa scaposa</i>	Tonteldoosbossie
<i>Justicia anagalloides</i>	--
<i>Pelargonium luridum</i>	--
<i>Acalypha angustata</i>	Copper leaf

<i>Chamaecrista mimosoides</i>	Fishbone cassia
<i>Dicoma anomala</i>	Maagbitterwortel
<i>Euryops gilfillanii</i>	--
<i>Euryops transvaalensis</i>	--
<i>Helichrysum aureonitens</i>	--
<i>Helichrysum caespitium</i>	Speelwonderboom
<i>Helichrysum calicomum</i>	--
<i>Helichrysum oreophilum</i>	--
<i>Helichrysum rugulosum</i>	--
<i>Ipomoea crassipes</i>	--
<b>Geophytic herbs</b>	
<i>Gladiolus crassifolius</i>	--
<i>Haemanthus humilis</i>	--
<i>Hypoxis rigidula</i>	Kaffertulp
<i>Ledebouria ovatifolia</i>	--
<b>Succulent herbs</b>	
<i>Aloe ecklonis</i>	Ecklone's aloe
<b>Low shrubs</b>	
<i>Anthospermum rigidum</i>	--
<i>Stoebe plumose</i>	--



## **Figure 7: National Vegetation types (SANBI)**

### **Animal Life**

The area within and surrounding the proposed Rietspruit Colliery is characterised by crop production, residential, livestock drinking and grazing. Due to the above, the wildlife habitats in the area have been affected. The result of the above would be the migration of some of the animals away from the affected areas.

Determination of animal life over an area to be impacted on by mining activities is a prerequisite before commencement with any mining activities. The information regarding the animal life of the area will be part of the Environmental Impact Assessment and Environmental Management Programme Report.

### **Surface Water**

In terms of the Department of Water Affairs demarcations, the proposed Rietspruit Colliery mining project area falls in the Upper Olifants Water Management area.

During the impact assessment several other aspects of the surface water within the catchment that may be affected by the proposed mining operations will be evaluated, which include but not limited to the catchment boundaries, mean annual run-off, normal and dry weather flow, flood peaks and volumes, surface water quality, surface water use and presence of sensitive landscapes such as wetlands and pans will be addressed.

During the impact assessment several other aspects of the surface water within the catchment that may be affected by the proposed mining operations will be evaluated, which include but not limited to the catchment boundaries, mean annual run-off, normal and dry weather flow, flood peaks and volumes, surface water quality, surface water use and presence of sensitive landscapes such as wetlands and pans will be addressed.

#### **3.2.1.1 River Diversions**

No river diversions are planned for the activities covered by this Scoping Report.

#### **3.2.1.2 Water Authority**

The authority in charge is the Department of Water and Sanitation (Mpumalanga Regional Office).

#### **3.2.1.1 Groundwater**

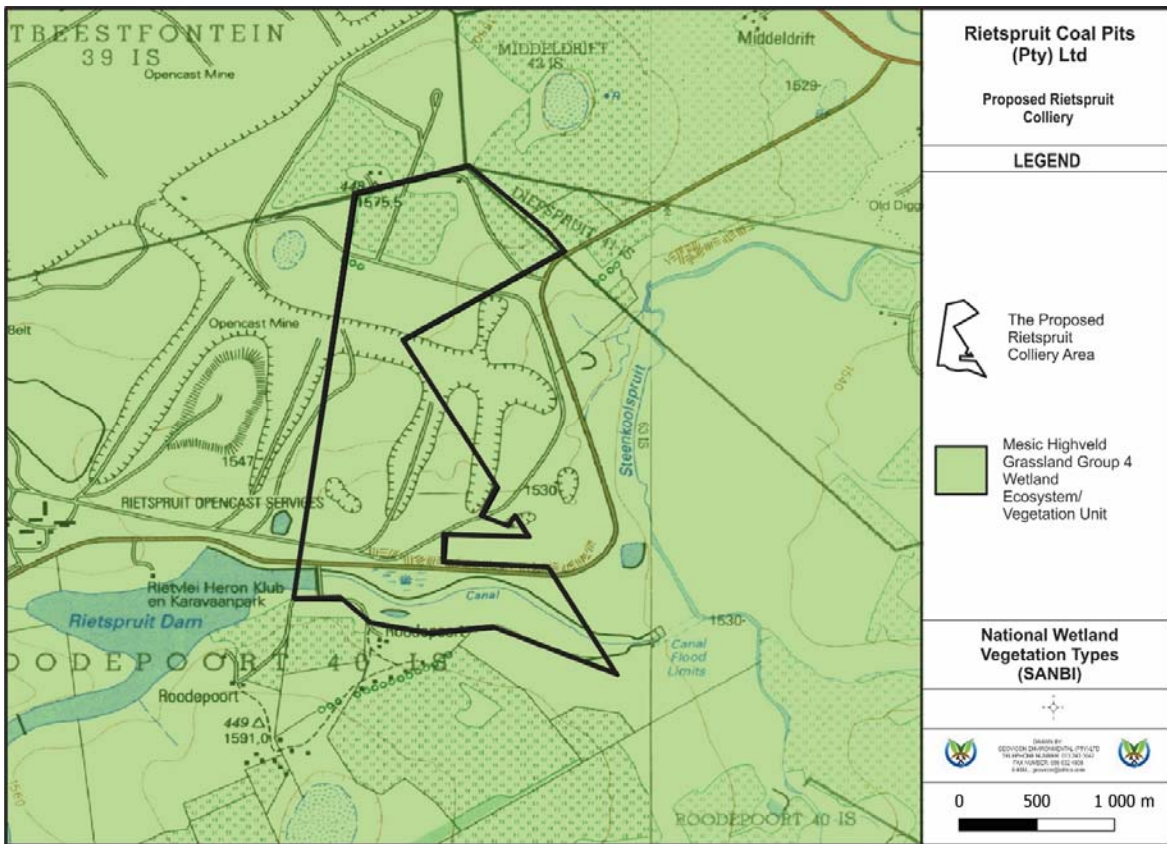
Since most mining-related activities impact on the groundwater quality and quantity, it is crucial that the prevailing groundwater environment be determined before mining activities could commence. The determined groundwater environment will then be used as reference baseline for quantifying potential impacts on the existing groundwater regime.

A geohydrological study will be conducted on the proposed mining area to determine the prevailing groundwater conditions.

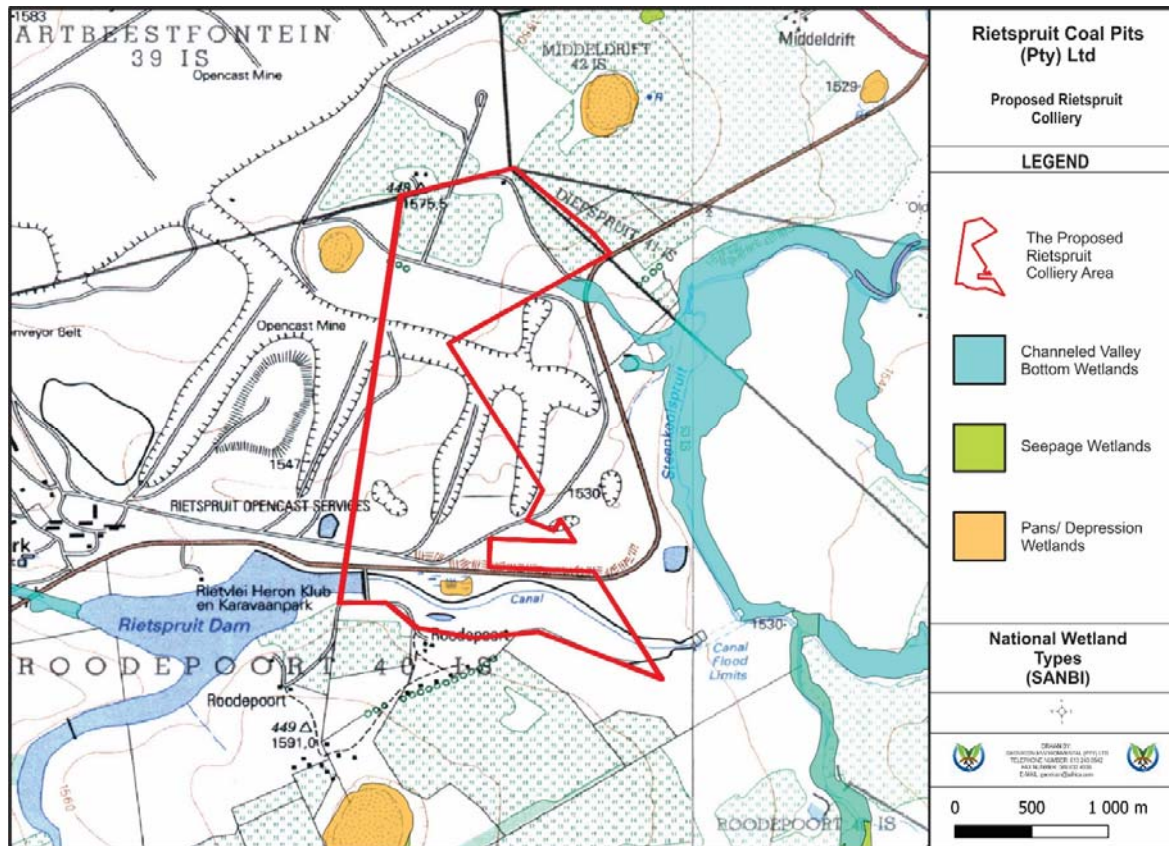
#### **3.2.1.2 Sensitive Landscape**

Wetlands are sensitive landscapes under statutory protection, and such must not be cultivated, overgrazed or mined. The presence of wetlands within the proposed mining area needs to be assessed and their status determined which will give the applicant and the authorities the pre-mining conditions of the wetlands. A suitably qualified wetland specialist will generate a wetland study report. And this will then be used as a basis for monitoring the effect of the proposed mining operation on the wetland. However, Geovicon Environmental (Pty) Ltd an independent consultant, undertook a desktop study over the Rietspruit Colliery area to determine the presence of any wetland areas.

According to the study, the proposed Rietspruit Colliery is situated in the Mesic Highveld Grassland Group 4, Wetland Vegetation type (Figure 8), the area has the following wetland types, namely channelled valley bottom, flood plains, seepage wetlands and depressions, Figure 9 provides a visual indication of all the wetland types located in the vicinity of the proposed Rietspruit Colliery Area.



**Figure 8: National Wetland Vegetation Types (SANBI)**



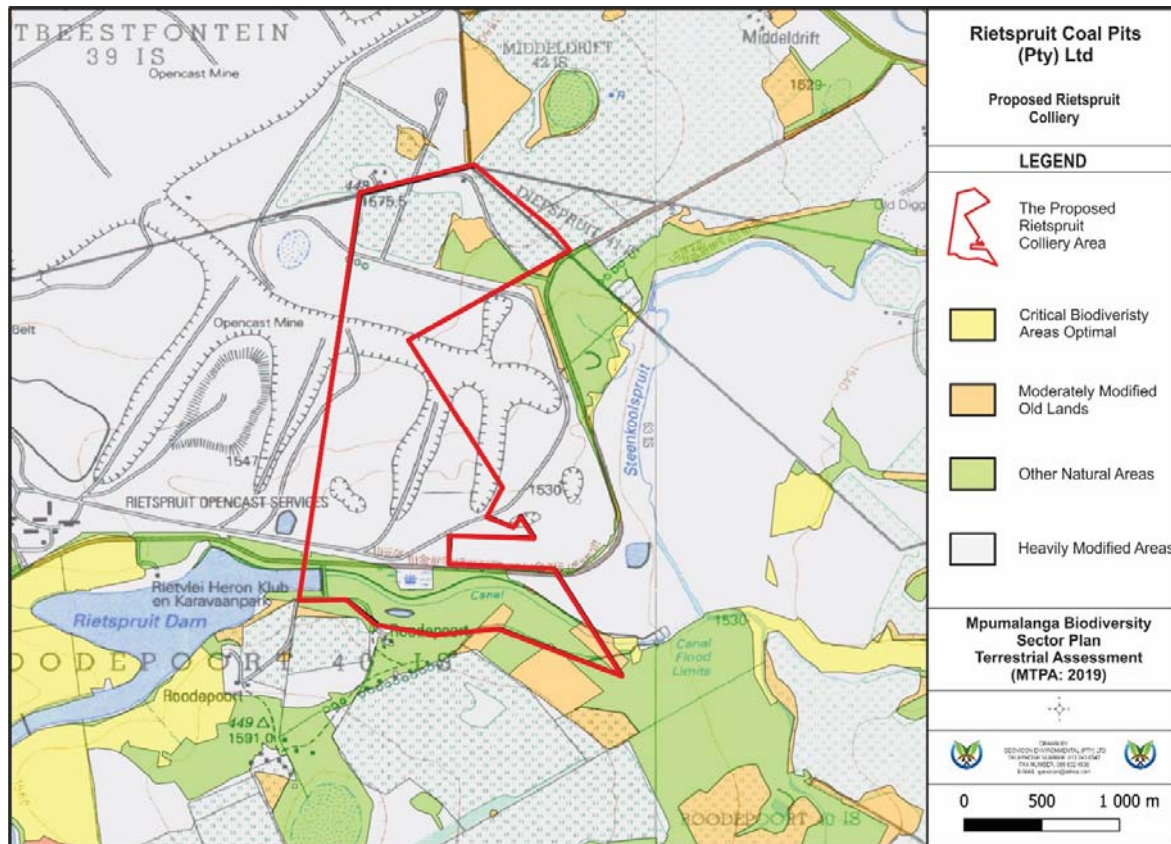
**Figure 9: National Wetland Types (National Wetland Map 5: SANBI)**

The proposed Rietspruit Colliery is situated in the vicinity of areas that are important for biodiversity. These areas include terrestrial and freshwater Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESA's), Other Natural Areas and both moderately and heavily modified areas.

**Other Natural Areas (ONAs):** Areas that have not been identified as a priority in the current systematic biodiversity plan but retain most of their natural character and perform a range of biodiversity and ecological infrastructural functions.

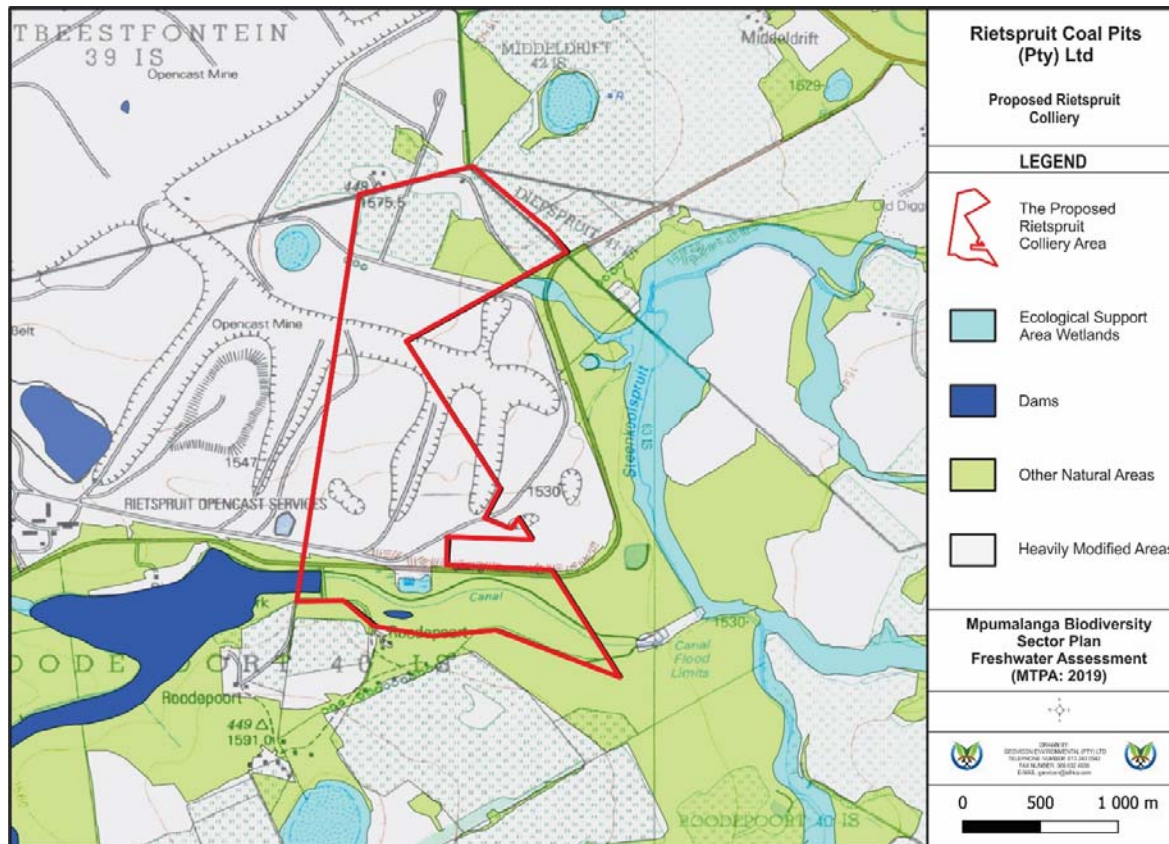
**Moderately or Heavily Modified Areas (sometimes called 'transformed'):** Areas that have been heavily modified by human activity so that they are by-and-large no longer natural, and do not contribute to biodiversity targets. Some of these areas may still provide limited biodiversity and ecological infrastructural functions but, their biodiversity value has been significantly and, in many cases, irreversibly compromised

Figure 13 , below provides a spatial illustration of the proposed Rietspruit Colliery Area in relation to terrestrial CBAs, ESA's etc.



**Figure 10: Mpumalanga Biodiversity Sector Plan Terrestrial Assessment (MBSP:2019)**

According to the Mpumalanga Biodiversity Sector Plan GIS-based electronic application (Mpumalanga Tourism and Parks Agency (MTPA), 2019), the areas where the above-mentioned activities are located, are primarily situated in freshwater assessment categories of “Heavily Modified” meaning areas that have experienced a form of land use that has resulted in the near complete loss of biodiversity and a degree of loss of ecological function; “Other Natural Areas” meaning areas that have not been identified as a priority in the current systematic biodiversity plan but retain most of their natural character and perform a range of biodiversity and ecological infrastructural functions; “Ecological Support Areas (ESA) – Wetlands” meaning areas that support the hydrological functioning of rivers, water tables, freshwater biodiversity as well as providing a host of ecosystem services through their ecological infrastructure. They need to be maintained in a healthy condition; and “Dams” meaning artificial water bodies which may have impacted on wetlands or river systems. These areas may, however, still have a recharge effect on wetlands, groundwater, and river systems.



**Figure 11: Mpumalanga Biodiversity Sector Plan Freshwater Assessment (MBSP:2019)**

### Air Quality

The main sources of pollution in the Mpumalanga Highveld region are power stations, petrochemical plants, small industries, domestic combustion, motor vehicles, smoldering coal-discard dumps/exposed coals and veld burning. Pollutants emitted by these sources include sulphur dioxide, nitrogen oxides, carbon monoxides, hydrocarbons and carbon dioxides.

The area surrounding the proposed Rietspruit Colliery comprises of crop production, residential, livestock drinking and grazing. Air quality status is therefore expected to be determined by biomass burning, pollution from urban activities and nearby mining operations.

### Sites of Archaeological and Cultural Interest

A study will be conducted by a suitably qualified specialist to confirm if there are any sites of archaeological and cultural interest found within the proposed mining area

### Visual Aspects

This area is characterised by a gently undulating plateau with fairly broad to narrowly incised valleys such as the Steenkoolspruit. The mine activities will be visible from the surrounding farms and from the nearby roads.

### Regional Socio-Economic Structure

The proposed project is situated in the Emalahleni Local Municipality part of the Nkangala District Municipality, which is one of the three districts in Mpumalanga province.

### **3.2.1.3 Population Growth and Location**

Compared to the neighbouring economic hubs and regional service centres such as Middelburg and Mbombela, as well as the dense rural settlements in the Nkangala District to the north, the Emalahleni Local Municipality is relatively sparsely populated.

The total population of the municipality has a total population of 395 466 individuals, 81,3% of whom are black African. (Stats SA, 2011). Whites make up 15,7% of the population, and other race groups comprise the remaining 3%.

Of those aged 20 years and older, 4,0% have completed primary school, 35,7% have some secondary education, 31,5% have completed matric, 14,0% have some form of higher education, while 5, 8% have no form of schooling (Stats SA, 2011).

The bulk of the population in eMalahleni is urbanised with only 11% of the population residing in the non-urban areas. The eMalahleni Town is dominant in terms of its population, with only 21% of the urban population residing outside the town. In terms of the urban areas, the highest population density is experienced in Lynnville (202 households/ hectare), followed by Phola (160 households/ hectare) and then Kwa-Guqa (157 households/ hectare).

### **3.2.1.4 Major Economic Activities and sources of Employment**

The major economic activities in the Witbank/Middelburg area are those associated with coal mining, metallurgical industries, commerce and light engineering, power generation, agriculture and administration. 70% of the Witbank area's economic base is founded in minerals. The area's main export is coal (currently only 24% of the total mined), steel and steel products, thus, making the Witbank and Middelburg economy relatively sensitive to world economic cycles.

### **3.2.1.5 Unemployment estimates for the area**

Approximately 45% of population is economically active, which is considerably higher than the Nkangala District (34%). The highest number of unemployed people reside in Hlalanikahle (23.5%), followed by Lynnville (22.6%), Phola (22.1%) and Kwa-Guqa (20.9%).

Employment of the population according to the major types of industry in the area is as follows:

- 23% in mining and quarrying;
- 13.2% in community, social and personal services;
- 13.1% in wholesale and retail trade;
- 10% in manufacturing; and
- Only 3.1% in agriculture, hunting, forestry and fishing.

From this breakdown it is clear that most people in the area are employed in the primary and secondary sectors, with very few people employed in the tertiary sector (only 5.7% as professionals and 4.1% as legislators; senior officials and managers). Rietspruit Colliery will employ new full-time employees for this project.



SECTION FOUR

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## **Details of Public Participation Process**

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## 4 DETAILS OF THE PUBLIC PARTICIPATION PROCESS

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In terms of Chapter 6 of the NEMA regulations (GN R543), all potential Interested and Affected Parties should be informed of the project and be given a chance to register as an Interested and Affected Party in order to raise any comments and concerns which relates to the proposed project.

### 4.1 THE CONSULTATION PROCESS

#### Registration phase

Immediate and adjacent landowners, local municipality, state departments and the greater public will be notified via emails (individual notices), site notices and a local newspaper to register as interested and affected parties for the EIA process of the proposed Hendrina Colliery's IEA application. The Draft Scoping report will be made available for comment to all relevant stakeholders during the registration phase. Note the scoping and registration phase will be undertaken together.

#### 4.1.1.1 Registered Interested and Affected Parties (I&AP's)

The interested and affected parties identified are as follows:

- Department of Water and Sanitation (Mpumalanga Regional Office)
- Department of Mineral Resources and Energy (Mpumalanga Regional Office)
- National Department of Agriculture, Forestry and Fisheries
- Mpumalanga Parks and Tourism Agency
- South Africa Heritage Agency
- Emalahleni Local Municipality
- Nkangala District Municipality
- Immediate/adjacent landowners and legal occupiers
- Ward Councillor and Community Leaders
- SANRAL
- Transnet

More interested and affected parties will be added should more parties register their names or send comments on the report.

#### Scoping Phase

The draft Scoping Report was placed in the Kriel Public Library on the 20<sup>th</sup> of January 2023 for evaluation and comment. An advertisement was placed in the local newspaper (Witbank News Newspaper) on the 20<sup>th</sup> of January 2023 in accordance with Regulation 41 of Government Notice No. 326 under section 24 of the National Environmental Management Act, 107 (Act no. 107 of 1998) informing the public about the availability of the draft scoping report in the said Library for evaluation and comment.

The draft Scoping Report will be submitted to relevant State Departments which deals with matters relating to the environment.

#### EIA/EMP Phase

Upon acceptance of the Final Scoping Report, the draft EIR/ EMPr Report, will be compiled and submitted

to relevant State Departments, the Emalaheni Local municipality, and registered I&APs for evaluations and comment. The draft EIR/ EMPr will also be placed in the Kriel Public Library for comment. An advert will be placed in the local newspaper in accordance with Regulation 41 of Government Notice No. 326 under section 24 of the National Environmental Management Act, 1998 (Act no. 107 of 1998) informing the public about the availability of the draft EIR/ EMP report in the said Library for evaluation and comments. Once the commenting period lapses, the final EIR/ EMP including comments from registered I&AP's, will be submitted to the DMRE.

#### **Decision on the IEA Application**

Once the competent authority has taken a decision on the IEA application for the proposed IEA, all registered I&AP's will be informed. This will be conducted directly in writing, via email or fax and indirectly through advertisement in local newspapers.

SECTION FIVE

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## **Need and Desirability of the Project**

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## 5 NEED AND DESIRABILITY OF THE PROPOSED PROJECT

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### 5.1 MOTIVATION FOR THE NEED AND DESIRABILITY OF THE PROJECT

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

Rietspruit Colliery is situated within the Emalahleni Local Municipality in the Mpumalanga Province. An EIA for the Environmental Authorisation application will be undertaken and a Scoping Report and an EIA and EMPr must be submitted to the Department of Mineral Resources and Energy. As part of the requirements of the compilation of the Scoping Report, EIR and EMPr, the applicant must determine the Need and Desirability of the proposed project. The need and desirability for the project must be compiled in order to comply with the requirements of the guideline on need and desirability promulgated on the 20th of October 2014 under Government Notice 891 of 2014, which in turn will comply with the requirements of the EIA Regulations, 2014 as amended.

To undertake the 'need and desirability assessment' the following must be considered in accordance with the NEMA EIA Regulations; Guideline and Information Document Series; Guideline on Need and Desirability (2014).

- The Integrated Development Plans for the Emalahleni Local Municipality

The need and desirability determination for this project will hence be structured such that it determines how the ecological attributes of the area, spatial development of the area, socio-economic profile of the communities within the mining area.

### 5.2 NEED FOR THE PROJECT

Coal is valued for its energy content, and, has been widely used to generate electricity. Coal mining has had many developments over the recent years, from the early days of men tunnelling, digging and manually extracting the coal on carts, to large open cut and long wall mines. Mining at this scale requires the use of draglines, trucks, conveyors, jacks and shearers. It is therefore important that these coal reserves are in regular supply at affordable prices, close to the point of consumption.

### 5.3 DESIRABILITY FOR THE PROJECT

Rietspruit Colliery will provide valuable job opportunities within the Emalahleni Local municipality and contribute towards development of the said Local Municipality.

SECTION SIX

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## **Detailed Description of the Project**

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## 6 DETAILED DESCRIPTION OF THE PROJECT

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### 6.1 DETAILED DESCRIPTION OF THE PROJECT

#### Surface Infrastructure

Surface infrastructure will include: initial box-cut, subsequent opencast cuts, R.O.M. stockpiling area, overburden stockpiles, offices, workshops, diesel storage facilities, crushing/screening plant, washing plant, access/haul roads, water management structures (Pollution Control Dam and clean and dirty water diversion structures) and other related mining infrastructure. See Mining Layout Plan attached as **Appendix B**.

#### Roads, railways and power lines

There are various existing main (secondary road) and minor (farm roads) roads, and telecommunication lines that occur within and in close proximity to the proposed Rietspruit Colliery. These existing roads will be used to connect to the proposed mining area. Rietspruit Colliery will require haul roads within the proposed mining area for haulage of coal by trucks from the mining area to the R.O.M stockpiling area. Power supply will be sourced from an existing Eskom power line.

#### Waste Management

##### 6.1.1.1 Solid Waste Management

Industrial and domestic waste arising from the proposed mining area will be collected and disposed of by a contractor at a registered waste disposal site. Waste that has value will be transported to a nearby Scrap yard where it will be sorted and sold. A Beneficiation plant will not be constructed at the proposed mining area, hence no mine residue will be generated.

##### 6.1.1.2 Water Management Facilities

Dirty water from the proposed mining area (workings and dirty water areas) will be pumped/drained/diverted to the pollution control facilities to be constructed on site. The pollution control facilities will be designed and constructed to have enough capacity to handle the volumes of the dirty water emanating from the proposed mine including the volumes from a 1:50 year 24-hour storm event.

Potable water supply for the mining area will be sourced from a borehole to be sited and drilled on site. If no suitable supply from the borehole's sittings found, alternatively water supply from the municipality or nearby farms or mines will be used.

##### 6.1.1.3 Mineral Processing

Crushing, screening, and washing of coal will be conducted before coal is transported to the inland markets.

##### 6.1.1.4 Transport of Product

Coal from the mining area will be transported via tipper trucks to the R.O.M stockpile area. Front-end loaders will be used to feed the crushing, screening, and washing plant with coal from the R.O.M. stockpile. Haulage trucks will then be used to transport the coal product from the coal product stockpile to the destined clients.

##### 6.1.1.5 Disturbance of watercourses

Wetlands associated with the tributaries of the Olifants River occur within and adjacent to the proposed development area. Rietspruit Coal Pits (Pty) Limited is committed to comply with the environmental

legislation, by obtaining necessary authorisations before conducting mining activities adjacent to these wetlands.



SECTION SEVEN

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## **Description of Identified potential alternatives**

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## 7 CONSIDERATION OF ALTERNATIVES

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### 7.1 MOTIVATION FOR NOT CONSIDERING ALTERNATIVES

#### Location Alternatives

The location of the proposed development is the most suitable due to its ideal location in terms of the requirements for coal mining. Prospecting boreholes drilled indicated that the quality of the coal in the area where the applicant proposes to mine coal, is of the best quality and therefore no alternative site has been investigated.

#### Site Layout Alternatives

Site layout alternatives can be considered after specialist input has identified possible sensitive landscapes and wetland zones have been delineated.

#### Transport Alternatives

In terms of the proposed Rietspruit Colliery the most viable option to accessing the site will be via the existing R545 Provincial Road.

### 7.2 CONCLUDING STATEMENT

- If the mine cannot proceed with this project, this may result in the sterilisation of the reserves for an extended period, which will cause loss of revenue to the local municipality and the district at large.
- In view of the above, the consequences of not proceeding with this project will have a detrimental impact on the employment opportunities to be created, the surrounding previously disadvantaged community and the owners of the mine.

SECTION EIGHT

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## **Description of Environmental Issues and Potential Impacts**

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## 8 DESCRIPTION OF ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

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This section will only highlight anticipated impacts at the proposed Rietspruit Colliery. Note that impacts discussed in this section are only briefly highlighted. A detailed impact assessment will be given in the Environmental Impact Assessment and Environmental Management Programme report to be submitted later to the Department of Mineral Resources and Energy.

The proposed mining operation will be conducted by means of opencast mining methods. Access to the coal reserves will be via an initial box cut and access ramp. Mining to be undertaken at the proposed mining area will constitute all mining phases. Potential impacts will arise during and after the mining operation on the proposed mining area, which include the four phases of mining i.e., Construction phase, Operational phase, Decommissioning phase and Closure phase (Residual Impacts).

### 8.1 CONSTRUCTION PHASE

During the construction phase, the following activities, which are likely to have a detrimental effect on the environmental, social and cultural aspects will be conducted:

- Construction of mine surface infrastructure (offices, workshops, access/haul roads, and other related mining infrastructure);
- Construction of crushing and screening plant
- Excavation of an initial box-cut;
- Preparation and formation of the topsoil, subsoil and overburden stockpiling areas;
- Preparation of R.O.M. stockpiling area;
- Construction of water management facilities

#### Topography

The construction of the mine surface infrastructure, R.O.M. and overburden stockpiles and pollution control dam and the excavation of the initial box cut will form topographical highpoints and topographical voids, which will have an impact on the topography of the proposed mining area. This will change the drainage patterns of the affected areas.

#### Soils

All construction phase activities will result in the stripping of the topsoil, which will result in the disruption of the soil profile within the mining areas. The stockpiling of the topsoil may result in the topsoil being leached out. The stockpiling of overburden material will result in the compaction of the topsoil layer, which will affect the fertility of the soil on which the stockpiles are placed.

#### Land Use

As described above, the area is predominantly used for crop production and limited grazing. All construction phase activities will result in the land use changing from the above-mentioned land uses to the mining land use. Note that the impacts during the construction phase will be limited to the initial box cut and infrastructure areas, hence will be less when compared to the operational phase. The construction phase may have impacts on the surrounding land uses, which will be determined during the EIA phase.

### **Land capability**

All construction phase activities will result in the reduction of the land capability through disruption of soil profile.

### **Natural vegetation**

The stockpiling of topsoil may result in the covering of the natural vegetation, which will in turn result in the loss of the vegetation. The construction phase activities on virgin ground will result in the removal of the topsoil layer, which will result in removal of vegetation cover. All mining activities will result in the removal of soils, which in turn, will result in loss of vegetation cover.

### **Animal Life**

All construction phase activities will result in the migration of animals away from the proposed mining area. Disruption of the topsoil profile may also lead to loss of animal burrows/microhabitats.

### **Surface water**

The activities undertaken during the construction phase will result in the formation of voids, which will decrease surface water runoff within the mine-affected catchments. Exposure of soils may lead to increased silt loads in surface water runoff. Rainfall captured within the pit will be exposed to carbonaceous material, resulting in elevation of some chemical components of the water. This water may impact negatively on the surface water of streams, if released.

### **Groundwater**

Note that during the construction phase no extensive mining operations and related activities will be undertaken, hence the mining operation will not have a significant influence on the groundwater. Oil and diesel spillages from earthmoving equipment/diesel tanks/workshop areas may contaminate groundwater. It is however not expected that the activities would impact on the groundwater significantly. In view of the above no significant impacts on groundwater are predicted during the construction phase.

### **Air Quality**

Movement of mining machinery will generate dust and diesel fumes. Dust will be generated by wind blowing over exposed soils. Blasting will also generate dust. This dust may have high concentration of coal, which may be harmful to employees, nearby residents, vegetation and may affect the land use of adjacent properties. These activities will have an impact on the air quality within and around the proposed mining area.

### **Visual Aspects**

The mine activities will be visible from the surrounding farms and the nearby roads. The visibility of the mine may have visual impacts on the surrounding properties.

### **Noise**

Machine operators in close proximity to mine machinery will be exposed to noise levels in excess of 85 dBA. Noise generated from the site may affect the neighbouring property owners and occupiers.

### **Social Aspects**

Commencement of mining activities may result in the following i.e., Creation of jobs in the Kriel area, Development of mine employees in terms of skills and career development, injection of capital into the local/regional economy, support of the infrastructure development, community development and poverty eradication projects. It must however be noted that the social well-being of the community within and adjacent to the proposed mining area will be affected by the commencement of the mine.

## 8.2 OPERATIONAL PHASE

The following activities, which may impact on the health of people and the environment, will occur at the proposed Rietspruit Colliery during the operational phase:

- Systematic removal of the coal seams by means of opencast mining method;
- Crushing and screening of coal
- Stockpiling and transporting of R.O.M material;
- Disposal of mine affected water into the pollution control facilities; *and*
- Use of the mine surface infrastructure.

The activities listed above are likely to have a detrimental effect on the following environmental/social aspects:

### Topography

Removal of coal by the opencast mining method and the stockpiling of coal at the coal stockpile area will result in the formation of voids and highpoints which will impact on the topography of the proposed mining area and its surrounds. The presence of the overburden stockpiles and the mine surface infrastructure will change the topographical features within and around the proposed mining area.

### Soils

Removal of the target coal during the operational phase will require that the overburden, which includes the top, subsoil and hards layers, be removed for access to the coal. The above, will result in the disturbance of above-mentioned layers, which will have an impact on the physical and chemical structure of the soil layers, which will in turn have impacts on the animal life and vegetation cover of the affected area. The use of mine machinery may have impacts on the soils due to leaking hydrocarbon fluids. Spillages of coal from the tipper and haulage trucks will cause areas not affected by the mining operation to be contaminated, resulting in the contamination of the soils within those areas.

### Land capability

All operational phase activities will result in the reduction of land capability as a result of disruption of soil profiles.

### Land Use

As described in the construction phase, the land use will change from crop production, residential, livestock drinking and grazing to mining. Except for the area demarcated for mining, no additional areas will be impacted on by the proposed mining operation.

### Natural Vegetation

The systematic removal of the coal by opencast mining methods will result in the removal of soil layers, which will in turn result in loss of vegetation. The above will have an impact on the natural vegetation over the opencast mining areas and indirectly to the animal life, if any, within the affected areas.

### Animal Life

The removal of the coal by opencast mining methods will result in the loss of animal burrows/microhabitats due to disruption of the soil profile and stripping of vegetation. This will result in the migration of animals away from the proposed mining area.

## **Surface water**

Removal of coal by opencast mining methods will result in the formation of a void, which will result in loss of MAR within the streams draining from the proposed mining area. Runoff from the upslope area may enter the opencast workings and other dirty water areas, giving rise to an increased loss of potential surface water runoff.

## **Sensitive landscapes**

The erosion and/or sedimentation of the seasonal wetland as a result of poor storm water management. This may result in alien vegetation encroachment within the surrounding wetland.

## **Groundwater**

Seepage from the pollution control dam may enter the groundwater table, resulting in pollution of the aquifer.

Note however, that a Geohydrological study will be undertaken to determine the extent of the anticipated impacts on groundwater.

## **Air Quality**

During the operational phase of the proposed mining operation, mine machinery movement may result in air pollution due to dust and diesel fumes generated. These air pollutants will have a tendency to travel towards the prevailing wind direction, which may cause settling of dust particles on the surrounding properties. Operators close to the mine machinery may also be affected by the dust generated. Note however that dust and fuel particulates tend to attenuate within a distance of approximately 500 meters. This situation may however differ in situations where wind speed is stronger than usual.

Dust will also be generated during blasting and will travel a longer distance compared to dust generated by blowing winds and machinery movements, hence the impact on air quality will cover a larger area.

Depending on the prevailing wind direction the landing of dust and fuel particulates on the surrounding properties may affect the vegetation of the land, which may include the cultivated lands.

Wind blowing over exposed soils will generate dust. These activities will have an impact on the air quality within and around the proposed mining area.

## **Noise**

Noise will be generated from mine machinery and blasting, which may be a nuisance to the nearby residents. Noises generated by mine machinery tend to attenuate to allowable levels within approximately five hundred meters. Operators close to the mine machinery may also be affected by the noise generated.

## **Visual Aspects**

All surface activities will be visible from a certain distance from the mine. Dust generated from the mine may be visible from a certain distance from the mine. The potential visual impact sites will include the nearby town Kriel and several farm roads. All potential visual impact sites will be identified and discussed in the EIA report.

## **Regional Socio-Economic Structure**

The commencement of the proposed Rietspruit Colliery will have a positive impact on the socio-economic structure by creating employment both directly and indirectly through the multiplier effect and by uplifting the economic levels of the surrounding areas through the implementation of the local economic development projects (Social and Labour Plan).

## **Interested and Affected Parties**

All interested and affected persons will be identified and consulted during the environmental impact assessment. Through this consultation all concerns will be recorded and measures to address the concerns identified. During the operational phase the mine will continue to apply an open-door policy with the public, hence the public will have access to the mine and documentation through relevant channels. Any concerns/complaints raised by any Interested and Affected Party will be considered and suitably addressed in a prompt manner.

### **8.3 DECOMMISSIONING PHASE**

The decommissioning phase is taken to begin once all economically exploitable coal reserves have been extracted. The following activities, which may impact on the health of people and the environment and are associated with the proposed project, will occur at the proposed Rietspruit Colliery during the decommissioning phase:

- Removal of all mining related infrastructure;
- Ripping of all infrastructure areas;
- Demolition of crushing and screening plant
- Filling of the final void and final shaping of the rehabilitated opencast pit;
- Rehabilitation of all R.O.M/product coal stockpiling area and haul/access roads;
- Rehabilitation of the dirty water management facilities; and
- Seeding of ripped and rehabilitated surfaces.

The activities listed above are likely to have a detrimental effect on the following environmental/social aspects:

#### **8.3.1 TOPOGRAPHY**

The removal of infrastructure and filling of voids will re-instate the topography of the area, hence a positive impact will result.

#### **8.3.2 SOILS, LAND CAPABILITY AND USE**

Removal of the carbonaceous layer from the R.O.M stockpiling area, ripping and rehabilitating of all haul roads and seeding of ripped and rehabilitated surfaces will re-instate the soils, land use and land capability. The above will result in a positive impact.

#### **8.3.3 NATURAL VEGETATION**

Seeding of ripped and rehabilitated surfaces will re-instate the natural vegetation of the area, hence a positive impact will result.

#### **8.3.4 ANIMAL LIFE**

Depending on the final land use, the general rehabilitation of the disturbed areas will see animal life migrating back to the area.

#### **8.3.5 SURFACE WATER**

Rehabilitation and shaping of the disturbed areas and removing of the pollution control facilities and diversion trenches/berms will result in the re-establishing of the surface water run-off patterns.



### **8.3.6 GROUNDWATER**

No additional impacts on the groundwater of the study area other than the impacts discussed in the operational phase are expected during the decommissioning phase of the project.

### **8.3.7 AIR QUALITY**

Removal of the carbonaceous layer from the R.O.M stockpiling area, ripping and rehabilitating of all haul roads and seeding of ripped and rehabilitated surfaces will result in the generation of dust. Wind blowing over exposed areas will also result in the generation of dust. In view of this, the generation of dust during the decommissioning phase will impact on the air quality of the area.

### **8.3.8 NOISE**

Movement of mining machinery during this phase of mining due to the rehabilitation work being conducted will generate noise. Machine operators and other employees in close proximity to mine machinery will be exposed to noise levels in excess of 85 dBA.

### **8.3.9 VISUAL ASPECTS**

All mine surface activities during this phase of mining will be visible from a certain distance from the mine. Dust generated from the mine may be visible from a certain distance from the mine. The potential visual impact sites will include the nearby town (Kriel) and several farm roads.

### **8.3.10 INTERESTED AND AFFECTED PARTIES**

All interested and affected persons would have been identified and consulted during the environmental impact assessment. Through this consultation all concerns will be recorded and measures to address the concerns identified. During the decommissioning phase the mine will continue to apply an open-door policy with the public, hence the public will have access to the mine and documentation through relevant channels. Any concerns/complaints raised will be addressed promptly.

SECTION NINE

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## **Conclusion**

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## 9 CONCLUSION

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### 9.1 OBJECTIVES OF THIS REPORT

The objectives for this report were outlined in Section 1.7. These objectives were as follows:

- Present information to the authorities about the proposed project.
- Provide information regarding alternatives that have been considered by Rietspruit Coal Pits (Pty) Limited.
- Show how Interested and Affected Parties will be afforded the opportunity to contribute to the project, to comment on the findings of the specialist's studies.
- Describe the baseline environment. A description of the receiving environment is given in Section 3.
- Describe the extent of environmental consequences for the construction, operating and closure phases. A summary of the potential impact, for construction, operation and decommissioning, is given in Section 8.
- Describe the environmental feasibility of the proposed project – the potential negative impacts relating to environment can be mitigated appropriately while significant socio-economic benefits to the country could be realised if the project proceeds.

### 9.2 ENVIRONMENTAL FEASIBILITY OF THE PROPOSED PROJECT

Based on the environmental assessment conducted as described in this draft Scoping Report, there are no significant environmental impacts associated with the proposed project that cannot be mitigated.

SECTION TEN

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## **Statutory Requirements**

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## 10 STATUTORY REQUIREMENTS

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All activities within the proposed area have been evaluated and activities listed in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) have been identified and relevant authorisation have been applied for. This draft Scoping Report for the proposed development has been undertaken in accordance with the Environmental Impact Assessment Regulations (2014) as amended published in Government Notice No. 326 of 4 December 2014 read with Section 44, of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

The National Environmental Management: Waste Act (NEMWA) requires that all waste management activities must be licensed. According to Section 44 of the NEMWA, the licensing procedure must be integrated with an EIAR process in terms of the NEMA.

The objectives of NEMWA involve the protection of health, wellbeing and the environment. The NEMWA provides measures for the minimisation of natural resource consumption, avoiding and minimising the generation of waste, reducing, recycling and recovering waste, and treating and safely disposing of waste.

Waste management activities are triggered by the proposed Rietspruit Colliery, hence an application in terms of the NEMWA will be submitted to the Department of Mineral Resources and Energy. However, where applicable, principles and objectives relating to waste management will be used during the compilation of the EMPr for the proposed project.

Rietspruit Coal Pits (Pty) Limited will also apply for the Integrated Water Use Licence for the proposed Colliery in terms of section 40 of the National Water Act, 1998 (Act 36 of 1998).

SECTION ELEVEN

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## **Plan of Study**

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## 11 PLAN OF STUDY

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### 11.1 DESCRIPTION OF ALTERNATIVES TO BE CONSIDERED AS PART OF THE ENVIRONMENTAL IMPACT ASSESSMENT

Based on the outcomes of the alternatives measured in the draft Scoping Report (see section 7), no alternatives will be considered as part of the Environmental Impact Assessment.

The option of not proceeding with the proposed Rietspruit Colliery was assessed in this draft Scoping Report. However, during the EIA phase, consultation with Interested and Affected Parties and studies undertaken will be considered when investigating the option of not proceeding with the proposed project.

### 11.2 DESCRIPTION OF ASPECTS TO BE ASSESSED AS PART OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The following environmental specialist studies that will be assessed and will be included in the EIA.

#### 11.2.1 Soil study

The approach would be to identify, classify and map the soil-landform resources by collecting relevant data on a flexible 150 by 150 m grid, with additional data points where hydric soils are expected. This will result in approximately formal soil-landscape descriptions. Reporting would be in the format with attention to salient soil properties, hectares occupied, landforms, soil hydromorphism, land capability, current land use and volumes of useable material for cover soil and in landscaping.

The study will also determine the potential impacts of the development of the identified soil types and recommend mitigation measures for the identified potential impacts.

#### 11.2.2 Vegetation Survey

The methodology included the studying of relevant maps and existing literature for the gathering of background information, identification of the actual species on site, listing of red data and declared invader species and the demarcation of sensitive areas.

The floristic diversity of the study area will be determined by means of the timed meander method. The timed meander method is highly efficient for conducting floristic analysis, specifically in detecting flora species of conservation concern and maximising floristic coverage. In addition, the method is time and cost effective and highly suited for compiling flora species lists and therefore gives a rapid indication of flora diversity. The timed meander survey will be conducted based on the technique described by Goff et al. (1982). Suitable habitat for species of conservation concern were identified according to Raimondo et al. (2009) and targeted as part of the timed meanders.

Notes will also be made at each site regarding current observed impacts (e.g., livestock grazing, trampling, erosion etc.) and the dominant vegetation will be subjectively recorded and any sensitive features (e.g., wetlands, rock outcrops etc.) will be included. Any additional observations will also be noted while navigating the meanders through the project area.

The South African National Biodiversity Institute (SANBI) provides an electronic database system, namely the Botanical Database of Southern Africa (BODATSA), to access distribution records on southern African plants. This database will be used as background information and also to verify the current applicable scientific names of plant species.

Rare and endangered species (if any) will be identified according to the National red list of South African Plants version 2017.1, and the Mpumalanga Conservation Act.

Declared invader species will be identified according to the National Environmental Management: Biodiversity Act (Act no 10 of 2004) (list promulgated in 2016), as well as the amended regulations in the Conservation of Agricultural Resources Act (no 43 of 1983).

### **11.2.3 Faunal Survey**

The animal biodiversity that may occur in any given area is dependent on the habitat that is available. The habitat must be able to provide food, shelter and areas for reproduction. The vegetation that occurs in an area is an important part of this habitat. Some animal species did adapt to benefit from development like housing and agriculture (cultivated lands, man-made dams etc.).

During the timed meander surveys, any signs of animal activity will be recorded by means of observed nests, dens, burrows, track, spoor, pellets, droppings, scat and dung. The local knowledge of the landowners in the area will also be used to indicate additional sightings in the area and existing literature and web-based atlases will be used to compile lists of animals with a possibility of occurrence in the area.

### **11.2.4 Hydrological Study**

The scope of work is summarised as follows, with the study limited to the study area:

- Review of existing reports and information
  - Review of all existing reports and information pertaining to the project.
  - One-day site visit, including travel time.
- Hydrological baseline study
  - Catchment delineation of the streams that fall within the study area. The catchments will be based on survey data provided by the client and/or using the Surveyor General's 5m contours.
  - Catchment characterisation.
  - Climate and mean annual and monthly precipitation analysis.
  - Maximum rainfall intensities.
  - Maximum 6-month rainfall data analysis.
  - Mean annual runoff analysis for the rivers, based on the Water Resources of South Africa, 2005 Study (WRC Report No TT 382/08).
  - Normal dry weather flows for the rivers, based on the Water Resources of South Africa, 2005 Study (WRC Report No TT 382/08).
  - Flood flow analysis (50-yr and 100-yr) for the streams.
- Flood lines and buffer zone delineation
  - The 100m GN704 buffer will be confirmed as being greater than the flood lines for all pans falling within or partly within the study area.
- Surface water quality
  - One water quality sample will be taken at each sample location. The sample will be taken for analysis of the water quality.
  - Baseline surface water quality analysis and interpretation will be done on the sample results.
- Surface water use
  - Possible users will be identified in terms of the headings of the South African Water Quality Guidelines.
- Surface water impact assessment
  - All proposed activities will be taken through an impact assessment. This will include quantifying surface water impacts on any wetlands.
- Reporting



- Compilation of a surface water specialist baseline report which can be used as input into the EIA document set.

#### **11.2.5 A storm water management plan**

- Water balance and PCD sizing
  - A stochastic daily timestep GoldSim water balance will be constructed for operations and post closure water balance modelling. This will include the calibration of a stochastic rainfall generator and water balance diagrams.
  - The water balance will be used for post closure modelling impact assessment such as expected rebound times and pit decant.
- The water balance will be used to size the pollution control dams required for the project, in accordance with GN704.

#### **11.2.6 Geo-hydrological Study**

##### Desk Study and Data Interpretation

Existing monitoring data as well as previous hydrogeological reports will be gathered, collated and assessed as input for the numerical flow and transport model.

##### Fieldwork

Fieldwork will be done to assess the current conditions of the site.

##### Numerical modelling

Numerical model to quantify the impacts under the current status quo as well as the potential impacts from the planned mining will be conducted.

##### Reporting

A report detailing the findings of the study will be provided in the format of regulations regarding the procedural requirements for water use license applications and appeals, specialist groundwater study.

#### **11.2.7 Heritage Impact Assessment**

##### Survey of literature

A survey of literature will be undertaken in order to obtain background information regarding the study area. Sources consulted in this regard will be indicated in the bibliography in the report.

##### Reference to other specialist desktop studies

Other heritage report (if available) will be identified and referenced.

##### Public consultation and stakeholder engagement

Public consultation will be done in by the EAP, the report will be presented to the public.

##### Physical field survey

The survey will be conducted according to generally accepted HIA practices and will be aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. An area wider than the demarcated area will be investigated, as the surrounding context needs to be taken into consideration. If required, the location/position of any site will be determined by means of a Global Positioning System (GPS), while photographs will also be taken where needed. The survey will be undertaken by doing a physical survey via off-road vehicle and on foot and will cover as much as possible of the area to be studied. Certain areas

##### Documentation

All sites, objects, features and structures identified will be documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities will be determined by means of the GPS. The information will be added to the description in order to facilitate the identification of each locality.

#### Evaluation of Heritage sites

The evaluation of heritage sites will be done by giving a field rating of each using the following criteria:

- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)
- The preservation condition of the site
- Uniqueness of the site and
- Potential to answer present research questions.

#### **11.2.8 Air Quality Impact Assessment**

The objectives of the study will be to characterise and describe ambient emissions from the coal mining process and to assess the impact thereof on the health of the receiving environment. The findings of the study will aim to provide the owner, relevant government departments, and other stakeholders with scientific data required in terms of present and future air quality management systems.

The study will be performed in accordance with the Technical Code of Practice for Air Dispersion Modelling in Air Quality Management in South Africa as described in the Regulations Regarding Air Dispersion Modelling (No. 533 of 2014), in terms of section 53 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).

Due to the level of risk associated with emissions from the process, a Level 2 air quality assessment for the project will be conducted. Level 2 assessment must be used for air quality impact assessment in standard/generic licence or amendment processes where:

- The distribution of pollutant concentrations and depositions are required in time and space.
- Pollutant dispersion can be reasonably treated by a straight-line, steady-state, Gaussian plume model with first order chemical transformation. Although more complicated processes may be occurring (i.e., curved plume trajectory), a more complicated model that explicitly treats these processes may not be necessary depending on the purposes of the modelling and the zone of interest. For example, if the area of interest is within 100 m, then curvature effects and chemical transformations may not be critical. Emissions are from sources where the greatest impacts are in the order of a few kilometres (less than 50 km) downwind.

AERMOD (AERMOD Version 13350 or later version) is the recommended model for more sophisticated near-source applications in all terrain types (where near-source is defined as less than 50km from source). The model can mostly be applied to Level 2 assessments.

AERMOD is a steady-state plume model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including, point, area and volume sources). In the stable boundary layer (SBL), the concentration distribution is assumed to be Gaussian in both the vertical and horizontal. In the convective boundary layer (CBL), the horizontal distribution is assumed

to be Gaussian, but the vertical distribution is described with a bi-Gaussian probability density function. Additionally, in the CBL, AERMOD treats “plume lofting,” whereby a portion of plume mass, released from a buoyant source, rises to and remains near the top of the boundary layer before becoming mixed into the CBL. AERMOD also tracks any plume mass that penetrates into elevated stable layer, and then allows it to re-enter the boundary layer when and if appropriate.

#### Deliverables

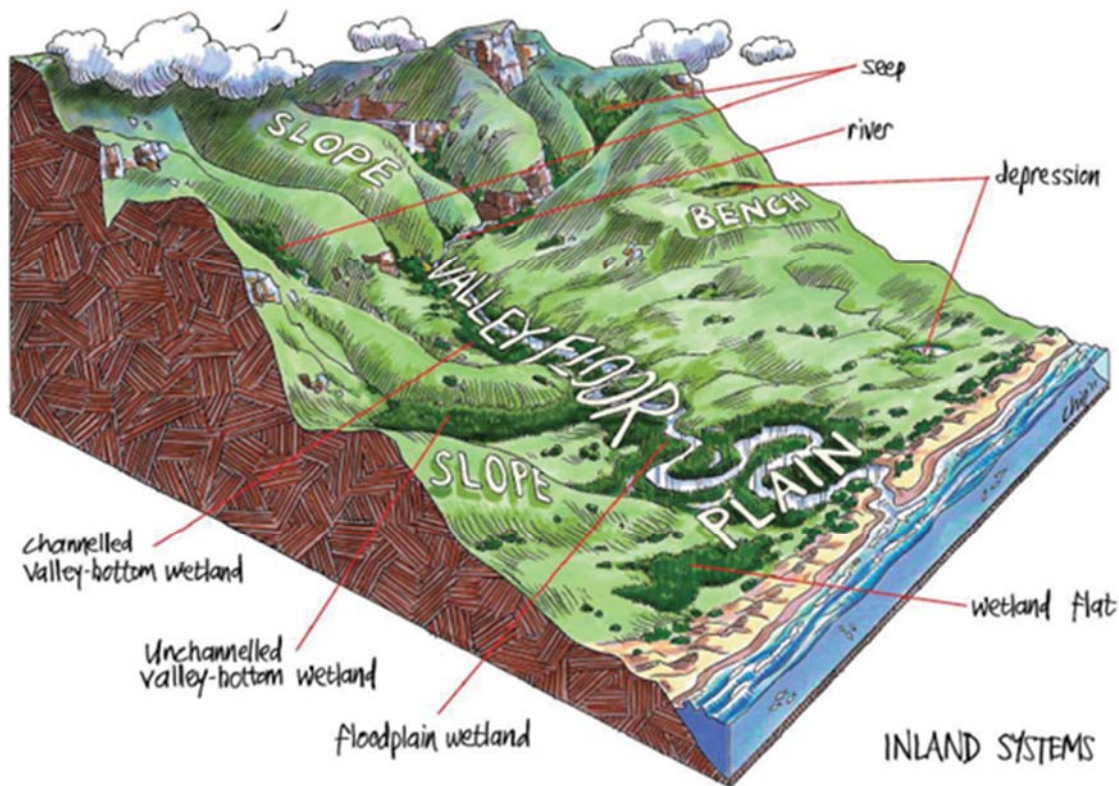
The findings of the air quality impact assessment study will be documented in support of the Environmental Authorisation application process and will contain at least the following information:

- a) Facility and locality information.
- b) Review of legal requirements and relevant air quality legislation.
- c) Emission characterisation.
- d) Geophysical and meteorological data.
- e) Ambient impact levels and analysis.
- f) Modelling procedures and supporting documentation.
- g) Comparison of model outcome and available ambient monitoring data.
- h) Applicable recommendations.

### **11.2.9 Wetland Assessment**

#### Wetland Classification

Wetlands are described in terms of their position in the landscape, and the classification was done according to its hydrogeomorphic setting (Ollis et al. 2013) (Figure 12). Soil specialists will delineate the wetland areas by means of soil forms.



**Figure 12: Wetland types in South Africa**

Present Ecological State – PES (Wetland Health or integrity)

The Present Ecological State (PES) will be determined using the Wet-Health (Version 2) (A refined suite of tools for assessing the Present Ecological State of wetland ecosystems), method described by Macfarlane et. al. 2020. A Level 1B (desktop assessment using land cover classes) and Level 2 (determine land cover classes on site and then run the Level 2 model) will be conducted. Ultimately, a Level 2 Hydrological, Geomorphological, Water quality and Vegetation assessments, based on Disturbance Units mapped on site within the wetland area, were conducted separately for each module, after which an overall wetland PES is determined.

The ecological state of a wetland can be defined according to the wetland's reference condition, which is the state of the wetland prior to anthropogenic influences. The overall approach is to quantify the impacts of human activity or clearly visible impacts on wetland health, and then to convert the impact scores to a Present Ecological Status (PES) score. This takes the form of assessing the spatial extent of impact of individual activities/occurrences and then separately assessing the intensity of impact of each activity in the affected area. The extent and intensity are then combined to determine an overall magnitude of impact.

Assessment of overall health in each module is a three-step process. Firstly, health is based on human activities as well as impacts in the local upslope catchment, the remaining upstream catchment and in the wetland itself. Each module involves an assessment of Present State (a score from 0 to 10), after which it is translated into six health classes (A to F), Secondly, using a combination of threat and/or vulnerability, an assessment is also made in each module of the likely Trajectory of Change within the

wetland. This is separated into five categories of likely change depending on the direction and/or degree of anticipated change.

Scores range from 0 (identical to the natural reference condition) to 10 (critically altered). Health classes range from A (completely unmodified) to F (modifications reached a critical level). The five Trajectory of Change classes are:  $\uparrow\uparrow$  = large improvement;  $\uparrow$  = slight improvement;  $\rightarrow$  = remain the same;  $\downarrow$  = slight decline;  $\downarrow\downarrow$  = rapid decline.

The overall health for each module is presented jointly by representing the Present State and likely Trajectory of Change.

The WET-Health view is that the Present Ecological State and likely Trajectory of change are best kept separate for each of the three modules because it helps focus wetland management on the relevant activity or activities that scored poorly. However, the authors recognize that some users will want a single score and thus a method whereby hydrological, geomorphological and vegetation Present Ecological States are integrated in a single score.

### Ecosystem services

The assessment of the ecosystem services supplied by the identified wetland unit will be conducted according to the guidelines as described by Kotze et. al. 2020 (WET-EcoServices (Version 2) - A technique for rapidly assessing ecosystem services supplied by wetlands and riparian areas, 2020).

Ecosystem services are defined as “the aspects of ecosystems utilized (actively or passively) to produce human well-being. Defined this way, ecosystem services include ecosystem organization or structure as well as process and/or functions if they are consumed or utilized by humanity either directly or indirectly” WET-EcoServices includes the assessment of several different ecosystem services (Table 3) which, according to the categorisation of ecosystem services, encompass supporting services, regulating services, provisioning services and cultural services. From Table 1 it can be seen that WET-EcoServices includes 16 different ecosystem services, which were selected for their specific relevance to the South African situation.

The technique has been designed for application to all inland wetlands and non-wetland riparian areas.

The system is not designed to provide a single overall measure of value or importance of a wetland.

**Table 12: Ecosystem services supplied by wetlands**

Ecosystem services supplied by wetlands/riparian areas	Services contributing to indirect benefits	Regulating and supporting benefits	Flood attenuation		The spreading out and slowing down of floodwaters in the wetland/riparian area, thereby reducing the severity of floods downstream (Adamus <i>et al.</i> 1987; MEA 2005)
			Streamflow regulation		Sustaining streamflow during low flow periods (McInnes and Everard 2017)
			Water quality enhancement benefits	Sediment trapping	The trapping and retention in the wetland/riparian area of sediment carried by runoff waters (Adamus <i>et al.</i> 1987)
				Phosphate assimilation	Removal by the wetland/riparian area of phosphates carried by runoff water, thereby enhancing water quality (O' Green <i>et al.</i> 2010)
				Nitrate assimilation	Removal by the wetland/riparian area of nitrates carried by runoff water, thereby enhancing water quality (O' Green <i>et al.</i> 2010)

Services contributing to direct benefits			Toxicant assimilation	Removal by the wetland/riparian area of toxicants (e.g., metals, biocides and salts) carried by runoff water, thereby enhancing water quality (O' Green <i>et al.</i> 2010)
			Erosion control	Controlling of erosion at the wetland/riparian area, principally through the protection provided by vegetation (MEA 2005)
			Carbon storage	The trapping of carbon by the wetland/riparian area, principally as soil organic matter (Kumar <i>et al.</i> 2017)
	Provisioning services	Biodiversity maintenance <sup>1</sup>		Through the provision of habitat and maintenance of natural process by the wetland/riparian area, a contribution is made to maintaining biodiversity (Liquete <i>et al.</i> 2016)
		Provision of water for human use		The provision of water which is taken directly from the wetland/riparian area for domestic, agriculture or other purposes (Kumar <i>et al.</i> 2017)
		Provision of harvestable resources		The provision of natural resources from the wetland/riparian area - including craft plants, fish, wood etc (McInnes and Everard 2017)
		Food for livestock		The provision of grazing for livestock (McInnes and Everard 2017)
		Provision of cultivated foods		The provision of cultivated foods from within the wetland/riparian area (McInnes and Everard 2017)
		Cultural and spiritual experience		Places of special cultural significance in the wetland/riparian area - e.g., for baptisms or gathering of culturally significant plants (McInnes and Everard 2017)
		Tourism and recreation		Sites of value for tourism and recreation in the wetland/riparian area, often associated with scenic beauty and abundant birdlife (McInnes and Everard 2017) <sup>2</sup>
Cultural (non-material) services	Education and research		Sites of value in the wetland/riparian area for education or research (McInnes and Everard 2017)	

1 It is recognised that biodiversity maintenance is not an ecosystem service in the strict sense (Liquete *et al.* 2016), and is framed in less anthropocentric terms than all of the other services, but it underpins many other services and is widely acknowledged as having high value to society broadly, even in the absence of any local or downstream beneficiaries.

2 WET-EcoServices focusses on recreational services which are specifically nature-based, e.g., bird watching. It does not account specifically for recreational services from wetland/riparian areas that have been converted into sports grounds, children's playgrounds or other built infrastructure.

#### Ecological Importance and Sensitivity (EIS)

The Ecological Importance and Sensitivity will be determined according to Kotze *et al.* 2020 (WET-EcoServices (Version 2) - A technique for rapidly assessing ecosystem services supplied by wetlands and riparian areas (EI), together with the Manual for the Rapid Ecological Reserve Determination of inland Wetlands (Version 2) by the Department of Water Affairs, January 2013 (WRC Report, (1788/1) (Rountree and Kotze 2013) (ES). It includes a score sheet that utilises information regarding the current state of the ecology of the wetland area (Rountree and Kotze 2013). and scores from the WET-EcoServices assessment regarding Biodiversity maintenance and importance, Regulating Services importance and Provisioning and Cultural Services importance.

Ecological Importance (EI) is the expression of the importance of wetlands and rivers in terms of the maintenance of biological diversity and ecological functioning at a local and landscape level. Ecological Sensitivity (S) refers to ecosystem fragility or the ability to resist or recover from disturbance (Rountree and Kotze 2013). The purpose of assessing ecological importance and sensitivity of water resources like wetlands, and rivers is to be able to identify those systems that provide valuable biodiversity support functions, regulating ecosystem services, or are especially sensitive to impacts.

### Recommended Ecological Category (REC)

The REC will be determined based on the results obtained from the PES, reference conditions, and EIS of the resource (sections above). Followed by realistic recommendations, mitigation, and rehabilitation measures to achieve the desired REC.

A wetland may receive the same class for the PES as the REC if the wetland is deemed in good condition, and therefore must stay in good condition. Otherwise, an appropriate REC should be assigned in order to prevent any further degradation as well as enhance the PES of the wetland feature. The principle with assigning a REC is to ensure that the status of the wetland is improved by at least one category higher than the current state.

### **11.2.10 Noise Impact Assessment**

#### Desktop Assessment

An initial desktop review of available information will include the following:

- Identification all possible baseline noise contributors.
- Identification of potential measurement/monitoring localities.
- Investigations of project noise comments and previous noise studies.
- Identification of Noise-Sensitive Developments (NSD's or receptors) by means of a desktop GoogleEarth® study and onsite investigations.

#### Rating Level (SANS10103:2008) - Measurements and Collection of Data

The onsite investigations and measurements will contain the following main aspects:

- Measurements conducted at receptors (I&AP's or noise sensitive developments) in terms of SANS10103:2008, National environmental Act (Act No. 107 OF 1998), GN NO. 326 and Gauteng Provincial Noise Control Regulations, Government Notice (GN) No. 5479 of 20 August 1999) methodology. A minimum of 10-minute day and night measurements will be conducted (day/night as per SANS10103:2008).
- Assumptions and limitations regarding the measurements.
- Analysis of data in terms of South African legalisation and guidelines (SANS10103:2008 and Gauteng Provincial Noise Control Regulations, Government Notice (GN) No. 5479 of 20 August 1999) as well as international guidelines (International Finance Corporation, Equator principals, World Health Organisation). The baseline Rating level of receptors identified in term of the SANS10103:2008 guidelines.

#### Noise Prediction Modelling

Modelled (worst-case) scenarios will be assessed focusing on the Planning, Construction, Operational, Closure/Post-Closure phases. The following will be considered for modelled scenarios:

- Corrections for ground conditions (obtained from Environmental Potential Altus, site observations) and metrological conditions.
- Ground elevation contours (if available).
- Building facades (if information available) and receptor localities.

- Noise modelling based on future predicted worst-case noise climate. Sound Power Levels (SPL) will be sourced online. The most significant (highest potential for a noise nuisance or disturbing noise) sources will be identified and modelled.
- Layout as per the main consultant final layout.
- Transportation networks (linear sources) and surface external sources (points sources for mechanical, aerodynamical, electrical) will be the focus of modelling.
- Numerous methodologies will be incorporated for modelling and calibration (increased confidence in findings). These include ISO 9613-2, SANS 10357:2008, CoRTN (Calculation of Road Traffic Noise) etc.
- 2D representation noise contours will be developed focusing on pre-mitigation and post mitigation effectiveness (if required).

#### Impact Assessment Methodology

The impact assessment methodology will incorporate:

- The assessment will be done using the methods and requirements of SANS 10328:2008, SANS 10103:2008 and the Gauteng Provincial Noise Control Regulations, Government Notice (GN) No. 5479 of 20 August 1999).
- Assessment of future predicted noise levels at noise sensitive areas making use of an Impact Assessment matrix. The phases will be for the Planning, Construction, Operational, Closure/Post-Closure phases.
- A constraints and noise contour map highlighting areas of potential impacts (non-compliance areas (disturbing noise) or noise issues (noise nuisance) in terms of the Gauteng Provincial Noise Control Regulations, Government Notice (GN) No. 5479 of 20 August 1999) (change of Rating level).
- Provide mitigations recommendations to reduce the noise impact where necessary. Discussion of the effectiveness of the recommended mitigation.
- Compilation of Environmental Management Programme (EMPr).

#### Deliverables

Description of the planned development and description of the existing environment.

- Identification of future predicted noise climate.
- Assumptions of modelled scenarios and measurements.
- Location of measured or calculated points on a map.
- Quantification of noise impacts and assumptions, assumptions and limitations.
- Alternatives assessed if required.
- A list of all the interested and affected parties (I&AP's) and the impacts on them.
- A detailed summary of all the comments received from I&AP's.
- Conclusions that were reached.
- Proposed recommendations, whether remedial measures will provide an acceptable solution.
- Whether a follow-up investigation should be conducted at completion.



- The deliverables within 3 weeks of date of appointment, or unless a deadline is supplied by main consultant.

#### **11.2.11 Ground Vibration and Air Blast**

##### Site Review and Information Capture

The following minimum requirements will be undertaken.

- It will be required that a site visit be done in order to obtain all relevant information onsite and offsite of the mining area,
- Review of site considering the various installations in and around the proposed blasting area,
- Definition of existing structures and review of possible concerns

##### Modelling and Report

A detailed EIA study report will be prepared and presented using data captured and information provided. The following aspects will be considered and presented as different sections in a final report:

1. Introduction
2. Background information of the proposed site
3. Mining operations and / or Blasting Operation Requirements
4. Site specific aspects applicable to be considered:
  - a. Ground vibration explanation, prediction, modelling and related impacts
  - b. Air blast explanation, prediction, modelling and related impacts
  - c. Fly-rock explanation, prediction, modelling and related impacts
  - d. Noxious fumes Information
5. Impact Evaluation
6. Mitigations and recommendations
7. Basic structure information – A structure profile that will indicate what is typical of the area. This is not a full photographic survey but will assist in making a proper evaluation of allowable ground vibration and air blast levels.
8. Conclusion

#### **11.2.12 Traffic Impact Assessment**

The purpose of this traffic impact study is to investigate the expected peak hour traffic generated by the proposed Colliery and to quantify, as well as evaluate its impact on the existing road network. This study will also discuss the proposed access to the colliery, with a discussion on its geometric layout, considering the length and turning circles of vehicles typically using coal mine accesses.

As part of the study, the assessment will also evaluate the NMT (Non-Motorised Transport) and Public Transport facilities for the proposed mining development. The assessment will undertake a weekday peak period traffic counts at the key intersections, identified according to the TMH16 and analyse the key intersections for possible capacity restraints and upgrades, if needed.

Based on the Sidra™ analyses results, recommendations will be made regarding possible upgrades (if any) at the key intersections.

### **11.2.13 Visual Impact Assessment**

The following will be undertaken in the assessment of visual impacts from the proposed project i.e.:

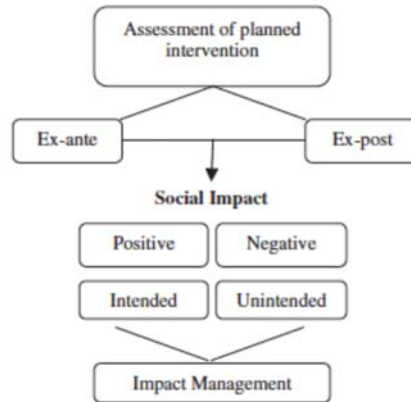
- Determine the setting, visual character and land use of the area surrounding the area, and the Genius Loci (sense of place). This was done in terms of:
  - Topography
  - Vegetation cover
  - Land use
  - Visibility
  - Landscape diversity
  - Landscape character
- Discussions and meetings with the specialist consultant team to identify specific aspects of the construction and development which would affect the visual quality of a setting;
- Define the extent of the affected visual environmental, the viewing distance and the critical views;
- An evaluation will be made of the landscape characteristics against which impact criteria ratings will be applied;
- The viewshed, the area within which the proposed project can be visible, will be determined using digital 1:50 000 topographic maps with 20 m contour intervals analysed by the Geographic Information System (GIS), algorithms available in the ArcView Software Suite.

### **11.2.14 Socio-economic Impact Assessment**

#### Background and Overview

The SIA will aim at determining the social risk associated with the proposed project. The main focus of the methods of assessment will be to provide knowledge and information about the consequences of a planned intervention in order to manage the social issues. The study will adopt a qualitative approach to collect relevant information. SIA is a hybrid of science and political process and provides advice to assist the mitigation and enhancement measures. Most importantly the Social Impact and Risk Assessment must be strongly associated with the management of an impact and its consequences rather than just an estimation and prediction. The parallel EIA activities are crucial to the SIA process as they inform the scope of the study and communicate the findings to the relevant stakeholders via the Public Participation Process (PPP).

The figure below presents the approach of analysis used in compiling the SIA.



**Figure 13: A schema of a social and risk impact assessment**

The process of conducting the SIA can be presented as a process of five steps organized across three sequential stages, namely:

- Impact identification, which involves risk screening and a clarificatory evaluation of the project. This stage also includes scoping which a stakeholder analysis is focusing on risk related concerns.
- Impact assessment, this stage of analysis determines the significance of the likely impact and considers a causal comparative to the risks.
- Impact management, which includes the appropriate strategies to deal with the risk.

#### Data gathering and analysis

Data gathering will include the following activities i.e.:

- Defining the study area
- Desktop studies and literature review
- Key stakeholder interviews
- Impact identification, determination of mitigation measures and report writing.

#### **11.3 DESCRIPTION OF THE PROPOSED METHOD OF ASSESSING THE ENVIRONMENTAL ASPECTS**

The following prediction and evaluation of impacts is based on the proposed Rietspruit Colliery to be conducted at the proposed development area.

The evaluation distinguishes between significantly adverse and beneficial impacts and allocates significance against national regulations, standards and quality objectives governing:

- Health & Safety
- Protection of Environmentally Sensitive Areas
- Land use
- Pollution levels
- Irreversible impacts are also identified.

## Risk Assessment

During the Environmental Impact Assessment data gathered and studies conducted will be used to identify the risks associated with the proposed project. All issues that have been identified as posing significant risks to the environment will be identified and prioritised. Management of these issues will be determined and will form part of this risk assessment.

## Methodology followed

The environment risk assessment will address the actions of the activities associated with the proposed development and assess the significance of the impact on the environment. The risks will then be described using the parameters specified in Table 13 below.

**Table 13: Criteria used for the environmental risk assessment**

THE STATUS OF THE IMPACT		
Positive:	A benefit to the holistic environment	
Negative:	A cost to the holistic environment	
Neutral:	No cost or benefit	
The probability of the impact		
Score	Severe / beneficial effect	Description
0	None	The impact will not occur
1	Improbable	Less than 15% sure of an impact occurring
2	Low (probability)	Between 15% and 40% sure of an impact occurring
3	Medium (probability)	Between 40% and 60% sure that the impact will occur
4	Highly Probable	Between 60% and 85% sure that the impact will occur
5	Definite	Over 85% sure that the impact will occur
The duration of the impact		
Score	Severe / beneficial effect	Description
1	Short term	Less than 2 years
2	Short to medium term	2-5 years
3	Medium term	6-25 years
4	Long term	26-45 years
5	Permanent	46 years or more
The scale of the impact		
Score	Severe / beneficial effect	Description
0	None	
1	Site	Within the site boundary
2	Local	Affects immediate surrounding areas
3	Regional	Extends substantially beyond the site boundary but only affects the region or province
4	National	Affects country

5	International	Affects is beyond the country and possibly the world
<b>The magnitude of the impact</b>		
<b>Score</b>	<b>Severe / beneficial effect</b>	<b>Description</b>
2	Minor	Effects observable – environmental impacts reversible with time without human intervention
4	Low	Effects observable – impacts reversible with rehabilitation
6	Moderate	Effects observable – affected area restored to acceptable environmental state
8	High	Extensive effects – irreversible alteration to the environment
10	Very high/Don't know	Extensive permanent effects with irreversible alteration

**Significance of possible impacts**

The significance of the impacts is calculated by multiplying the consequence of the impact by the probability of the impact. Table 14 below illustrates the methodology used to calculate the significance of the impact.

**Table 14: Significance Rating**

<b>The consequences of the impact</b>		
Consequence = Magnitude + Duration + Scale		
<b>The significance of the impact</b>		
Significance = Consequence x Probability		
<b>Significance</b>	<b>Score out of 100</b>	
Low	1 to 30	
Medium	30 to 60	
High	60+	

The methodology specified above will be used to identify and assess the impacts and then rate the significance of the impact and hence determine the risk of the impact on the environment during the development of the proposed project. Mitigation measures will be specified for each impact in effort to minimise the risk of the impact.

**11.4 STAGES AT WHICH THE COMPETENT AUTHORITY WILL BE CONSULTED**

The competent authority will be consulted on submission of the draft and final Scoping Report which will be submitted to include comments received from I&AP's. On acceptance of the final Scoping Report, a draft EIR/EMP will be compiled. After consultation with I&AP's, including the competent authority, the final EIR/EMP will then be submitted to the competent authority including comments (if any) received from I&AP's.

**11.5 PUBLIC PARTICIPATION PROCESS**

**Interested and Affected Parties**

The following have been identified as the Interested and Affected Parties (I & AP'S) for the proposed project development:

- Department of Mineral Resources and Energy (Mpumalanga Regional Office)
- Department of Water and Sanitation (Mpumalanga Regional Office)

- Department Agriculture, Forestry and Fisheries
- Mpumalanga Tourism and Parks Agency (MTPA)
- Emalahleni Local Municipality
- Immediately and adjacent landowners
- Ward Councillor
- Community Leaders
- SANRAL
- Transnet

### **The Consultation Process**

During the consultation process, the public will be offered an opportunity to register as I& AP's as well as comment on the draft Scoping Report. Should more parties register their names will be added on to the above-mentioned list.

### **Advertisements**

An advert is placed in the local newspaper (Witbank News) in accordance with Regulation 41 of Government Notice No. 326 under section 24 of the National Environmental Management Act, 1998 (Act no. 107 of 1998) informing the public about the availability of information of the draft Scoping Report at a public place.

### **Identification of issues and alternatives**

During consultation process issues and alternatives might be raised and will be addressed as required regarding the proposed development activities.

### **Evaluation of concerns**

Concerns will be addressed by relevant specialists including the company's consultant according to their significance as indicated in the impact rating.

### **Strategy to address concerns**

Key environmental and social concerns will be evaluated through open communication with the relevant authorities and registered I&AP's who lodged concerns / complaints.

### **Registration & Scoping Phase**

- Offer an opportunity to I&APs to register and simultaneously comment on the Draft Scoping Report.
- Notify I&AP via adverts, posters, email and personal consultation.
- Draft Scoping Report to be submitted to I&APs for comment.
- Final Scoping Report will be completed to include comments from registered I&AP's

### **EIA Phase**

- Ongoing communication with registered I&AP's
- Draft EIR/EMPr Report submitted to registered I&APs for comment.
- Final EIR/EMPr Report will be completed including comments from I&AP's

---

**Record of Decision (ROD)**

- Inform registered I & APs of ROD directly in writing, via email or fax and indirectly through advertisement in local newspapers.

**11.6 DESCRIPTION OF TASKS THAT WILL BE UNDERTAKEN AS PART OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

The proposed Rietspruit Colliery mining operation will be developed mainly on Cultivated Commercial Annuals non pivot/ non-irrigated land, and natural grasslands, which will result in the change of the areas land use. It will be necessary for Rietspruit Coal Pits (Pty) Limited to undertake detailed environmental studies.

The key findings of the above-mentioned studies will be discussed and summarised in the (EIR/EMPr). These studies will also be made available as attachments to the EIR.

SECTION TWELVE

---

## **Undertaking**



## 12 UNDERTAKING

Herewith I, the person whose full names is stated below, confirm that I am the EAP authorised to act as representative of Geovicon Environmental (Pty) Ltd, the company commissioned by the applicant in terms of Regulation 12 of the Environmental Impact Assessment Regulations, 2014 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and confirm that:

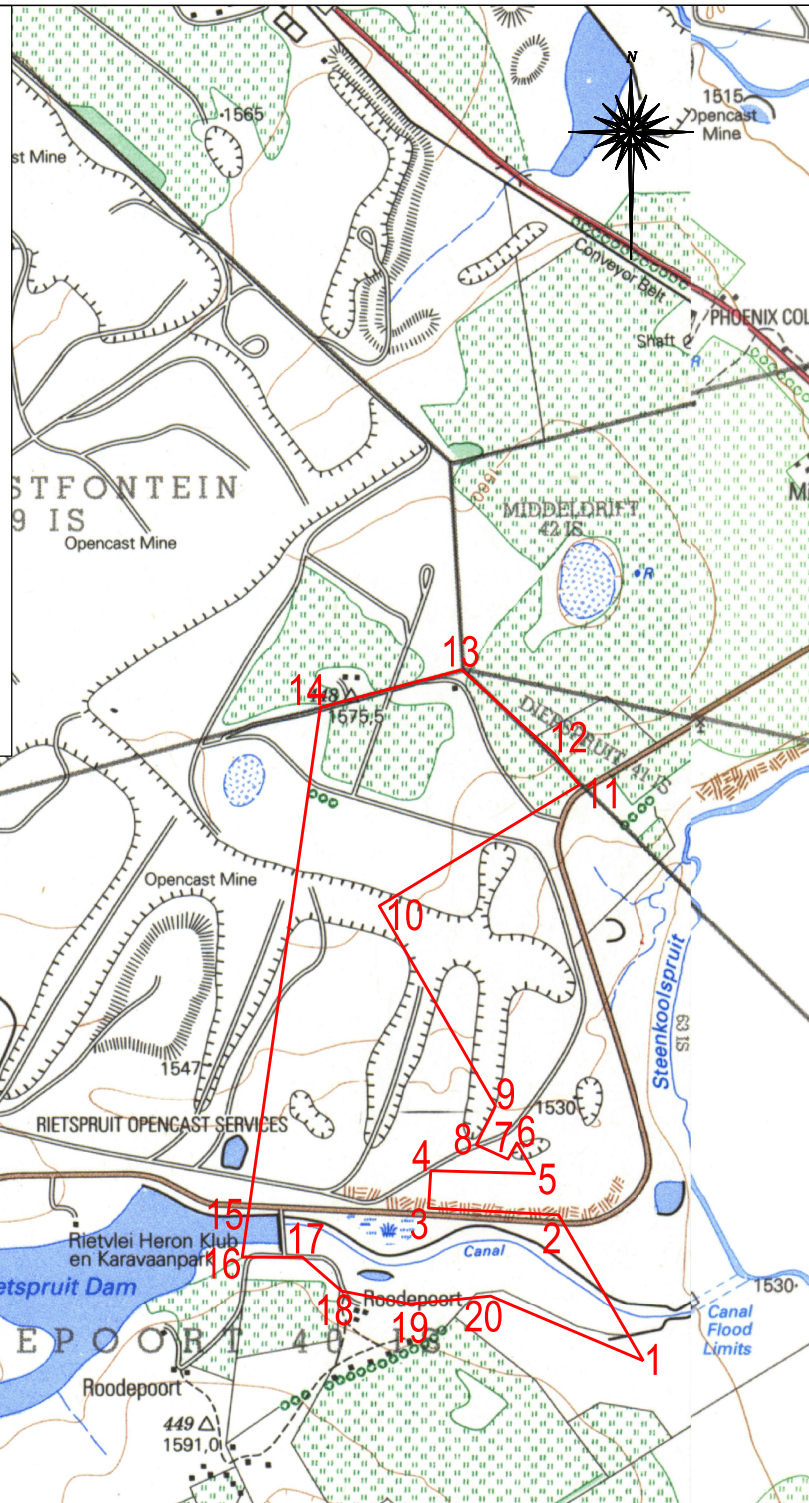
- The above report is compiled with all relevant available information pertaining to the proposed project.
- All relevant stakeholders and Interested and Affected Parties were consulted and any comments received were included in the compilation of this report.
- Any responses provided to Interested and Affected Parties by the EAP is included in this report.
- The plan of study for the proposed project is included in this report and was provided to all Interested and Affected Parties to ensure that they are aware and agree to the plan of study for undertaking the Environmental Impact Assessment.

<b>Full Names and Surname</b>	
<b>Date</b>	

**Appendix A**  
**Regulation 2 (2) plan**

# MINING RIGHT CO-ORDINATES WG 29°

POINTS	LAT/LONG
1	26,1760748°S; 29,2476851°E
2	26,1692245°S; 29,2432642°E
3	26,1689163°S; 29,2364931°E
4	26,1671489°S; 29,2366°E
5	26,1672769°S; 29,2420072°E
6	26,1658388°S; 29,241079°E
7	26,1665998°S; 29,2406152°E
8	26,165926°S; 29,238966°E
9	26,1641066°S; 29,2399612°E
10	26,1547097°S; 29,2338966°E
11	26,1490033°S; 29,2443055°E
12	26,1475747°S; 29,2430218°E
13	26,1436°S; 29,238177°E
14	26,1453813°S; 29,2308105°E
15	26,1689826°S; 29,2271288°E
16	26,1712324°S; 29,2267893°E
17	26,1712302°S; 29,2299271°E
18	26,1728208°S; 29,2319642°E
19	26,1734236°S; 29,2355349°E
20	26,1730479°S; 29,2397216°E
1	26,1760748°S; 29,2476851°E



# RIETSPRUIT COAL PITS (PTY) LTD REG NO: 2021/702659/07

APPLICATION FOR MINING RIGHT  
Plan compiled in accordance with  
Regulation 2(2) of the Mineral & Petroleum  
Resources Development Act 2002  
(ACT 28 of 2002)

Scale 1 : 1 000

### LEGEND

MINING RIGHT AREA	
	MINING RIGHT AREA
	National Freeway; National Route
	Arterial Route
	Main Road
	Secondary Road; Bench Mark
	Other Road; Bridge
	Track and Hiking Trail
	Railway; Station or Siding
	Other Railway; Tunnel
	Embankment; Cutting
	Power Lines
	Built-up Area
	Buildings; Ruin
	Post Office; Police Station; Store
	Place of Worship; School; Hotel
	Fence; Wall
	Windpump; Monument
	Communication Tower
	Mine Dump; Excavation
	Trigonometrical Station; Marine Beacon
	Lighthouse and Marine Light
	Cemetery; Grave
	International Boundary and Beacon
	Provincial Boundary
	Game, Nature Reserve & State Forest Boundary
	Perennial River
	Perennial Water
	Non-perennial River
	Non-perennial Water
	Dry Water Course
	Dry Pan
	Marsh and Vlei
	Pipeline (above ground)
	Water Tower; Reservoir; Water Point
	Coastal Rocks
	Prominent Rock Outcrop
	Erosion; Sand
	Woodland
	Cultivated Land
	Orchard or Vineyard
	Recreation Ground
	Row of Trees

The figure lettered 1-20 AND 1 represent a Mining Right area in extent of approximately 344.56ha, comprising of a certain portion of portions 21 of the farm ROODEPOORT 40 IS, Located 21.23km North of the town KRIEL, in the Magisterial district of KRIEL for which RCP (PTY) LTD REG NO: 2021/702659/07 has applied for a mining right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002), but subject to Regulation 17 of the Mine Health and Safety Act, 1996 (Act 29 of 1996), excluding any area within 100 meters of any public road, railway, cemetery, residential area or public area.

SIGNED: .....  
REGIONAL MANAGER  
MPUMALANGA PROVINCE

SIGNED: .....  
RCP (PTY) LTD  
REG NO: 2021/702659/07



Contact : 012 472 0328  
Email : info@xakwa.com  
tiisetso@xakwa.com

Address : 175 Corobay  
Waterkloof Glen  
0010

**Appendix B**  
**Deed's list of the direct farms**

Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

## SEARCH CRITERIA

Search Date	2023/01/17 11:48	Farm Number	40
Reference	-	Registration Division	IS
Report Print Date	2023/01/17 11:48	Portion Number	-
Farm Name	-	Remaining Extent	NO
Deeds Office	Mpumalanga	Search Source	WinDeed Database

## PORTION LIST

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
1	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
2	ESKOM HOLDINGS SOC LTD	T874/2021	2021/02/05	
4	TAVISTOCK COLLIERIES PTY LTD	T40270/1998	1998/04/16	
5	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	
6	EMALAHLENI LOCAL MUNICIPALITY	T129043/2002	2002/10/18	
7	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
10	WET ALBERTUS NICOLAAS DE	T13285/1965	1965/04/15	-
11	BURJAN BOERDERYE PTY LTD	T52433/1986	1986/11/13	-
12	EMALAHLENI LOCAL MUNICIPALITY	T129043/2002	2002/10/18	
13	TAVISTOCK COLLIERIES PTY LTD	T40269/1998	1998/04/16	
14	SCHUTTE WILHELMINA SUSANNA	T100586/1995	1995/11/22	
15	MANHATTAN SYNDICATE LTD	T26923/1973	1973/08/20	
16	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	
17	LIZE TRUST	T85746/2006	2006/07/14	

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**PORTION LIST**

Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
18	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
19	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
20	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
21	MANHATTAN SYNDICATE LTD	T38160/1979	1979/10/26	-
22	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
23	MANHATTAN SYNDICATE LTD	T40271/1979	1979/11/12	-
31	** FOR INFO REFER TO REGISTRAR OF DEEDS **	REPLACED	-	-
33	NEBDA BELEGGINGS CC	T53477/2002	2002/05/10	

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**Appendix C**  
**National Web Based Environmental Screening**  
**Tool Report**

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

**EIA Reference number:**

**Project name:** RIETSPRUIT COLLIERY

**Project title:** RIETSPRUIT COLLIERY MINING RIGHT APPLICATION

**Date screening report generated:** 19/01/2023 12:03:15

**Applicant:** RIETSPRUIT COAL PITS (PTY) LTD

**Compiler:** GEOVICON ENVIRONMENTAL (PTY) LTD

**Compiler signature:**

.....

**Application Category:** Mining|Mining Right

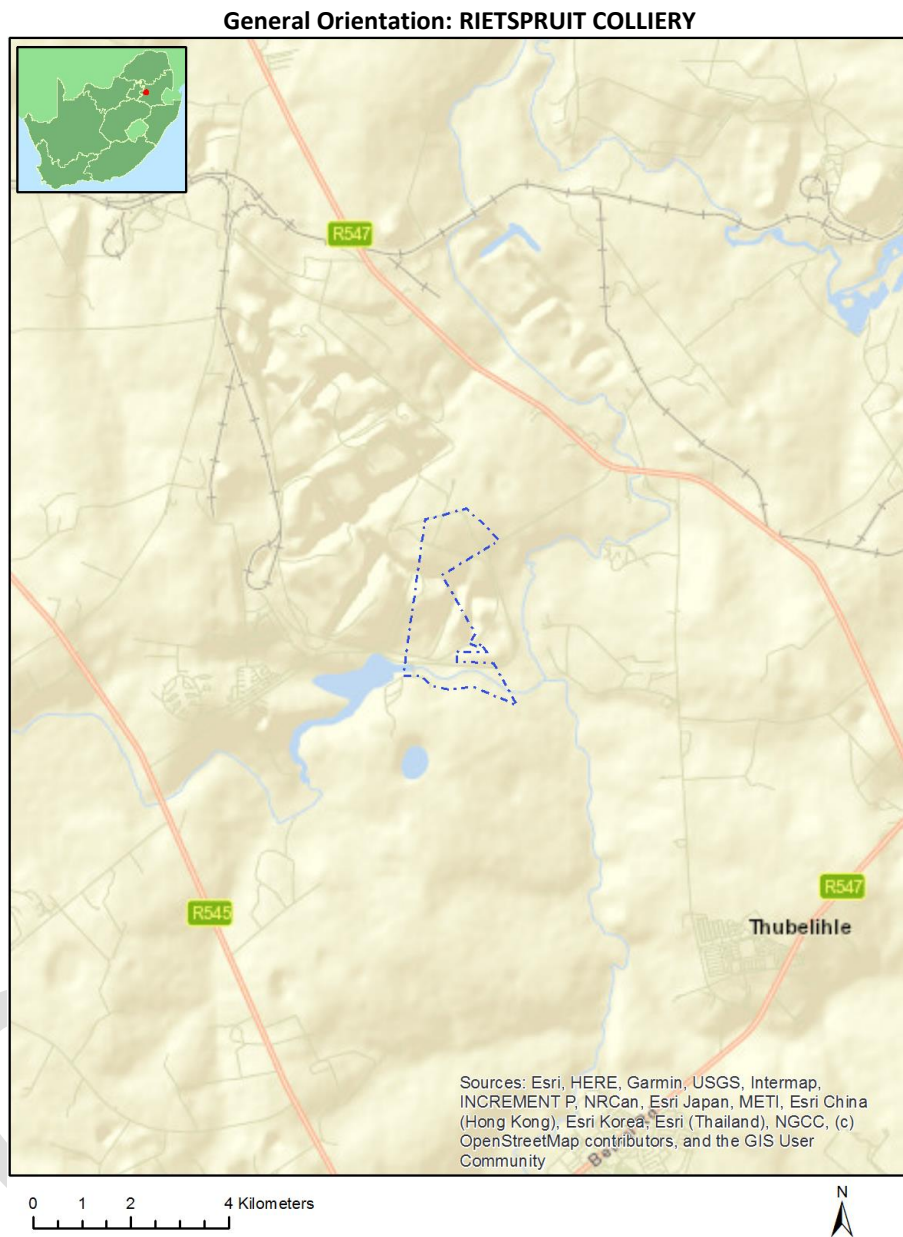


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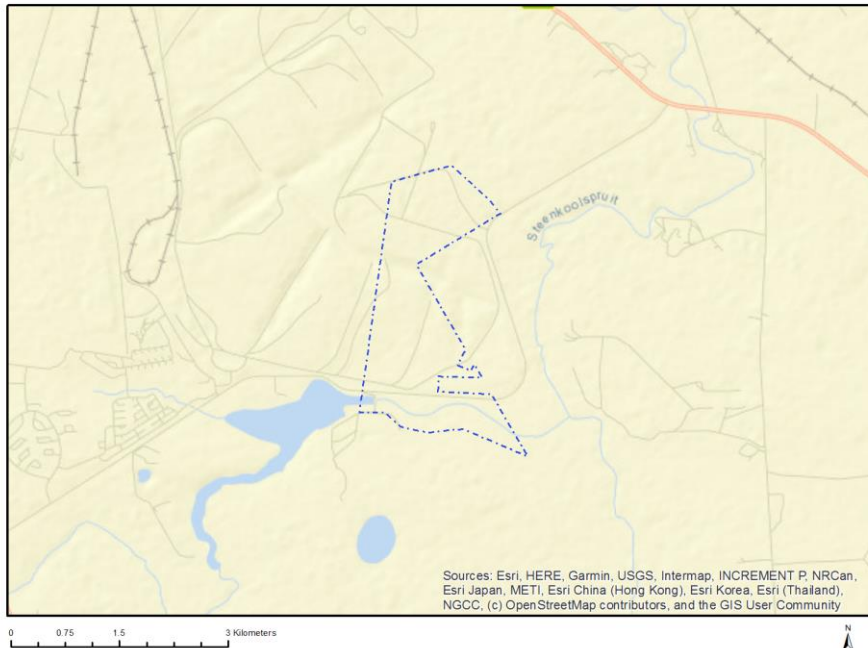
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MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY .....	18

# Proposed Project Location

## Orientation map 1: General location



## 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	ROODEPOORT	40	0	26°10'36.88S	29°13'23.75E	Farm
2	DIEPSPRUIT	41	0	26°9'24.7S	29°16'13.11E	Farm
3	DIEPSPRUIT	41	2	26°8'53.94S	29°15'6.19E	Farm Portion
4	ROODEPOORT	40	21	26°9'37.75S	29°14'6.97E	Farm Portion

Development footprint<sup>1</sup> vertices:

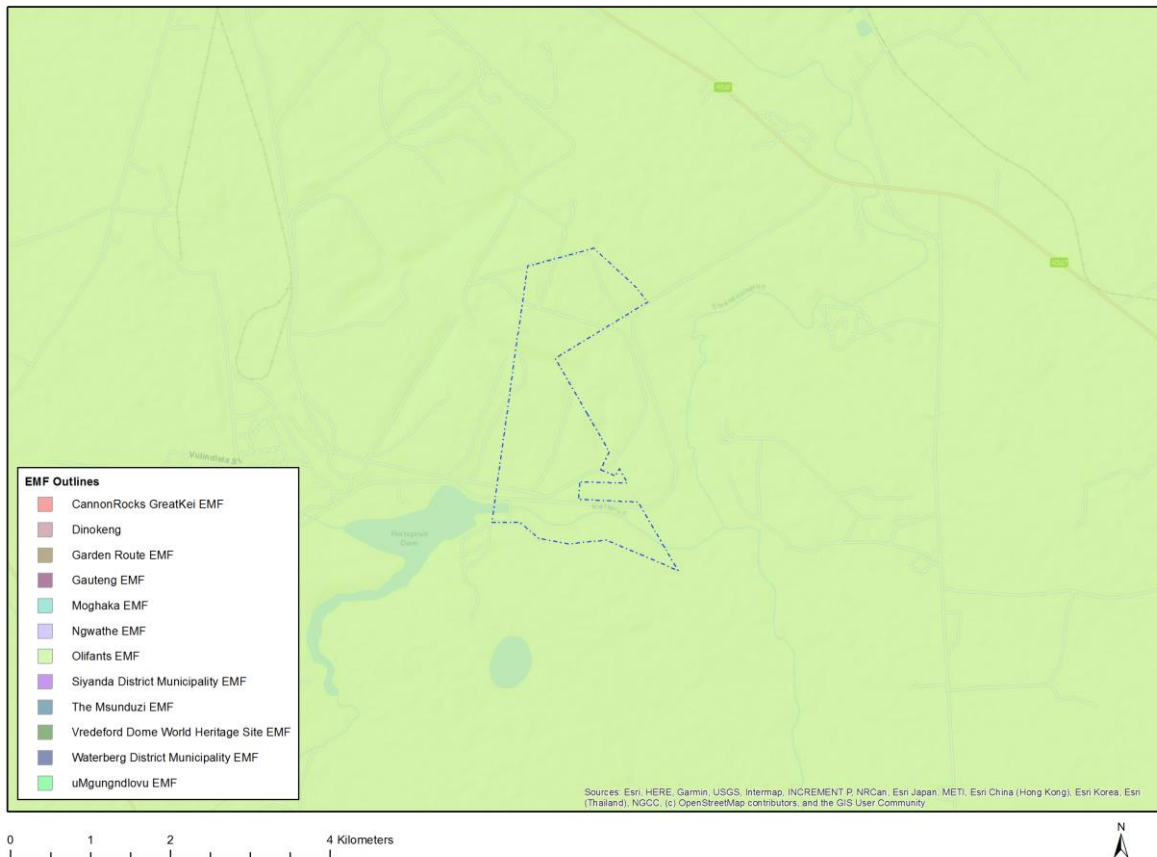
No development footprint(s) specified.

## 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	24.2

<sup>1</sup> "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.

## Environmental Management Frameworks relevant to the application



Environmental Management Framework	LINK
Olifants EMF	<a href="https://screening.environment.gov.za/ScreeningDownloads/EMF/Zone_46,_67,_78,_80,_92,_103,_122,_129.pdf">https://screening.environment.gov.za/ScreeningDownloads/EMF/Zone_46, 67, 78, 80, 92, 103, 122, 129.pdf</a>

## 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 site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: **Mining | Mining Right.**

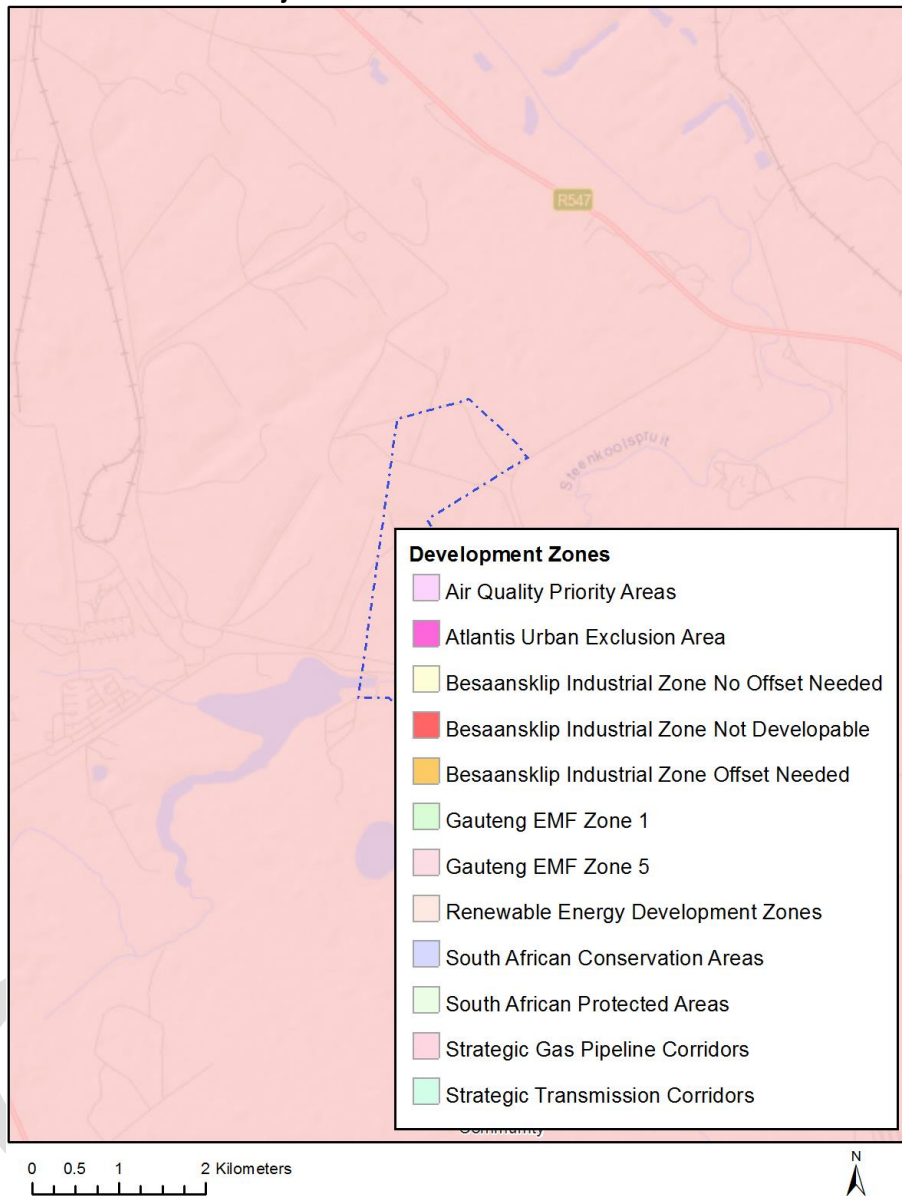
### Relevant development incentives, restrictions, exclusions or prohibitions

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

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-International corridor	<a href="https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf">https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf</a>
Air Quality-Highveld Priority Area	<a href="https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/HIGHVELD_PRIORITY_AREA_AQMP.pdf">https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/HIGHVELD_PRIORITY_AREA_AQMP.pdf</a>
Renewable energy development zones 9-Emalahle ni	<a href="https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_REDZ.pdf">https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_REDZ.pdf</a>
Strategic Gas Pipeline Corridors -Phase 8: Rompco Pipeline Corridor	<a href="https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_GAS.pdf">https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_GAS.pdf</a>

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

Project Location: RIETSPRUIT COLLIERY



**Proposed Development Area Environmental Sensitivity**

The following summary of the development site 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 site situation.

<b>N o</b>	<b>Specialist assessment</b>	<b>Assessment Protocol</b>
1	Agricultural Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf</a>
2	Landscape/Visual Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
3	Archaeological and Cultural Heritage Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
4	Palaeontology Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
5	Terrestrial Biodiversity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf</a>
6	Aquatic Biodiversity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf</a>
7	Hydrology	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols</a>

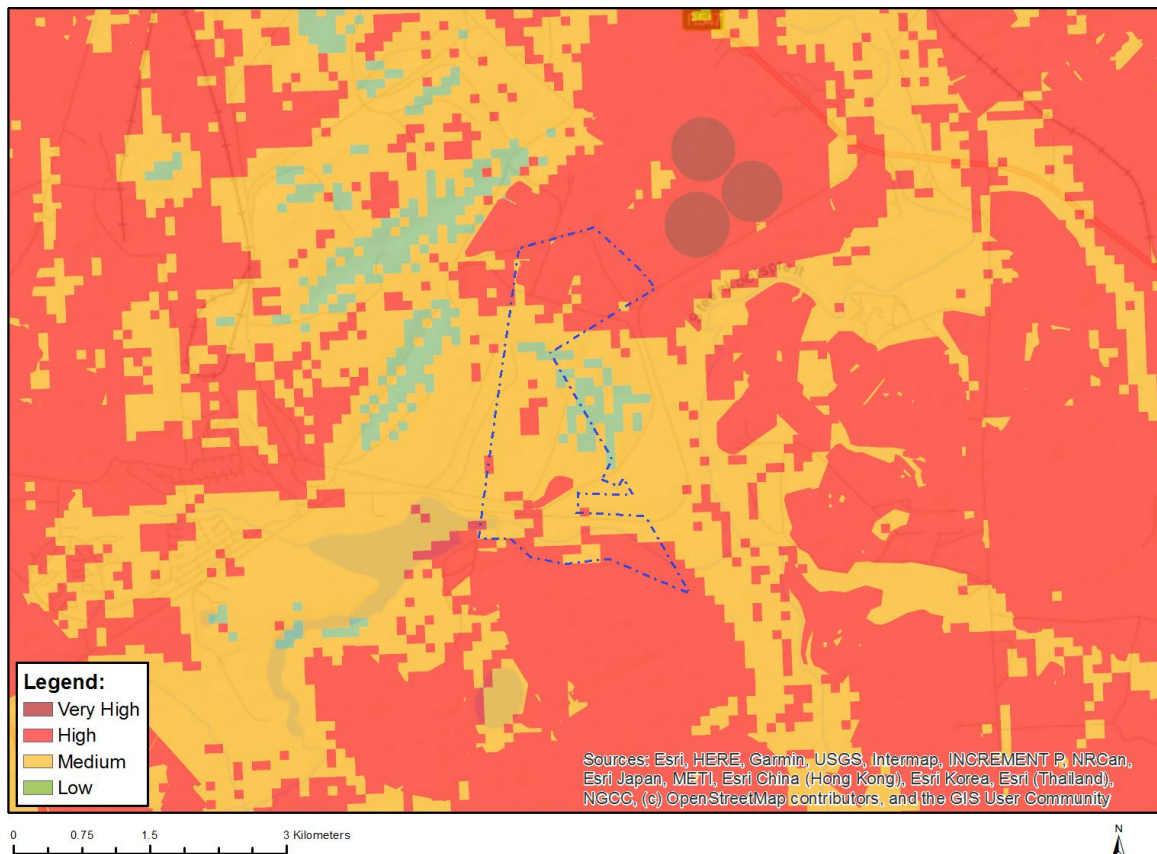
	Assessment	<a href="#">/Gazetted General Requirement Assessment Protocols.pdf</a>
8	Noise Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Noise Impacts Assessment Protocol.pdf</a>
9	Radioactivity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
10	Traffic Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
11	Geotechnical Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
12	Climate Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
13	Health Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
14	Socio-Economic Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
15	Ambient Air Quality Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
16	Seismicity Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf</a>
17	Plant Species Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Plant Species Assessment Protocols.pdf</a>
18	Animal Species Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Animal Species Assessment Protocols.pdf</a>



## Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site 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

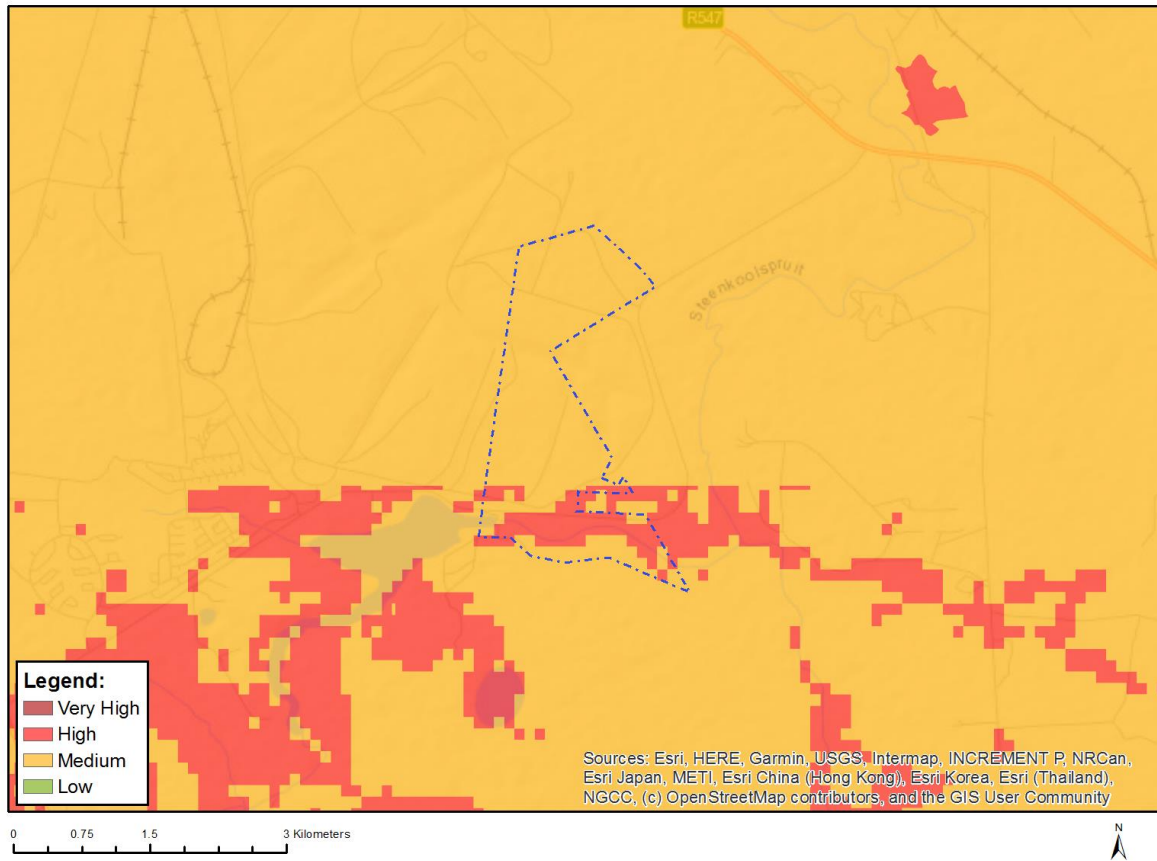


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

#### Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;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 ANIMAL SPECIES THEME SENSITIVITY



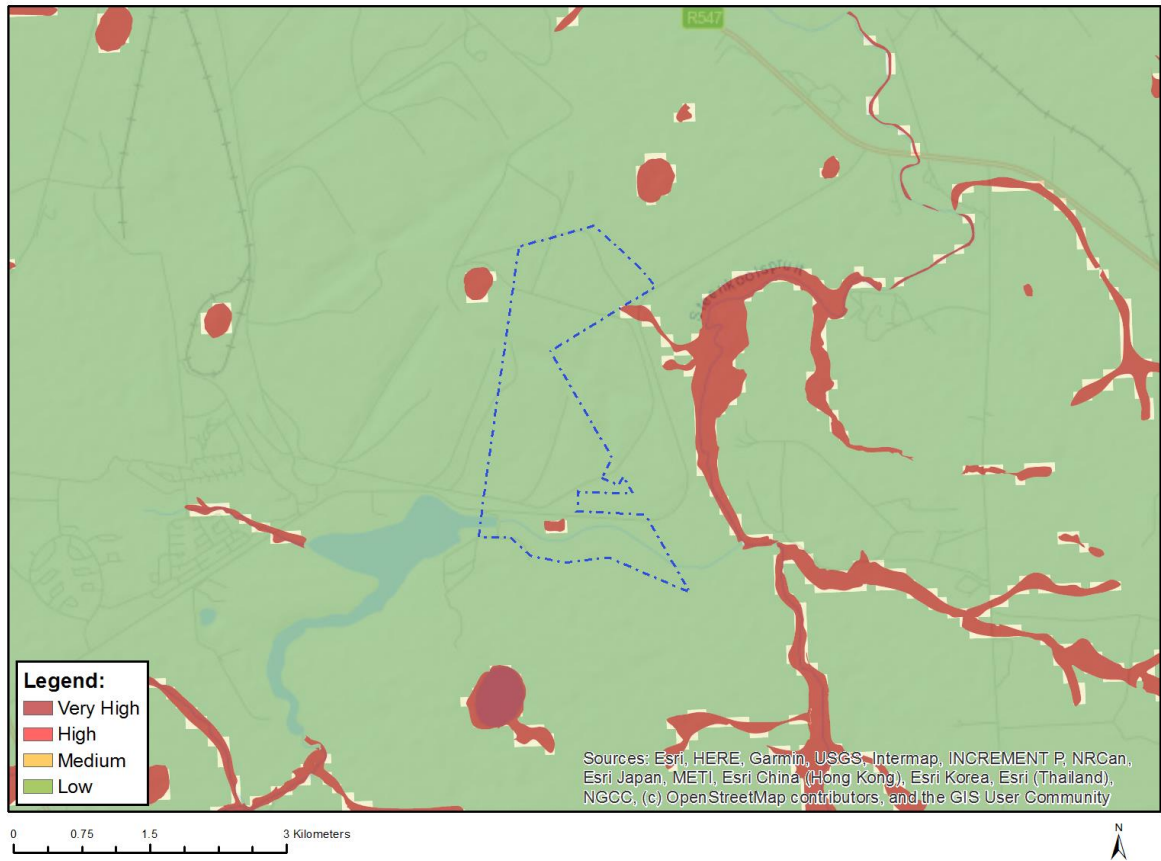
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at [eiadatarequests@sanbi.org.za](mailto:eiadatarequests@sanbi.org.za) 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	Aves-Tyto capensis
High	Aves-Circus ranivorus
Medium	Aves-Tyto capensis
Medium	Aves-Circus ranivorus
Medium	Aves-Hydroprogne caspia
Medium	Aves-Eupodotis senegalensis
Medium	Mammalia-Crocidura maquassiensis
Medium	Mammalia-Hydrictis maculicollis
Medium	Mammalia-Ourebia ourebi ourebi

## MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

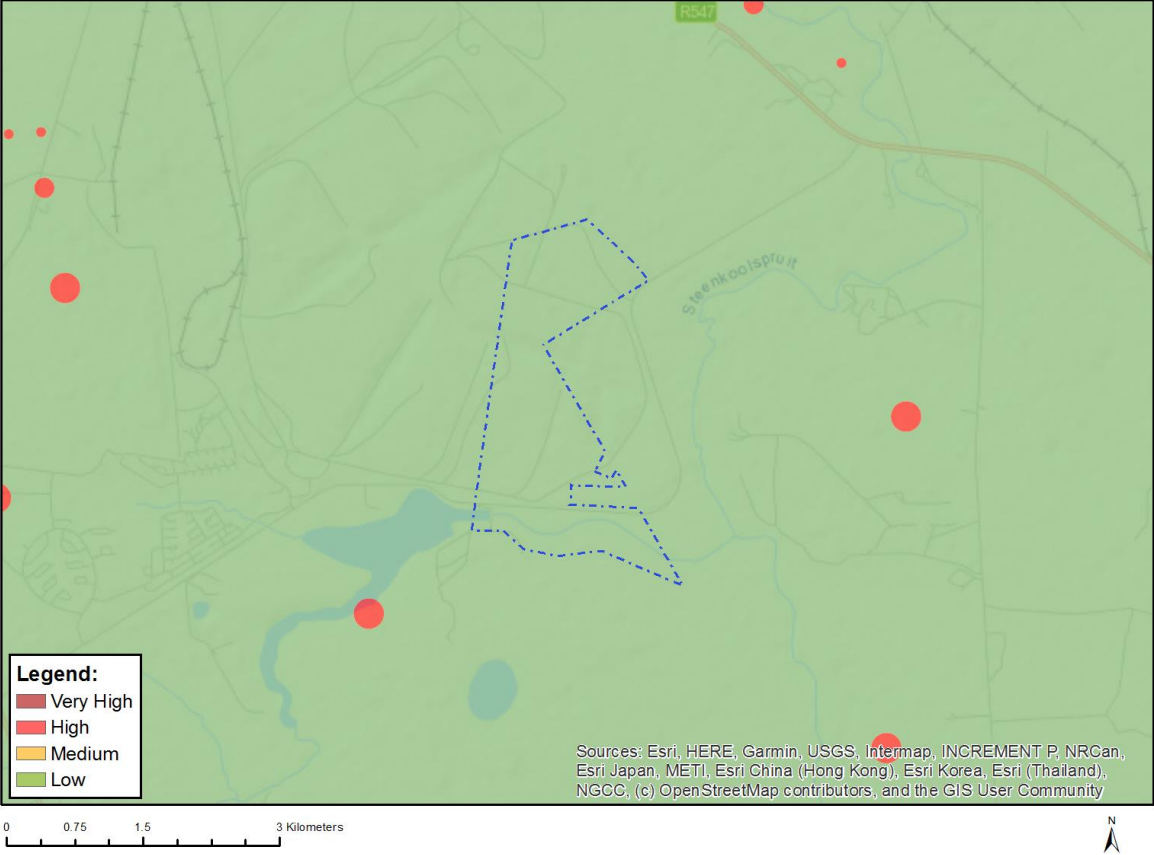


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

### Sensitivity Features:

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

# MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

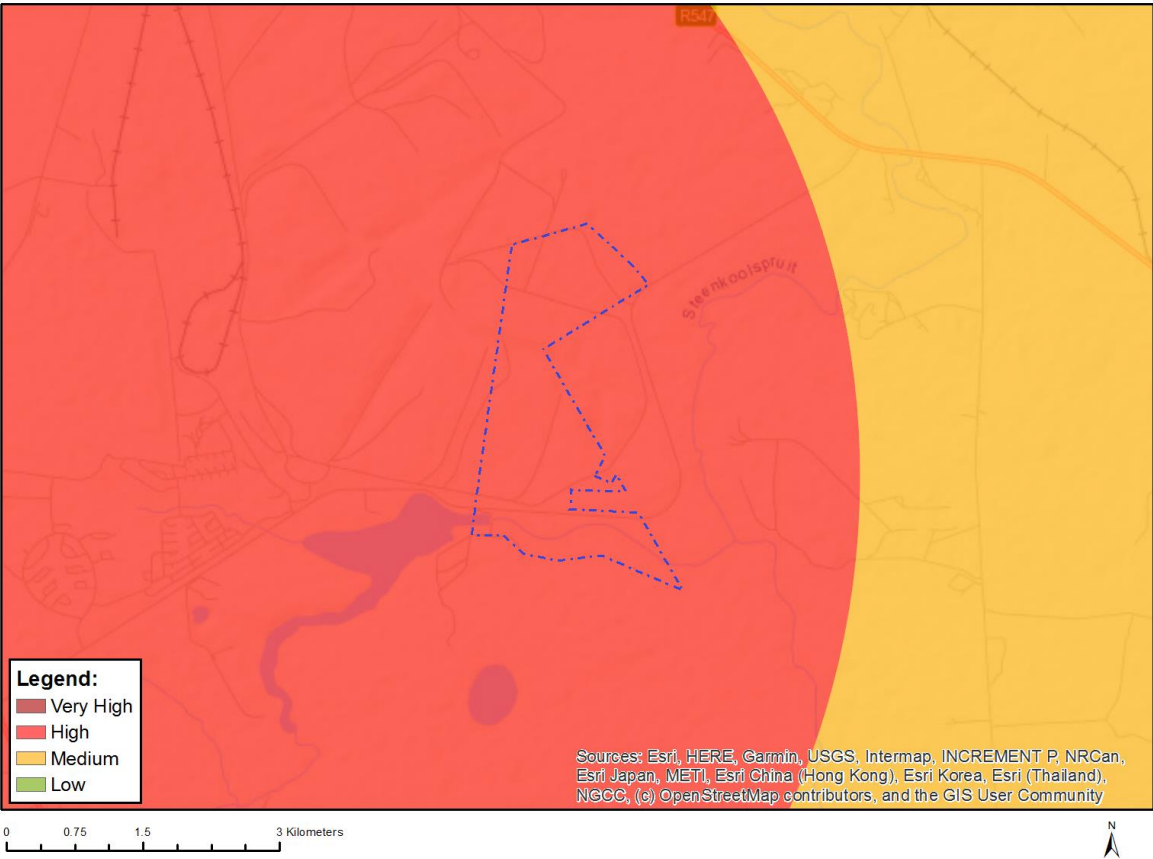


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

**Sensitivity Features:**

Sensitivity	Feature(s)
Low	Low sensitivity

# MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

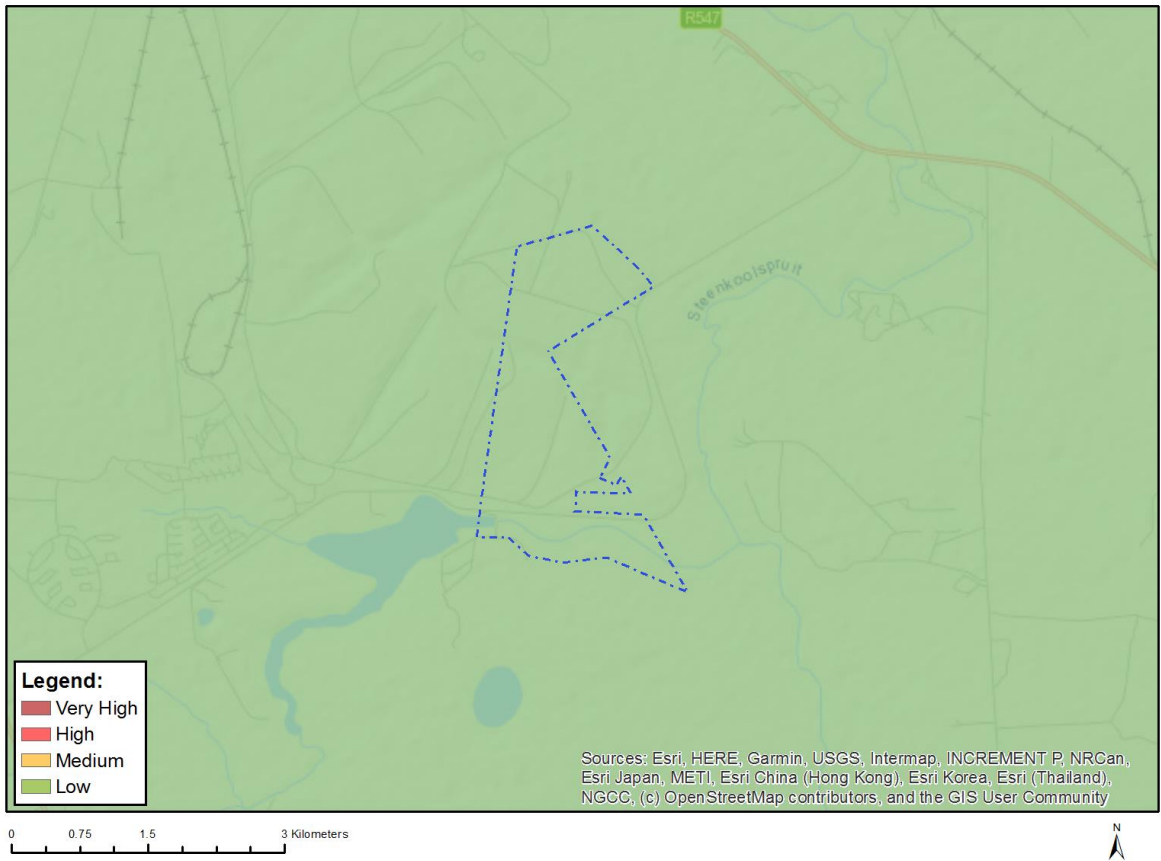


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

**Sensitivity Features:**

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome

# MAP OF RELATIVE DEFENCE THEME SENSITIVITY

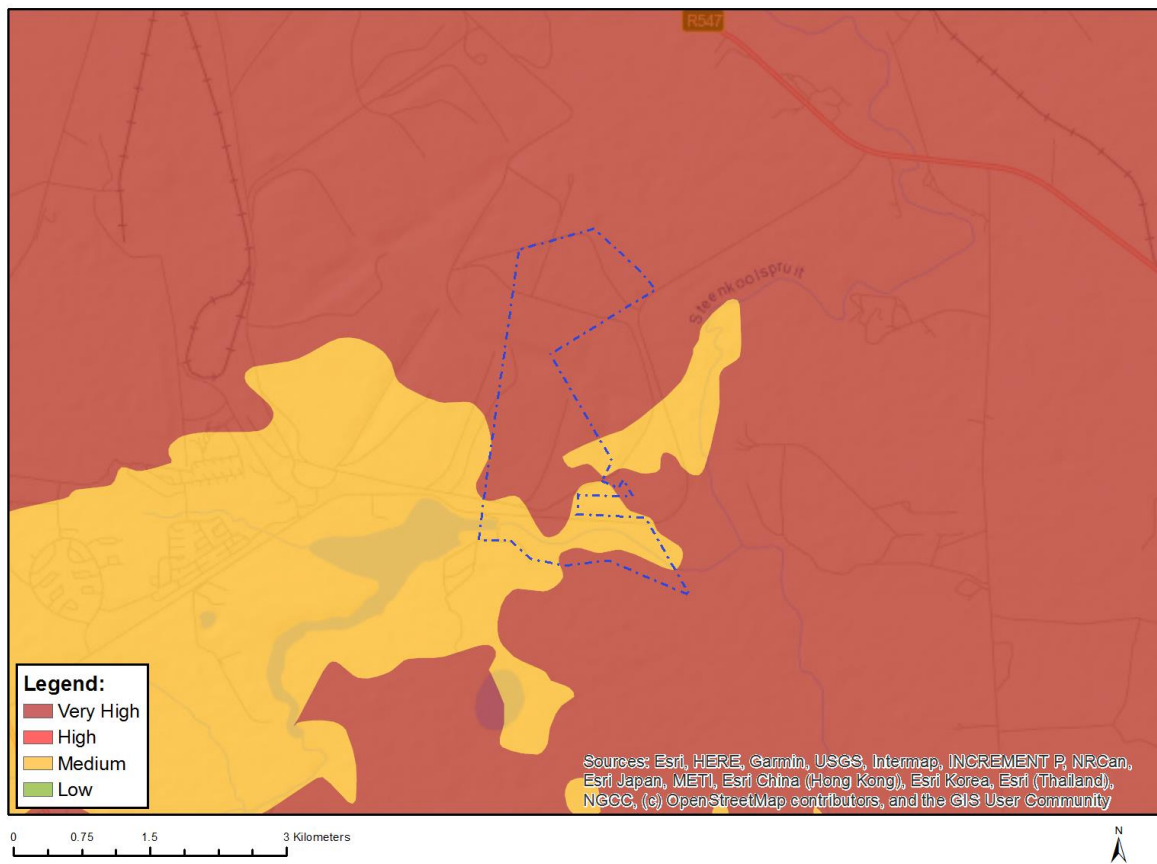


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

## Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

## MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

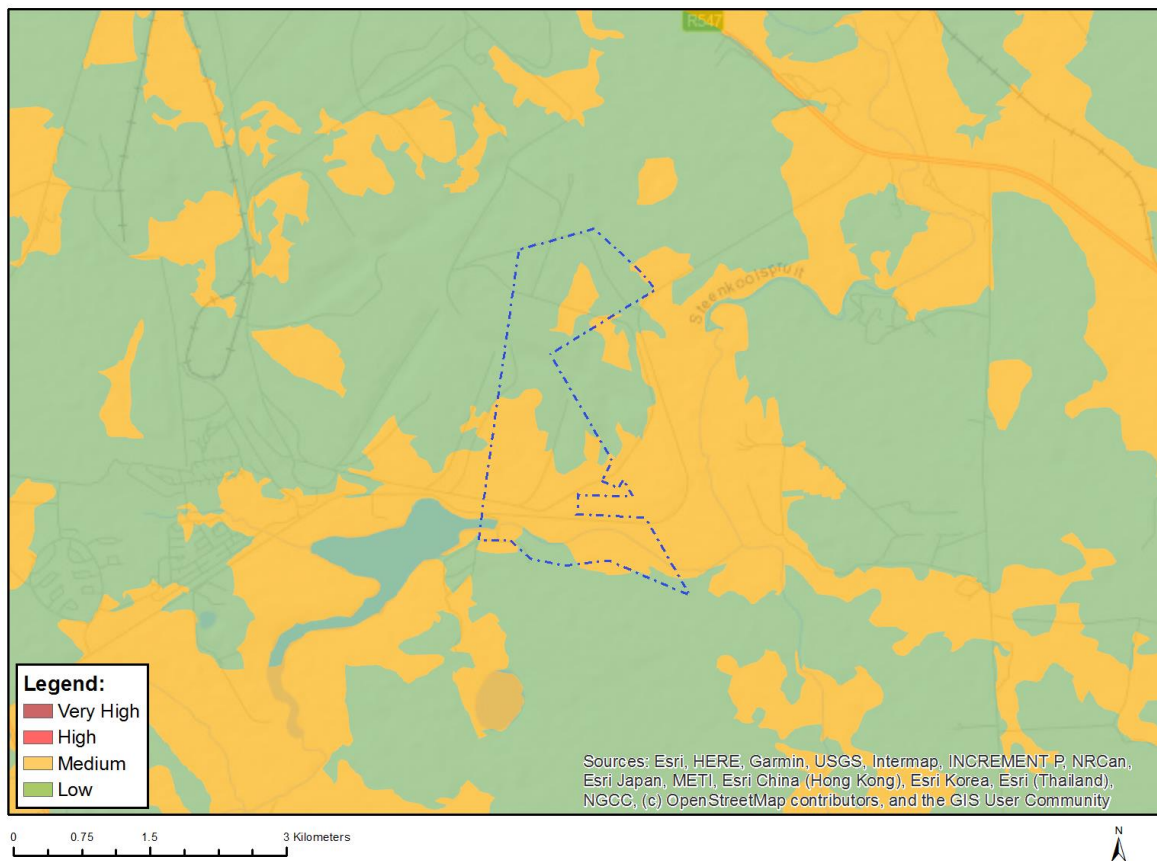


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

### Sensitivity Features:

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

## MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



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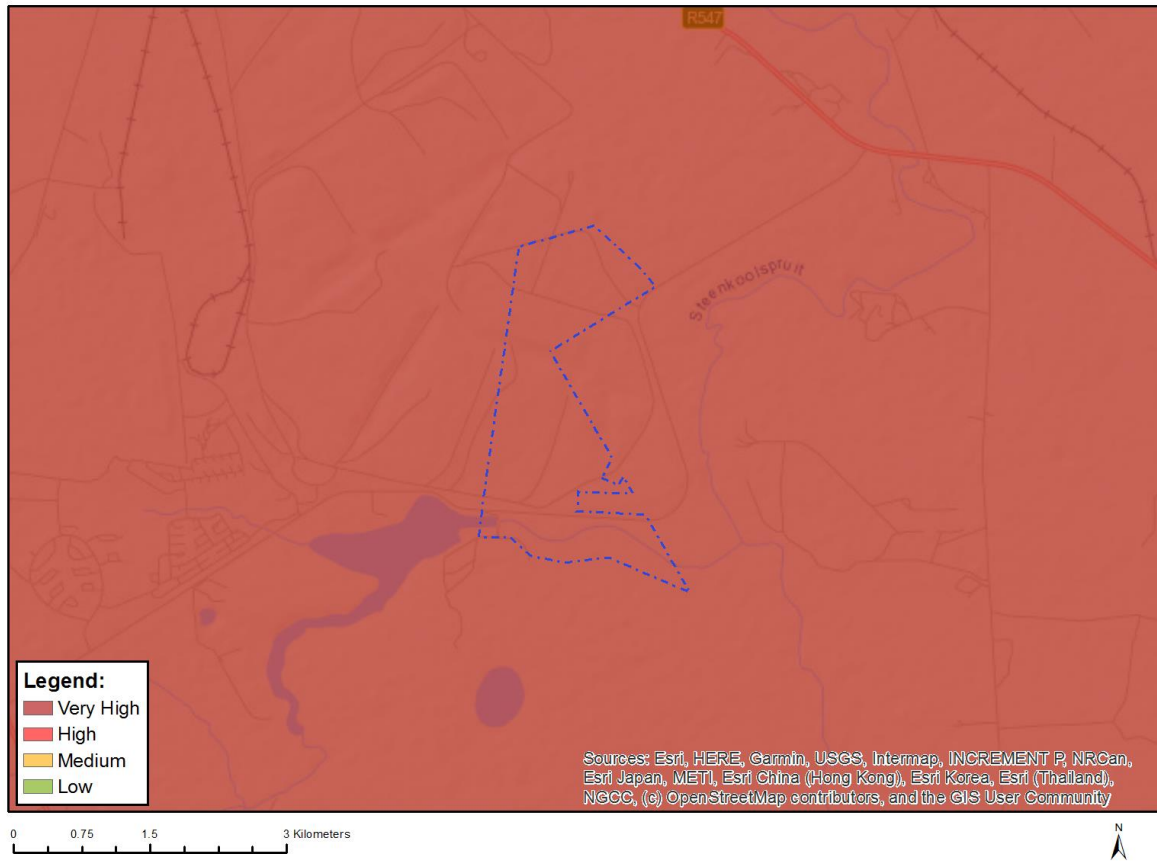
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

### Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 41
Medium	Sensitive species 691
Medium	<i>Pachycarpus suaveolens</i>
Medium	<i>Brachycorythis conica</i> subsp. <i>transvaalensis</i>



## MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

### Sensitivity Features:

Sensitivity	Feature(s)
Very High	Critical biodiversity area 2
Very High	Protected Areas Expansion Strategy
Very High	Vulnerable ecosystem