

BASIC ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

PROPOSED COAL ON PORTION OF PORTION 10 OF THE FARM MODDERFONTEIN 236 IR, IN THE MAGISTERIAL DISTRICT OF DELMAS, MPUMALANGA PROVINCE.

On behalf of:



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DMRE REF: MP 30/5/1/3/2/13242 MP



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

BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

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FILE REFERENCE NUMBER SAMRAD	: MP 30/5/1/3/2/13242 MP

BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

DOCUMENT CONTROL	
Project Title:	Mining Permit application on the portion of portion 10 of the farm Modderfontein 236 IR
Mineral	Coal
Magisterial District	Delmas Magisterial District, Mpumalanga Province.
Compiled on behalf of	Kgothatso Transport (Pty) Ltd
Compiled By	Ms Valentine Mhlanga
Reviewed By	Dr Kenneth Singo
Submission to	Stakeholders
Date	2022

Disclaimer

The opinion expressed in this, and associated reports are based on the information provided by Kgothatso Transport (Pty) Ltd to Singo Consulting (Pty) Ltd ("Singo Consulting") and is specific to the scope of work agreed with Kgothatso Transport (Pty) Ltd. Singo Consulting acts as an advisor to the Kgothatso Transport (Pty) Ltd and exercises all reasonable skill and care in the provision of its professional services in a manner consistent with the level of care and expertise exercised by members of the environmental profession.

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

1.1 EXECUTIVE SUMMARY

Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Consultant by Kgothatso Transport (Pty) Ltd to conduct Environmental Impact Assessment (EIA), compile an Environmental Management Programme report (EMPr) and undertake Public Participation Process (PPP). This is done for processes of acquiring Environmental Authorization for the proposed Mining Permit Application within portion of portion 10 of the farm Modderfontein 236 IR, under the Magisterial District of Delmas, Mpumalanga Province with DMRE Ref: MP 30/5/1/3/2/ 13242 MP.

Mining Permit Application has been submitted for the exploitation of Coal resources on the property mentioned above. Mining activities will be undertaken over a period of two (2) years. This project will entail an open cast method of excavation. The mine design will be developed according to the dimension of the applied mineral deposit within the project area, but overall mining activities will be limited to an area of 5 Ha as per mining permit requirements. The topsoil will be stockpiled elsewhere on site preferably next to the farm boundary and will be used during rehabilitation period.

Once a box cut has been made, the overburden and mineral resources where necessary will be loosened by blasting. The loosened material will then be loaded onto trucks by excavators. A haul road will be situated at the side of the open cast, forming a ramp up which trucks can drive, carrying ore and waste rock. Waste rock will be piled up at the surface, near the edge of the open cast (waste dump). The waste dump will be tiered and stepped, to minimize degradation. All the activities will be guided by the project's EMPr such that the project does not impact the environment negatively. Attempts to consult the landowner has been unsuccessful thus far.

1.1.1 Purpose of this Document

This document has been compiled in support of the Mining Permit and Environmental Authorization Application and aims to assess any impacts associated with small scale mining. It is important that interested and Affected Parties are provided with an opportunity to review and comment on the assessment report, thereby contributing to the environmental impact assessment process and assisting in identifying any additional risks or impacts that may be experienced. As such, a public consultation was undertaken for this application and will be an on-going process until the DMRE conclude the project. The draft report will be made available to

Interested and Affected Parties for a period of at least 30 days from the 23rd of August 2022 to the 21st of September 2022 and the comments received during this period will be submitted to DMRE for adjudication.

1.1.2 Project Location

Portion of portion 10 of the farm Modderfontein 236 IR is located 24 km west of Delmas Town. Access to the project area is via the gravel road which extends from the R555 provincial road. The proposed permit area is located within the Victor Khanye local municipality, under the Nkangala District Municipality in Mpumalanga Province.

1.1.3 Project Activities

The proposed mining methodology to be employed is a very basic form of opencast mining, and a 5-hectare area will be demarcated for mining. Prior to mining, trenches will be excavated in order to delineate the outcrop. This will be followed by blasting and subsequent mining of the orebody utilizing a truck and shovel operation. The mined ore will be crushed and screened using a mobile crushing and screening plant. A front-end loader will be used to load the material into haulage trucks. The ore will be processed off-site. The mine will operate for a two (2) year permit. Period with an option to renew for three (3) periods, each of which may not exceed one (1) year if the mining programme is not completed.

The project infrastructure and activities will include:

- Site clearance.
- Removal of topsoil and overburden and stockpiling.
- Site establishment, including the establishment of an access route, mobilization of equipment and preparation of area for mining.
- Excavation of a box cut.
- Blasting.
- Loading zone.
- Dust control.
- Crushing and screening of ore.
- Hauling and transporting of ore.
- Ablution facilities and waste storage area.
- Rehabilitation of site

1.1.4 Environmental Specialist Studies

A comprehensive assessment was undertaken in support of the Mining Permit Project. The following specialist studies were conducted:

- Soil Study
- Hydrogeological Study
- Hydrology Study



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REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

PREPARED BY:



PREPARED ON BEHALF OF:



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IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

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

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INTRODUCTION

Kgothatso Transport (Pty) Ltd has lodged an application for a Mining Permit in terms of section 27 of the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act No. 28 of 2002). The proposed Kgothatso Transport Mine will be located approximately 24 km west of Delmas Town, approximately 0,3 km southwest of Rowan Tree (Pty) Ltd and approximately 2,29 northeast of Daybreak Farms on portion of portion 10 of the farm Modderfontein 236 IR in Mpumalanga Province. The project site covers an area of about 5 hectares (ha). Access to the site is via the gravel road which extends from the R555 provincial road. The project area falls under City of Victor Kanye Local Municipality. The proposed small-scale mining operation will involve mining of Coal resources using truck and shovel mining method.

PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1 Contact person and correspondence address.

a) Details of the Environmental Assessment Practitioner (EAP).

Project applicant:	Kgothatso Transport (Pty) Ltd		
Registration no (if any):	2014/212108/07		
Trading name (if any):	Kgothatso Transport (Pty) Ltd		
Responsible Person, (e.g., Director, CEO, etc.):	Director		
Contact person:	Mr Mathe Simon Motanyana		
Physical address:	R50 Road, Office No. 4, Tutuni Office Park Delmas, Mpumalanga, 2210		
Postal address:	R50 Road, Office No. 4, Tutuni Office Park, Delmas, 2210		
Postal code:	2210		
Telephone:	+27 13 665 9906	Cell:	+27 71 576 8769
E-mail:	kgothatsotransport1000@gmail.com	Fax:	+27 86 658 5702

b) Expertise of the EAP

Please refer to Appendix 9 for the EAP's qualifications and Curriculum Vitae.

Singo Consulting (Pty) Ltd is a growing organization in the field of geological sciences, environmental sciences, and environmental management. This organization has provided sound practicable solutions to unavoidable environmental problems,

particularly those triggered by human activities. This is achieved by tackling environmental problems using various fields of applied science, such as chemistry, hydrology, environmental geology, geochemistry, geophysics, and soil sciences. This leads to proper and sound environmental impact assessments and the production of enforceable environmental management plans. This organization has conducted over 26 successful Environmental Impact Assessments (EIAs) in various provinces of South Africa, basic assessment reports and environmental management plans (EMPs) which protect and promote the sustainable utilization of environment.

2 Location of the overall activity

Farm name	Portion of portion 10 of the farm Modderfontein 236 IR
Application area (ha)	5 ha
Magisterial district	Magisterial District of Delmas
Distance and direction from nearest town	<ul style="list-style-type: none"> • Approximately 24 km west of Delmas Town • Approximately 0,3 km southwest of Rowan Tree (Pty) Ltd • Approximately 2,29 northeast of Daybreak Farms
21-digit Surveyor General code for each farm portion	TOIR00000000023600010

2.1 Locality map (show nearest town, scale not smaller than 1: 250,000)

The proposed Kgothatso Transport Mine will be located approximately 24 km west of Delmas Town, approximately 0,3 km southwest of Rowan Tree (Pty) Ltd and approximately 2,29 northeast of Daybreak Farms along the N12 or R555 road on portion of portion 10 of the farm Modderfontein 236 IR in Mpumalanga Province. The project site covers an area of about 5 hectares (ha). Access to the site is via the gravel road which extends from the R555 provincial road. The project area falls under the city of Delmas in the Victor Kanye Local Municipality. See figures 1 & 2.

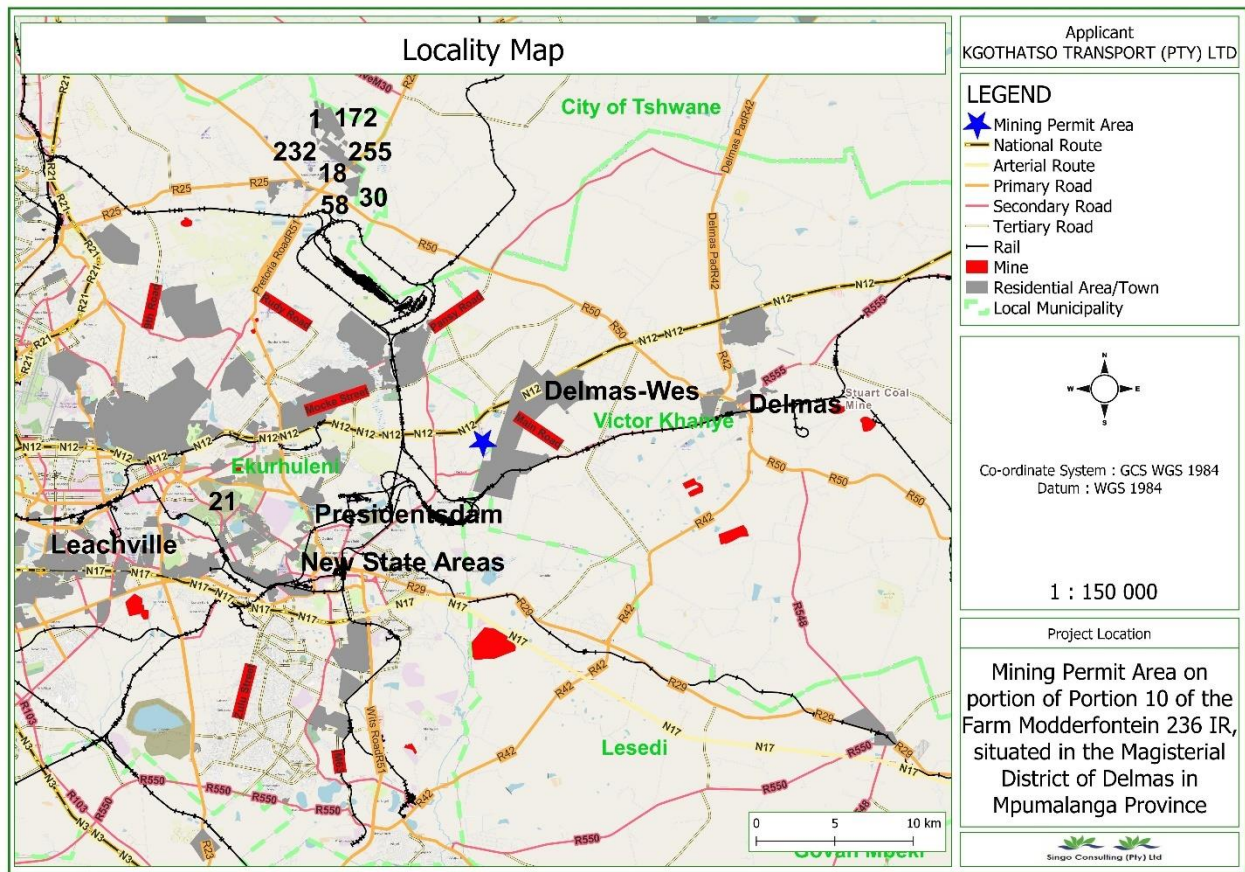


Figure 1: Locality map showing the position of the applied area.



Figure 2: Google Earth view showing the location of the applied space.

1.1. Details of the Environmental Assessment Practitioner

Singo Consulting (Pty) Ltd was appointed by Kgothatso Transport (Pty) Ltd as an independent EAP to compile this report. The contact details of the consultants who compiled this report are as follows:

Details of the EAP who prepared the report:

Name of Practitioner	Ms Valentine Mhlanga
Designation	EAP intern
Tel No.	013 692 0041
Fax No.	086 514 4103
Email address	valentine@singoconsulting.co.za

Details of the EAP who reviewed the report:

Name of Practitioner	Dr N.K Singo
Designation	Principal EAP
Tel No.	013 692 0041
Fax No.	086 514 4103
Email address	kenneth@singoconsulting.co.za

1.2. Expertise of the EAP

1.2.1. Qualifications of the EAP

In terms of Regulation 13 of the NEMA 2014 EIA Regulations (Government Notice 326), an independent EAP must be appointed by the Applicant to manage the application. In compliance to the mentioned regulation, Singo Consulting (Pty) Ltd was appointed by the Applicant as the EAP and are compliant with the definition of an EAP as defined in the 2014 EIA Regulations and the NEMA.

This includes, inter alia, the requirement that Singo Consulting (Pty) Ltd is:

- Objective and independent.
- Have expertise in conducting EIAs.
- Comply with the NEMA, the Regulations and all other applicable legislation.

- Consider all relevant factors relating to the application.
- Provide full disclosure to the Applicant and the relevant environmental authority.

1.2.2. Summary of EAP's Past Experience

Please refer to appendix 2 for the EAP's qualifications and Curriculum Vitae.

Singo Consulting (Pty) Ltd is a growing organization in the field of geological sciences, environmental sciences and environmental management. This organization has provided sound practicable solutions to unavoidable environmental problems, particularly those triggered by human activities. This is achieved by tackling environmental problems using various fields of applied science, such as chemistry, hydrology, environmental geology, geochemistry, geophysics, and soil sciences. This leads to proper and sound environmental impact assessments and the production of enforceable environmental management plans. This organization has conducted over 26 successful Environmental Impact Assessments (EIAs) in various provinces of South Africa, basic assessment reports and environmental management plans (EMPs) which protect and promote the sustainable utilization of environment.

3 DESCRIPTION AND SCOPE OF THE PROPOSED ACTIVITY

The method that will be employed is a very basic form of open cast mining, and a 5-ha area will be demarcated for mining activities. Blasting and subsequent mining of the orebody utilizing a truck and shovel operation will be conducted (Figure 2). The mined ore will be crushed and screened utilising a mobile crushing and screening plant that will be established within the boundaries of the mining area. A front-end loader will be utilized to load the material into haulage trucks. The mine will operate for a two (2) year permit period with an option to renew for three (3) periods of which may not exceed one year. The coal will be stockpiled and transported to clients via trucks and trailers. All activities will be contained within the boundaries of the mining site.

The project infrastructure and activities will include the following:

- Site clearance.
- Removal of topsoil and overburden and stockpiling.
- Site establishment, including the establishment of an access route, mobilisation of equipment and preparation of area for mining.
- Excavation of an open pit.
- Blasting.

- Loading zone.
- Dust control.
- Crushing and screening.
- Hauling and transporting of ore.
- Ablution facilities and waste storage area.
- Rehabilitation of site and Monitoring.

3.1 Description of the scope of the proposed overall activity

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



Figure 3: Proposed mine layout (infrastructure plans)

Figure 4: Listed and specified activities

NAME OF ACTIVITY E.g., for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office and access route; and for mining: excavations, blasting, stockpiles, discard dumps/ dams, loading, hauling, transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines and conveyors.	Aerial extent of the activity Ha or m ²	Listed activity Mark with X where applicable or affected	Applicable listing notice (GNR 324, GNR 325 OR GNR 327)
Mining Permit Application	5Ha	X	GNR 327 Activity 21:
Vegetation Clearance	5 Ha	X	GNR 327 Activity 27
Overburden stockpile	0.09Ha	X	Not listed
Access road	0.03Ha	X	Not listed
Topsoil stockpile	0.09Ha	X	Not listed
ROM stockpile area	0.07Ha	X	Not listed
Dirty water trench	0.03Ha	X	Not listed
Mobile offices	0.02Ha	X	Not listed
Mobile sanitation area	0.01Ha	X	Not listed
Pollution Control Dam (PCD) construction	0.06Ha	X	Not listed
Product Stockpile Area	0.07Ha	X	Not listed
Crushing & Screening	0.06Ha	X	Not listed
Box cut, strip 1 and strip 2	4.47Ha	X	Not listed
Drilling and Blasting	4.47Ha	X	Not listed

Coal extraction	4.47Ha	X	Not listed
A closure certificate in terms of section 43 of the mineral petroleum Resources Development Act, 2002 (Act 28, 2002)	5 Ha	X	GNR 327 Activity 22

3.2 Description of the activities to be undertaken.

This project will be carried out in terms of National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014 (as amended) read together with regulation 40-43 of the Act. The triggered activities as reflected on Government Notice R983 (as amended) Activity No. will be; LN 1 Activity 21, 22 & 27:

- LN 1 Activity 27: The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for -(i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
- Activity 21: The project requires a mining permit in terms of the MPRDA.
- Activity 22: Upon closure of the site a closure permit in terms of the MPRDA will be required.

LN 1 Activity 27 is about clearing of vegetation and this application seek to be authorized for this activity. Deforestation process is required before commencement of any mining activity if the area is vegetated, this process allows the mining company to gain access to the mining area and locating other required infrastructures. Therefore, land clearance will be the first stage as part of development.

During site establishment, the applicant must demarcate the site boundaries and clear the topsoil and overburden from the extension area to open it for drilling and blasting. Upon stripping, the topsoil and overburden will be stockpiled along the boundaries of the opencast mining for use during the rehabilitation phase. Topsoil stripping will be restricted to the areas to be mined. The complete A-horizon (topsoil – the top 100-200 mm of soil, which is generally darker in colour due to high organic matter content) will be removed. If it is unclear where the topsoil layer ends, the top 300 mm of soil must be stripped.

The topsoil will be stockpiled in the form of a berm alongside the boundary of the mine mining where it will not be driven over, contaminated, flooded, or moved during the operational phase. The topsoil berm will measure a maximum of 1.5 m high and indigenous grass species must be planted on it, if vegetation does not naturally establish within 6 months of stockpiling, to prevent soil erosion and discourage weed growth. The roots of the grass will improve soil

viability for rehabilitation purposes. The stripped overburden will be stockpiled on a designated area after the topsoil has been removed. The applicant will introduce the mining equipment to the area during the site establishment phase.

3.3 Development -Stripping of overburden

Overburden is waste rock consisting of consolidated and unconsolidated material that must be removed to expose the underlying ore body. It is desirable to remove as little overburden as possible to access the ore of interest, but a larger volume of waste rock is excavated when the mineral deposit is deep. The removal techniques that will be employed are cyclical with interruption in the extraction (drilling, blasting, and loading) and removal (haulage) phases. This is particularly true for hard rock overburden which must be drilled and blasted first. An exception to this cyclical effect is dredges used in hydraulic surface mining and some types of loose material mining with bucket wheel excavators. The fraction of waste rock to ore excavated is defined as the stripping ratio. Stripping ratios of 2:1 up to 4:1 is not uncommon in large mining operations. Ratios above 6:1 tend to be less economically viable, depending on the commodity. Once removed, overburden can be used for road and tailings construction or may have non-mining commercial value as fill dirt.

Surface mining is a mine in which the ore lies near the surface and can be extracted by removing the covering layers of rock and soil. Almost all surface mining operations are exposed to the elements and require no roof support. Open cast mining method employ a conventional mining cycle of operations to extract minerals: rock breakage is usually accomplished by drilling and blasting for consolidated materials and by ripping or direct removal by excavators for unconsolidated soil and/or decomposed rock, followed by materials handling and transportation. Open cast mining method was considered based on the geological data, extrapolation of resource from nearby mines, life span of a permit and the closure advantage of open cast mining.

During the development and exploitation stages of mining when natural materials are extracted from the earth, remarkably similar unit operations are normally employed. The unit operations of mining are the basic steps used to produce mineral from the deposit, and the auxiliary operations that are used to support them. The steps contributing directly to mineral extraction are production operations, which constitute the production cycle of operations. The ancillary steps that support the production cycle are termed auxiliary operations. The production cycle employs unit operations that are normally grouped into rock breakage and materials handling. This cyclic operation will be employed to recover coal resources.

Breakage generally consists of drilling and blasting, and materials handling encompasses loading or excavation and haulage (horizontal transport) and sometimes hoisting (vertical or inclined transport).

Thus, the basic production cycle consists of these unit operations:

Production cycle=Drill+ Blast + Load+ Haul

Although production operations tend to be separate and cyclic in nature, the trend in modern mining and tunnelling is to eliminate or combine functions and to increase continuity of extraction. For example, in coal and other soft rock mines, continuous miners break and load the mineral to eliminate drilling and blasting. The cycle of operations in surface and underground mining differs primarily by the scale of the equipment. Specialized machines have evolved to meet the unique needs of the two regimes.

2.3.1 Blasting Operation

Drilling and blasting can be defined as the controlled use of explosives and other methods such as gas pressure blasting pyrotechnics, to break rock for excavation. It is practiced most often in mining, quarrying and civil engineering such as dam, tunnel or road construction. The result of rock blasting is often known as a rock cut.

Drilling and blasting currently utilizes many different varieties of explosives with different compositions and performance properties. Higher velocity explosives are used for relatively hard rock in order to shatter and break the rock, while low velocity explosives are used in soft rocks to generate more gas pressure and a greater heaving effect. For instance, an early 20th-century blasting manual compared the effects of black powder to that of a wedge, and dynamite to that of a hammer. The most commonly used explosives in mining today are ANFO based blends due to lower cost than dynamite.

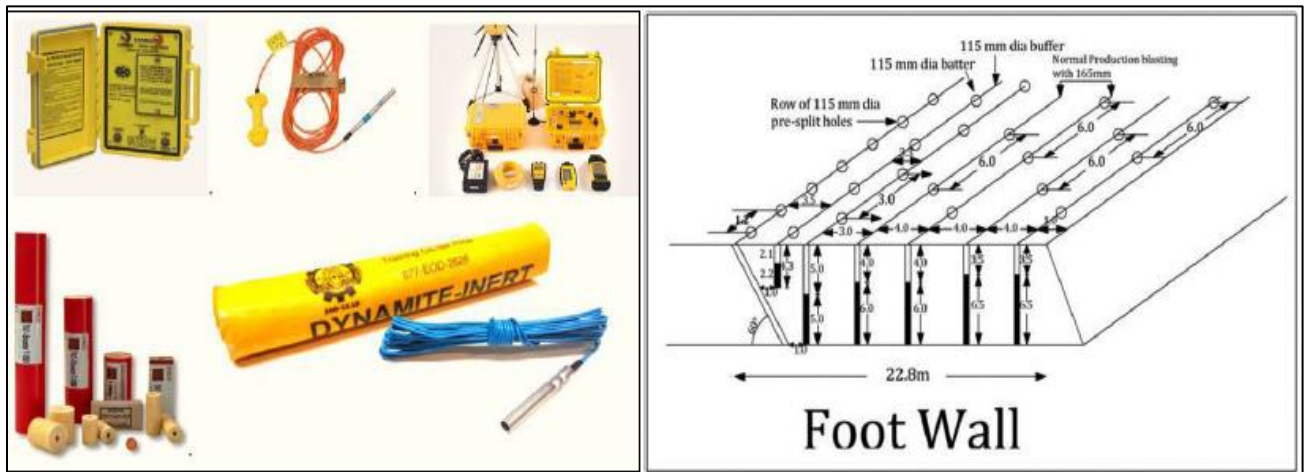
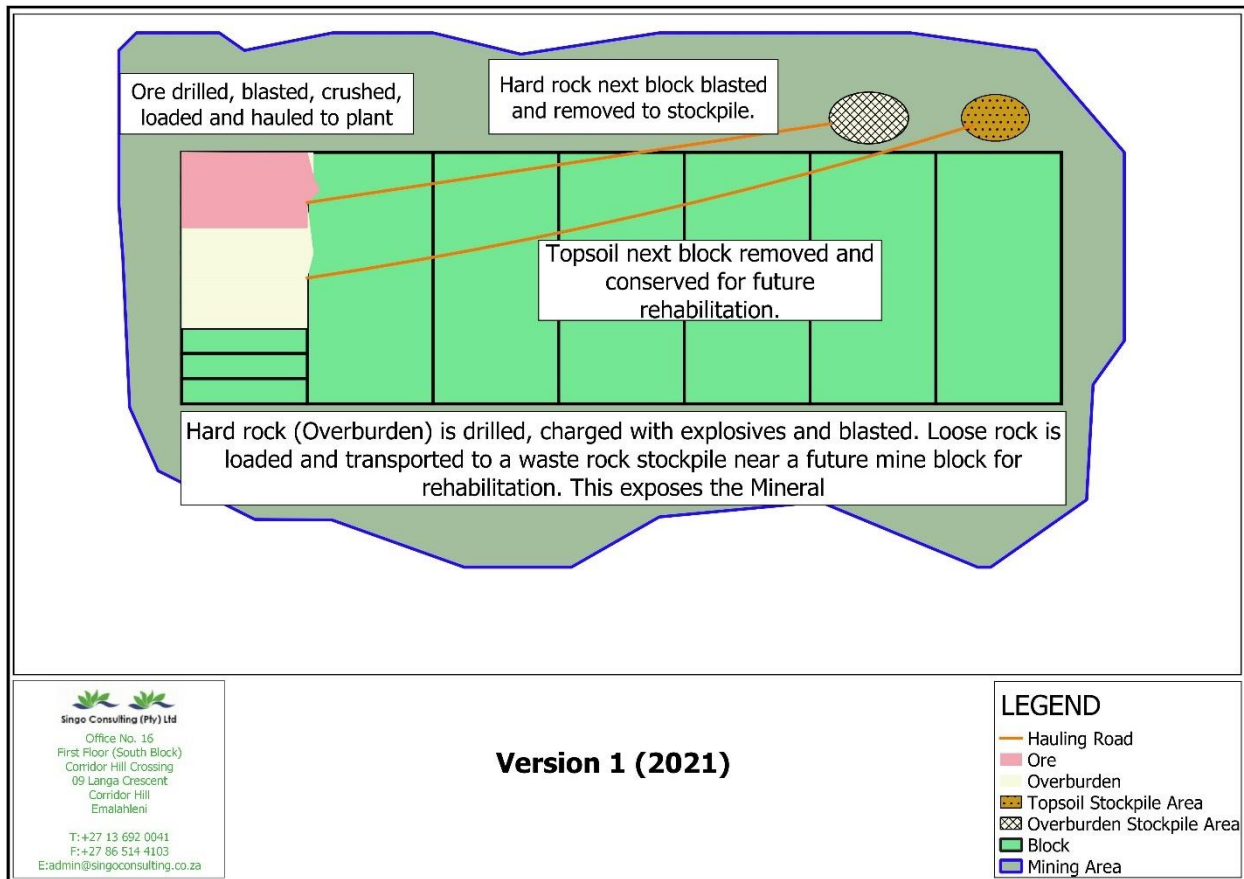
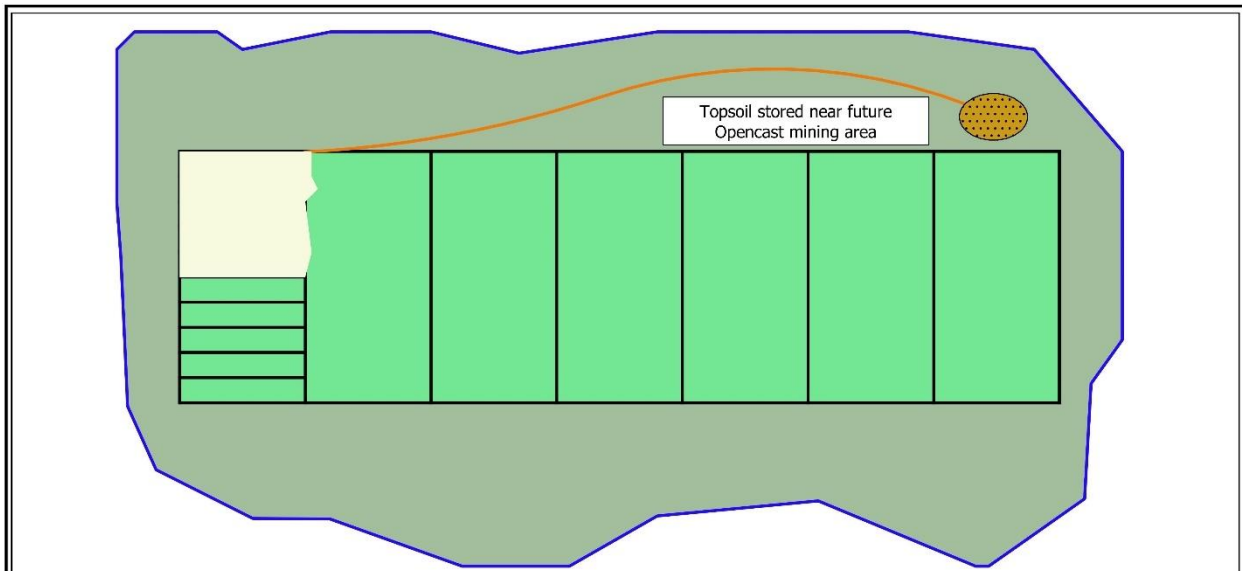


Figure 5: Accessories, Blasting Design, and Planning for Blasting



Figure 6: Typical example of open cast operation



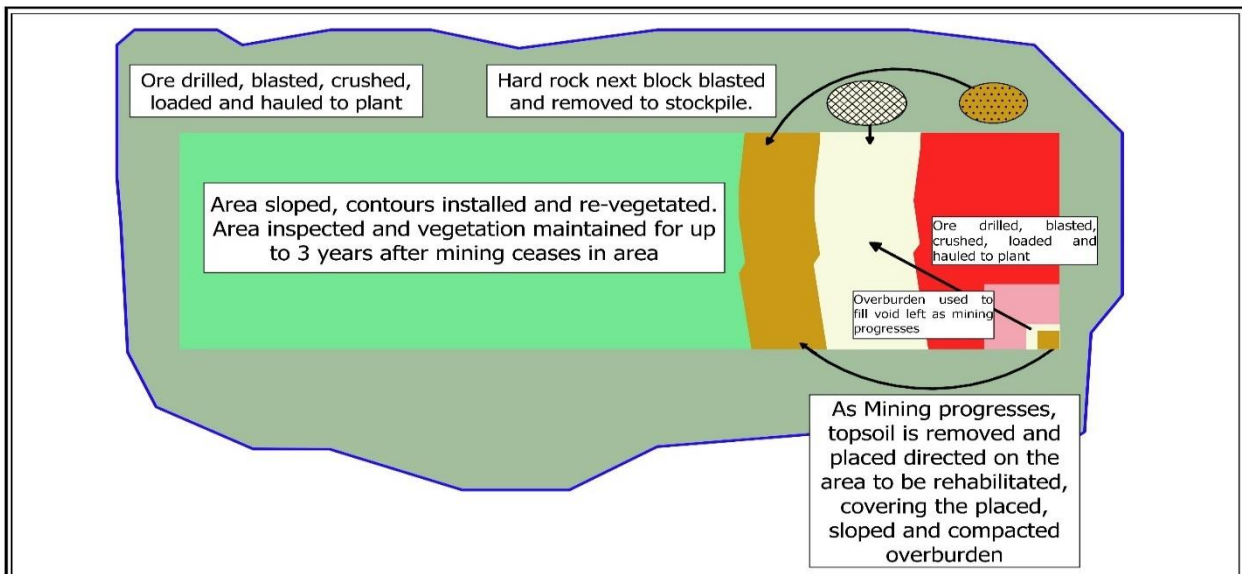


The blocks are again subdivided into smaller blocks. The topsoil of the few blocks is removed. This exposes the Overburden

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Version 1 (2021)

LEGEND
 — Hauling Road
 — Overburden
 — Topsoil Stockpile Area
 — Block
 — Mining Area



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Version 1 (2021)

LEGEND
 — Ore
 — Mined-Out Area
 — Topsoil
 — Topsoil Stockpile Area
 — Overburden
 — Overburden Stockpile Area
 — Rehabilitated Area

Figure 7: A series of mining activities and phases that will be followed (Singo Consulting (Pty) Ltd)

Table 1: Activities and phases

Phase	Activity no	Activity
Construction	1	Site clearing: Removal of topsoil and vegetation
	2	Construction of any surface infrastructure, e.g. Haul roads, pipes, storm water diversion berms (incl. transportation of materials and stockpiling)
	3	Blasting and development of initial box cut for mining
	4	Temporary storage of hazardous products (fuel, explosives) and waste
Operation	5	Removal of overburden and backfilling when possible (incl. drilling/blasting of hard overburden and stockpiling)
	6	Use and maintenance of haul roads.
	7	Extraction of coal (mining process) and run of mine (RoM) coal stockpile
	8	Water use and storage on site
	9	Storage, handling and treatment of hazardous products (fuel, explosives, oil) and waste activities (waste, discard)
	10	Concurrent replacement of overburden, topsoil and re-vegetation
Decommissioning	11	Removal of all infrastructure (incl. transportation off site)
	12	Rehabilitation (spreading of soil, re-vegetation and profiling)
	13	Installation of post-closure water infrastructure
	14	Environmental monitoring of decommissioning activities
	15	Storage, handling and treatment of hazardous products (fuel, explosives, oil) and waste activities (waste discard)
Post-closure	16	Post-closure monitoring and rehabilitation

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

The mining method proposed involves open cast extraction of coal from a pit to be established on virgin ground. The pit at the site will be worked by cutting a bench which will be progressed in a north-easterly direction. The mining methods will include blasting with explosives to loosen the hard rock (overburden) when necessary, see Figures below. The material will be loaded with excavators and hauled to the mobile crushing and screening plants that will be established within the boundaries of the mining area. The Coal will be stockpiled and transported to clients via trucks and trailers. All activities will be contained within the boundaries of the mining site.

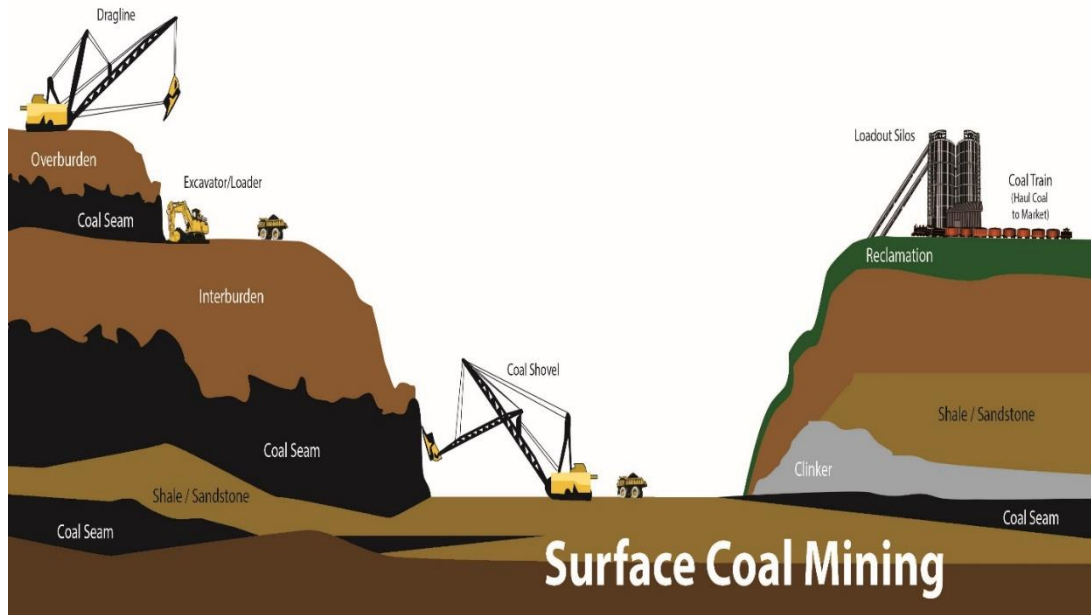


Figure 8: Schematic representation of open cast mining technique operation.

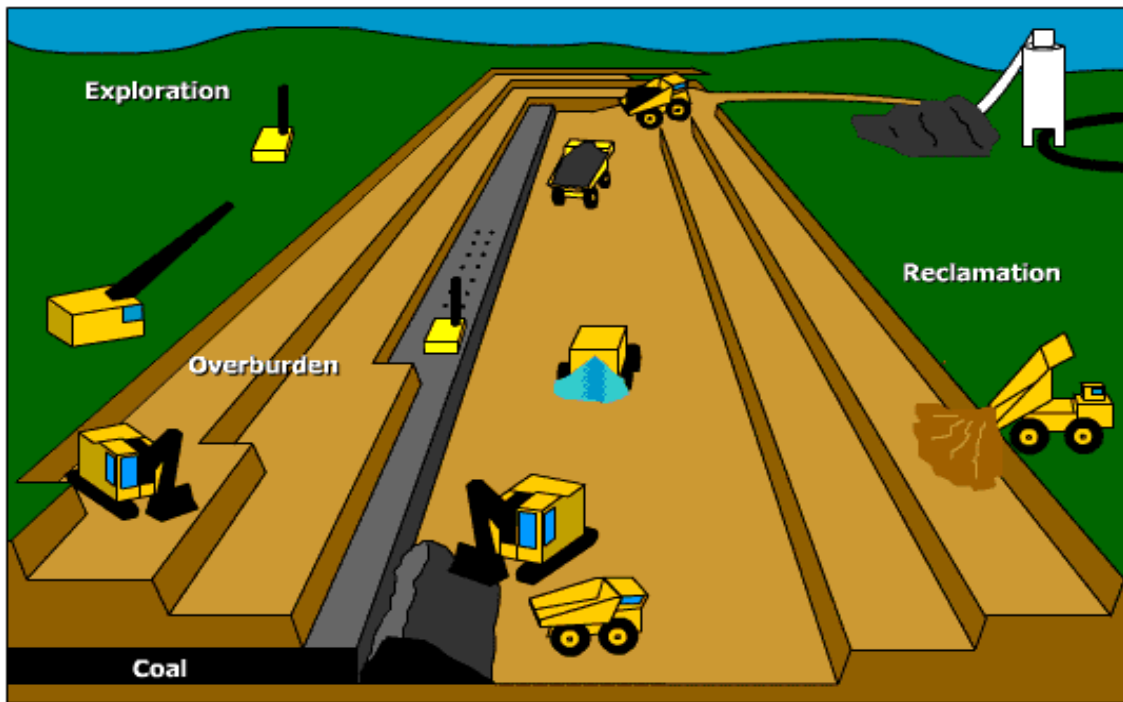


Figure 9: Coal mining stages; removal of topsoil, overburden removal, excavating (sometimes blasting comes first), replacing the overburden and topsoil, preparing the topsoil for rehabilitation and natural vegetation is restored.

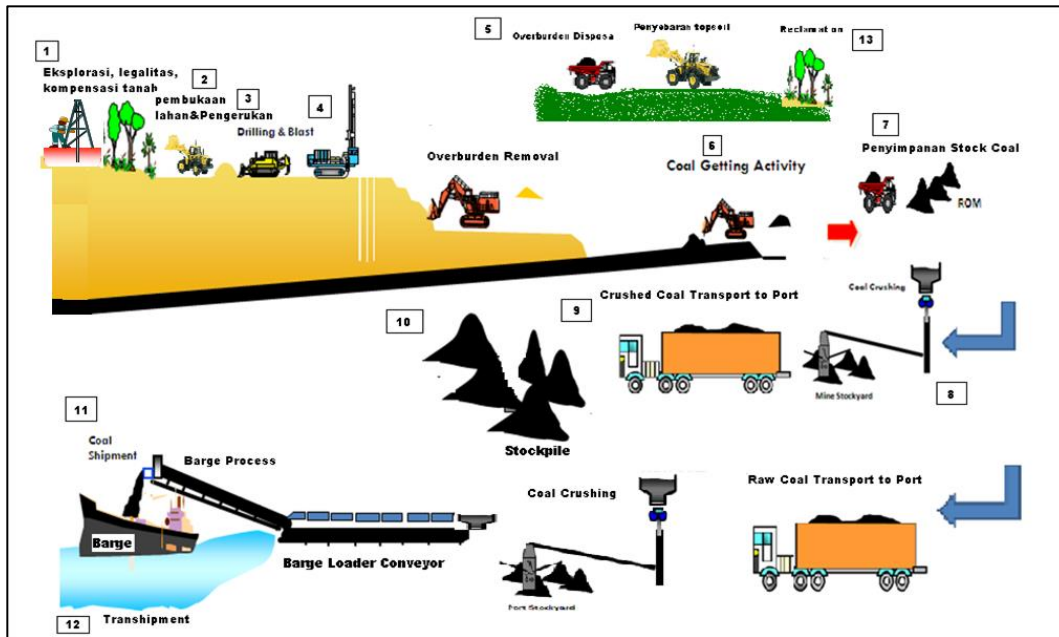


Figure 10: Flow diagram representing typical mining operations, crushing processes and finally supply to the power station.

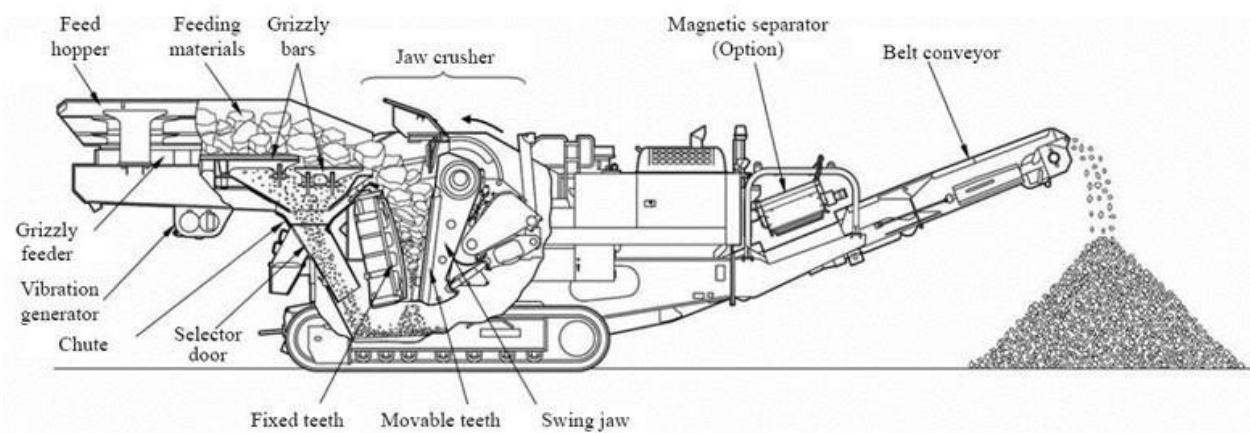


Figure 11: Typical mobile crusher

Excavation plan

Excavation will be conducted in phases to ensure a well-ordered and cost-effective approach. A decision will be made at the end of every phase on whether to proceed or to abandon the project. The first phase will commence at the beginning of the Excavation cycle. This phase will commence with a desktop study, reviewing old existing literature and maps in the general area will be reviewed where it is available. This will be used to formulate a well-informed basis for the remainder of the mining programme. At the same time aerial data will be purchased of the area to determine the terrain layout and look for indicators of near-surface structures that can be investigated more closely. Once the desktop component of phase one, is completed, a field geologist will map the area by walking out the excavation area. During the field mapping exercise, the geologist will be looking for geological structures (such as outcrops, faults etc); rock formations and identifying the general stratigraphy of the area. Any anomalies that were earlier identified will

be investigated. Remote sensing techniques can then be employed, and the gathered information will be captured digitally using GIS mapping.

Physical Excavation.

The typical example of excavation is shown in Figure 9. The equipment to be used are as follows:

- ❖ Excavation
- ❖ Dumper Truck
- ❖ Front end loader
- ❖ Temporary Fencing
- ❖ Wooden pegs
- ❖ Safety Cones
- ❖ Field vehicles
- ❖ First aid kit
- ❖ Sample bags
- ❖ PPE (dust mask; gloves; goggles reflector vest)

No staff will be living on the proposed site. There will be portable toilets located on site to provide sanitary facilities to the employees.



Figure 12: Schematic illustration of mode of operation of an open cast mine.

NAME OF ACTIVITY E.g., for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office and access route; and for mining: excavations, blasting, stockpiles, discard dumps/ dams, loading, hauling, transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines and conveyors.	Aerial extent of the activity Ha or m ²	Listed activity Mark with X where applicable	Applicable listing notice GNR 327, 325 & 324
---	--	--	--

Mining Permit Application	5ha	X	<p>Listing Notice 1: R.327 on 7 April 2017, Activity 21: Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including —</p> <p>(a) associated infrastructure, structures, and earthworks, directly related to the extraction of a mineral resource [,]; or [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)]</p> <p>(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening, or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining, or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.</p> <p>'' The development of facilities or infrastructure for any process or activity which requires a permit or license or an amended permit or license in terms of national or provincial legislation. governing the generation or release of emissions, pollution, or effluent, excluding—</p> <p>(i) activities which are identified and included in Listing Notice 1 of 2014''</p>
Clearing of vegetation before Open cast mining commences	5ha	X	<p>Listing Notice 1: R.327 on 7 April 2017, Activity 27: The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—</p>

			<p>the undertaking of a linear activity; or</p> <p>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>
Open cast mining	5ha	X	<p>Listing Notice 1: R.327 on 7 April 2017, Activity 21. The removal and disposal of mineral contemplated in terms of section 20 of the MPRDA, including:</p> <p>(a) Associated infrastructure, structures, and earthworks, directly related to prospecting of a mineral resource; or</p> <p>(b) The primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening, or washing</p>
Roads and Haul	0,03 Ha	x	<p>Listing Notice 1: R.327 on 7 April 2017, Activity 24: The development of a road:</p> <p>(a) for which an environmental authorization 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</p> <p>(b) with a reserve wider than 13.5 m, or where no reserve exists where the road is wider than 8 m</p>

			Construction of mining road infrastructure, which will include service, access, and haul roads as part of the proposed mining activities.
Rehabilitation	5ha	x	Listing Notice 2: R.327 on 7 April 2017, Activity 22: The decommissioning of any activity requiring – (i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or (ii) a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure;

The mining method proposed involves open cast extraction of Coal from a pit. The pit at the site will be worked by cutting a bench which will be progressed in a north-easterly direction. The mining methods will include blasting with explosives to loosen the hard rock (overburden) when necessary. The material will be loaded with excavators and hauled to the mobile crushing and screening plants that will be established within the project area. The Coal will be stockpiled and transported to clients via trucks and trailers. All activities will be contained within the boundaries of the mining site, see Figure 13 below. Kgothatso Transport (Pty) Ltd prefers this because its lower cost and a higher safety level compared to other methods.

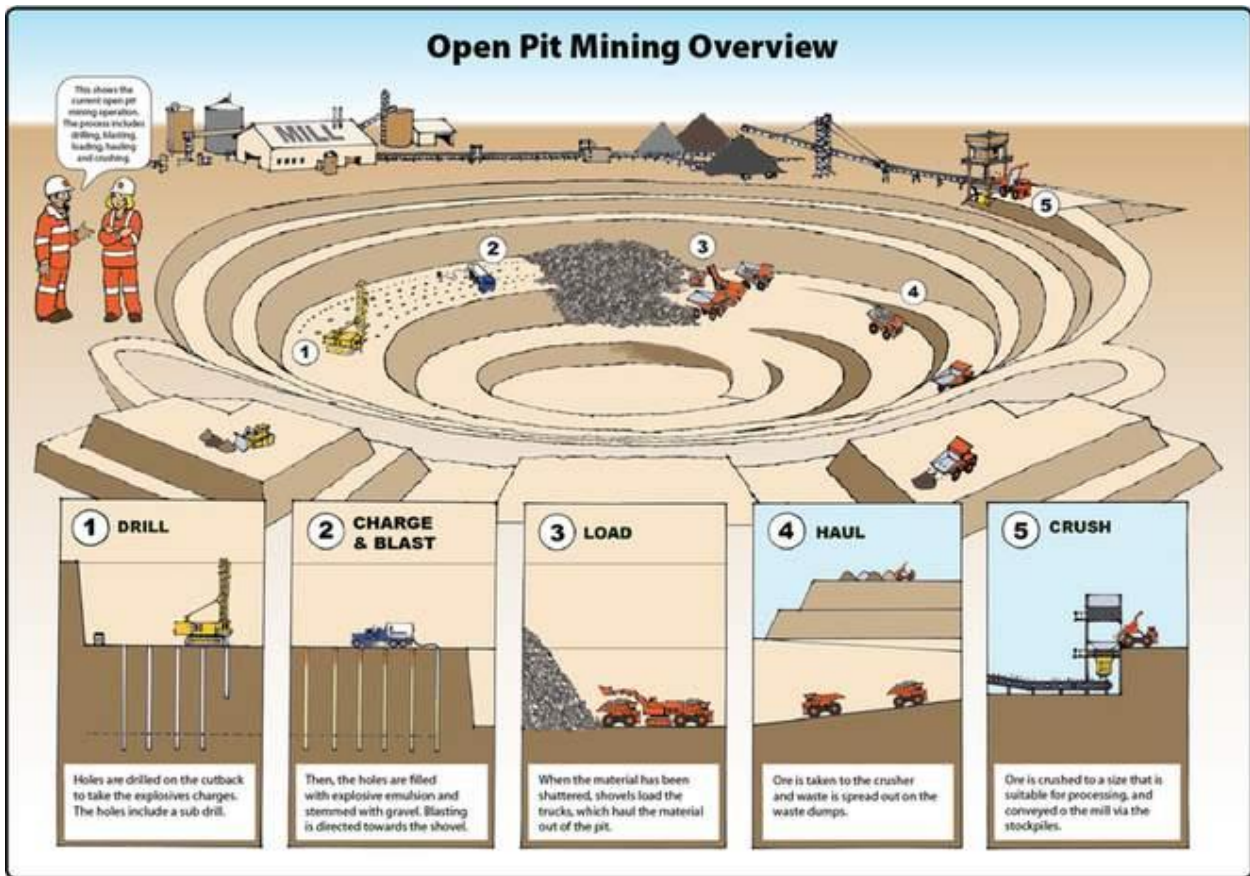


Figure 13: Typical illustration of opencast mining process

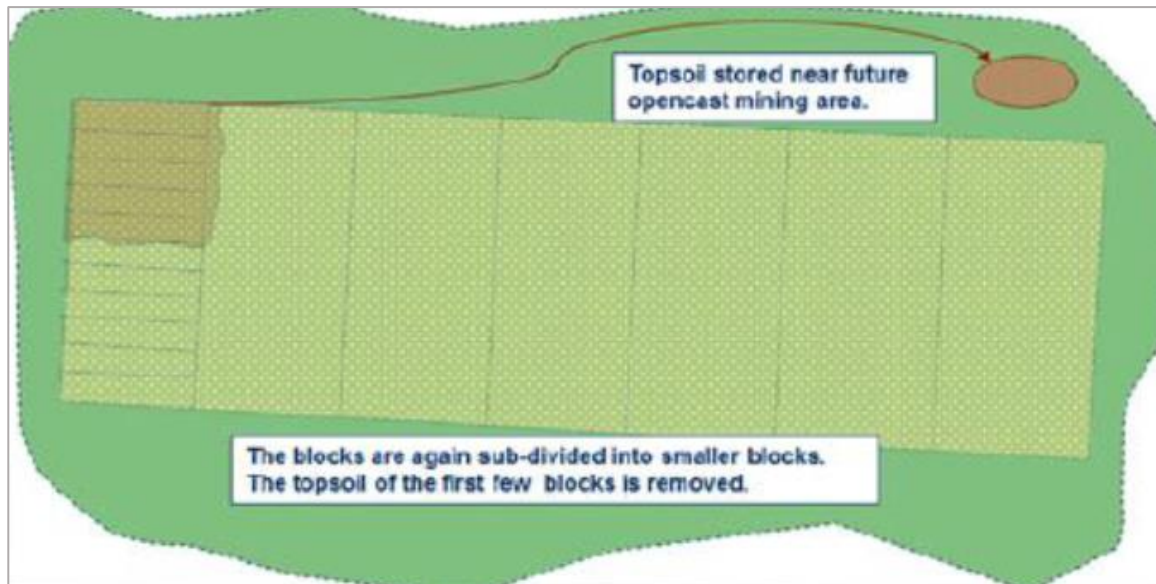


Figure 14: Topsoil removal

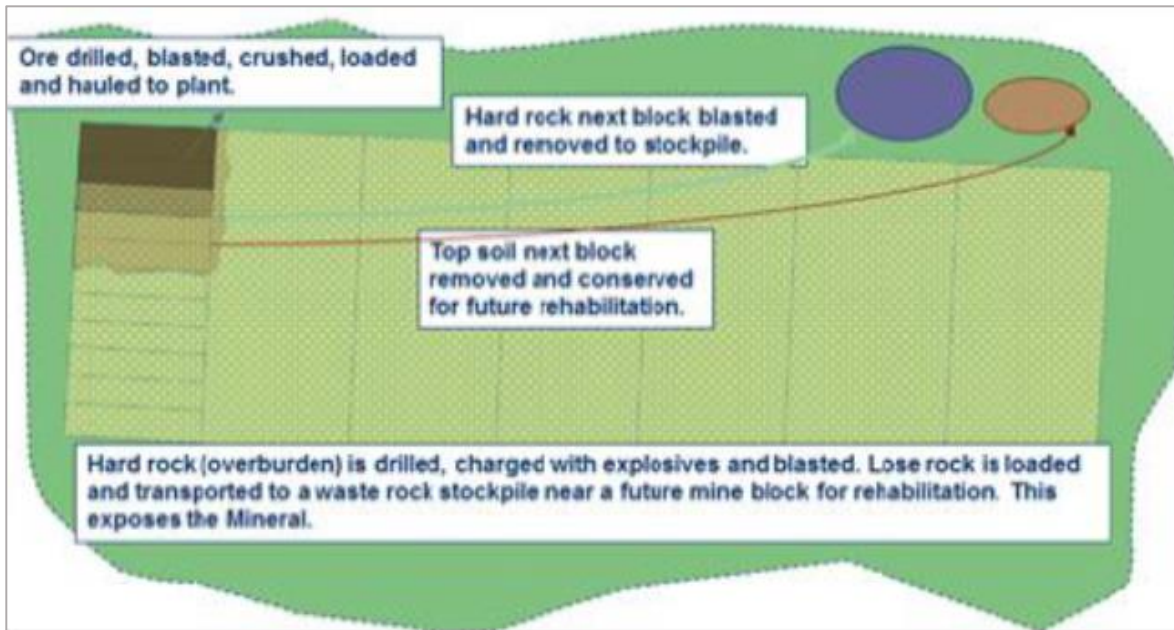


Figure 15: Overburden blasting and removal

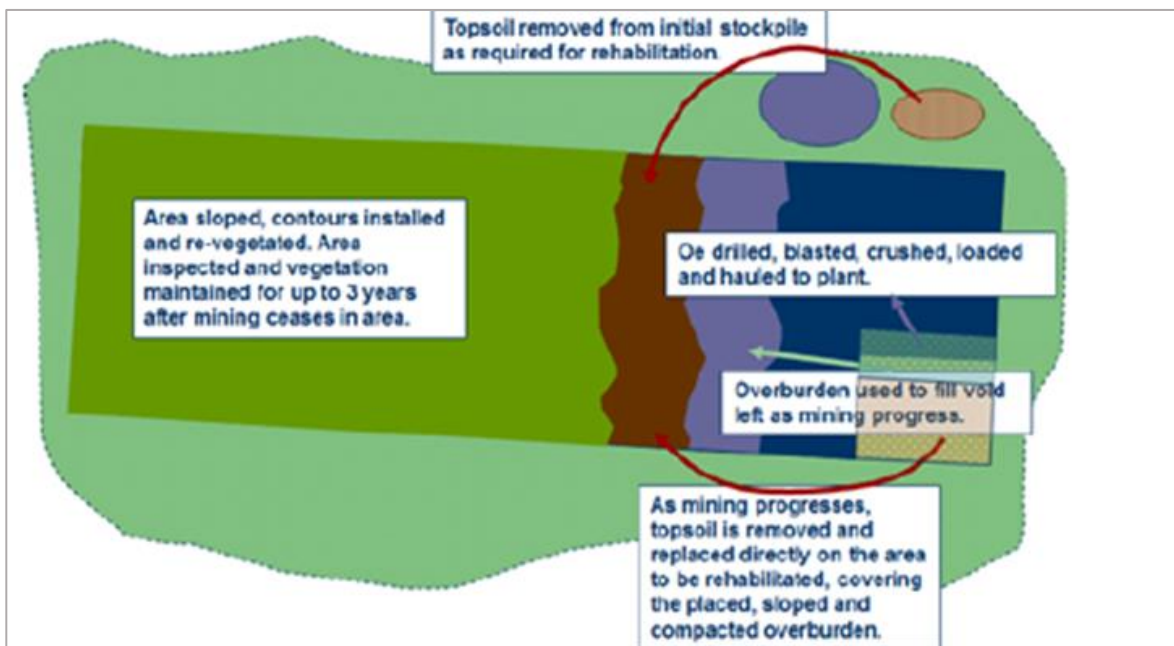


Figure 16: Rehabilitation stage

The proposed Coal pit triggers GN R. 324/GN R. 325/GN R. 327 Activities 12, 21, and 22 as:

- Activity 27: The clearance of an area of 300 square meters or more of indigenous vegetation.
- Activity 21: The project requires a mining permit in terms of the MPRDA.
- Activity 22: Upon closure of the site a closure permit in terms of the MPRDA will be required (ADD 24)

The company intends to loosen the hard rock by drilling and blasting activities, upon which it will be mechanically recovered with drilling, excavating and earth-moving equipment. A mobile crushing and screening plant will be present at the mining area. After the blast, recovered Coal,

Coal will be loaded on a tipper truck and transported to the crusher plant where it will be crushed and screened to various specifications, as per customer requirements. Transportation of the final product will be from the stockpile area to the client by means of trucks. The mine process map is shown in the table below.

Phase	Activity no	Activity
Construction	1	Site clearing: Removal of topsoil and vegetation
	2	Construction of any surface infrastructure, e.g., Haul roads, pipes, storm water diversion berms (incl. transportation of materials and stockpiling)
	3	Blasting and development of initial box cut for mining
	4	Temporary storage of hazardous products (fuel, explosives) and waste
Operation	5	Removal of overburden when possible (incl. drilling/blasting of hard overburden and stockpiling)
	6	Use and maintenance of haul roads.
	7	Extraction of Coal (mining process) and run of mine (RoM) Coal stockpile
	8	Water use and storage on site
	9	Storage, handling, and treatment of hazardous products (fuel, explosives, oil) and waste activities (waste, discard)
	10	Concurrent replacement of overburden, topsoil, and re-vegetation
Decommissioning	11	Removal of all infrastructure (incl. transportation off site)
	12	Rehabilitation (spreading of soil, re-vegetation, and profiling)
	13	Installation of post-closure water infrastructure
	14	Environmental monitoring of decommissioning activities
	15	Storage, handling, and treatment of hazardous products (fuel, explosives, oil) and waste activities (waste discard)
Post-closure	16	Post-closure monitoring and rehabilitation

3.3.1 Site establishment/construction phase

During site establishment, the applicant must demarcate the site boundaries and clear the topsoil and overburden from the extension area to open it for drilling and blasting. Upon stripping, the topsoil and overburden will be stockpiled along the boundaries of the quarry pit for use during the rehabilitation phase. Topsoil stripping will be restricted to the areas to be mined. The complete A-horizon (topsoil – the top 100-200 mm of soil, which is generally darker in colour due to high organic matter content) will be removed. If it is unclear where the topsoil layer ends, the top 300 mm of soil must be stripped.

The topsoil will be stockpiled in the form of a berm alongside the boundary of the mine pit where it will not be driven over, contaminated, flooded or moved during the operational phase. The topsoil berm will measure a maximum of 1.5 m high and indigenous grass species must be planted on it, if vegetation does not naturally establish within 6 months of stockpiling, to prevent soil erosion and discourage weed growth. The roots of the grass will improve soil viability for rehabilitation purposes. The stripped

overburden will be stockpiled on a designated area after the topsoil has been removed. The applicant will introduce the mining equipment to the area during the site establishment phase. The equipment to be used on site will include:

- Weigh bridge
- Mobile in-pit crusher plant
- Chemical toilet
- Drilling equipment
- Excavating equipment
- Earth moving equipment.

3.3.2 Operational phase

The Coal mining process includes drilling to set charges, detonation, loading and short haul, and stockpiling. Mining will be conducted by blasting benches from the rock face of the pit face. Blasting is anticipated to occur weekly. The noise caused by blasting will be instantaneous and of short duration. The applicant must ensure that all surrounding residents/farmers are informed of each blasting event. After a blast, the larger Coal will be broken into smaller pieces by hydraulic hammer. The manageable pieces will be transported by tipper or dumper trucks to the crusher plant. The Coal is run through the crushers to produce the end product in various coal grades, depending on the market.

The mining activities will consist of the following:

- Excavating
- Blasting
- Crushing and Screening
- Stockpiling and transporting

The machinery used in the operation will be serviced at the applicant's existing off-site workshop. Only emergency repairs will be conducted on site with regular equipment maintenance at the above-mentioned workshop. The mining site will not require the storage of large quantities of diesel, as this is already available at the applicant's workshop area. Fuelling of tracked vehicles must be done at the mining site for logistical reasons. A chemical toilet will be established on site to be used by the employees. The existing farm road will be used to access the mining area.

3.3.3 Decommissioning phase

The closure objectives include making the coal pit safe and ensuring that the remainder of the site is fit for agricultural use. The coal pit will be incorporated into the closure objectives of the proposed extension area, which will entail the benching of the site. Benches will be built with overburden, top-dressed with topsoil, and vegetated with an appropriate grass mix if vegetation is not naturally established in the area within six

months of the replacement of the topsoil. Control of weeds and alien invasive plant species is an important aspect after topsoil replacement and seeding (if applicable) has been done in an area. Site management will implement an alien invasive plant management plan during the 12-month aftercare period to address germination of problem plants in the area.

The decommissioning activities will include:

- Sloping and landscaping during rehabilitation
- Replacing of topsoil
- Implementation of an alien invader plant management plan

3.4 Policy and legislative context

Applicable legislation and guidelines used to compile the report. Description of the policy and legislative context in which the development is proposed, including identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments applicable to this activity and to be considered in the assessment process	Reference was applied	Development's compliance with and response to the policy and legislative context E.g., in terms of the National Water Act a Water Use License has/has not been applied for
MPRDA, 2002, (No. 28 of 2002)	Application for a mining permit DMRE reference: MP 30/5/1/3/2/ 13242 MP.	GNR 327 (Of 2017), Activity 21: Any activity including the operation therefore, which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (No. 28 of 2002)
National Environmental Management Act (NEMA), 1998 (No. 107 of 1998) and the EIA regulations, 2014	Application for environmental authorisation: DMRE Reference: MP 30/5/1/3/2/ 13242 MP.	GN R. 324/GN R. 325/GN R. 327 Activities 27, 21, and 22
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) and amendments	Biophysical environment	No aspects of the project could be identified that triggers the NEMA:BA
Mine Health and Safety Act (MHSA), 1996 (Act No 29 of 1996)	The mitigation measures proposed for the site includes specifications of the MHSA	The operational phase of the mine will trigger the MHSA
National Heritage Resources Act (NHRA), No 25 of 1999	Cultural and heritage environment	No aspects of the project could be identified that triggers the NHRA
Conservation of Agricultural Resources Act (CARA), 1983 (No. 43 of 1983)	Biophysical environment	All alien invader plants on site must be controlled in terms of CARA
Legislation		
Constitution of South Africa, specifically everyone has a right.	Excavation activities	The excavation activities shall be conducted in such a manner that significant environmental

<p>a. to an environment that is not harmful to their health or wellbeing; and</p> <p>b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:</p> <p>i. prevents pollution and ecological degradation.</p> <p>ii. promote conservation; and</p> <p>iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>		<p>impacts are avoided, where significant impacts cannot all together avoided be minimized and mitigated to protect the environmental right of South Africans.</p>
<p>Mineral and Petroleum Development Resources Act, Act 28 of 200 (MPRDA) section 16 (as amended)</p>	<p>excavation activities</p>	<p>The conditions and requirements attached to the granting of the mining right will apply to the mining activities.</p>
<p>National Environmental Management Act, no 107 of 1998 (as amended) (NEMA) Listing Activity 20 of Listing Notice 1 in terms of Regulation 983 of 2014</p>		<p>The appropriate environmental authorization will be obtained before proceeding with any excavation activities. Measures will be implemented to prevent any pollution occurring during the drilling activities. The disturbed area shall be rehabilitated in such a way that it is stable, non-polluting, non-eroded, free from alien invasive species and suitable for agreed post closure land use.</p>
<p>National Water Act, 1998 (Act 36 of 1998). Best Practice Guidelines: Series A, G, & H</p>	<p>(S 21) Water use & mine water management</p>	<p>Best practice guidelines will be followed for water management, water characterization, water resource protection, water treatment, and the development of the mine water management model</p>

<p>National Environmental Management: Waste Act, Act 59 of 2008 (NEMWA)NEM: WA (as amended)</p>	<p>Management measures environmental awareness plan</p>	<p>The generation of potential waste will be minimized through ensuring employees of the excavation contractor are subjected to the appropriate environmental awareness campaign before commencement of excavation.</p> <p>All waste generated during the drilling activities will be disposed of in a responsible legal manner.</p> <p>Proof of legal disposal will be maintained on site.</p>
<p>National Heritage Resources Act, 25 of 1999 ("NHRA")</p>	<p>Management Measures</p>	<p>Phase 1 Heritage Impact Assessment shall be conducted prior to excavation to ensure that significant impacts on heritage artefacts, heritage site and graves. No excavation activities will take place with 50m of any identified heritage resource such as a grave.</p>
<p>Constitution of the Republic of South Africa (Bill of Rights), 1996</p>	<p>Chapter 2 section 24</p>	<p>Mining activities shall be conducted in such a manner that significant environmental impacts are avoided, where significant impacts cannot all together be avoided, be minimised and mitigated to protect the environmental right of South Africans.</p>
<p>Municipal Plans and Policies</p>		
<p>City of Delmas, Victor Kanye municipality Integrated Development Plan (IDP) 2017-2022</p>		<p>Used to identify relevant socio-economic background information as well as spatial development information. The applicant acknowledges the need to maximize</p>

		economic benefit from mining, industrial, business, agricultural and tourism development in the area and promote a climate for economic development in line with the municipal development frameworks.
Standards, Guidance and Spatial Tools		
BGIS (www.bgis.sanbi.org)	Baseline environmental description	Used during desktop research to identify sensitive environments within the mining permits area.
SANS 10103:2008 The Measurement and Rating of Environmental Noise with Respect to Land Use, Health, Annoyance and to Speech Communication	Management / monitoring measures	Used to set the standard allowable for noise generation and control during excavation.
SANS 1929:2005 Edition 1.1 – Ambient Air Quality Limits for Common Pollutants	Management / monitoring measures	Used to set the standard for dust generation and control during excavation.

3.5 Need and desirability of the proposed activities.

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

South Africa is known for its abundance of mineral resources. It is estimated to have the world's fifth-largest mining sector in terms of gross domestic product value and its mining companies are key players in the global industry. South African mining and mining real estate remains attractive for development. Mining creates an environment that leads the community to be more involved in the projects and result in more sustainable job creation strategies within the surrounding communities as well as attracting foreign investment. In addition, the South African economy heavily relies on the mining sector. Mining for Coal, Coal mineral will boost the current struggling national economy. The mining sector has provided more employment opportunities for the citizens in general. The provincial citizens of the Mpumalanga Province will be awarded more employment opportunities.

Should the proposed mining operation be authorized, the following economic development activities will result:

- Job creation
- Development of skills
- Potential for business opportunities
- Establishment of bursaries and scholarships
- Stimulate economic activities in the local vicinity

Employment

The proposed mine development will lead to jobs for 10-20 semi-skilled workers for 2 years of the proposed mine (A mining permit is granted for two years, renewable for another 3 years and cannot extend over 5 ha by law).

Kgothatso Transport (Pty) Ltd is committed to the socio-economic empowerment of people who were previously disadvantaged and believes that gender equity is critical to economic growth and wealth creation in South Africa. Kgothatso Transport (Pty) Ltd is committed to creating a workplace in which employees of ability and application can develop rewarding careers at all levels, regardless of their background, race, gender, or disability. The mine will therefore advance non-discrimination employment practices and supports the principles of employment, development, and advancement of HDSA's. This plan is applicable to all employees who are Delmas citizens or permanent residents.

Participation of Women in Mining

Kgothatso Transport company will offer women an equal opportunity to participate in all its operations, and at all levels of responsibility. The company will work together with Delmas Community.

- The 10% target for women in mining will be met through the Employment Equity Plan;
- Female employees will have the opportunity to participate in suitable responsibilities and challenges equal to those afforded to male employees.
- Mentorship programmes will provide equal opportunities for the participation of female candidates.
- The career progression plan will include a women-specific element to ensure that females with potential for progress are considered fully alongside their male counterparts and are not inadvertently passed over in the promotion process.

Environmental Impact

The impacts on the environment have been evaluated as part of this assessment (basic assessment) of the project. Low to moderate impacts are expected in terms of air quality, noise, and visual character. It is the role of the independent environmental practitioner to assess the impact of the development project on the environment, assess the benefit / disadvantage of the project to the people of South Africa and to provide clear mitigation measures and recommendations under which conditions such a project could be a sound development project in the best interest of South Africa (including the economy, the environment, and its people). The environmental impacts and economical gains need to be carefully weighed to assess whether the proposed project can contribute to a better South Africa for all.

Rehabilitation Capacity

Kgothatso Transport has been determined and have demonstrated a willingness and ability to make financial provision for rehabilitation of the project area after they mine so that grazing of cows can continue in and around the area.

Recommendation

Period for which the environmental authorisation is required is 5 years.

3.5.1 Advantages

- Delmas has abundant Coal reserves
- Coal -fired power stations are reliable.
- Delmas Coal resources are at shallow depth, hence the low mining cost.
- Delmas 's infrastructure to generate electricity from coal is well-established
- Burning Coal is the most cost-effective and energy-efficient way of generating electricity.

3.5.2 Disadvantages

- Coal has the most waste problems of all energy sources. Waste includes sulphur and nitrogen oxides, organic compounds, heavy metals, radioactive elements, greenhouse gases and a lot of ash.
- Building Coal -fired power station is a long and expensive process
- Delmas Coal fields are concentrated in Mpumalanga, which limits the location options for power stations.

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

The project area falls within the Kaapvaal Craton and thus has the generic potential to host diamondiferous kimberlites. Numerous kimberlites, including diamond alluvial fields, are known in the local region. The Cullinan Premier Mine is located approximately 53 km south-west from the project area. The site was selected as it contains good quality of Coal resources located in a convenient position near transport routes. The layout and technology of this mining project has been determined by the shape, position, and orientation of the mineral resources. Refer to the Site Plan in figure 3 above. The operational approach is practical and based on best practice to ensure a phased approach of mining followed by rehabilitation in sequential stages. The following will do adhered to:

- The preferred and only location of the mining activity is on the earmarked section of the application area- Portion of portion 10 of the farm Modderfontein 236 IR. The preferred and only activity is the mining of coal resources.
- The preferred and only technology is the use of a Front-End Loader to remove the mineral and for trucks to transport the proposed mineral to the clients (buyers). There are therefore no other reasonable or feasible sites, layouts, activities, technologies, or operational alternatives for further consideration in the impact assessment component, other than the mandatory "no-go" alternative that must be assessed for comparison purposes as the environmental baseline.
- The open cast mining has been identified as the most effective method to produce the desired coal. Due to the remote location of the pit, the potential impacts on the surrounding environment, associated with open cast mining, is deemed to be of low significance.
- The general waste produced on-site will be contained in sealed refuse bins to be transported to the local municipal landfill site by a registered company.
- As equipment maintenance and servicing will be done at an off-site workshop, the amount of hazardous waste to be produced at the site will be minimal and mainly because of accidental oil or diesel spillages.
- Contaminated soil will be removed to the depth of the spillage and contained in sealed bins until removed from site by a hazardous waste-handling contractor to be disposed of at a registered hazardous waste handling site.

3.7 Full description of process followed to reach proposed preferred alternatives within the site

This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by

interested and affected parties (I&APs), and the consideration of alternatives to the initially proposed site layout.

3.7.1 Preferred site

The area is being utilised for crop farming (see Fig.12). Therefore, on the proposed applied mining permit area there are no environmental sensitive areas, there are Eskom infrastructures, next to the applied permit area and comment received from Eskom without objection provided with some conditions.



Figure 17: Existing Crop Farming on the proposed 5ha Project Area.

The preferred and only manner of extracting the applied mineral for this proposed activity is through mining. The life of a mine is currently intended to exist for two years, therefore temporary structures will be erected on site for the operation (e.g., mobile structures).

3.7.2 Technology alternatives

There are no technological alternatives to the proposed mining activities. Opencast mining is the only method that will be used.

3.8 Details of the development footprint alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of individual site activities, provide details of the alternatives considered with respect to:

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

Kgothatso Transport identified the need for coal in the area due to an increase in coal usage. In this light, the applicant identified the proposed area as the preferred and only viable site alternative. From extensive work conducted previously in this area, it is known that this area contains the resources being sought.

Various project alternatives were considered during the planning phase of the project. These included the following:

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

- The preferred and only location of the mining activity is on the earmarked section of the application area- Portion of portion 10 of the farm Modderfontein 236 IR. The preferred and only activity is the mining of Coal.
- The site was selected as it contains good quality of Coal needed and located in a convenient position close to transport routes.
- The property is state owned.

3.8.2 Open cast mining (preferred alternative) vs. underground mining

- The open cast mining method is used when deposits of commercially useful mineral or rock are found near the surface, where the overburden is relatively thin, or the material is structurally unsuitable for tunnelling.
- Underground mining is used where the mineral occurs deep below the surface and the overburden is thick.
- Open cast mining of the mineral has been identified as the most cost-effective method to produce the desired Coal as it is found near the surface, with only a narrow layer of overburden that needs to be removed.
- The geology of the area and depth of mineral to be mined is structurally unsuitable for tunnelling.

- The open cast mining method will not produce any residual waste to be disposed of. Due to the location of the proposed pits, the potential impact on the surrounding environment is expected to be insignificant. It is proposed that all mining-related infrastructure be contained in the boundary of the mining area.
- Mining will involve the use of mechanized earth moving equipment (an excavator and front-end loader) to move the unconsolidated material in bulk. The proposed mining area will be less than 5 hectares. Because of the small scale and size of the proposed mining area.

The development of support infrastructure and mining activities take into consideration the following measures:

- Infrastructure such as houses (including lodges, fences, electricity pylons, gates) will be avoided.
- No mining activities will take place at horizontal distance of 500 m from any infrastructure (R50 Road)
- Any boreholes, sewer pipelines, etc will be marked-off prior to site establishment and avoided during mining operation.
- Existing access roads will be utilized to access the mining area.

3.8.3 Temporary infrastructure (preferred alternative) vs. permanent infrastructure

- Temporary infrastructure use will entail the use of track-based or easily removable infrastructure. This includes a mobile in-pit crusher plant, temporary weigh bridge and chemical toilet, with off-site vehicle and equipment servicing (at the applicant's existing workshop). The off-site office will be used for project administration purposes.
- Positive aspects: The infrastructure can be moved around in the mining area boundaries as mining progresses, decreasing the distance material has to be transported from the crusher plant to the stockpile area. In addition, the crusher plant and other equipment can move out of the mining area (and onto the existing road) during a blast to prevent potential fly rock damage. During the decommissioning phase, infrastructure will be removed from the mining area, making site rehabilitation easy and effective.
- Permanent infrastructure will entail the construction of an office building with ablution facilities, installation of a septic tank to be connected to the ablution facilities, installation of a permanent weigh bridge and permanent crusher plant.
- The use of permanent infrastructure will increase the impact of the proposed project on the environment as it will entail the establishment of more structures, necessitate the use of concrete products on site to establish these infrastructures, lengthen the period required for rehabilitation as well as increase the rehabilitation cost as the permanent infrastructure will either must be

decommissioned or be maintained after the closure of the site.

- Due to the small size of the mining area the infrastructure may be exposed to fly rock damage during blasting events.
- The construction of permanent infrastructure on site will increase the visual impact of the proposed project on the surrounding environment and additional mitigation measures will have to be implemented to address the impact.
- In the light of the above, the use of temporary infrastructure is deemed to be the most viable preferred alternative as compared to the permanent structures to avoid escalating rehabilitation costs and impacting the environment more.
- Mining will involve the use of mechanized earth moving equipment (an excavator and front-end loader- truck and shovel) to move Coal. Due to the small scale of the coal other technologies have not been considered as it is not feasible for the small scale of the proposed mine. The topsoil will be removed and stockpiled for rehabilitation Access onto provincial road (preferred alternative) vs. national road
- Provincial Road: There is an alternative road for transportation of material to the mine R555 then join R50 which provides ease of access to the proposed project area. It is also recommended that truck utilise this road when transporting coal to clients instead of using national road such as the N12 which relatively not far from the project area as this will reduce the traffic flow on national road.
- National road (N12): The transporting of material from the mining area to clients (N12). To minimise the impact the activity may have on traffic, it is proposed that this option of implemented, and the alternative provincial road (as mentioned above) be used as access road to and from the coal pit.

3.8.4 No-go alternative

The no-go alternative entails no change to the status quo and should therefore be considered. The mineral to be mined at the site will be used for several uses coal will be used for energy and power industries, If the no-go alternative is implemented, the applicant will not be able to expand the mine to utilise the mineral present in the area. This could have major impacts on aspects such as transporting of material to power stations from far off mining areas, cost-effectiveness of material, impact on roads and road users due to long distance hauling of mineral and loss of income to Mpumalanga business as the permit is at Mpumalanga province.

The no-go alternative was not considered the preferred alternative, as:

- The applicant will not be able to supply in the demand of power station.
- The application, if approved, would allow the applicant to utilise the available

mineral, as well as provide employment opportunities to local employees that stay around the proposed farm which includes, the Delmas community and those that stay at the farmsteads. Should the no-go alternative be followed, these opportunities will be lost to the applicant, potential employees, and clients.

- The applicant will not be able to diversify the income of the property.
- illegal mining may be triggered due to lack of job opportunities by locals.

3.9 Details of the public participation process followed.

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

The following media of communication with interested and affected parties (I & APs) were used:

- A newspaper advert was published on the local newspaper –Streeknuus on the 22nd of July, giving notice to I&APs of the applicant`s intention to prospect the area as well as inviting all affected parties to a meeting where the applicant would provide full details of the project. Please refer to Figure 18 below.

The Streeknuus Newspaper is distributed in areas including the towns of Delmas.

- Registered letters were sent via emails and hand over to the following authorities:
 - Department of Water and Sanitation
 - Department of Agriculture and Rural Development
 - Victor Kanye Local Municipality
 - Mpumalanga Tourism and Parks Agency
 - South African National Roads Agency Limited (SANRAL)
 - Department of Land Restitution Commission
 - South African Heritage Resources Agency
 - Eskom, etc

A 30-day commenting period will be given to Stakeholders.

Site notices written in English (A2 sized) were placed in strategic areas such Local Municipality notice board, along the provincial route R50 and at farm boundaries of the proposed area and neighbouring farms.

- E-mail and telephonic communication with I & APs.

- Comment and registration sheet: I & APs were requested to provide written comments, concerns, and inputs that would be consolidated into the BAR.
- A register of I & APs was kept and as such the following information was distributed to them:
 - Background Information Document (BID). The BID is comprised of the following information:
 - The description of the land concerned.
 - The location of the project.
 - Mining method
 - The mineral applied for.
 - Timeframes for submission of reports to the DMRE.
 - Request to target audience to register as I & APs.
 - Details of EAP and Consultant.
 - The Draft Basic Assessment Report and Environmental Management Plan (BAR & EMPr) for the proposed project made available for public review (30 days period)

3.9.1 Project advert published on Streeknuus/news released 22nd July 2022 and winded search results.

6 SCHOOLS
Laerskool Delmas is tweede in RMS-hokkierreeks



Chrismie Redelinghuys laat loop met die bat.



Delmas se hokkie-bokkies in aksie tydens die RMS-reeks.

Thia Botha
 Tydens vanjaar se RMS Laerskool-hokkie het Laerskool Delmas se hokkie-bokkies hul uitstekende van hul taak gekwyf en in die algehele tweede plek geëindig.
 Daar het vanjaar sewe laerskole in totaal deelgeneem.
 Deelnemende skole was Laerskool Northmead van Benoni, Laerskool Edlees en Laerskool Burchleigh van Kemptonpark, Laerskool Protea van Krugersdorp, Laerskool Oliefontein van Brits, Laerskool Bakenkop van Centurion en Laerskool Delmas.
 Die reeks het vanaf Vrydag, 15 Julie tot Saterdag, 16 Julie op die hokkievelde van Hoërskool Delmas plaasgevind.
 Spanne wat deelgeneem het, was die 0'10's, die 0'11's, die 0'12's en 0'13-spanne.
 Laerskool Delmas het daarin geslaag om in elke ouderdomsgroep onder die eerste drie te eindig.
 In die 0'10's se wedstryd het Northmead die eerste plek behaal, met Delmas tweede en Protea as derde.
 In die 0'11-stryd het Northmead ook eerste geëindig, met Protea as tweede en Delmas as derde.
 Tydens die 0'12's se wedstryd, het Northmead weer eerste geëindig, Delmas tweede en Bakenkop as derde.
 Tydens die 0'13's se wedstryd was Northmead steeds die wenner, Delmas tweede en Protea as derde.
 Dit het vir Laerskool Delmas 'n algehele tweede plek tydens die naweek se RMS-hokkie reeks vir laerskole besorg.
 Die hoof, Johan de Beer, het namens die beheerliggaam van Laerskool Delmas, die ouers en leëders van die deelnemende skole bedank.



Eva Karagjannis met haar danstroeie, toegewikkel in die Suid-Afrikaanse vlag tydens haar deelname in Blackpool in die Verenigde Koninkryk. Foto: Verskaf

Eva behaal 'n sesde plek op kampioenskap in VK

Dit was 'n kompetisie waaraan dansers vanoor die wêreld deelgeneem het.
 Daar het in totaal 60 deelnemers van Suid-Afrika aan die kompetisie deelgeneem.
 Uit eie geleedere het die 13-jarige Evagelenah Zoe Karagjannis, beter bekend as Eva, inwoner van Bapsfontein, Suid-Afrika in die Ope Ondersteuningskampioenskap tydens die gesogte Liverpool Winter Garden in Blackpool, Verenigde Koninkryk verteenwoordig. Die kompetisie het vanaf 24 tot 28 Junie plaasgevind.
 Eva het 'n algehele sesde plek in die 0'14-solo-atleting in die wêreld vrystyl-kampioenskap behaal.
 Volgens Eva se ma, Melissa Maritz, was die kompetisie nie sonder uitdagings nie.
 "Ons visum was laat, ons het dit eers Woensdag, 22 Junie ontvang en Donderdag, 23 Junie het ons vertrek.
 "Ons het Vrydagmiddag, 24 Junie in Manchester geland en toe dadelik 'n trein na Blackpool geneem."
 "In Moeë, maar trosse en tevrede ma en dogter was op 4 Julie weer terug op eie bodem in Suid-Afrika.
 Volgens Eva, is sy trots op haarself en dit wat sy in die kompetisie bereik het.
 "Dit was 'n eer om my land te verteenwoordig," het Eva gesê.
 "Ek is baie nou ook meer gemotiveerd en opgewonde oor dit wat die nuwe dansjaar sal bring."
 Eva se ma het op haar beurt gesê dat sy trots is op haar dogter.
 "Die hele ervaring en dit



'n Trosse Eva Karagjannis tydens die danstroeie in Blackpool in die Verenigde Koninkryk. Foto: Verskaf

NOTICE OF PUBLIC PARTICIPATION FOR PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORISATION APPLICATION	
ISIZULU	ENGLISH
<p>Izaziwe sesikho selungelo ukubamba amandla: I Kgophato Transport (Pty) Ltd (aka isicelo oluyagqwini lwezobomi Kanamela (SME Ref: MP 305/15/13242 MP) ngokubona ukubamba amandla kungqonye yintsimi ye-10 yehlabathi (Modderfontein 236 IR, uMlamalangi ye-Funda oluqalantlali i Delmas eLunduleweni uMlamalangi).</p> <p>Izaziwe ukubamba ngokufutshane ukufutshane kwezobomi bezobomi kanye (PMP) (MPEA) (idibane wama-28 maa-2002) kanye nezifundo ye-EIA ka-2014, ezikhulile ngaphandle kokuzalwa kuzalwani ngombono 162 ka-Gazette No. 3622 noma Singo-Singomali kanye ka-2004, ezikhulile noma zingq'ibhazisa kanye ka-2017, ukubamba i-Kgophato Transport (Pty) Ltd (aka isicelo selungelo ukubamba amandla).</p>	<p>Notice of the Mining Permit Application: Kgophato Transport (Pty) Ltd has lodged an application with the Department of Mineral Resources and Energy (DMRE Ref: MP 305/15/13242 MP) for the purpose of mining Coal on a portion of portion 16 of the Farm Modderfontein 236 IR, situated in the Magisterial District of Delmas in the Mpumalanga Province.</p> <p>Notice is hereby given in terms of the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002) and EA regulations 2014, published under Government Notice No. 982 in Gazette No. 3522 of 8 December 2004, amended on 7 April 2017, that Kgophato Transport (Pty) Ltd has applied for a Mining Permit for the above-mentioned mineral.</p>
ISIMENI SOKUPHAWULA NOKUYEZA IMIBONDO NAYELANA NALE APPLICATION	INVITATION TO COMMENT
<p>Ukubhalwa ngokubamba amandla abanenzibhokele nababizwekayo: Njengomnye yintsimi ye-EIA, kubhalwa ngokubamba amandla kungqonye yintsimi ye-10 yehlabathi oluyagqwini lwezobomi Kanamela (SME Ref: MP 305/15/13242 MP) ngokubona ukubamba amandla kungqonye yintsimi ye-10 yehlabathi (Modderfontein 236 IR, uMlamalangi ye-Funda oluqalantlali i Delmas eLunduleweni uMlamalangi).</p> <p>Izaziwe ukubamba ngokufutshane ukufutshane kwezobomi bezobomi kanye (PMP) (MPEA) (idibane wama-28 maa-2002) kanye nezifundo ye-EIA ka-2014, ezikhulile ngaphandle kokuzalwa kuzalwani ngombono 162 ka-Gazette No. 3622 noma Singo-Singomali kanye ka-2004, ezikhulile noma zingq'ibhazisa kanye ka-2017, ukubamba i-Kgophato Transport (Pty) Ltd (aka isicelo selungelo ukubamba amandla).</p>	<p>Registration as Interested & Affected Party: As part of the EA process, more especially the Public Participation Process (PPP) for this proposed project, interested and Affected Parties (I&APs) are invited to register and kindly submit any comments or concerns to reach Valente Mlangeni using the contact details provided below. The public are invited to review and comment on the Draft Risk Assessment Report (DRAR) and Environmental Management Programme Report (EMPR). The draft DRAR & EMPR will be available for review for 30 days calendar period from 23rd of August 2022 to the 21st of September 2022. This report will be available at Delmas Public Library (Cor Sandi Clifts & Van Riebeeck, 2270, Delmas, Mpumalanga) and a soft copy upon request from Singo Consulting (Pty) Ltd, using the Consultant's contact details below.</p> <p>Comments on the DRAR & EMPR should be submitted no later than the 21st of September 2022. For more information, to register as an Interested or Affected Party, please contact:-</p>
CONSULTANT	APPLICANT
<p>Singo Consulting (Pty) Ltd</p> <p>Physical address: Office No. 870, 5 Bulalaka Street, Tzabzi Park Est. 2, eMlamalangi, 1040 Contact person: Valente Mlangeni Tel No: 013 692 0041 Cell No: 081 813 0654 Fax No: 086 514 4102 Email: valente@singoconsulting.co.za</p>	<p>KGOPHATO TRANSPORT PTY LTD</p> <p>Physical address: R50 Road, Office No. 4, Tzabzi Office Park, Delmas, 2270 Contact person: Mtho Simon Motzanyana Tel No: 013 665 9906 Cell No: 071 576 8769 Fax No: 086 628 5702 Email: kgophattransport100@gmail.com</p>

Figure 18: Published Newspaper Advert

WinDeed Database D/O Property
 IR, MODDERFONTEIN, 236, 10, MPUMALANGA

Lexis® WinDeed

SearchInsure

ENDORSEMENTS (3)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
		SOUTH AFRICA LTD		
3	INFO FROM PRETORIA DEEDS REGIS	-	-	-

HISTORIC DOCUMENTS (6)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T34066/1985	DUVENAGE ANNA CATHRINA SOPHIA	56 745	2008 0063 3803
2	I-4945/979C-10030/95	ST	Unknown	-
3	T10030/1955	PLESSIS ANDRIES HENDRIK DU	-	1985 1291 0443
4	T3079/2008	DANRESA TRUST	1 200 000	2008 0064 0522
5	B7099/2009	-	6 750 000	-
6	B2912/2014	STANJARD BANK VAN SUID-AFRIKA LTD	1 630 000	-

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ENDORSEMENTS (3)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
		SOUTH AFRICA LTD		
3	INFO FROM PRETORIA DEEDS REGIS	-	-	-

HISTORIC DOCUMENTS (6)				
#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	T36066/1985	DUVENAGE ANNA CATHRINA SOPHIA	54 245	2008 0063 3803
2	I-4945/979C-10030/95	5T	Unknown	-
3	T10030/1955	PLESSIS ANDRIES HENDRIK DU	-	1985 1291 0443
4	T3079/2008	DANRESA TRUST	1 200 000	2008 0064 0522
5	B7099/2009	-	6 750 000	-
6	B2912/2014	STANDARD BANK VAN SUID-AFRIKA LTD	1 630 000	-

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Figure 19: Windeed Search (Portion of Portion 10)



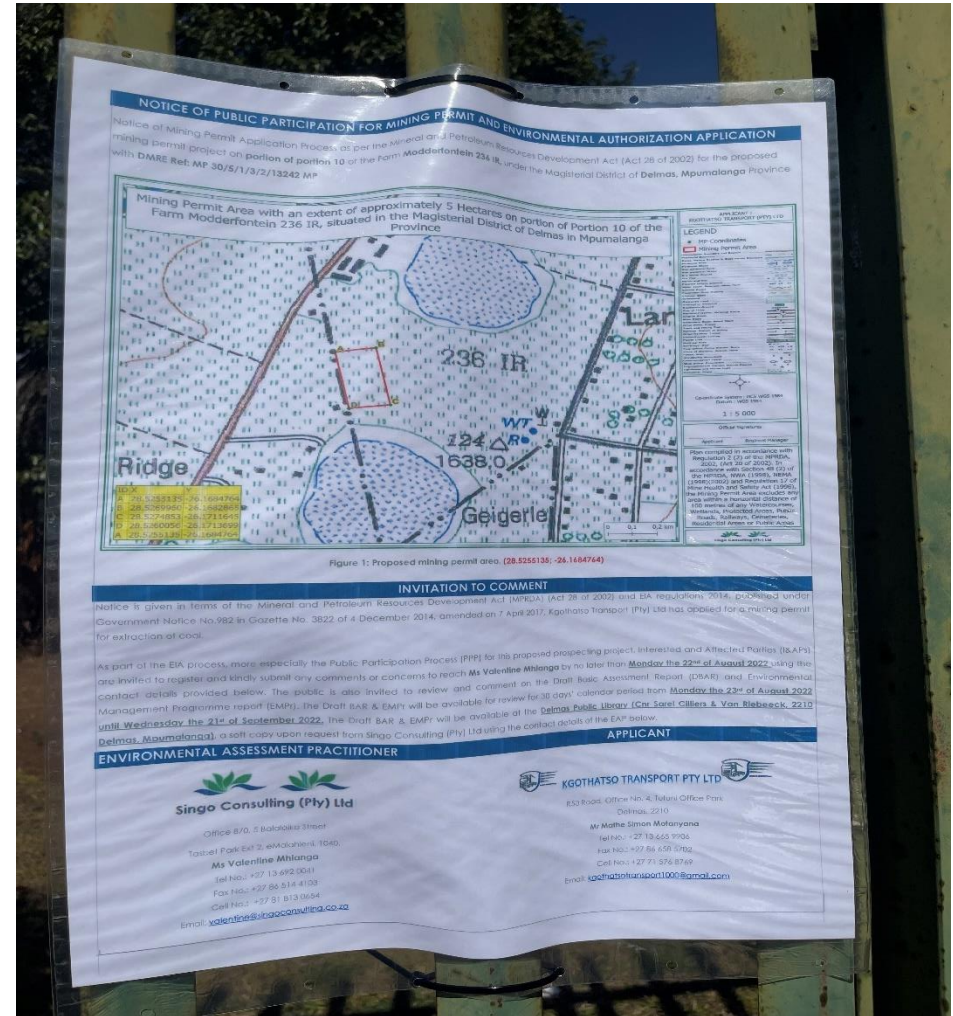


Figure 20: Proof of Site notice placement

3.10 Summary of issues raised by I&APs

Compile the table summarising comments and issues raised, and reaction to those responses.

Interested and Affected Parties List the name of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted	Date Comments Received (Call, Fax, emails)	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
<u>AFFECTED PARTIES</u>				
Landowner/s				
	X			
Adjacent Landowner				
	X			Refer to Appendix 2: Consultation with Stakeholders for full consultation
				Refer to Appendix 2: Consultation with

					Stakeholders for full consultation.
Local Municipality:					
	x				Refer to Appendix 2: Consultation with Stakeholders for full consultation.
Local library					
	x				Refer to Appendix 2: Consultation with Stakeholders for full consultation.
Community					
	x				Refer to Appendix 2: Consultation with Stakeholders for full consultation.
Organs of state (Responsible for infrastructure that may be affected: Roads, Departments, Eskom, Telkom & DWA)					

	x				Refer to Appendix 2: Consultation with Stakeholders for full consultation.
	x				Refer to Appendix 2: Consultation with Stakeholders for full consultation.
	x				Refer to Appendix 2: Consultation with Stakeholders.
	x				Refer to. Appendix 2: Consultation with Stakeholders.
	x				Refer to. Appendix 2: Consultation with Stakeholders.

	x				Refer to. Appendix 2: Consultation with Stakeholders.
	x				Refer to. Appendix 2: Consultation with Stakeholders.
Other Affected Parties					
	x				

Interested parties					

Due to POPIA, this will be included in the final BAR.

3.11 The environmental attributes associated with the alternatives.

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

4 Baseline environment

4.1 Type of environment affected by the proposed activity

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

4.1.1 Geology

4.1.1.1 General geology

The main Karoo Supergroup basin covers over 50% of South Africa's surface and consists of five age-based groups, which show a change of depositional environment in time. These groups are the Dwyka (glacial), Ecca (shallow marine and coastal plain), Beaufort (non-marine fluvial), Stormberg (aeolian) and the volcanic Lebombo or Drakensberg groups (Johnson et al., 2006). The proposed project area falls within the Highveld coalfield. Sediments of Vryheid and Dwyka formations underlay the area which was deposited on a glaciated Pre-Karoo basement consisting of Rooiberg felsites. The Vryheid formation is essentially an interbedded succession of sandstone with lesser gritstone, siltstone and mudstone, which contains five coal seams of the Highveld coalfield.

The red mark surrounds No. 5 seam which is the seam under investigation. The No. 4 seam below No. 5 seam generally has a flat to gently undulating topography. In areas where a dolerite sill has cut through, the seam encounters faults and some areas slightly tilted along the margins of the fault. The coal is generally burnt in those areas. The intrusions caused vertical throw on the faults which vary from 6 to 25m. Few dykes have been located on the surface. It is probably so because they are not numerous and the thick soil covers them. Weathering of the sandstone from surface has taken place on certain parts of the mine. The depth of the weathering varies and leaves behind soft overburden. Below the soft overburden is nonweathered sandstone which overlies the whole No. 5 seam and is regarded as hard overburden.

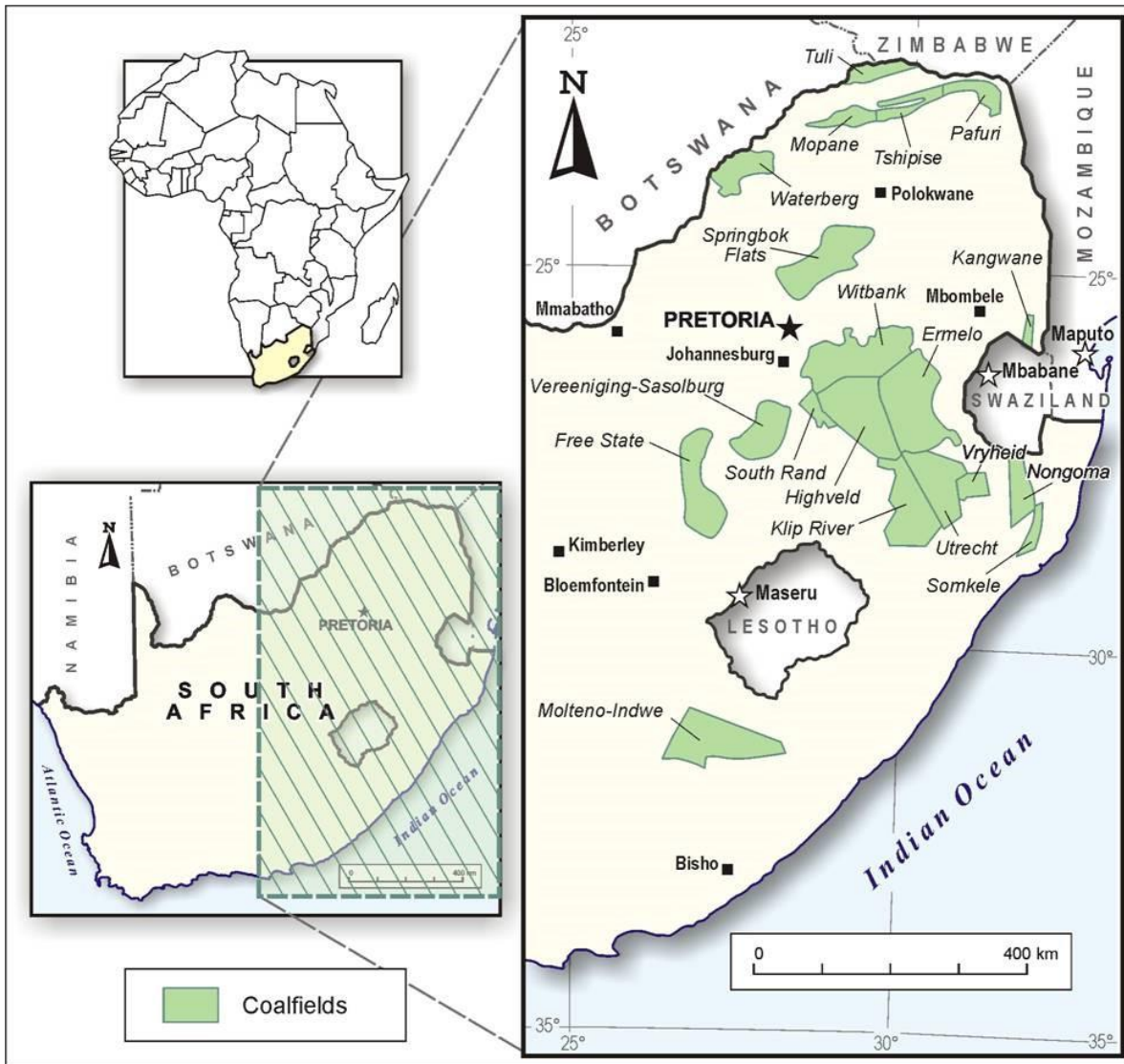


Figure 21: South Africa's Coalfields, Snyman (1998).

4.1.2 Geology of the Project Area

4.1.3 Malmani Formation

The formation consists mainly of alternating layers of chert free dolomite and chert rich dolomite (Visser, 1989). The Dwyka Group of the Karoo Supergroup separates the dolomitic aquifer from the overlying Vryheid Formation. The Dwyka tillite consists of gravelly diamictite with minor shale and mudstone that is less permeable than both the Vryheid Formation and the Malmani dolomite. The Dwyka is normally considered an aquiclude. It should however be verified if this is the case in the Leeuwbank mining area, especially as several dykes, sinkholes and boreholes may have connected the aquifers. An effective depth of 300 m has been accepted as the maximum depth to which significant dissolution of the dolomite has taken place. A hydraulic conductivity that varies

between 10 and 100 m/day is considered representative of the Malmani dolomite. The Malmani Subgroup is a major aquifer system which is normally high yielding and produces good quality water. This aquifer can be classified as a karst aquifer (Barnard, 1999), denoting cavities associated with fracturing and jointing, and the groundwater yield is normally more than 5 l/s.

The Malmani Subgroup forms the main aquifer and consists mainly of alternating layers of chert free dolomite and chert rich dolomite. (Visser, 1989). Overlying this is the Vryheid Formation of thick sandstone and gritstone alternated by sandy shale and coal beds. The Dwyka Formation separates the dolomitic aquifer from the Vryheid Formation. It consists of gravely diamictite with minor varved shale and mudstone that is less permeable than both the Vryheid Formation and the Malmani dolomite. The Dwyka is normally considered as an aquiclude. An effective depth of 300 metres has been accepted as the maximum depth to which significant dissolution of the dolomite has been taking place. A hydraulic conductivity that varies between 10 to 100 m/day is considered representative of the Malmani dolomite.

The Dwyka Formation tillite overlies dolomite and chert of the Malmani Formation of the Pretoria Group of the Transvaal Supergroup. The Delmas coal field is situated on the western border of the Witbank coal field. Three coal seams have been identified, namely the upper, middle, and lower seams. The top seam corresponds with the No. 2 seam of the Witbank coal field, the bottom seam corresponds with the No. 4 seam.

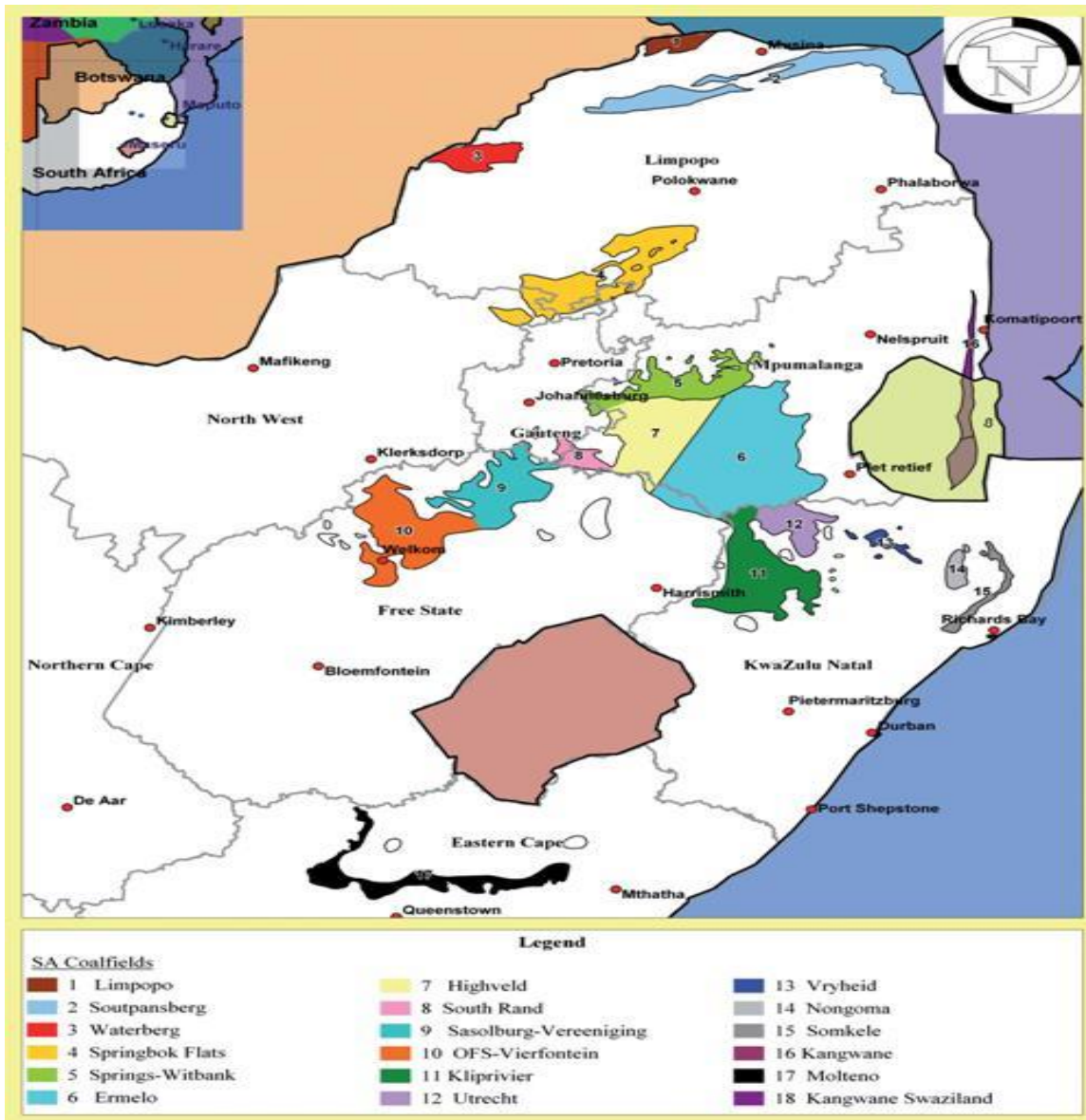


Figure 22: Coalfields of South Africa.

4.1.3.1 Flora

According to Mucina and Rutherford, 2006, the proposed area is located in the Moist Cool Highveld Grassland. This vegetation is distributed in Mpumalanga and Gauteng on plains between Belfast (in the east) and the eastern side of Johannesburg (in the west) and extends to Bethal, Ermelo, and Springs.

The climatic conditions of the vegetation unit are strongly seasonal summer rainfall, with very dry winters. The MAP (650-900 mm, averaging 726 mm) is relatively uniform across most of the unit, but increases significantly in the extreme south-east. The coefficient of variation in MAP is 25% across most of the unit but drops to 21% in the east and south-east. Frost occurs about thirteen to forty-two days, but longer at higher elevations. This

vegetation type is listed as Endangered with approximately 0.9 % conservation target conserved in nature reserves. About 60 % of this vegetation unit is remaining, whilst transformation has reached approximately 40 %.

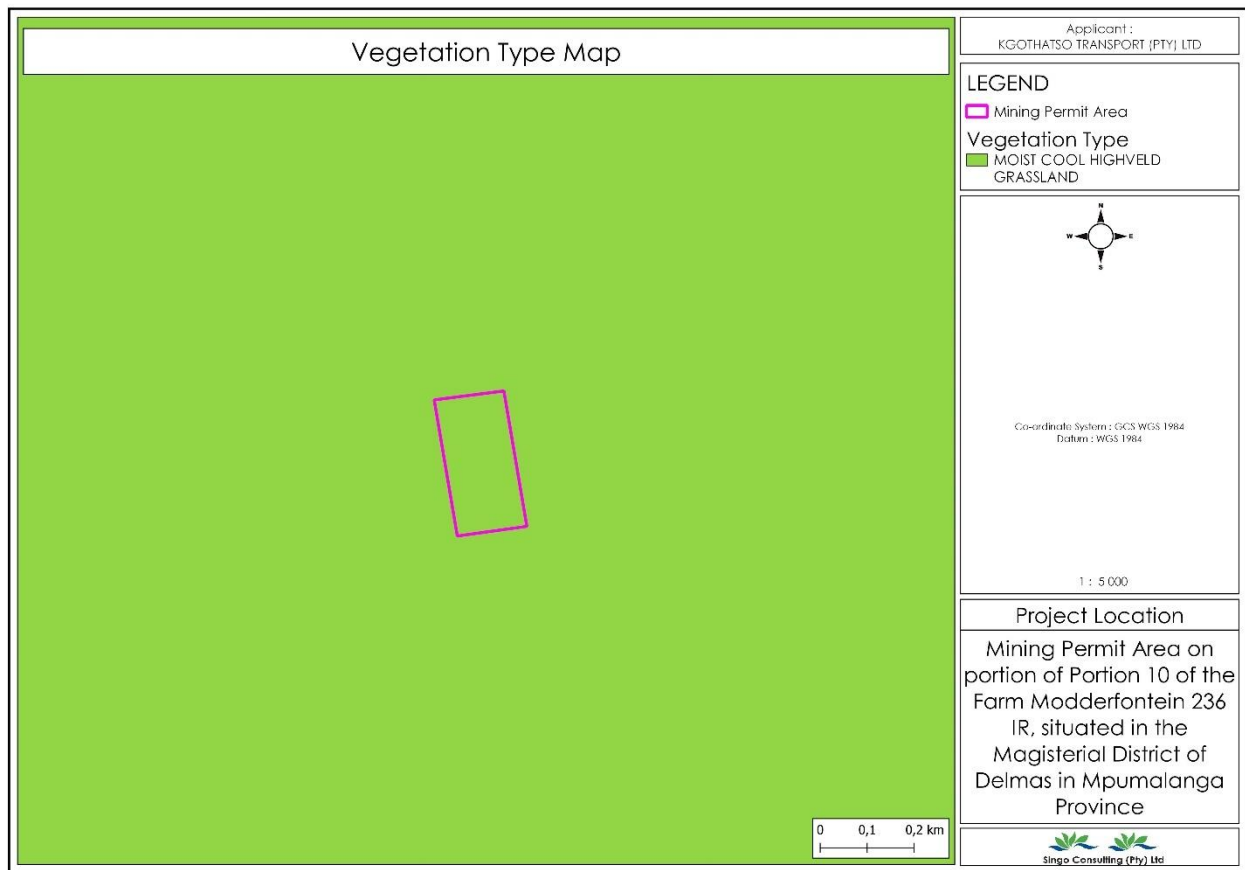


Figure 23: vegetation map in relation with the project area.

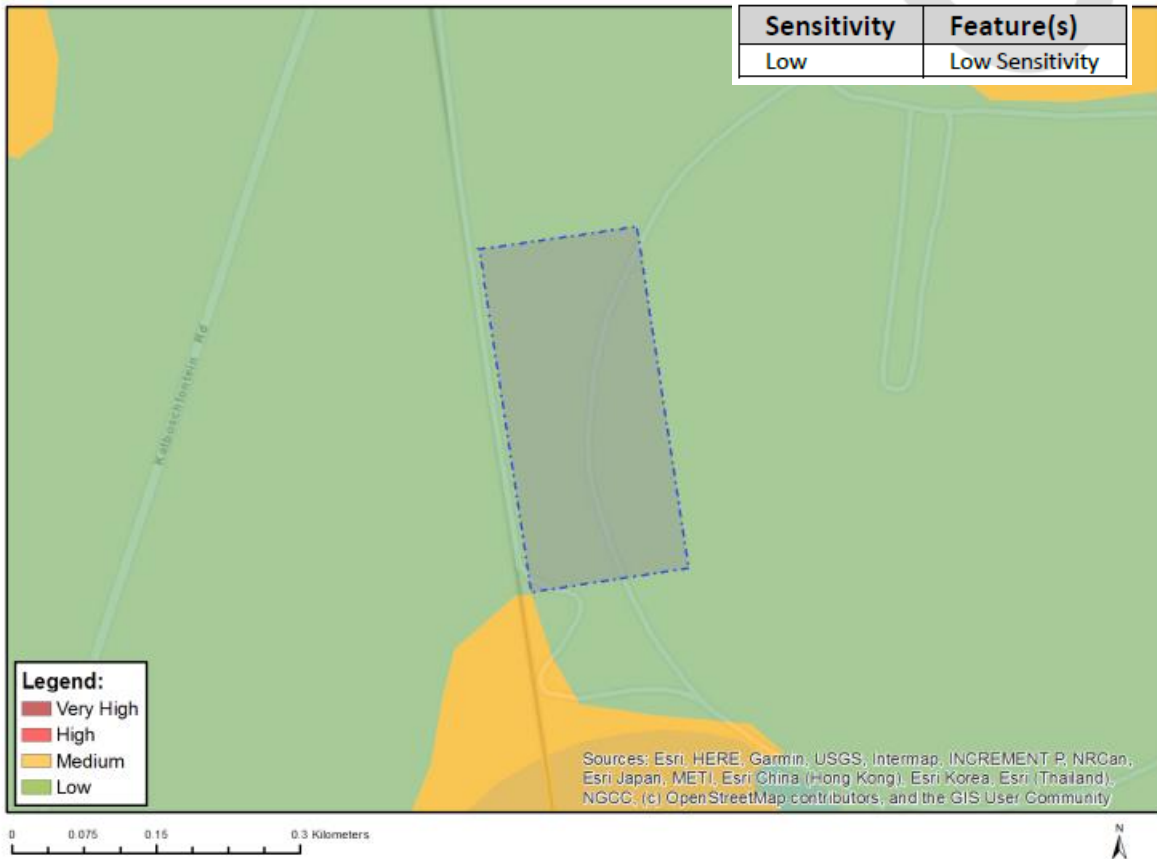


Figure 24: Plant Species Theme Sensitivity Map from Screening Tool



Figure 25: Type of vegetation found on site during assessment

4.1.3.2 Fauna

No domestic nor wild fauna was observed during site assessment. Should any fauna enter the mining area there will be no impact on the proposed mining activity as they will be able to move away or through the site, without being harmed.

The fauna around the proposed mining area will not be impacted by the proposed activity, as they will be able to move away from or through the site unharmed. Workers must be educated and managed to ensure that no fauna at the site is harmed. Upon commencement of the proposed processing activities, the processing area will be fenced off to prevent livestock, such as cattle from wandering into the work areas.

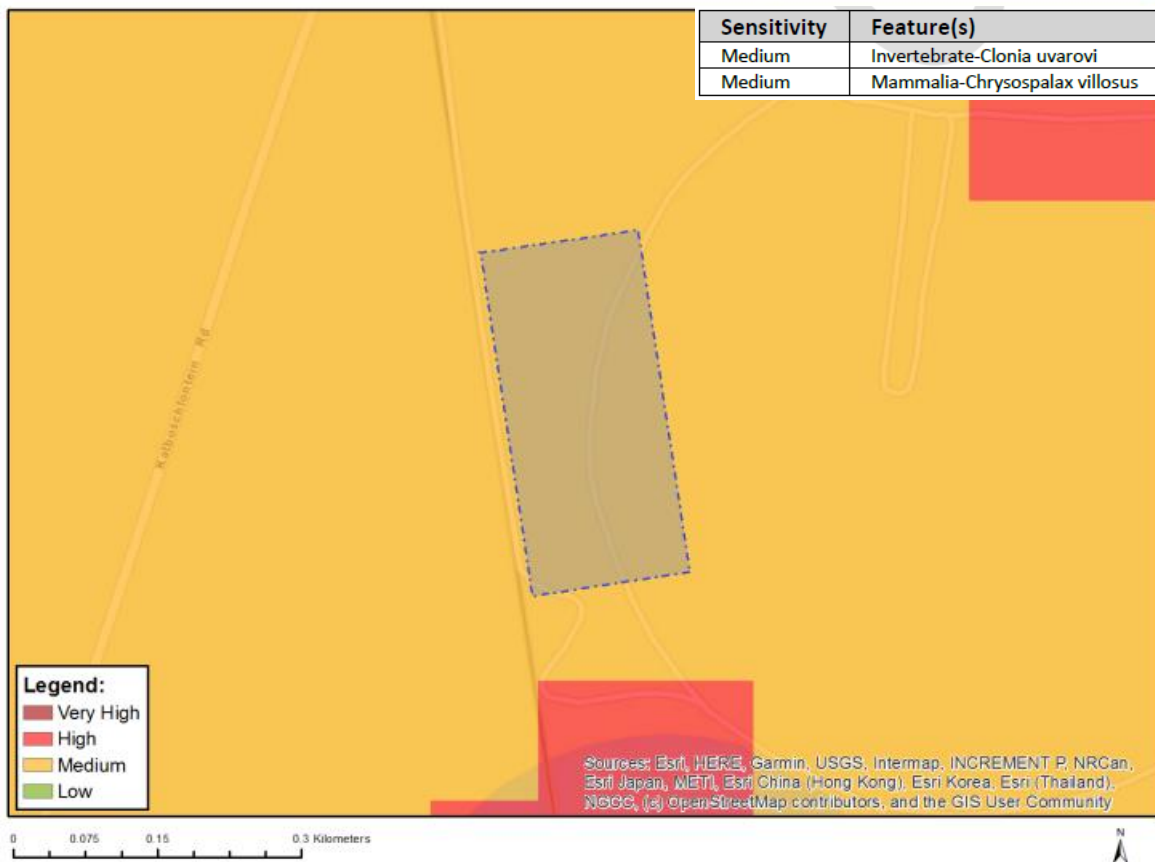


Figure 26: Animal Species Theme Sensitivity Map from Screening Tool

4.1.3.3 Soil

According to the inhouse soil study that was conducted, the mining permit area is covered with freely drained, structureless soil. This type of soil means that water is removed from the soil very rapidly. Soils commonly are coarse textured and have very high permeability or are very shallow. Diagnostic zone is entirely brownish, with few or no grey mottles or grey clay films. Some soils have silt coats in the upper B horizon.

Red apedal soils

These soils have a structure that is weaker than moderate blocky or prismatic in the moist state, if structure is borderline, CEC (NH₄OAc, pH7) per kg soil is less than 11 cmol (+)/kg soil. These soils are non-calcareous in any part of the horizon which occurs within 1500mm of the soil surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. It does not have alluvial or aeolian stratifications. The B horizons that have more or less uniform colours, falling within the range defined as red and that in the moist state, lack well-formed peds other than porous micro-aggregates, qualify as red apedal. The concept of these macroscopically weakly structured or structureless materials embraces that kind of weathering that takes place in a well-drained oxidizing environment to produce coatings of iron oxides on individual soil particles (hence the diagnostic red colours) and clay minerals dominated by non-swelling 1:1 type.

Yellow apedal soil

This horizon does not have grey colours in the dry state as defined for the E horizon. Although colour must be substantially uniform, some variability is permitted, for example mottles or concretions which are insufficient to qualify the horizon as a diagnostic plinthic B, faunal reworking may also result in acceptable colour variegations. It is non-calcareous within any part of the horizon which occurs within 1500mm of the surface but may contain infrequent, discrete, relict lime nodules in a non-calcareous soil matrix. Does not have alluvial or aeolian stratifications., directly underlies a diagnostic topsoil horizon or an E horizon. Yellow brown apedal B horizons occur over approximately the same climatic spread as their red counterparts and so are also very widely distributed throughout the country. They may be found on all types of parent material.



Figure 27: Project area soil type map (Freely drained soils)



Figure 28: Project area soil type (freely drained, structureless soils)

4.1.3.4 Surface and Ground Water

According to the inhouse hydrology study, the mining permit area is in the Upper Olifants Water Management Area (WMA). The main quaternary catchment is C21D.

The WR2012 study, presents hydrological parameters for each quaternary catchment including area, mean annual precipitation (MAP) and mean annual runoff (MAR). Based on the WR2012 study, the project area falls within the quaternary catchment C21D.

The area includes the towns of Bronkhorstspuit, Delmas, Douglas, Kriel, Kinross, Ogies, Evander, Secunda, Bethal, eMalahleni and Steve Tshwete. The Upper Olifants catchment is the most urbanized of the four sub-catchments, with most of the urban population located in eMalahleni and Steve Tshwete. Water in the area is generally utilized for mining activities and livestock watering. Downstream of the site are numerous and varied users

such as aquatic life, livestock watering, domestic abstraction and industrial use associated with Olifants river. Wetland depressions in the proposed mining area were confirmed by the inhouse GIS specialist and observed during site assessment.

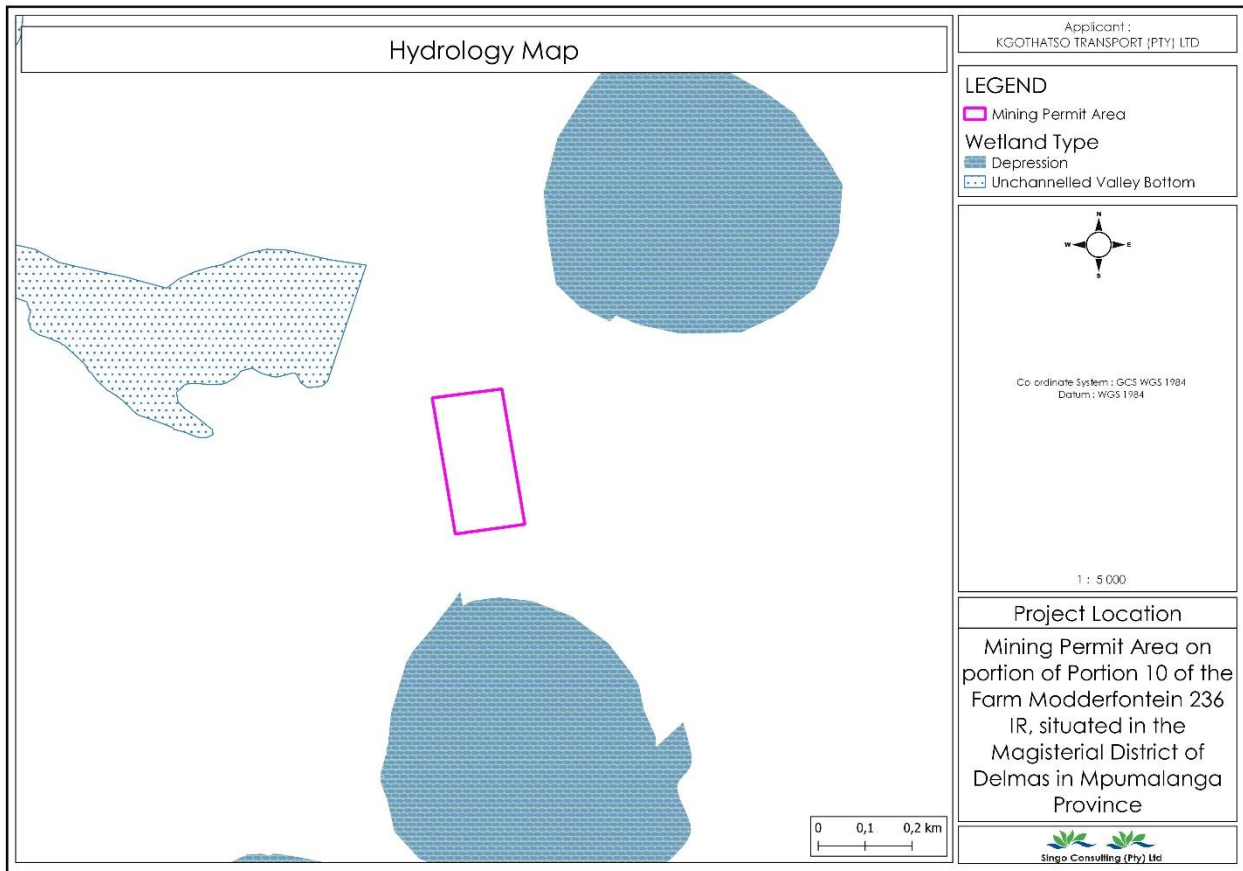


Figure 29: Hydrological Map of the project Area.

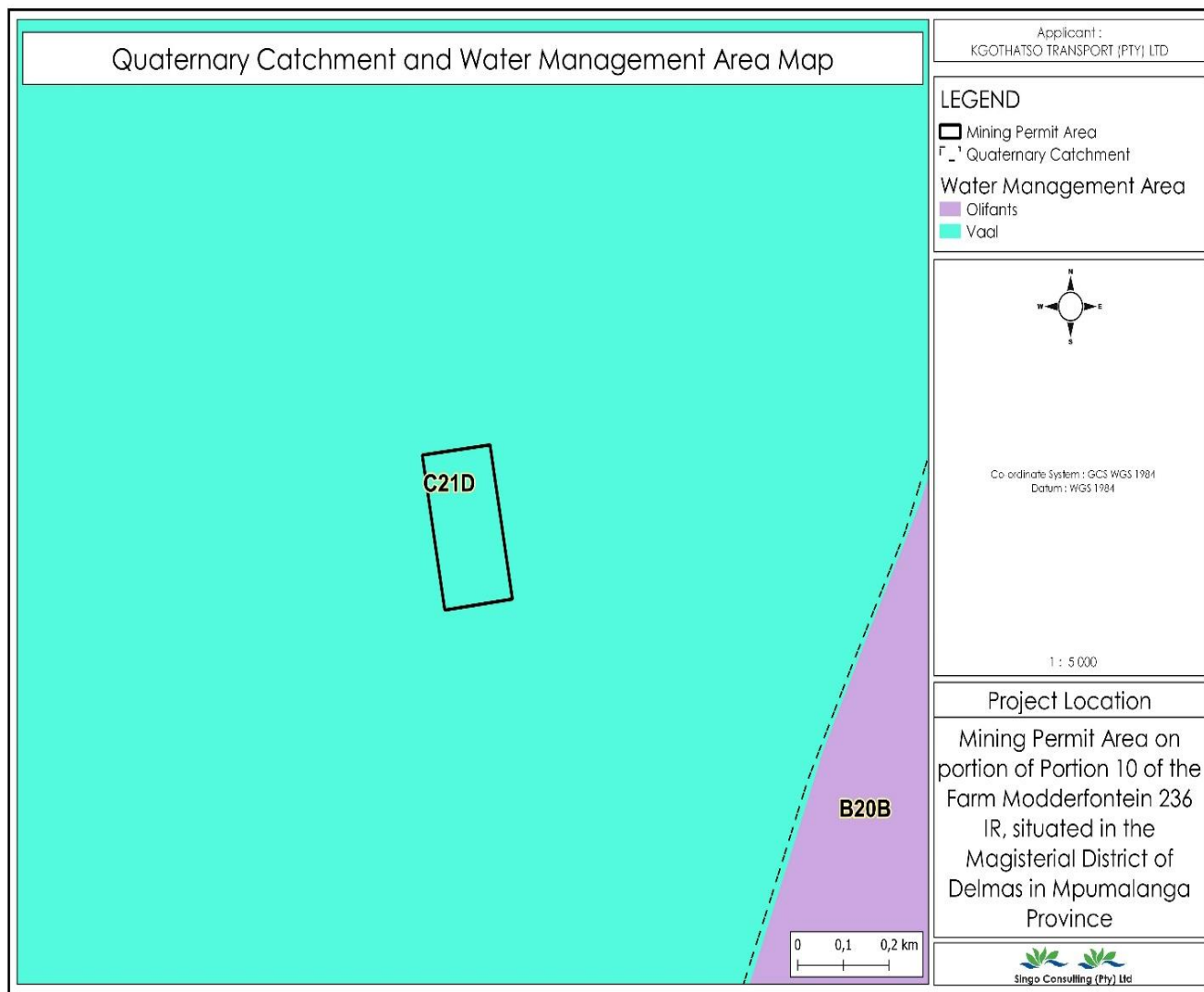


Figure 30 : Quaternary catchment Map of the Project Area.

4.1.3.5 Topography

The topography of the project area is situated in a flat-lying topography ranges from 1585 mamsl as displayed by the contour lines on the topology map below Figure 28, and the map shows that there are no hills and mountains around the project area.

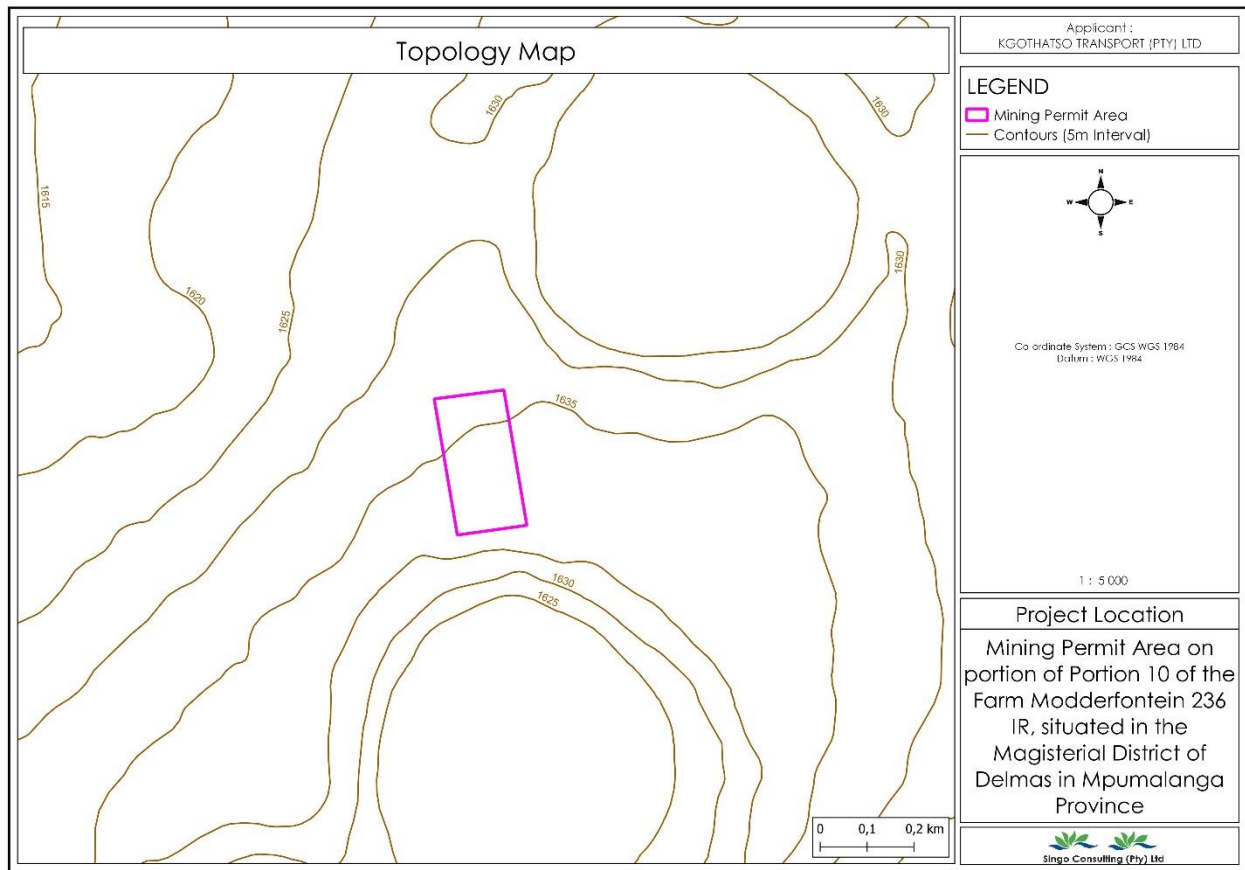


Figure 31: Topographical map of the project area.

4.1.3.6 Climate

Delmas has mild to warm summers and cool to cold winters. Summers have a lot more precipitation relative to winters. The location is classified as Cwb by Köppen and Geiger. Delmas receives the most rainfall from October to March and zero rainfall during the winter, the average annual temperature is 15.7°C receiving the average rainfall of 688mm annually.

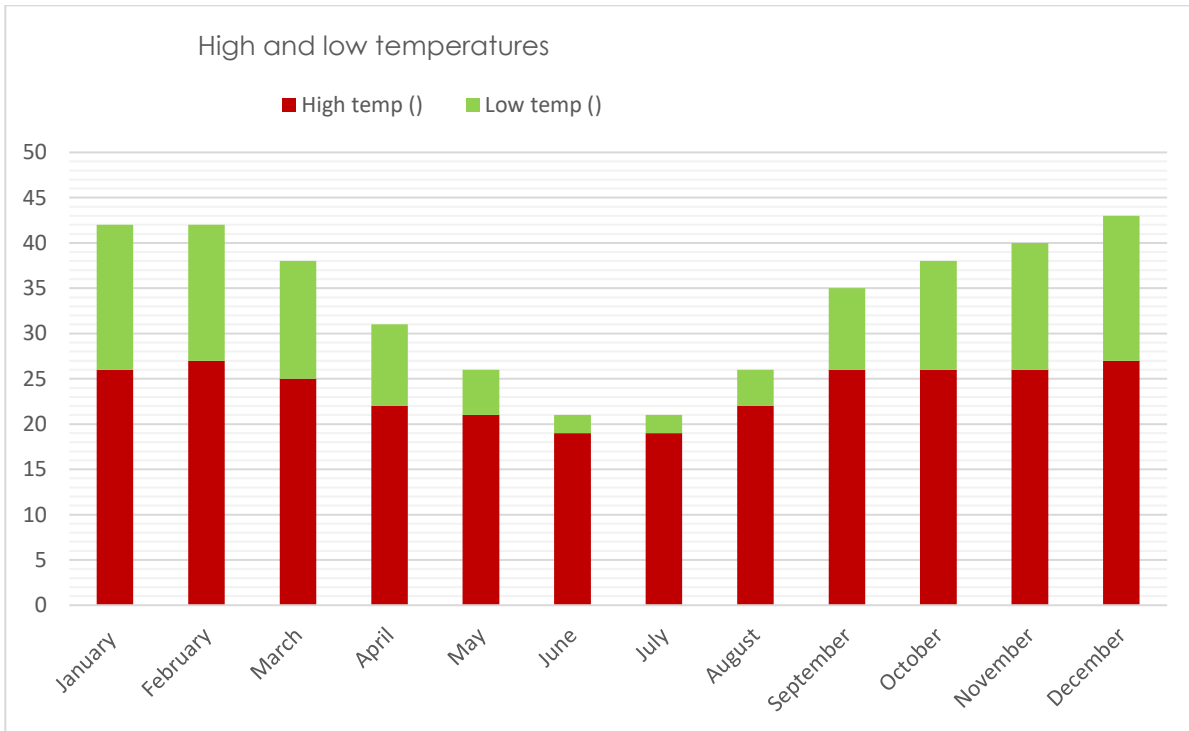


Table 2: High and low temperatures.

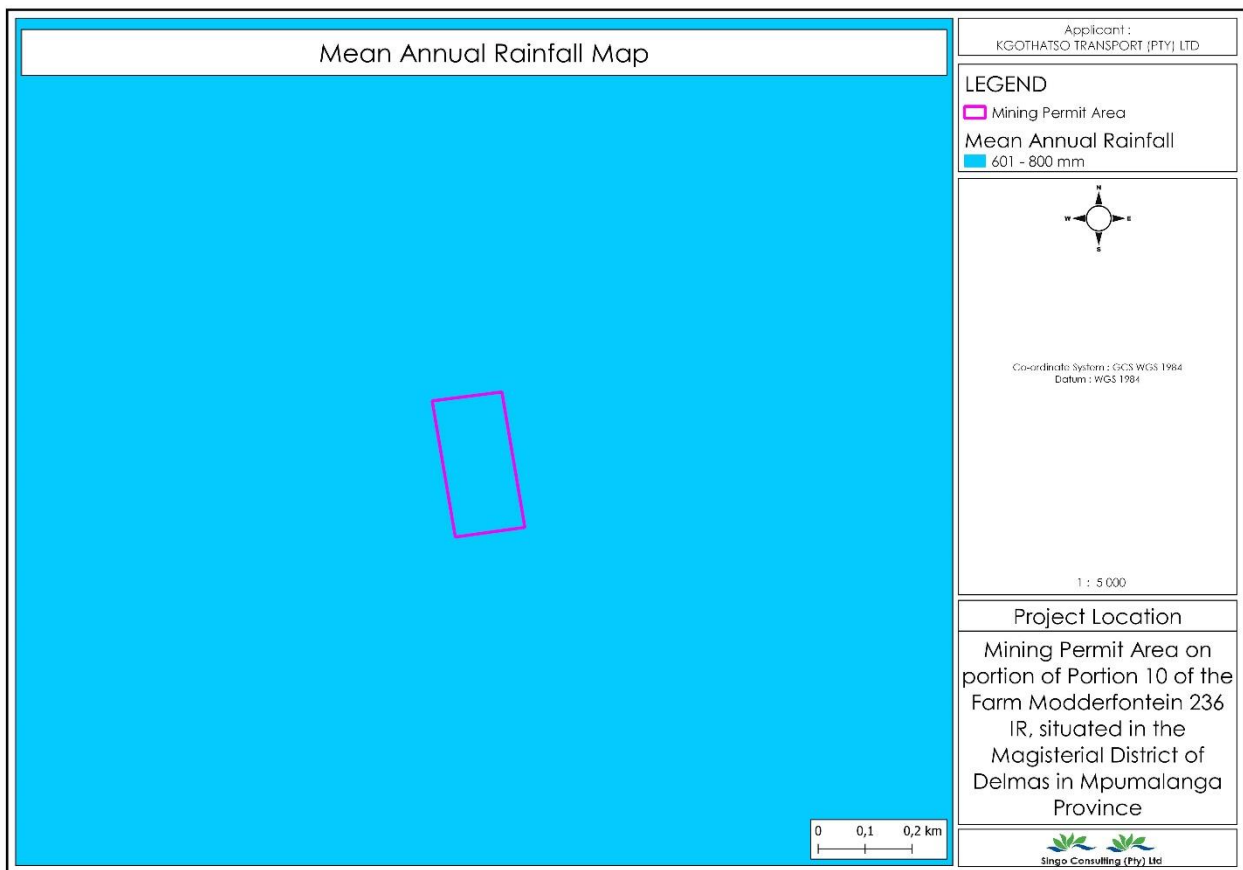


Figure 32: Annual rainfall within the project area

4.1.3.7 Public roads

The proposed project area is located along the N12 or R555 towards the west of Delmas on portion of portion 10 of the farm Modderfontein 236 IR in Mpumalanga Province and covers an area 5 ha.

4.1.3.8 Graves, heritage, archaeological and cultural resources

The proposed mine is located within the cultivated area and there are no archaeological or heritage resources identified at the surface on site. SAHRA was consulted through online, and the status of the land is not yet confirmed. Site visit did not reveal any critical feature which can be declared as heritage. Consultation with stakeholders more especially landowner and SAHRA will allude to the presence of any heritage feature.

SAHRIS

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Heritage Cases

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MP 30 /5/1/3/2/(13242) MP)

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CaseHeader LocationInfo Admin

Status: DRAFT

HeritageAuthority(s): SAHRA
MPHRA

Case Type: Section 38 (8) - Statutory Comment Required

Development Type: Mining

ProposalDescription:
Mining Permit on Portion of portion 10 of the farm Modderfontein 236 IR

Expanded_Motivation:
Mining Permit on Portion of portion 10 of the farm Modderfontein 236 IR situated in the magisterial district of Delmas, Mpumalanga Province

ApplicationDate: Thursday, July 14, 2022 - 14:35

CaseID: 19046

Applicants: Kgothatso Transport (Pty) Ltd

Consultants/Experts: Ndinannyi Kenneth

OtherReferences:

Dept	CaseReference	DueDate	FinalDecision
DMR-MP	MP 30 /5/1/3/2/ 13242 MP	14/08/2022	

ReferenceList:

AdditionalDocuments

1. Background Information Documents-Kgothatso.pdf

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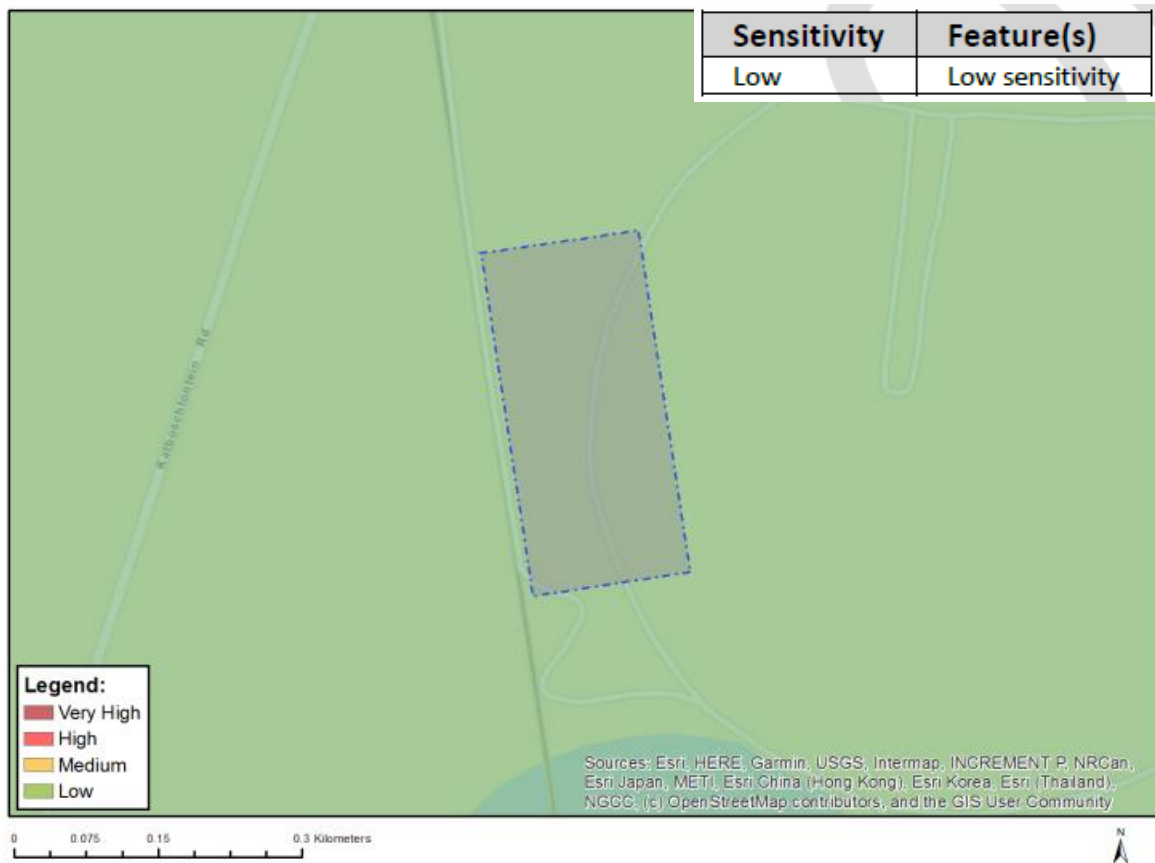


Figure 33: Archaeological Features assessed on site and Map.

4.1.3.9 Railway line

No railway line was detected during assessment in the near vicinity of the proposed mine location. Transposition of acquired mineral will be done through provincial and national routes to various clients.

4.1.3.10 Noise

The surrounding areas are characterised by agricultural setting in which vehicles and equipment operate. The traffic on the public roads surrounding the property contributes to the ambient noise of the area. The noise to be generated at the proposed mining operation is expected to temporarily increase the noise levels of the area. Blasting noise will be instantaneous and of short duration. Transportation of the material will generate noise daily. Mitigation measures should be implemented to ensure employees conduct themselves in an acceptable manner while on site to lessen the noise impact of the proposed activity on the surrounding environment.

4.1.3.11 Critical Biodiversity

The permit area is situated in a heavily modified see map below Figure 34. The permit area is heavily modified transformed area, biodiversity function has been lost to the point that they are not worth considering for conservation.

There are no critical species will be affected by the proposed project as there are critical plants and sensitivity within and around the proposed mining permit. Therefore, critical species will be harmed even though identified during the operation of proposed project as Eco will be onsite every day to monitor the operation. Although the area is characterized by Moist Cool Highveld Grassland according to the inhouse GIS specialist, the area is heavily modified by other activities which leads to vanished of these Moist Cool Highveld grassland mentioned on the vegetation type section.

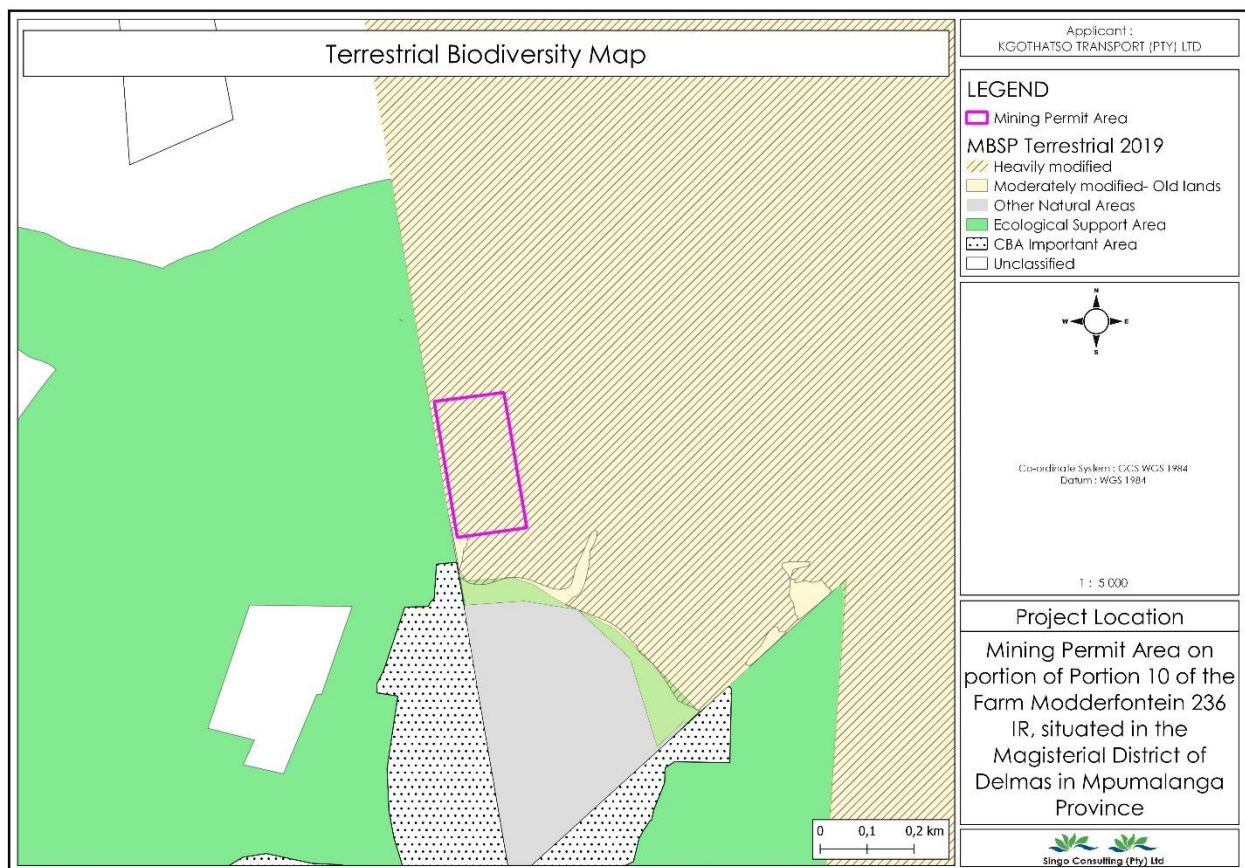


Figure 34: Biodiversity Map

4.1.3.12 Socio-economic

The development of the Strategic Plan of the Mpumalanga Department of Economic Development and Tourism (MDEDT) for the period 2015 to 2020 is based on new priorities for the Mpumalanga administration and aims to fast track growth, support priority sectors, create jobs and promote economic participation by all its people. The Department's vision is for a "an inclusive, global competitive economy" and its mission is "to drive economic growth that creates decent employment and promote sustainable development through partnership" The implementation of the plan is founded on Outcome 4 of national government's Medium Term Strategic Framework (MTSF) for 2015 to 2010, which is, Decent employment through inclusive growth". According to the strategy, the province has at least 80% of the coal reserves in South Africa.

There is also a large forestry sector and a strong agricultural sector with the potential to absorb lower skilled labour. The active mining, agricultural and forestry sectors also provide possibilities for beneficiation. The province is strategically located with access to inland provinces and proximity to Swaziland and Mozambique, including the Maputo port. Although infrastructure, that is, roads, transport and logistics, electricity, water, telecommunications, and medical care, is regarded as generally good there is also an acknowledgement that rural infrastructure is poor. The natural landscape in the province is ideal to stimulate tourism. The Department has developed good working relations with its stakeholders. It however recognises the need for improving alignment amongst stakeholders in the province.

Mpumalanga Premier Mtshweni in her State of the Province Address on 22 February 2019 (Mpumalanga Provincial Government, 2019) stated that the provincial economy grew at 3% in 2014 but last year recorded a rate of less than 1%. The Mpumalanga Strategy identifies five prioritised economic sectors in the province, namely, agriculture for the promotion of agro-processing, mining for value addition through beneficiation and energy generation, manufacturing, Information Communication Technology, and tourism and cultural industries for job creation and growth of Small, Medium and Micro Enterprises (SMMEs). The department is promoting collaboration amongst departments in all spheres of government and with the private sector, to put together a comprehensive support package for SMMEs and cooperatives.

The Victor Khanye Local Municipality Gross Domestic Product (GDP) is estimated to grow by 3.4% per annum ended up to and including 2016, while this is smaller than the District and Province projections. The forecast is excessively optimistic if we consider that the historical growth rate in the period 1996-2011 remained relatively low at 2.0% per annum.

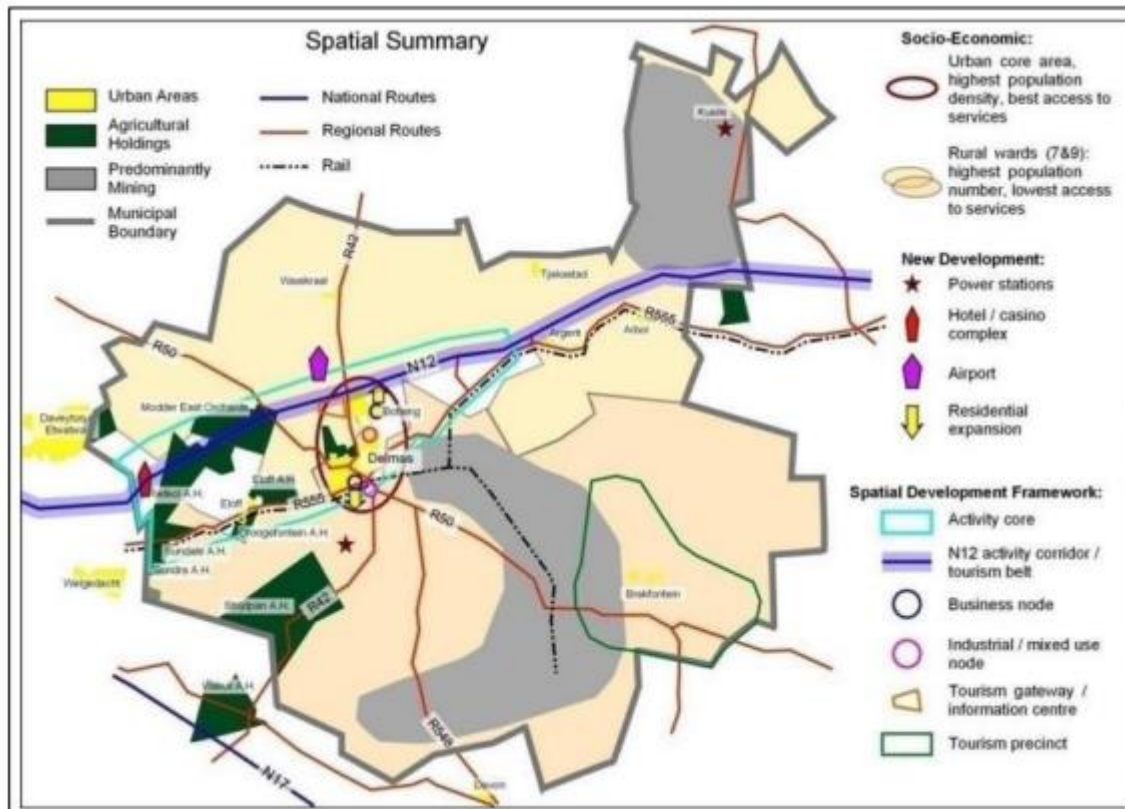


Figure 35: Locality map of Victor Kanye Local Municipality. Source: VLKM IDP 2017-2022

Agriculture, transport, community services, finance and mining will be the main contributors to the Victor Kanye Local Municipality economic growth in the period up to 2016. The municipality is a major maize producing area. Annual maize production is predictable between 230 000 and 250 000 metric tons. Mining activities are intense on coal and silica. About 3 million metric tons of coal and 2 million metric tons of silica are mined annually in the municipal area. With respect to Gross Value Added (GVA) - a amount in economic terms of the value of goods and services produced in an area, industry or sector of an economy - the Victor Kanye Local Municipality contribution to Mpumalanga province is reflected at 2,0% in 2011 at an estimated value of 3,4 billion.

Population demographics

Population at the provincial, municipal and ward levels. This represents decreasing population densities of 56.6, 35.4, 27.3 and 7.3 persons per km² as one goes from provincial to ward levels.

Victor Kanye Municipality 's population has grown from 75 452 to 84 151 in 5 years. This recorded a growth rate of 2.5%per annum between 2011 and 2016 (Victor Kanye IDP 2017-2021)

Profile	Population
Mpumalanga Province	4 039 939
District municipality	1 135 409
Local municipality	164 608
Ward	5 924

Figure 36: Population and Density

Forty eight percent (48%) of the population in the ward is in the age category 18 to 64, representing the generally employable population. This is lower than in the local municipality (59% of the population). There was a larger proportion of females at ward level (52%) than at local municipality level (50%). It is possible that job seekers in the ward, including men, may have moved out of the ward looking for work. The predominant language as one moved from district municipality to local municipality and then ward level was increasingly 106 isiZulu, that is, 60%, 71%, 91% of households respectively. At provincial level, the dominant language was Siswati (27%), followed by isiZulu (24%).

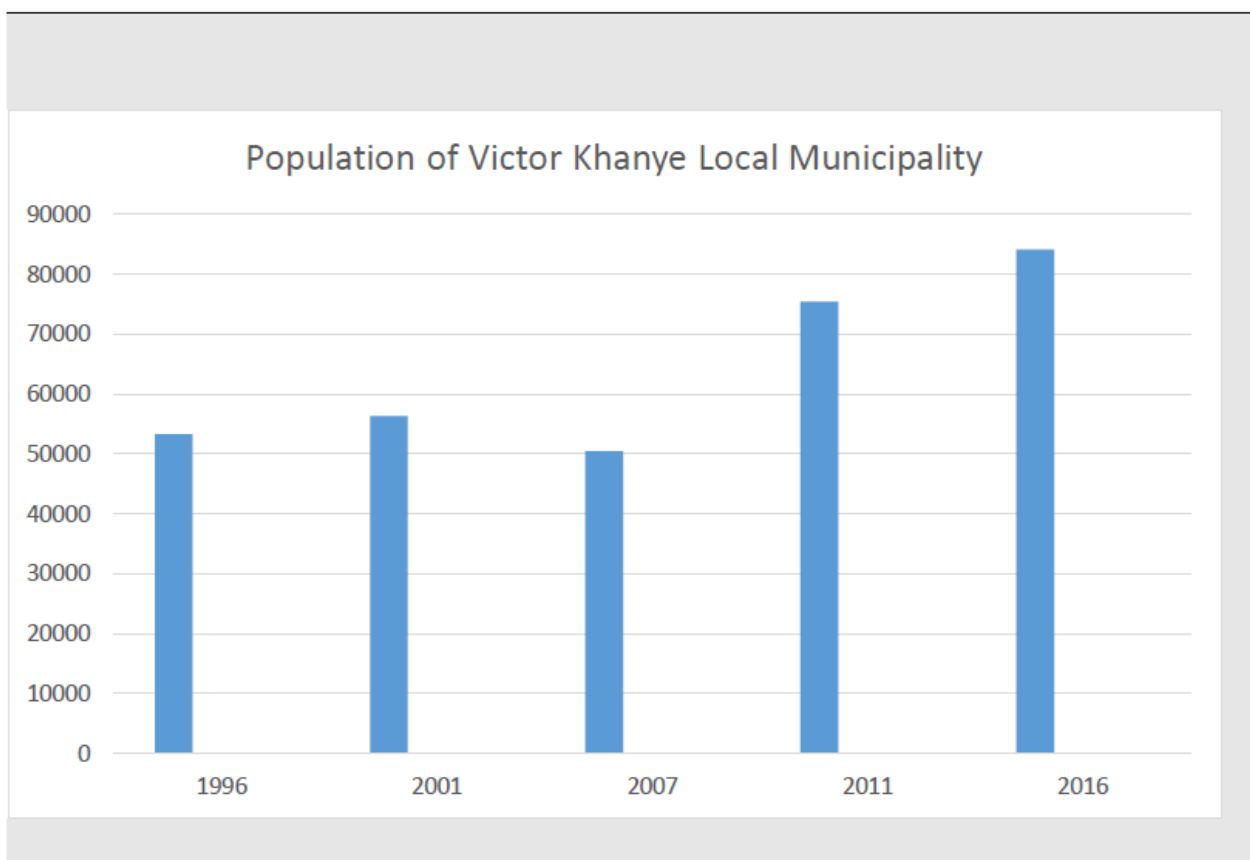


Table 3: Population of Victor Kanye Local Municipality

Education

25% of the population above 15 years of age has had no schooling or did not complete primary school. Of this number 5,528 are basically illiterate and therefore future meaningful employment prospects are virtually impossible. A further 41% of the population did not complete the schooling curriculum and therefore did not reach the level of matric. The information was sourced from Victor Kanye integrated development Plan (2017-2021)

No schooling	5 528
Less than Grade 7	6 164
Grade 7	2 234
Less than Grade 12	16 610
Matric/ Grade 12	12 719
Matric plus	3 348
Total	46 603

Table 4: Education Levels at Victor Kanye Local Municipality (Stats SA 2016)

Employment and Income

At local municipal level, large proportions of the households recorded annual earnings in the categories R10 000 to R20 000 (18%), R20 000 to R40 000 (21%), and R40 000 to R 75 000 (15%). Thirteen percent did not have any income and 11% received less than R10 000 per annum, that is, almost a quarter (24%) of the households were living on less than R835 per month. At ward level, 27% of the households lived on an income of less than R835 a month and 45% of the population earned between R10 000 and R40 000 per annum. Another 16% earned between R40 000 to R 75 000. More households at the ward level (72%) were therefore earning an income in the lower brackets, that is less than R 40 000 annually.

4.2 Description of current land uses

The surrounding land use on the proposed project area are associated with cultivated area and mining area. The project Area is located approximately 54.4 km South-West of Ogies, approximately 81.6 km South-West of Witbank and approximately 89.1km North-West of Kriel, along the N12 or R555 towards Witbank. Mining Permit application is currently used for Cultivation. This was confirmed by site visit process that was conducted.

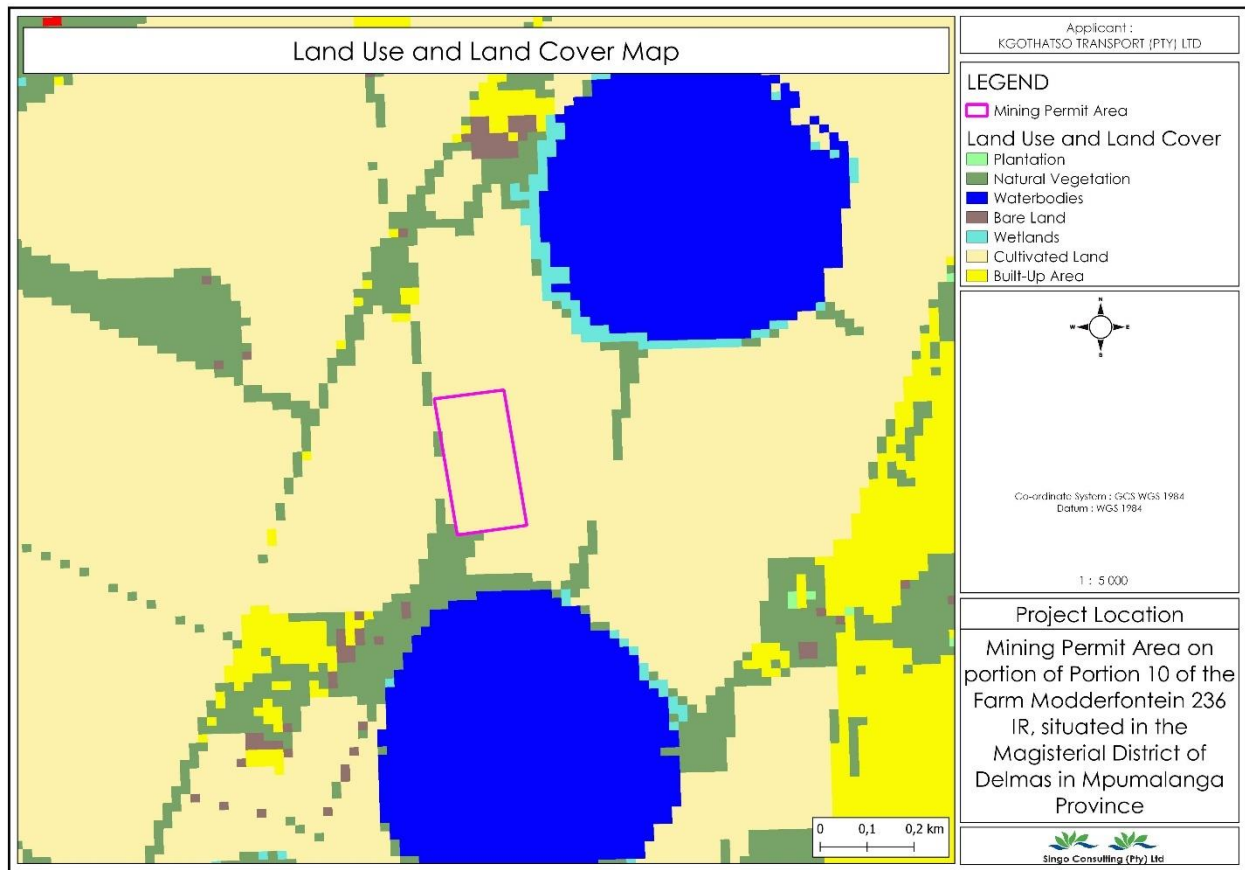


Figure 37: Land Use Map of the Mining Permit Area.

4.3 Description of site-specific environmental features and infrastructure

The following table provides a description of the land uses and/or prominent features that currently occur within a 2km radius of the site:

Land use character	Yes	No	Description
Natural area	Yes		The area is used for cultivation purposes with a patch of natural vegetation
Low-density residential	Yes		Farming homesteads are located near the applied permit area.
Medium-density residential		No	
High-density residential		No	
Informal residential		No	
Retail commercial and warehousing		No	
Light industrial		No	
Medium industrial		No	
Heavy industrial		No	
Power station		No	
Office/consulting room		No	
Military or police base/ station/compound		No	
Soil heap or slimes dam		No	
Quarry, mine or borrow pit		No	
Dam or reservoir		No	

Land use character	Yes	No	Description
Hospital/medical centre		No	
School or crèche		No	
School		No	
Tertiary education facility		No	
Church		No	
Old age home		No	
Sewage treatment plant		No	
Train station or shunting yard		No	
Railway line		No	
Major (road 4 lines or more)		No	
River, stream or wetland	Yes		There are wetland depressions and waterbodies around the proposed mining permit area
Agriculture	Yes		The project area is surrounded by land used for agricultural purposes, particularly crop farming.
Nature conservation area		No	
Mountain, hill or ridge		No	
Museum		No	
Historical building		No	
Plantation		No	
Landfill/waste treatment site	Yes	No	Illegal dumping (Landfill) is currently taking place in the proposed mining permit.
Archaeological sites		No	
Other land uses		No	

The following provides a description of the land uses and/or prominent features that currently occur within a 500 m radius of the site:

Environmental features

The proposed project area is situated Victor Kanye Local Municipality, where classified within heavily modified as seen in Figure 31 (indicated by brown colour). There are wetland depressions within the proposed permit area.

Infrastructure

Infrastructure is the basic facilities and systems that serve a state, region, or other place, including the services and facilities necessary for the functioning of its economy.

Infrastructure consists of infrastructure developments, both public and private, such as Buildings, highways, bridges, tunnels, sewage electric grids and telecommunications.

The property lies within the proposed project area, there is electric power line within the proposed area which will be buffered 100 meters away from proposed area. Eskom commented without objection with some conditions on the proposed project.

4.4 Environmental and current land use map

Show all environmental, and current land use features. Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as

informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed, or mitigated.



Figure 38: The environmental and current land use map, project area highlighted by a red rectangle.

4.5 Impacts and risks identified, including the nature, significance, consequence, extent, duration, and probability of the impacts

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

The following potential impacts were identified of each main activity in each phase. The significance rating was determined using the methodology as explained under vi) Methodology Used in Determining and Ranking the Significance. The impact rating listed below was determined for each impact prior to bringing the proposed mitigation measures into consideration. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

4.5.1 Stripping and stockpiling of topsoil

Visual intrusion associated with the establishment of the mining area

Rating: Medium-High

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	5	2	3	5	5	5	15

Dust nuisance caused by soil disturbance.

Rating: Medium

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	4	2	2.6	5	5	5	13

Noise nuisance caused by machinery stripping and stockpiling the topsoil.

Rating: Medium

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	4	2	2.6	5	5	5	13

Infestation of the topsoil heaps by weeds or invader plants.

Rating: Low-Medium

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
3	4	1	2.6	5	2	3.5	9

Loss of topsoil due to incorrect storm water management.

Rating: Medium

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
3	4	1	2.6	5	4	4.5	11.7

Contamination of area with hydrocarbons or hazardous waste materials.

Rating: Medium-High

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
4	4	2	3.3	5	5	5	16.5

4.5.2 Blasting

Health and safety risk posed by blasting activities.

Rating: Medium

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
4	4	1	3	5	2	3.5	10.5

Dust nuisance caused by blasting activities.

Rating: Low-Medium

Degree of mitigation: None

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
2	1	2	1.6	5	2	3.5	5.6

Noise nuisance caused by blasting activities.

4.5.3 Excavation

Visual intrusion associated with the excavation activities.

Rating: Medium-High

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
2	5	2	3	5	5	5	15

Dust nuisance due to excavation activities.

Rating: Medium

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
2	4	2	2.6	5	5	5	13

Noise nuisance generated by excavation equipment.

Rating: Medium

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
2	4	1	2.3	4	5	4.5	10.4

Unsafe working conditions for employees.

Rating: Medium-High

Degree of mitigation: Full

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
4	4	1	3	5	5	5	15

Negative impact of the fauna and flora of the area.

Rating: Low

Degree of mitigation: Full

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
2	1	1	1.3	5	1	3	3.9

Contamination of area with hydrocarbons or hazardous waste materials.

Rating: Medium

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance

Severity	Duration	Extent		Probability	Frequency		
4	4	2	3.3	4	5	4.5	14.9

Weed and invader plant infestation of the area.

Rating: Low-Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	5	2	2	5.2

4.5.4 In-pit crushing

Dust nuisance due to the crushing activities.

Rating: Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	3	2	2.6	5	5	5	13

Noise nuisance generated by the crushing activities.

Rating: Medium

Degree of mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	4	5	4.5	11.7

Contamination of area with hydrocarbons or hazardous waste materials.

Rating: Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	2	3.3	4	5	4.5	14.9

4.5.5 Stockpiling and transporting

Visual intrusion associated with the stockpiled material and vehicles transporting material.

Rating: Medium

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	4	5	4.5	11.7

Loss of material due to ineffective storm water handling

Rating: Low-Medium

Degree of mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	4	3	3.5	8

Weed and invader plant infestation of the area due to the disturbance of the soil

Rating: Low-Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	4	2	3	7.8

Dust nuisance from stockpiled material and vehicles transporting the material

Rating: Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	4	5	4.5	11.7

Degradation of access roads

Rating: Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	2	3	4	5	4.5	13.5

Noise nuisance caused by vehicles

Rating: Medium

Degree of mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	4	5	4.5	11.7

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	2	3.3	4	5	4.5	14.9

4.5.6 Sloping and landscaping during rehabilitation

Soil erosion

Rating: Low-Medium

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	3	3	3	9

Health and safety risk posed by un-sloped areas

Rating: Medium-High

Degree of mitigation: Full

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		

4	5	1	3.3	5	5	5	16.5
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Dust nuisance caused during sloping and landscaping activities

Rating: Low-Medium

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	3	1	2	4	5	4.5	9

Noise nuisance caused by machinery

Rating: Low-Medium

Degree of mitigation: Partial

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	1	2	1.6	3	5	4	6.4

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Low-Medium

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
4	4	1	3	3	1	2	6

4.5.7 Replacing of topsoil and rehabilitation of disturbed area

Loss of reinstated topsoil due to the absence of vegetation

Rating: Low-Medium

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
3	3	1	2.3	3	2	2.5	5.8

Infestation of the area by weed and invader plants

Rating: Low-Medium

Degree of mitigation: Full

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
3	4	1	2.6	4	2	3	7.8

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

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

4.6.1 Definitions and concepts

4.6.1.1 Environmental significance

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

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

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e., intensity, duration, and likelihood). Impact significance is the value placed on the change by different affected parties (i.e., level of acceptability) (DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5).

The concept of risk has two dimensions, namely the consequence of an event or set of circumstances, and the likelihood of consequences being realised (Environment Australia (1999) Environmental Risk Management).

4.6.1.2 Impact

The positive or negative effects on human well-being and/or the environment.

4.6.1.3 Consequence

The intermediate or final outcome of an event or situation, or the result on the environment of an event.

4.6.1.4 Likelihood

A qualitative term covering both probability and frequency.

4.6.1.5 Frequency

The number of occurrences of a defined event in each time or rate.

4.6.1.6 Probability

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

4.6.1.7 Environment

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

4.6.1.8 Methodology that will be used

The environmental significance assessment methodology is based on the following determination:

ENVIRONMENTAL SIGNIFICANCE = OVERALL CONSEQUENCE X OVERALL LIKELIHOOD

Determination of overall consequence

Consequence analysis is a mixture of quantitative and qualitative information; the outcome can be positive or negative. Several factors determine consequence. For the purpose of determining the environmental significance in terms of consequence, the following factors were chosen: **Severity/Intensity, Duration and Extent/Spatial Scale**. Each factor is assigned a rating of 1 to 5, as described in the following tables.

Determination of severity/intensity

Severity relates to the nature of the event, aspect or impact on the environment and describes how severe the aspects impact the biophysical and socio-economic environment. The following section indicates the overall rating for severity, taking into consideration the various criteria.

4.6.1.9 Severity rating

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant/ No harmful	Small / Potentially harmful	Significant/ harmful	Great/very harmful	Disastrous, extremely harmful
Social/ community response	Acceptable/ I&AP satisfied	Slightly tolerable / Possible objections	Intolerable/ sporadic complaints	Unacceptable/ widespread complaints	Totally unacceptable/ possible legal action
Irreversibility	Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance/ easily reversible	Low cost to mitigate	Substantial cost to mitigate/ potential to mitigate impacts/ potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact Irreversible
Biophysical (air quality, water quantity and quality, waste production, fauna and flora)	Insignificant change/ deterioration or disturbance	Moderate change/ deterioration or disturbance	Significant change/ deterioration or disturbance	Very significant change/ deterioration or disturbance	Disastrous change/ deterioration or disturbance

Determination of duration

Duration refers to the amount of time that the environment will be affected by the

event, risk or impact, if no intervention e.g., remedial action takes place.

Rating of duration

Rating	Description
1	Up to 1 month
2	1-3 months (quarter)
3	3-12 months
4	1-10 years
5	Beyond 10 years

Determination of extent/spatial scale

Extent or spatial scale is the area affected by the event, aspect, or impact.

Rating of extent/spatial scale

Rating	Description
1	Immediate, fully contained area
2	Surrounding area
3	Within business unit area of responsibility
4	Within the farm/neighboring farm area
5	Regional, national, international

Determination of overall consequence

Overall consequence is determined by adding the factors determined above and summarised below and dividing the sum by 3.

Example of calculating overall consequence

Consequence	Rating
Severity	Example 4
Duration	Example 2
Extent	Example 4
Subtotal	10
Total consequence (subtotal divided by 3)	3.3

DETERMINATION OF LIKELIHOOD

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described in the following.

Determination of frequency

Frequency refers to how often the specific activity, related to the event, aspect, or impact, is undertaken.

Rating of frequency

Rating	Description
1	Once a year or once/more during operation
2	Once/more in 6 months
3	Once/more a month
4	Once/more a week
5	Daily

Determination of probability

Probability refers to how often the activity or aspect has an impact on the environment.

Rating of probability

Rating	Description
1	Almost never/almost impossible
2	Very seldom/highly unlikely
3	Infrequent/unlikely/seldom
4	Often/regularly/likely/possible
5	Daily/highly likely/definitely

Overall likelihood

Overall likelihood is calculated by adding the factors determined above and summarised below and dividing the sum by 2.

Example of calculating overall Likelihood

Consequence	Rating
Frequency	Example 4
Probability	Example 2
Subtotal	6
Total likelihood (subtotal divided by 2)	3

4.6.2 Determination of overall environmental significance

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will fall into a range of low, low-medium, medium, medium-high, or high, as shown in the table below.

4.6.2.1 Determination of overall environmental significance

Significance or risk	Low	Low-medium	Medium	Medium-high	High
Overall consequence X overall likelihood	1-4.9	5-9.9	10-14.9	15-19.9	20-25

4.6.2.2 Qualitative description or magnitude of environmental significance

Significance or risk	Low	Low-medium	Medium	Medium-high	High
Impact magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company.	Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable.	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action required	Maintain current	Maintain current	Implement monitoring.	Improve management	Implement significant

	management measures. Where possible improve.	management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve.	Investigate mitigation measures and improve management measures to reduce risk, where possible.	measures to reduce risk.	mitigation measures or implement alternatives.
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This description is qualitative and an indication of the nature or magnitude environmental significance. It guides the prioritisations and decision-making process associated with this event, aspect or impact.

4.6.3 Description of environmental significance and related action required

Based on the above, the significance rating scale has been determined as follows:

High	Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.
Medium-high	Impacts of a substantial order. In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.
Medium	Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and/or remedial activity would be both feasible and fairly easily possible. In case of positive impacts, other means of achieving these benefits would be about equal in time, cost, and effort.
Low-medium	Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.
Low impact would be negligible	In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap, and simple. In the case of positive impacts, alternative means would almost all likely be better, in one or several ways, than this means of achieving the benefit.
Insignificant	There would be a no impact at all – not even a very low impact on the system or any of its parts.

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

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

The proposed mine will be established on a natural area which is being utilize for illegal dumping area with minimal vegetation cover. The adjacent land is being utilised for agricultural purposes and mining. Upon closure of the mining area, the land will, once again, be useful for agricultural purposes.

Due to the distance from residential area to the mine, low-medium significantly negative impacts on the community could be identified. The dust and noise impacts that may emanate from the mining area during the operational phase could have a negative impact on the surrounding farmsteads if the mitigation measures proposed in this document are not implemented and managed on-site. The operation of the mine will, however, also have several positive impacts, such as permanent job creation for skilled, semi-skilled and un-skilled workers. The proposed mine will, therefore, contribute to upgrading/ maintaining infrastructure in and around Sundra area, which will indirectly contribute to the economy of the area.

4.8 The possible mitigation measures that could be applied and the level of risk

Regarding the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/discussion of the mitigation or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered.

4.8.1 Visual mitigation

The risk of the proposed mining activities having a negative impact on the aesthetic quality of the surrounding environment can be reduced to medium risk through the implementation of the following mitigation measures:

- The site must be always kept neat and in good condition.
- Upon closure, the site must be rehabilitated and sloped to ensure that the visual impact on the aesthetic value of the area is minimal.

4.8.2 Dust handling

The risk of dust generated from the proposed mining activities having a negative impact on the surrounding environment can be reduced to low medium through the implementation of the following mitigation measures:

- Dust liberation into the surrounding environment must be effectively controlled

using *inter alia*, water spraying and/or other dust-allaying agents.

- The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- Access road speeds must be limited to 40km/h to prevent excessive dust generation.
- Roads must be sprayed with water or an environmentally friendly dust allaying agent, that contains no Polychlorinated Biphenyl (PCBs) (e.g., DAS products), if dust is generated above acceptable limits.
- The in-pit crusher plant must have operational water sprayers to alleviate dust generation from the conveyor belts.

4.8.3 Noise handling

The risk of noise, generated from the proposed mining activities, having a negative impact on the surrounding environment can be reduced to low medium through the implementation of the following mitigation measures:

- The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.
- No loud music may be permitted at the mining area.
- All mining vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act.
- The type, duration and timing of the blasting procedures must be planned with due cognisance of other land users and structures in the vicinity.
- Surrounding landowners must be notified, in writing, prior to blasting occasions.

4.8.4 Management of weed or invader plants

The risk of weeds or invader plants invading the disturbed area can be reduced to low through the implementation of the following mitigation measures:

- A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).
- Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
 - The plants can be uprooted, felled, or cut off and destroyed completely.
 - The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide.
- The temporary topsoil stockpiles must be kept free of weeds.

4.8.5 Storm water handling

The risk of contamination through dirty storm water escaping from work areas, or erosion or loss of material caused by uncontrolled storm water flowing through the mining area, can be reduced to low by implementing the following mitigation measures:

- Storm water must be diverted around the topsoil heaps, stockpile areas and access roads to prevent erosion and loss of material.
- Runoff water must also be diverted around the stockpile areas with trenches and contour structures to prevent erosion of the work areas.
- Mining must be conducted in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions the DWS may impose:
 - Clean water (e.g., rainwater) must be kept clean and routed to a natural watercourse by a system separate from the dirty water system. Clean water must be prevented from running or spilling into dirty water systems.
 - Dirty water must be collected and contained in a system separate from the clean water system.
 - Dirty water must be prevented from spilling/seeping into clean water systems.
 - The storm water management plan must apply for the entire life cycle of the mine and over different hydrological cycles (rainfall patterns).
 - The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into the storm water management plan.

4.8.6 Management of health and safety risks

The health and safety risk posed by the proposed mining activities can be reduced to low through the implementation of the following mitigation measures:

- The type, duration and timing of the blasting procedures must be planned with due cognisance of other land users and structures in the vicinity,
- The surrounding landowners and communities must be informed, in writing, ahead of any blasting event.
- Measures to limit fly rock must be taken.
- Audible warning of a pending blast must be given at least 3 minutes before the blast.
- All fly rock (with diameters of 150 mm and larger) which falls beyond the working area, together with the rock spill, must be collected and removed,
- Workers must have access to the correct PPE, as required by law.
- All operations must comply with the Occupational Health and Safety Act (OHSA).

4.8.7 Waste management

The risk of waste generation having a negative impact on the surrounding environment can be reduced to low through by implementing the following mitigation measures:

- No processing area or waste pile may be established within 100 m of the edge of any river channel or other water bodies.
- Regular vehicle maintenance may only take place within the service bay area of the off-site workshop. If emergency repairs are needed on equipment unable to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200 L closed container/bin to be removed from the emergency service area to the workshop to ensure proper disposal.
- Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility.
- Spills must be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage and the polluted soil and disposing of it at a recognised facility. Proof hereof should be filed.
- Suitable covered receptacles should be available always and conveniently placed for waste disposal.
- Non-biodegradable refuse, such as glass bottles, plastic bags, metal scrap, etc., should be stored in a container with a closable lid at a collecting point, collected on a regular basis and disposed of at a recognised landfill site. Specific precautions should be taken to prevent refuse from being dumped on or near the mine area.
- Biodegradable refuse generated should be handled as indicated above.

4.8.8 Management of access roads

The risk on the condition of the roads, because of the proposed mining activities, can be reduced to low medium by implementing the following mitigation measures:

- Storm water must be diverted around the access roads to prevent erosion.
- Erosion of access road: Vehicular movement must be restricted to existing access routes to prevent criss-crossing of tracks through undisturbed areas. Rutting and erosion of the access road because of the mining activities should be repaired by the applicant.

4.8.9 Topsoil handling

The risk of topsoil loss can be reduced to low by implementing the following mitigation measures:

- Where applicable, the first 300 mm of topsoil should be removed in strips and

stored along the boundary of the mining area. Stockpiling of topsoil must be done to protect it from erosion, which includes mixing it with overburden or other material. The topsoil must be used to cover the rehabilitated area and improve the establishment of natural vegetation.

- The temporary topsoil stockpiles of each removed strip must be kept weed free.
- Topsoil stockpiles must be placed on a levelled area and measures should be implemented to safeguard the piles from being washed away in the event of heavy rain/storm water.
- Topsoil heaps should not exceed 1.5 m, to preserve micro-organisms in the topsoil, which can be lost due to compaction and lack of oxygen.
- Should natural vegetation not establish on the heaps within 6 months of stockpiling, it must be planted with an indigenous grass species.
- Storm and runoff water should be diverted around the stockpile area and access roads to prevent erosion.

4.8.10 Protection of fauna and flora

The risk on the fauna and flora of the footprint area, as well as the surrounding environment, because of the proposed mining activities, can be reduced to low by implementing the following mitigation measures:

- The site manager must ensure that no fauna is caught, killed, harmed, sold, or played with.
- Workers must be instructed to report any animals that may be trapped in the working area.
- No snares may be set, or nests raided for eggs or young.
- No plants or trees may be removed without the approval of the Environmental Control Officer (ECO).

4.9 Motivation where no alternative sites were considered.

Kgothatso Transport identified the growing need for, coal resources due to an increase in power demand, bombs creations, recreational field making and brick and concrete making. In this light, the applicant identified the proposed area as the preferred and only viable site alternative because of its immediate availability backed by data reviewed in the PWP, which has proven that the resources are available in the area. The establishment of a pit in this un-utilised area was found to be most viable.

Various project alternatives were considered during the planning phase of the project and the preferred alternatives proved to be:

- The open cast mining of the coal has been identified as the most effective method to produce the desired coal product.

- The use of temporary infrastructure will reduce the impact on the environment and decrease closure objectives regarding infrastructure decommissioning.
- It is recommended that the existing farm road connected to the provincial road (R25) immediately to the property be used as an access road.

4.10 Statement motivating the alternative development location within overall site

Provide a statement motivating the final site layout that is proposed.

The open cast mining of the coal has been identified as the most cost-effective method to produce the desired coal product. It is proposed that all mining-related infrastructure will be contained within the boundaries of the mining area. As no permanent infrastructure will be established on site, the layout/position of the temporary infrastructure will be determined by the mining progress and available space in the 5ha mining area.

4.11 Process undertaken to identify, assess and rank impacts and risk of site activities

Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity, including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.

During the impact assessment process, several potential impacts were identified of each main activity in each phase (4.12). An initial significance rating was determined for each potential impact, should the mitigation measures proposed in this document not be implemented on-site. The impact assessment process continued to identify mitigation measures to address the impact that the proposed mining activity may have on the surrounding environment. A significance rating was again determined for each impact using a relevant methodology. The impact ratings listed in the following section was determined for each impact after bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

4.11.1 Stripping and stockpiling of topsoil

Visual intrusion associated with the establishment of the mining area.

Rating: Medium

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	5	5	5	13

Dust nuisance caused by the disturbance of the soil

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
1	1	1	1	3	2	2.5	2.5

Noise nuisance caused by machinery stripping and stockpiling the topsoil

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
1	1	2	1.3	3	2	2.5	3.3

Infestation of the topsoil heaps by weeds or invader plants

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	1	1	1.6	3	2	2.5	4

Loss of topsoil due to incorrect storm water management

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	1	1	1.6	3	2	2.5	4

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	1	1	3	2	1	1.5	4.5

4.11.2 Blasting

Health and safety risk posed by blasting activities

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		

4	1	1	3	2	1	1.5	4.5
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Dust nuisance caused by blasting activities

Rating: Low – Medium

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	1	2	1.6	5	2	3.5	5.6

Noise nuisance caused by blasting activities

Rating: Low – Medium

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	1	2	1.6	5	2	3.5	5.6

4.11.3 Excavation

Visual intrusion associated with the excavation activities

Rating: Medium

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
2	4	2	2.6	5	5	5	13

Dust nuisance due to excavation activities

Rating: Low

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
1	1	1	1	3	3	3	3

Noise nuisance generated by excavation equipment

Rating: Low – Medium

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
1	4	1	2	3	3	3	6

Unsafe working conditions for employees

Rating: Low

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
4	1	1	2	2	1	1.5	3

Negative impact on the fauna and flora of the area

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	1	1.3	1	1	1	1.3

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	1	1	2	3	1	2	4

Weed and invader plant infestation of the area

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	1	1	1.6	2	2	2	3.2

4.11.4 Crushing

Dust nuisance due to the crushing activities

Rating: Low – Medium

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	3	1	2	2	3	2.5	5

Noise nuisance generated by the crushing activities

Rating: Low – Medium

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	1	2.3	2	3	2.5	5.8

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	1	1	2	2	2	2	4

4.11.5 Stockpiling and transporting

Visual intrusion associated with the stockpiled material and vehicles transporting the material.

Rating: Low – Medium

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.6	2	3	2.5	6.5

Loss of material due to ineffective storm water handling.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	1	1.3	2	1	1.5	2

Weed and invader plant infestation of the area due to the disturbance of the soil.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	1	1.3	4	2	3	3.9

Dust nuisance from stockpiled material and vehicles transporting the material.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
1	1	1	1	2	3	2.5	2.5

Degradation of access roads.

Rating: Low – Medium

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	1	2	2	3	3	3	6

Noise nuisance caused by vehicles.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
1	1	2	1.3	2	3	2.5	3.3

Contamination of area with hydrocarbons or hazardous waste materials.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	1	1	2	2	2	2	4

4.11.6 Sloping and landscaping during rehabilitation

Soil erosion

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	1	1	2	2	1	1.5	3

Health and safety risk posed by un-sloped areas.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	1	1	2	2	1	1.5	3

Dust nuisance caused during sloping and landscaping activities.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
1	1	1	1	2	1	1.5	1.5

Noise nuisance caused by machinery.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	2	1.6	2	1	1.5	2.4

Contamination of area with hydrocarbons or hazardous waste materials.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	1	1	2	2	1	1.5	3

4.11.7 Replacing of topsoil and rehabilitation of disturbed area

Loss of reinstated topsoil due to the absence of vegetation.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	1	1	1.6	3	2	2.5	4

Infestation of the area by weed and invader plants.

Rating: Low

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	1	1	1.6	2	2	2	3.2

4.12 Assessment of each identified potentially significant impact and risk

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

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
E.g., for prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office and access route. E.g., for mining - excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams, boreholes, accommodation, offices, ablution, stores workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	Including the potential impacts for cumulative impacts, e.g., dust, noise, drainage, surface disturbance, fly rock and surface water contamination, groundwater contamination, and air pollution.		In which impact is anticipated, e.g., construction, commissioning, operational decommissioning, closure, post-closure.	if not mitigated	Modify, remedy, control, or stop through, e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, and alternative activity. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.	if mitigated
Stripping and stockpiling of topsoil	Visual intrusion associated with the establishment of the mining area	The visual impact may affect the residents of the immediate area. (Farmsteads)	Site establishment /construction phase	Medium – High	Control: Implementation of proper housekeeping	Medium
	Dust nuisance caused by the disturbance of soil	Dust will be contained within the property boundaries		Medium	Control: Dust suppression	Low
	Noise nuisance caused by machinery stripping and stockpiling the topsoil	The noise impact should be contained within the boundaries of the property but might have a periodic impact on the closest residents on the farmsteads and Sundra community.		Medium	Control: Noise control measures	Low
	Infestation of the	Biodiversity		Low-medium	Control and remedy:	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	topsoil heaps by weeds and invader plants				Implementation of weed control	
	Loss of topsoil due to incorrect storm water management	Loss of topsoil will affect the rehabilitation of the mining area.		Medium	Control: Storm water management	Low
	Contamination of area with hydrocarbons or hazardous waste materials	Contamination may cause surface or ground water contamination if not addressed		Medium-high	Control and remedy: Implementation of waste management	Low
Blasting	Health and safety risk posed by blasting activities	Impact might affect the employees working on site	Operational phase	Medium	Control: Health and safety monitoring and management	Low
	Dust nuisance caused by blasting activities	Depends on the blast, the impact might affect the surrounding community. Blasting will occur twice a year.		Low-medium	Control: Dust suppression	Low-medium
	Noise nuisance caused by blasting activities	Dependent on the blast, the impact might affect the surrounding community. Blasting will occur twice a year.		Low-medium	Control: Noise control measures	Low
Excavation	Visual intrusion associated with the excavation activities	The visual impact may affect the residents of the immediate area.	Operational phase	Medium-high	Control: Implementation of proper housekeeping	Medium
	Dust nuisance due to excavation activities	Dust will be contained within the property boundaries and will therefore affect only the landowner.		Medium	Control: Dust suppression	Low
	Noise nuisance	The noise impact should		Medium-high	Control: Noise control	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	generated by excavation equipment	be contained within the boundaries of the property but might have a periodic impact on the closest residents at the farmsteads and Sundra community.			measures	
	Unsafe working conditions for employees	Impact might affect employees.		Low	Control: Health and safety monitoring and management	Low
	Negative impact on the fauna and flora of the area	Biodiversity		Medium	Control: Protection of fauna and flora through operational phase	Low
	Contamination of area with hydrocarbons or hazardous waste materials	Contamination may cause surface or ground water contamination if not addressed.		Medium	Control: Implementation of waste management	Low
	Weed and invader plant infestation	Biodiversity		Low-medium	Control: Implementation of weed control	Low
Crushing	Dust nuisance due to the crushing activities	Dust will be contained in property boundaries and therefore affect only the landowner.	Operational phase	Medium	Control: Dust suppression	Low-medium
	Noise nuisance generated by the crushing activities	The noise impact should be contained within the boundaries of the property but might have a periodic impact at the farmsteads and also Sundra community.		Medium	Control: Noise control measures	Low-medium
	Contamination of area with hydrocarbons or hazardous waste	Contamination may cause surface or ground water contamination if not addressed		Medium	Control: Implementation of waste management	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	materials					
Stockpiling and transporting	Visual intrusion associated with the stockpiled material and vehicles transporting the material	The visual impact may affect the residents of the immediate area.	Operational phase	Medium	Control: Implementation of proper housekeeping	Low-medium
	Loss of material due to ineffective storm water handling	Impact will affect income of applicant.		Low-medium	Control: Storm water control measures	Low
	Weed and invader plant infestation of the area due to soil disturbance	Biodiversity		Low-medium	Control and remedy: Implementation of weed control	Low
	Dust nuisance from stockpiled material and vehicles transporting the material	Dust will be contained within the property boundaries		Medium	Control: Dust suppression	Low
	Degradation of access roads	All road users will be affected.		Medium	Control and remedy: Road management	Low-medium
	Noise nuisance caused by vehicles	The noise impact should be contained within the boundaries of the property but might have a periodic impact on the farmsteads and also Sundra community.		Medium	Control: Noise management monitoring and management	Low
	Contamination of area with hydrocarbons or hazardous waste	Contamination may cause surface or ground water contamination if not addressed		Medium	Control: Implementation of waste management	Low
Sloping and landscaping during rehabilitation	Soil erosion	Biodiversity	Decommissioning phase	Low-medium	Control: Soil management	Low
	Health and safety	Impact will affect the		Medium-high	Control: Health and safety	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	risk posed by un-sloped areas	employees and residents of the property			monitoring and management	
	Dust nuisance caused during sloping and landscaping	Dust will be contained within the property boundaries		Low-medium	Control: Dust suppression	Low
	Noise nuisance caused by machinery	The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the farmsteads and also Sundra community.		Low-medium	Control: Noise monitoring	Low
	Contamination of area with hydrocarbons or hazardous waste	Contamination may cause surface/ground water contamination if not addressed		Low-medium	Control: Waste management	Low
Replacing of topsoil and rehabilitation of disturbed area	Loss of reinstated topsoil due to the absence of vegetation	Biodiversity and soil management	Decommissioning phase	Low-medium	Control: Soil management	Low
	Infestation of the area by weed and invader plants	Biodiversity and soil management		Low-medium	Control and remedy: Implementation of weed control	Low

The supporting impact assessment conducted by the EAP must be attached as an appendix.

4.13 Summary of specialist reports

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

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report Mark with an X where applicable	Reference to applicable report section Where specialist recommendations have been included
Hydrogeological study	<ul style="list-style-type: none"> ➤ The designing of the infrastructures will take into consideration the slope types identified around the mining permit to effectively manage water. ➤ The area falls on weathered aquifer, wastewater will be properly diverted from seepage, as the aquifer is weathered, and contamination is highly likely. ➤ Proper stormwater management is recommended to prevent the risk of water resources contamination. <ul style="list-style-type: none"> • The study area falls on a fractured aquifer system, the mine planning will take into consideration the fracture zones in the Vryheid formation, drilling activities will not contact the fractures as that is where most groundwater in the area is found and to prevent possible groundwater pollution from residual explosive material used. • The numerical model will be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty. 	X	Section 6.1.6 of this report

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report Mark with an X where applicable	Reference to applicable report section Where specialist recommendations have been included
	<ul style="list-style-type: none"> • There will be regular testing or monitoring of surrounding soil, water resources to detect any change in chemistry so that remedial measures are implemented in time. • The monitoring process throughout the existence of the project, the chemical and physical parameters of the water samples will be tested and compared with the SANS241: 2015 • There will be soil, water resources and land pollution mitigation measures on site. • Wastewater source will be identified, and mitigation measures put in place to prevent groundwater contamination. • The stockpile, there will be regular monitoring of any heavy metal which could be exposed, which could result in leaching during rainfall. • Proper and competent structure of the tailings dam will be built, to contain liquid, or solid waste and to prevent such waste from entering the outside environment. • it is recommended that to protect the wetlands onsite, there will be fencing to prevent encroachment of activities which will harm the waterbodies. • It is recommended that compliance of relevant legislations be ensured, NEMA Act 107 of 1998, NWA Act 36 of 1998, NEM: waste Management Act 58 of 2008. • Regular dust monitoring will take place weekly, to detect any change in dust being produced, so that mitigation measures are implemented early. 		

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report Mark with an X where applicable	Reference to applicable report section Where specialist recommendations have been included
	<ul style="list-style-type: none"> • It is recommended that during the existence of the project there will also be regular maintenance of the mobile ablutions, to avoid leakage of waste into the ground. • There will be boreholes in and around the permit area, to monitor the groundwater quality and quantity. • Prior to the mining operations, Kgothatso Transport will conduct tests on the soil and groundwater, to trace the residues of any chemicals used during the cultivation process, and to implement measures to lower those effects. 		
Hydrological study	<ul style="list-style-type: none"> • Monitoring of the surface water quality shall be carried out regularly during the project's construction and operating phases. • An independent ECO is to be appointed during construction. The mine's internal Environmental officers will be conversant with best practices in accordance with rehabilitation during decommissioning and an audit is to be performed before and after rehabilitation. • A GN 704 audit is to be conducted bi-annually to assist with compliance to the separation of clean and dirty water infrastructure. • Where mining infrastructure, such as haul roads, are required across natural watercourses, new storm water infrastructure, such as pipes and culverts could replace the hydraulic function currently offered by the natural water courses. This 	X	Section 6.1.6 of this report

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report Mark with an X where applicable	Reference to applicable report section Where specialist recommendations have been included
	<p>infrastructure should be designed for both hydraulic performance and environmental functionality.</p> <ul style="list-style-type: none"> • Around operating areas, temporary erosion control measures (e.g., sediment nets, berms, etc.) must be used. • At all times, sufficient freeboard in PCDs and other dirty water dams must be guaranteed. Dams must be managed in strict compliance with GN704 standards. • No dirty water should be released into the ecosystem. Excess water in the mine water circuit must be dealt with properly in accordance with the DWS 		
Soil Study	<ul style="list-style-type: none"> • The proposed mining land should be returned to its origin as before mining activities and the rehabilitation performance assessment in the proposed land must be done progressively (annually) during the operational phase by a soil specialist. • Final surface rehabilitation of all disturbed areas during mining activities. Rehabilitation of unnecessary water management facilities once appropriate to do so. • Specialists should be used to evaluate the erosion and other possible impacts during the entire mining process. • Limit impacts to the footprints to keep physical impacts as small as possible. Areas for road, site lay-out should be minimized, dust generation. 	X	Section 6.1.6 of this report

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations included in the EIA report Mark with an X where applicable	Reference to applicable report section Where specialist recommendations have been included

4.14 Environmental impact statement

4.14.1 Summary of the key findings of the EIA

The key findings of the EIA are as follows:

- The project entails the mining of coal, with minimal vegetation cover. Which is merely utilised as illegal dumping space. Therefore, very little natural vegetation must be disturbed by mining activities.
- The existing roads to the proposed mining space will be used to gain access to the site. No new roads are needed.
- The applicant's off-site workshop will be used for servicing vehicles, thereby reducing the risk of hazardous spills and contamination at the mining site.
- Due to the remote setting of the pit, most potential impacts can be contained within the boundaries, if mitigation measures proposed in this document is implemented on-site.
- The mining operation will have a temporary visual impact on the surrounding environment. Upon closure of the proposed mining area the visual impact on the proposed mining area will be mitigated and addressed.
- The proposed project is not expected to have an impact on the river as no river is seen passing near the permit area within a 500m/ 1km radius. However, Proper storm water and waste management must be implemented on the site to minimise the potential of pollution.

4.14.2 Final site map

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

The map indicating site activities is attached as Figure 3.

4.14.3 Positive and negative impacts of the proposed activity and alternatives

The positive impacts associated with the project include:

- Job creation, although a fixed number of jobs to be created which can be estimated to amount of 10-20, will include multiple job opportunities for skilled, semi-skilled and unskilled personnel will be created by this project. This will contribute to the socio-economic status of the Delmas area.
- The coal to be mined will be supplied to Eskom, hence it will enhance Eskom's coal resources security to generate electricity without re-occurrence of load shedding.

The negative impacts associated with the project and that was of Low-Medium or Medium significance includes:

Visual intrusion associated with the establishment of the mining area	Medium
Visual intrusion associated with the excavation activities	Medium
Visual intrusion associated with the stockpiled material and vehicles transporting the material	Low-medium
Dust nuisance caused by blasting activities	Low-medium
Dust nuisance due to the crushing activities	Low-medium
Noise nuisance generated by excavation equipment	Low-medium
Noise nuisance generated by the crushing activities	Low-medium
Degradation of access roads	Low-medium

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

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

Management objectives	Role	Management outcomes
Dust handling	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer.	<ul style="list-style-type: none"> • Control dust liberation into the surrounding environment by using water spraying and/or other dust allaying agents. • Limit speed on the access roads to 40km/h to prevent the generation of excess dust. • Spray roads with water or an environmentally friendly dust-allaying agent that contains no PCB's (e.g., DAS products) if dust is generated above acceptable limits. • Assess effectiveness of dust suppression equipment. • Ensure the crusher plant has operational water sprayer to alleviate dust generation from the conveyor belts.
Noise handling	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer.	<ul style="list-style-type: none"> • Ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the mining area. • Ensure that all mining vehicles are equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act. • Plan the type, duration, and timing of the blasting procedures with due cognizance of other land users and structures in the vicinity. • Notify surrounding landowners in writing prior to blasting.
Management of weed/ invader plants	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer.	<ul style="list-style-type: none"> • Implement a weed and invader plant control management plan. • Control declared invader or exotic species on the rehabilitated areas. • Keep the temporary topsoil stockpiles free of weeds.
Surface and storm water handling	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the	<ul style="list-style-type: none"> • Divert storm water around topsoil heaps, stockpile areas and access roads to prevent erosion and material loss. • Divert runoff water around stockpile areas with trenches and contour structures to prevent erosion of work areas.

Management objectives	Role	Management outcomes
	Environmental Control Officer.	<ul style="list-style-type: none"> • Conduct mining in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose.
Management of health and safety risks	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer. Blasting contractor to comply with national blasting requirements.	<ul style="list-style-type: none"> • Plan the type, duration and timing of the blasting procedures with due cognizance of other land users and structures in the vicinity. • Inform the surrounding landowners and communities of any blasting event. • Use noise mufflers and/or soft explosives during blasting, limit fly rock. • Give audible warning of a pending blast at least 3 minutes in advance of the blast. • Remove all fly rock (of diameter 150 mm and larger) which falls beyond the working area, with the rock spill. • Ensure that workers have access to the correct PPE as required by law. • Ensure all operations comply with the Occupational Health and Safety Act.
Waste management	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer.	<ul style="list-style-type: none"> • Ensure no waste pile is established within 100 m of the edge of any river channel or other water bodies. • Ensure regular vehicle maintenance take place within the service bay area of the off-site workshop. If emergency repairs are needed on site, ensure drip trays is present. Ensure all waste products are disposed of in a 200L closed container/bin inside the emergency service area. • Collect effluents containing oil, grease or other industrial substances in a suitable receptacle and remove from site, for resale or appropriate disposal at a recognized facility. • Clean spills immediately to the satisfaction of the Regional Manager by removing the spillage and polluted soil and disposing thereof at a recognized facility. File proof. • Ensure availability of suitable covered, conveniently placed receptacles always for waste disposal. • Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Collection should take place on a regular basis and disposed of at the recognized landfill site at Witbank. Prevent refuse from being dumped on or in the vicinity of the mine area. • Biodegradable refuse to be handled as indicated above.
Management of access roads	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer.	<ul style="list-style-type: none"> • Divert storm water around access roads to prevent erosion. • Erosion of access road: Restrict vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas.
Topsoil	Site Manager to ensure	<ul style="list-style-type: none"> • Remove the first 300mm of topsoil in strips and store at

Management objectives	Role	Management outcomes
handling	compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer.	<p>stockpile area.</p> <ul style="list-style-type: none"> • Keep the temporary topsoil stockpiles free of weeds. • Place topsoil stockpiles on a levelled area and implement measures to safeguard the piles from being washed away in the event of heavy rains/storm water. • Topsoil heaps should not exceed 1.5 m to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • Seed the stockpiled topsoil heaps if vegetation does not re-establish within 6 months of stockpiling. • Divert storm- and runoff water around the stockpile area and access roads to prevent erosion.
Fauna and flora	Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer.	<ul style="list-style-type: none"> • Ensure no fauna is caught, killed, harmed, sold or played with. • Instruct workers to report any animals that may be trapped in the working area. Ensure no snares are set or nests raided for eggs or young. • Do not remove plants/trees without ECO approval.

4.16 Aspects for inclusion as conditions of authorisation

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

The management objectives listed in this report (5.4) should be considered for inclusion in the environmental authorisation.

4.17 Description of any assumptions, uncertainties, and gaps in knowledge

Which relate to the assessment and mitigation measures proposed.

The assumptions made in this document, which relate to the assessment and mitigation measures proposed, stem from site-specific information gathered from the property owner, as well as site inspections and background information gathering.

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

No fatal flaws could be identified that were deemed severe enough to prevent the activity from continuing, should the mitigation measures and monitoring programmes proposed in this document be implemented on site. The management objectives listed in this report should be considered for inclusion in the Environmental Authorisation.

4.19 Period for which the Environmental Authorisation is required

The applicant requests the Environmental Authorisation to be valid for a three-year period.

4.20 Undertaking

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

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

4.21 Financial provision

State the amount required to manage and rehabilitate the environment.

A financial provision of R 1 019 043 is proposed for the mining application.

4.21.1 Explain how the aforesaid amount was derived

The amount was derived from the quantum calculations.

4.21.2 Confirm that this amount can be provided from operating expenditure

Confirm that the amount is anticipated to be an operating cost and is provided for as such in the Mining Work Programme, Financial and Technical Competence Report or PWP.

Applicant		KGOATHATSO TRANSPORT PTY LTD		CALCULATION OF THE QUANTUM				
Evaluator: Valentine Mhlanga				DMRE Ref No.: MP 30/5/1/3/2/13242 MP Date: August-2022				
No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0	
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0	
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0	
3	Rehabilitation of access roads	m2	0	49	1	1	0	
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0	
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0	
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0	
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	0.07	1	0	
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0	
8 (A)	Rehabilitation of overburden and spoils	ha	0.32	189528	1	1	60648.96	
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0	
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0.09	685612	1	1	61705.08	
9	Rehabilitation of subsided areas	ha		158701	1	1	0	
10	General surface rehabilitation	ha	5	150138	0.8	1	600552	
11	River diversions	ha	0	150138	1	1	0	
12	Fencing	m	0	171	1	1	0	
13	Water management	ha	0.06	57087	1	1	3425.22	
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0	
15 (A)	Specialist study	Sum	0			1	0	
15 (B)	Specialist study	Sum				1	0	
						Sub Total 1	726331.26	
1	Preliminary and General		87159.7512	weighting factor 2 1			87159.7512	
2	Contingencies			72633.126			72633.126	
						Subtotal 2	886124.14	
Sign	Valentine Mhlanga						VAT (15%)	132918.62
Date	12/8/2022						Grand Total	1019043

The amount of **R1 019 043-00** for financial provision was calculated for the mining application. Financial provision will be made in the form of a bank guarantee upon the successful granting of the mining permit.

4.22 Specific information required by the Competent Authority

Compliance with the provisions of sections 24(4) (a) and (b) read with section 24 (3)(a) and (7) of the NEMA (107 of 1998). The EIA report must include the:

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

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

The project entails the mining of Coal within a natural land, with minimal vegetation cover. Which is merely utilised as illegal dumping space. Therefore, very little natural vegetation must be disturbed by mining activities. The existing roads to the proposed mining space will be used to gain access to the site. No new roads are needed.

The applicant's off-site workshop will be used for servicing vehicles, thereby reducing the risk of hazardous spills and contamination at the mining site. Due to the remote setting of the pit, most potential impacts can be contained within the boundaries, if mitigation measures proposed in this document is implemented on-site.

The mining operation will have a temporary visual impact on the surrounding environment. Upon closure of the proposed mining area the visual impact on the proposed mining area will be mitigated and addressed. The proposed project is not expected to have an impact on the river as no river is seen passing near the permit area within a 500m/ 1km radius. However, Proper storm water and waste management must be implemented on the site to minimise the potential of pollution.

The operation of the mine will have several positive impacts, such as job creation for skilled, semi-skilled and unskilled permanent workers. The proposed mine will therefore contribute locally by aiding in the development of the area and boosting the local economy through increased municipal revenue. On a national scale, this will aid by boosting the slowly growing SA economy.

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

Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) except

for the national estate contemplated in section 3(2)(i)(vi) and (vii) of the Act, attach the investigation report and confirm that the applicable mitigation is reflected herein.

The 5ha space has no national heritage features, however in the vicinity of the farm, graves were identified and resemblance of old house structures. It is therefore recommended that a full heritage study is conducted to ensure that no archaeological features are negatively impacted.

4.23 Other matters required in terms of section 24(4)(a) and (b) of the Act

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

The site and project alternatives investigated during the impact assessment process were done at the hand of information obtained during the site investigation, public participation process and desktop studies conducted of the study area. As discussed earlier, the following alternatives were considered:

- Establishment of a mine 1 km away from the residence or any form of development vs. establishment of Coal pit in an illegal dumping space, partially virgin/natural area (preferred alternative)
- Open cast mining (preferred alternative) vs. underground mining
- Temporary Infrastructure (preferred alternative) vs. permanent Infrastructure
- Access onto provincial road (preferred alternative) vs. access onto national road
- No-go alternative

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

5 Environmental management programme

5.1 Details of the EAP

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

Details of the EAP are included in Part A of this report.

5.2 Description of the aspects of the activity

Confirm that the requirements to describe the aspects of the activity that are covered by the draft environmental management programme is already included in Part A, 3.1, herein, as required.

The aspects of the activity that are covered by the environmental management programme has been described and included in Part A, 3.1.

5.3 Composite map

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

As mentioned in Part A, 2.1 this map has been compiled and is attached as Figure 3.

5.4 Description of impact management objectives, including management statements

5.4.1 Determination of closure objectives

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

The decommissioning phase will entail the rehabilitation of the mining site. Once mining activities cease, the area will be fully rehabilitated. The perimeter walls of the open cast pit will either be sloped at 1:3 to the pit floor to prevent soil erosion or stepped by creating benches of not more than 3 m high. The applicant will comply with the minimum closure objectives as prescribed by DMRE and detailed below.

Rehabilitation of the excavated area:

- Rocks and coarse material removed from the excavation must be dumped into the excavation.

- No waste will be permitted to be deposited in the excavations.
- Once overburden, rocks and coarse natural materials have been added to the excavation and profiled with acceptable contours and erosion control measures, the topsoil previously stored will be returned to its original depth over the area.
- The area will be fertilised if necessary to allow vegetation to establish rapidly. The site will be seeded with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from site closure.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area seeded with a vegetation seed mix to their specification.

Rehabilitation of plant area:

- The compacted areas will be ripped, and the topsoil returned over the area.
- Coarse natural material used for the construction of ramps will be removed and dumped into the excavations.
- Stockpiles will be removed during the decommissioning phase, the area ripped, and the topsoil returned to its original depth to provide a growth medium.
- On completion of operations, all structures or objects will be dealt with in accordance with Section 44 of the MPRDA, 2002 (Act 28 of 2002):
 - Where sites have been rendered devoid of vegetation/grass or soils have been compacted by traffic, the surface will be scarified or ripped.
 - The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora if natural vegetation does not re-establish within 6 months of the closure of the site.
- Photographs of the mining area and office sites, before and during the mining operation and after rehabilitation, will be taken at selected fixed points and kept on record for the information of the Regional Manager.
- On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, will be scarified to a depth of at least 300 mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.
- Prior to replacing the topsoil, the overburden material that was removed from these areas will be replaced in the same order as it originally occurred.
- The area will then be fertilised if necessary to allow vegetation to establish rapidly. The site will be seeded with a local, adapted indigenous seed mix if natural

vegetation does not re-establish within 6 months after closure of the site.

- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area seeded with a seed mix to their specification.

Final rehabilitation:

- Rehabilitation of the surface area will entail landscaping, levelling, top dressing, land preparation, seeding (if required), maintenance and weed/alien clearing.
- All infrastructure, equipment, plant, temporary housing, and other items used during the mining period will be removed from the site (section 44 of the MPRDA).
- Waste material of any description, including receptacles, scrap, rubble, and tyres, will be removed entirely from the mining area, and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on the site.
- Weed/alien clearing will be done sporadically during the life of the mining activities.
- Species regarded as Category 1 weeds according to CARA (Conservation of Agricultural Recourses Act, 1983 – Act 43; Regulations 15 & 16 (as amended in March 2001) need to be eradicated from the site.
- Final rehabilitation will be completed within a period specified by the Regional Manager.

5.5 Volume and rate of water use required for the operation

Water will only be used for dust suppression purposes as the mining method does not require any washing or related process water. Water sprayers will be fixed to the crusher plant and a water truck will be used to spray access roads and stockpile areas to alleviate dust generation. It is proposed that the mining activities will require approximately 10 000L of water per day.

5.6 Has a water use licence has been applied for?

No mining activity will occur within identified watercourses. Application for a Water Use Licence is being considered as part of this mining application; however, it is anticipated that abstraction related water uses may be applicable. It is recommended that this be confirmed with the DWS prior to commencement of the invasive mining activities that require water and should any of the NWA Section 21 water uses become applicable, then the Applicant will need to apply for the relevant water uses from the Department of Water and Sanitation prior to undertaking such activities. As a result, DWS has been consulted.

The proposed mining activities falls within the ambit of section 21 water uses in terms of the National Water Act, 1998 (Act No. 36 of 1998).

The following water use activities will take place on site:

- Section 21 (c) and (i): Mining permit located within 500 m from wetlands
- Section 21 (g): Proposed dust suppression, having the overburden and product stockpiles,
- Section 21 (j): Dewatering of water from the pit.

5.7 Impacts to be mitigated in their respective phases

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

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
E.g. for prospecting – drill site, site camp, ablution, facilities, accommodation, equipment storage, sample storage, site office, access route, etc. E.g. for mining – excavations, blasting, stockpiles, discard dumps/dams, loading, hauling and transport. Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	Of operation in which activity will take place. State: Planning and design, pre-construction, construction operational, rehabilitation, closure, post-closure	Volumes, tonnages and hectares or m ²	Describe how recommendations herein will remedy the cause of pollution or degradation	Description of how each recommendation herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities	Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to rehabilitation specifically this must take place at the earliest opportunity. With regard to rehabilitation, therefore state either: Upon cessation of the individual activity or, upon cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Stripping and stockpiling of topsoil	Site establishment/ construction phase	5 ha	<p>Visual mitigation</p> <ul style="list-style-type: none"> The site must be neat and kept in good condition at all times. Upon closure, the site must be rehabilitated and sloped to ensure that visual impact on the aesthetic value of the area is minimal. <p>Dust handling</p> <ul style="list-style-type: none"> Dust liberation into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. 	<ul style="list-style-type: none"> Dust and Noise: NEMAQA, 2004 Regulation 6(1) Weeds: CARA, 1983 Storm Water: NWA, 1998 Waste: NEM:WA, 2008 	Throughout the site establishment phase.

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<ul style="list-style-type: none"> • The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness. • Speed on the access roads must be limited to 40km/h to prevent excess dust generation. • Roads must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCBs (e.g., DAS products) if dust is generated above acceptable limits. <p>Noise handling</p> <ul style="list-style-type: none"> • The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours. • No loud music permitted at the mining area. • All mining vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act. <p>Weed and invader plant management</p> <ul style="list-style-type: none"> • A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of CORA (Act No 43 1983). • Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used: 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<ul style="list-style-type: none"> ○ The plants can be uprooted, felled, or cut off and can be destroyed completely. ○ The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide. ○ The temporary topsoil stockpiles must be kept free of weeds. <p>Storm water handling</p> <ul style="list-style-type: none"> ● Storm water must be diverted around the topsoil heaps, stockpile areas and access roads to prevent erosion and material loss. ● Runoff water must be diverted around the stockpile areas with trenches and contour structures to prevent erosion of the work areas. <p>Waste management</p> <ul style="list-style-type: none"> ● No processing area or waste pile may be established within 100 m of the edge of any river channel or other water bodies. ● Regular vehicle maintenance may only take place in the service bay area of the off-site workshop. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200L closed container/bin to be removed from the 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>emergency service area to the workshop to ensure proper disposal.</p> <ul style="list-style-type: none"> • Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, for resale or appropriate disposal at a recognized facility. • Spills must be cleaned immediately to the satisfaction of the Regional Manager by removing the spillage and the polluted soil and disposing it at a recognized facility. Proof must be filed. • Suitable covered receptacles must be always available and conveniently placed for waste disposal. • Non-biodegradable refuse, such as glass bottles, plastic bags, metal scrap, etc., must be stored in a container with a closable lid at a collecting point and collected on a regular basis and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the mine area. • Biodegradable refuse generated must be handled as indicated above. 		
Blasting	Operational phase	3.9ha	<p>Management of Health and Safety Risks</p> <ul style="list-style-type: none"> • The type, duration and timing of the blasting procedures must be planned with due cognizance of other land users and structures in the vicinity, 	<p>Health and safety</p> <ul style="list-style-type: none"> • MHSA, 1996 • OHSA, 1993 • OHSAS 18001 <p>Dust and noise</p>	Applicable with each blasting event.

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<ul style="list-style-type: none"> • The surrounding landowners and communities must be informed in writing ahead of any blasting event • Measures to limit fly rock must be taken • Audible warning of a pending blast must be given at least 3 minutes before the blast • All fly rock (of diameter 150mm and larger) which falls beyond the working area, together with the rock spill must be collected and removed, • Workers must have access to the correct PPE as required by law. • All operations must comply with the OHSA. <p>Dust handling</p> <ul style="list-style-type: none"> • Dust liberation into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. • Speed on the access roads must be limited to 40km/h to prevent the generation of excess dust. <p>Noise handling</p> <ul style="list-style-type: none"> • The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours. • No loud music permitted at the mining area. • All mining vehicles must be equipped 	NEMAQA, 2004 Regulation 6(1)	

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>with silencers and maintained in a road worthy condition in terms of the Road Transport Act.</p> <ul style="list-style-type: none"> The type, duration and timing of the blasting procedures must be planned with due cognizance of other land users and structures in the vicinity. Surrounding landowners must be notified in writing prior to blasting. 		
Excavation	Operational phase	3.9ha	<p>Visual mitigation</p> <ul style="list-style-type: none"> The site needs to have a neat appearance and be always kept in good condition. Upon closure the site needs to be rehabilitated and sloped to ensure that the visual impact on the aesthetic value of the area is kept to a minimum. <p>Dust handling</p> <ul style="list-style-type: none"> Dust liberation into the surrounding environment must be effectively controlled using, inter alia, water spraying and/or other dust-allaying agents. The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness. Speed on the access roads must be limited to 40km/h to prevent the generation of excess dust. Roads must be sprayed with water or an environmentally friendly dust- 	<p>Dust and noise NEM:AQA, 2004 Regulation 6(1)</p> <p>Health and safety MHSA, 1996 OHSA, 1993 OHSAS 18001</p> <p>Fauna and flora NEM:BA, 2004</p> <p>Waste NEMWA, 2008</p> <p>Weeds CARA, 1983</p>	Throughout the operational phase

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>allaying agent that contains no PCBs (e.g., DAS products) if dust is generated above acceptable limits.</p> <p>Noise handling</p> <ul style="list-style-type: none"> • The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours. • No loud music permitted at the mining area. • All mining vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act. <p>Management of health and safety risks</p> <ul style="list-style-type: none"> • Workers must have access to the correct PPE as required by law. • All operations must comply with the OHS Act. <p>Protection of fauna and flora</p> <ul style="list-style-type: none"> • The site manager should ensure that no fauna is caught, killed, harmed, sold or played with. • Workers should be instructed to report any animals that may be trapped in the working area. • No snares may be set, or nests raided for eggs or young. • No plants or trees may be removed without the approval of the ECO. <p>Waste management</p> <ul style="list-style-type: none"> • No processing area or waste pile may 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>be established within 100 m of the edge of any river channel or other water bodies.</p> <ul style="list-style-type: none"> • Regular vehicle maintenance may only take place within the service bay area of the off-site workshop. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200 L closed container/bin to be removed from the emergency service area to the workshop in order to ensure proper disposal. • Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from site, for resale/ appropriate disposal at a recognized facility. • Spills must be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage and polluted soil and disposing it at a recognized facility. Proof must be filed. • Suitable covered receptacles must be available at all times and conveniently placed for waste disposal. • Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., should be stored in a container with a closable lid at a collecting point 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>and collected on a regular basis and disposed of at a recognized landfill site. Specific precautions should be taken to prevent refuse from being dumped on or in the vicinity of the mine area.</p> <ul style="list-style-type: none"> • Biodegradable refuse generated must be handled as indicated above. <p>Management of weed/invader plants</p> <ul style="list-style-type: none"> • A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of CORA (Act No 43 1983). • Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used: <ul style="list-style-type: none"> ○ The plants can be uprooted, felled or cut off and can be destroyed completely. ○ The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide. ○ The temporary topsoil stockpiles need to be kept free of weeds. 		
Crushing	Operational phase	0.3ha	<p>Dust handling</p> <ul style="list-style-type: none"> • Dust liberation into the surrounding environment must be effectively controlled by using, inter alia, water 	<p>Dust and noise NEMAQA 2004 Waste NEMWA 2008</p>	Throughout the operational phase

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>spraying and/or other dust-allaying agents.</p> <ul style="list-style-type: none"> • The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness. • Speed on the access roads must be limited to 40km/h to prevent excess dust generation. • The crusher plant must have operational water sprayers to alleviate dust generation from conveyor belts. <p>Noise handling</p> <ul style="list-style-type: none"> • The applicant must ensure that staff conduct themselves in an acceptable manner while on site, during work hours and after hours. • No loud music permitted at the mining area. • All mining vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act. <p>Waste management</p> <ul style="list-style-type: none"> • No processing area or waste pile may be established within 100 m of the edge of any river channel or other water bodies. • Regular vehicle maintenance may only take place in the service bay of the off-site workshop. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>be present. All waste products must be disposed of in a 200L closed container/bin to be removed from the emergency service area to the workshop for proper disposal.</p> <ul style="list-style-type: none"> • Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from site, either for resale or appropriate disposal at a recognized facility. • Spills must be cleaned up immediately to the satisfaction of the Regional Manager by removing spillage and polluted soil and by disposing it at a recognized facility. Proof must be filed. • Suitable covered receptacles must be always available and conveniently placed for the disposal of waste. • Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., should be stored in a container with a closable lid at a collecting point and collected on a regular basis and disposed of at a recognized landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the mine area. • Biodegradable refuse generated must be handled as indicated above. 		
Stockpiling and transporting	Operational phase	0.7ha	<p>Visual mitigation</p> <ul style="list-style-type: none"> • The site must be neat and be always 	Storm water NWA, 1998	Throughout operational phase

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>kept in good condition.</p> <ul style="list-style-type: none"> • Upon closure, the site must be rehabilitated and sloped to ensure that the visual impact on the aesthetic value of the area is minimal. <p>Storm water handling</p> <ul style="list-style-type: none"> • Storm water must be diverted around the stockpile areas and access roads to prevent erosion and material loss. • Runoff water must be diverted around the stockpile areas with trenches and contour structures to prevent erosion of work areas. • Mining must be conducted in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the DWS, and any other conditions that the DWS may impose: • Clean water (e.g., rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. Prevent clean water from running or spilling into dirty water systems. • Dirty water must be collected and contained in a system separate from the clean water system. • Dirty water must be prevented from spilling/seeping into clean water 	<p>Weeds CARA, 1983</p> <p>Dust and noise NEMAQA, 2004 Regulation 6(1)</p> <p>Waste NEMWA, 2008</p>	

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>systems.</p> <ul style="list-style-type: none"> • The storm water management plan must apply for the entire life cycle of the mine and over different hydrological cycles (rainfall patterns). • The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into the storm water management plan. <p>Management of weed/invaser plants</p> <ul style="list-style-type: none"> • A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of CORA (Act No 43 1983). • Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used: <ul style="list-style-type: none"> ○ The plants can be uprooted, felled, or cut off and can be destroyed completely. ○ The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide. • The temporary stockpile area must be kept free of weeds. <p>Dust handling</p> <ul style="list-style-type: none"> • Dust liberation into the surrounding 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>environment must be effectively controlled using, inter alia, water spraying and/or other dust-allaying agents.</p> <ul style="list-style-type: none"> • The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness. • Speed on the access roads must be limited to 40km/h to prevent excess dust generation. • Roads must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCBs (e.g., DAS products) if dust is generated above acceptable limits. <p>Management of access roads</p> <ul style="list-style-type: none"> • Storm water should be diverted around the access roads to prevent erosion. • Vehicular movement must be restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas. • Rutting and erosion of the access road caused because of the mining activities must be repaired by the applicant. <p>Noise handling</p> <ul style="list-style-type: none"> • The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours. 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<ul style="list-style-type: none"> • No loud music permitted at the mining area. • All mining vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act. Waste management • No processing area or waste pile may be established within 100 m of the edge of any river channel or other water bodies. • Regular vehicle maintenance may only take place in the service bay area of the off-site workshop. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200L closed container/bin to be removed from the emergency service area to the workshop for proper disposal. • Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from site, for resale or appropriate disposal at a recognized facility. • Spills must be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage and polluted soil and disposing of it at a recognized facility. Proof must be filed. • Suitable covered receptacles must be 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>always available and conveniently placed for waste disposal.</p> <ul style="list-style-type: none"> • Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., should be stored in a container with a closable lid at a collecting point and collected on a regular basis and disposed of at a recognized landfill site. Specific precautions should be taken to prevent refuse from being dumped on or in the vicinity of the mine area. • Biodegradable refuse generated must be handled as indicated above. 		
Sloping and landscaping during rehabilitation	Decommissioning phase	5 ha	<p>Storm water handling</p> <ul style="list-style-type: none"> • Storm water must be diverted around the rehabilitated area to prevent erosion and loss of reinstated material. <p>Management of health and safety risks</p> <ul style="list-style-type: none"> • Excavations must be rehabilitated as stipulated in the closure plan to ensure the site is safe upon closure. • Workers must have access to the correct PPE as required by law. • All operations must comply with the OHSWA. <p>Dust handling</p> <ul style="list-style-type: none"> • Dust liberation into the surrounding environment must be effectively controlled using, inter alia, water spraying and/or other dust-allaying agents. • The site manager must ensure 	<p>Storm water NWA, 1998</p> <p>Health and safety MHSA, 1996 OHSWA, 1993 OHSAS 18001</p> <p>Dust and noise NEMAQA 2004, Regulation 6(1)</p> <p>Waste NEMWA 2008</p>	Upon cessation of mining

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>continuous assessment of all dust suppression equipment to confirm its effectiveness.</p> <ul style="list-style-type: none"> • Speed on the access roads must be limited to 40km/h to prevent excess dust generation. • Roads must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCBs (e.g., DAS products) if dust is generated above acceptable limits. <p>Noise handling</p> <ul style="list-style-type: none"> • The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours. • No loud music permitted at the mining area. • All mining vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act. <p>Waste management</p> <ul style="list-style-type: none"> • Waste material of any description, including receptacles, scrap, rubble, and tyres, will be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried/burned on site • Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from site, for resale/ 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>appropriate disposal at a recognized facility.</p> <ul style="list-style-type: none"> • Spills must be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and disposing of it at a recognized facility. Proof should be filed. • Suitable covered receptacles must be always available and conveniently placed for waste disposal. • Non-biodegradable refuse, like glass bottles, plastic bags, metal scrap, etc., should be stored in a container with a closable lid at a collecting point and collected on a regular basis and disposed of at a recognized landfill site. Specific precautions should be taken to prevent refuse from being dumped on or in the vicinity of the mine area. • Biodegradable refuse generated must be handled as indicated above. 		
Replacing of topsoil and rehabilitation of disturbed area	Decommissioning phase	5 ha	<p>Rehabilitation of excavated area</p> <ul style="list-style-type: none"> • Rocks and coarse material removed from the excavation must be dumped into the excavation. • No waste will be permitted to be deposited in the excavations. • Once overburden, rocks and coarse natural materials have been added to the excavation and were profiled with acceptable contours and erosion 	<p>Rehabilitation MPRDA, 2008</p> <p>Health and safety MHSA, 1996 OHSA, 1993 OHSAS 18001</p> <p>Dust and noise NEMAQA, 2004 Regulation 6(1)</p> <p>Weeds CARA, 1983</p>	Upon cessation of mining

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>control measures, the topsoil previously stored will be returned to its original depth over the area.</p> <ul style="list-style-type: none"> • The area will be fertilised if necessary to allow vegetation to establish rapidly. The site will be seeded with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from site closure. • If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area seeded with a vegetation seed mix to his or her specification. <p>Rehabilitation of plant area</p> <ul style="list-style-type: none"> • The compacted areas will be ripped, and the topsoil returned over the area. • Coarse natural material used for the construction of ramps will be removed and dumped into the excavations. • Stockpiles will be removed during the decommissioning phase, the area ripped, and topsoil returned to original depth to provide a growth medium. • On completion of operations, all structures or objects will be dealt with in 	<p>Waste NEMWA, 2008</p>	

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>accordance with Section 44 of the MPRDA 2002 (Act 28 of 2002):</p> <ul style="list-style-type: none"> o Where sites have been rendered devoid of vegetation/grass or soils have been compacted by traffic, the surface will be scarified or ripped. o The site will be seeded with a vegetation seed mix adapted to reflect the local indigenous flora if natural vegetation does not re-establish within 6 months of site closure. o Photographs of the mining area and office sites, before and during the mining operation and after rehabilitation, will be taken at selected fixed points and kept on record for the information of the Regional Manager. o On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, will be scarified to a depth of at least 300 mm and graded to an even surface condition. The previously stored topsoil will be returned to its original depth over the area. o Prior to replacing the topsoil, the overburden material that was 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>removed from these areas will be replaced in the same order as it originally occurred.</p> <ul style="list-style-type: none"> ○ The area will then be fertilized if necessary to allow vegetation to establish rapidly. The site will be seeded with a local, adapted indigenous seed mix if natural vegetation does not re-establish within 6 months after site closure. ○ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analyzed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a seed mix to their specification. <p>Final rehabilitation</p> <ul style="list-style-type: none"> ● Rehabilitation of the surface area will entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed/alien clearing. ● All infrastructure, equipment, plant, temporary housing and other items used during the mining period will be removed from the site (section 44 of the MPRDA). ● Waste material of any description, 		

Activities	Phase	Size and scale of disturbance	Mitigation measures	Compliance with standards	Time period for implementation
			<p>including receptacles, scrap, rubble, and tyres, will be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried/burned on site.</p> <ul style="list-style-type: none"> • Weed/alien clearing will be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1 weeds according to CORA, 1983 – Act 43; Regulations 15 & 16 (as amended in March 2001) must be eradicated from the site. • Final rehabilitation will be completed within a period specified by the Regional Manager. 		

5.8 Impact management outcomes

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

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
Whether listed or not. E.g., excavations, blasting, stockpiles, discard dumps/ dams, loading, hauling, transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	E.g., dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution, etc.		In which impact is anticipated. E.g., construction, commissioning, operational decommissioning, closure and post-closure.	Modify, remedy, control or stop through, e.g., noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity, etc.	Impact avoided, noise levels, dust levels, rehabilitation standards, end-use objectives, etc.
Topsoil stripping and stockpiling	Visual intrusion associated with the establishment of the mining area.	The visual impact may affect the residents of the immediate area.	Site establishment/ construction phase	Control: Implementation of proper housekeeping	<ul style="list-style-type: none"> Impact on the surrounding environment mitigated until rehabilitation standards can be implemented.
	Dust nuisance caused by soil disturbance.	Dust will be contained within property boundaries.		Control: Dust suppression	<ul style="list-style-type: none"> Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day. Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – particulates >1/10th of the occupational exposure limit. NEMAQA 2004, Regulation 6(1)

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Noise nuisance caused by machinery stripping and stockpiling the topsoil.	The noise impact should be contained within property boundaries, but might have a periodic impact on the farmsteads and Sundra community		Control: Noise control measures	<ul style="list-style-type: none"> Noise levels on the site must be managed and needs to comply with the standards stipulated in NEMAQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008 Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Infestation of the topsoil heaps by weeds and invader plants	Biodiversity		Control and remedy: Implementation of weed control	<ul style="list-style-type: none"> The impact must be avoided through the eradication of Category 1 weeds/ invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.
	Loss of topsoil due to incorrect storm water management.	Loss of topsoil will affect the rehabilitation of the mining area.		Control: Storm water management	<ul style="list-style-type: none"> The impact must be avoided through the implementation of storm water management.
	Contamination of area with hydrocarbons or hazardous waste materials.	Contamination may cause surface or ground water contamination if not addressed		Control and remedy: Implementation of waste management	<ul style="list-style-type: none"> The impact must be avoided through the implementation of the mitigation measures stipulated in this document. Should spillage occur, the area needs to be cleaned in accordance with the standards of the NEMWA, 2008.
Blasting	Health and safety risk posed by blasting activities	Impact might affect the employees working on site.	Operational phase	Control: Health and safety monitoring management	<ul style="list-style-type: none"> Impact must be avoided through compliance with the MHSA, 1996, OHSA, 1993 and OHSAS 18001 Fallout dust levels must comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day.

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Dust nuisance caused by blasting activities	Dependent on the blast, the impact might affect the surrounding community. Blasting will only occur twice a year.		Control: Dust suppression	Gravimetric dust levels has to comply with the standard published in the NIOSH guidelines particulates >1/10 th of the occupational exposure limit. NEMAQA, 2004 Regulation 6(1)
	Noise nuisance caused by blasting activities	Dependent on the blast, the impact might affect the surrounding community. Blasting will only occur twice a year.		Control: Noise control measure	<ul style="list-style-type: none"> Noise levels on the site has to be managed and need to comply with the standards stipulated in NEMAQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008 Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
Excavation	Visual intrusion associated with the excavation activities	The visual impact may affect the residents of the immediate area.	Operational phase	Control: Implementation of proper housekeeping	<ul style="list-style-type: none"> Impact on the surrounding environment mitigated until rehabilitation standards can be implemented.
	Dust nuisance due to excavation activities.	Dust will be contained within the property boundaries.		Control: Dust suppression	<ul style="list-style-type: none"> Fallout dust levels must comply with the acceptable dust fall rate published for non-residential areas, as per National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day. Gravimetric dust levels must comply with the standard published in the NIOSH guidelines –Particulates >1/10th of the occupational exposure limit. NEMAQA, 2004 Regulation 6(1).
Noise nuisance generated by excavation equipment	The noise impact must be contained within the boundaries of the property, but	Control: Noise control measures		<ul style="list-style-type: none"> Noise levels on the site has to be managed and need to comply with the standards stipulated in NEMAQA, 2004 	

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
		might have a periodic impact on the farmsteads and Sundra community			Regulation 6(1) as well as the noise standards of SANS 10103:2008. <ul style="list-style-type: none"> Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Unsafe working conditions for employees.	Impact might affect employees		Control: Health and safety monitoring and management	<ul style="list-style-type: none"> Impact must be avoided through compliance with the MHPA, 1996, OHPA, 1993 and OHSAS 18001
Excavation	Negative impact on the fauna and flora of the area.	Biodiversity	Operational phase	Control: Protection of fauna and flora through operational phase	<ul style="list-style-type: none"> The impact must be avoided through implementation of the mitigation measures stipulated in this document. NEMBA, 2004.
	Contamination of area with hydrocarbons or hazardous waste materials.	Contamination may cause surface or ground water contamination if not addressed.		Control: Implementation of waste management	<ul style="list-style-type: none"> The impact should be avoided through the implementation the mitigation measures stipulated in this document. Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEMWA, 2008.
	Weed and invader plant infestation of the area.	Biodiversity		Control: Implementation of weed control	<ul style="list-style-type: none"> The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.
Crushing	Dust nuisance due to the crushing activities	Dust will be contained within the property boundaries	Operational phase	Control: Dust suppression	<ul style="list-style-type: none"> Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – $600 < \text{Dust Fall} < 1\ 200 \text{ mg/m}^2/\text{day}$. Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates $>1/10^{\text{th}}$ of the occupational exposure limit.

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Noise nuisance generated by the crushing activities	The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the farmsteads and Sundra community		Control: Noise control measures	<ul style="list-style-type: none"> • NEMAQA, 2004 Regulation 6(1). • Noise levels on the site has to be managed and need to comply with the standards stipulated in NEMAQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. • Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Contamination of area with hydrocarbons or hazardous waste materials.	Contamination may cause surface or ground water contamination if not addressed.		Control: Implementation of waste management	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEMWA, 2008.
	Loss of material due to ineffective storm water handling.	Impact will affect income of applicant.		Control: Storm water control measures	<ul style="list-style-type: none"> • The impact should be avoided through the implementation of storm water management.
	Weed and invader plant infestation of the area due to the disturbance of the soil	Biodiversity		Control and remedy: Implementation of weed control	<ul style="list-style-type: none"> • The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.
Stockpiling and transporting	Dust nuisance from stockpiled material and vehicles transporting the material.	Dust will be contained within the property boundaries	Operational phase	Control: Dust suppression	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day. • Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit.

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
	Degradation of access roads.	All road users will be affected.		Control and remedy: Road management	<ul style="list-style-type: none"> • NEMAQA, 2004 Regulation 6(1). • The impact should be avoided through the implementation of the mitigation measures proposed in this document.
	Noise nuisance caused by vehicles.	The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the farmsteads and Sundra community		Control: Noise management monitoring and management	<ul style="list-style-type: none"> • Noise levels on the site has to be managed and need to comply with the standards stipulated in NEMAQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. • Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
Sloping and landscaping during rehabilitation	Contamination of area with hydrocarbons or hazardous waste materials	Contamination may cause surface or ground water contamination if not addressed.	Decommissioning phase	Control: Implementation of waste management	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.
	Soil erosion	Biodiversity		Control: Soil management	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • CARA, 1993
	Health and safety risk posed by un-sloped areas	Impact will affect employees and residents of the property		Control: Health and safety monitoring and management.	<ul style="list-style-type: none"> • The impact should be avoided through compliance with the standards of the MHSa, 1996, OHSA, 1993 and OHSAS 18001
	Dust nuisance caused during sloping and landscaping activities.	Dust will be contained within the property boundaries		Control: Dust suppression	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day.

Activity	Potential impact	Aspects affected	Phase	Mitigation type	Standard to be achieved
					<ul style="list-style-type: none"> Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10 of the occupational exposure limit. NEM:AQA, 2004 Regulation 6(1).
	Noise nuisance caused by machinery.	The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the farmsteads and Sundra community		Control: Noise monitoring	<ul style="list-style-type: none"> Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM:AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Contamination of area with hydrocarbons or hazardous waste materials.	Contamination may cause surface or ground water contamination if not addressed.		Control: Waste management	<ul style="list-style-type: none"> The impact should be avoided through the implementation the mitigation measures stipulated in this document. Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.
Replacing of topsoil and rehabilitation of disturbed area	Loss of reinstated topsoil due to the absence of vegetation	Biodiversity and soil management	Decommissioning phase	Control: Soil management	<ul style="list-style-type: none"> The impact should be avoided through the implementation the mitigation measures stipulated in this document. CARA, 1993
	Infestation of the area by weed and invader plants.	Biodiversity and soil management		Control and remedy: Implementation of weed control	<ul style="list-style-type: none"> The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.

5.9 Impact management actions

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

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
Whether listed or not, e.g., excavations, blasting, stockpiles, discard dumps/dams, loading, hauling, transport, water supply dams, boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	E.g., dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution, etc.	Modify, remedy, control or stop through, e.g., noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity, etc. E.g., Modify through alternative method, control through noise control, control through management and monitoring, and remedy through rehabilitation.	Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. Regarding Rehabilitation specifically this must take place at the earliest opportunity. Regarding rehabilitation therefore state either – Upon cessation of the individual activity or upon the cessation of mining, bulk sampling, or alluvial diamond prospecting as the case may be.	A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities
Topsoil stripping and stockpiling	Visual intrusion associated with the establishment of the mining area.	Control: Implementation of proper housekeeping	To be implemented daily throughout the site establishment / construction phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	Impact on the surrounding environment must be mitigated until rehabilitation standards can be implemented in terms of the MRDA.
	Dust nuisance caused by the disturbance of soil.	Control: Dust suppression	To be implemented daily throughout the site establishment / construction phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance 	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – $600 < \text{Dust Fall} < 1200 \text{ mg/m}^2/\text{day}$.

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
			monitoring of site by an <ul style="list-style-type: none"> • Environmental Control Officer. 	<ul style="list-style-type: none"> • Gravimetric dust levels must comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit NEMAQA, 2004 Regulation 6(1)
	Noise nuisance caused by machinery stripping and stockpiling the topsoil.	Control: Noise control measures	To be implemented daily throughout the site establishment / construction phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Noise levels on the site must be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. • Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Infestation of the topsoil heaps by weeds and invader plants	Control and remedy: Implementation of weed control	To be implemented, when necessary, throughout the site establishment / construction phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.
	Loss of topsoil due to incorrect storm water management.	Control: Storm water management	To be implemented daily throughout the site establishment / construction phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control officer 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation of storm water management.

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
	Contamination of area with hydrocarbons or hazardous waste materials	Control and remedy: Implementation of waste management	To be implemented daily throughout the site establishment / construction phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation of the mitigation measures stipulated in this document. • Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.
Blasting	Health and safety risk posed by blasting activities	Control: Health and safety monitoring and management	To be implemented when necessary throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through compliance with the standards of the MHSA, 1996, OHSA, 1993 and OHSAS 18001
	Dust nuisance caused by blasting activities	Control: Dust suppression	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day. • Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit. • NEMAQA, 2004 Regulation 6(1)
	Noise nuisance caused by blasting activities	Control: Noise control measures	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. 	<ul style="list-style-type: none"> • Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
			<ul style="list-style-type: none"> • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<p>10103:2008.</p> <ul style="list-style-type: none"> • Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
Excavation	Visual intrusion associated with the excavation activities	Control: Implementation of proper housekeeping	<p>To be implemented daily throughout the operational phase:</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Impact on the surrounding environment mitigated until rehabilitation standards can be implemented.
	Dust nuisance due to excavation activities.	Control: Dust suppression	<p>To be implemented daily throughout the operational phase:</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day • Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit. • NEM: AQA, 2004 Regulation 6(1).
	Noise nuisance generated by excavation equipment.	Control: Noise control measures	<p>To be implemented daily throughout the operational phase:</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. • Employees working in areas with noise levels of more than 82dBA

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
				need to be issue with hearing protection.
	Unsafe working conditions for employees.	Control: Health and safety monitoring and management	To be daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through compliance with the standards of the MHSA, 1996, OHSA, 1993 and OHSAS 18001
	Negative impact on the fauna and flora of the area.	Control: Protection of fauna and flora through operational phase	To be daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation of the mitigation measures stipulated in this document. • NEM:BA, 2004.
	Contamination of area with hydrocarbons or hazardous waste materials.	Control: Implementation of waste management	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.
	Weed and invader plant infestation of the area.	Control: implementation of weed control	To be implemented when necessary throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
Crushing	Dust nuisance due to the crushing activities	Control: Dust suppression	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – $600 < \text{Dust Fall} < 1200 \text{ mg/m}^2/\text{day}$. • Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates $>1/10^{\text{th}}$ of the occupational exposure limit. • NEM: AQA, 2004 Regulation 6(1).
	Noise nuisance generated by the crushing activities.	Control: Noise control measures	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. • Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Contamination of area with hydrocarbons or hazardous waste materials.	Control: Implementation of waste management	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.
Stockpiling and transporting	Visual intrusion associated with the stockpiled material and	Control: Implementation of proper housekeeping	To be implemented daily throughout the operational phase:	<ul style="list-style-type: none"> • Impact on the surrounding environment mitigated until

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
	vehicles transporting the material.		<ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	rehabilitation standards can be implemented.
	Loss of material due to ineffective storm water handling.	Control: Storm water control measures	<ul style="list-style-type: none"> • To be implemented daily throughout the operational phase: • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation of storm water management
	Weed and invader plant infestation of the area due to the disturbance of the soil	Control and remedy: Implementation of weed control	<p>To be implemented when necessary throughout the operational phase:</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.
	Dust nuisance from stockpiled material and vehicles transporting the material.	Control: Dust suppression	<p>To be implemented daily throughout the operational phase:</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer. 	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day. • Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit. • NEM: AQA, 2004 Regulation 6(1).

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
	Degradation of access roads	Control and remedy: Road management	To be implemented when necessary throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation of the mitigation measures proposed in this document.
	Noise nuisance caused by vehicles.	Control: Noise management monitoring and management	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. • Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Contamination of area with hydrocarbons or hazardous waste materials.	Control: Implementation of waste management	To be implemented daily throughout the operational phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEMWA, 2008.
Sloping and landscaping during rehabilitation	Soil erosion	Control: Soil management	To be implemented throughout the rehabilitation / closure phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • CARA, 1993

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
	Health and safety risk posed by un-sloped areas	Control: Health and safety monitoring and management.	To be implemented throughout the rehabilitation / closure phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through compliance with the standards of the MHSA, 1996, OHSA, 1993 and OHSAS 18001
	Dust nuisance caused during sloping and landscaping activities.	Control: Dust suppression	To be implemented throughout the rehabilitation / closure phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day. • Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit. • NEM: AQA, 2004 Regulation 6(1).
	Noise nuisance caused by machinery.	Control: Noise monitoring	To be implemented throughout the rehabilitation / closure phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. • Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.
	Contamination of area with hydrocarbons or	Controls: Waste management	To be implemented throughout the rehabilitation / closure phase: <ul style="list-style-type: none"> • Daily compliance monitoring by site management. 	<ul style="list-style-type: none"> • The impact must be avoided through implementation of mitigation measures stipulated in this document.

Activity	Potential impact	Mitigation type	Time period for implementation	Compliance with standards
	hazardous waste materials.		<ul style="list-style-type: none"> • Compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEMWA, 2008.
Replacing of topsoil and rehabilitation of disturbed area	Loss of reinstated topsoil due to the absence of vegetation	Control: Soil management	<p>To be implemented throughout the rehabilitation / closure phase:</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the implementation the mitigation measures stipulated in this document. • CARA, 1993
	Infestation of the area by weed and invader plants.	Control and remedy: Implementation of weed control	<p>To be implemented throughout the rehabilitation / closure phase:</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Compliance monitoring of site by an Environmental Control Officer. 	<ul style="list-style-type: none"> • The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document.

6 Determination of the amount of financial provision

6.1 Closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation

Once mining activities cease, the area will be fully rehabilitated to a level that can either be used as recreational facility or a pan. The perimeter walls of the opencast pit will either be sloped at 1:3 to the pit floor to prevent soil erosion or be stepped by creating benches of not more than 3 m high. Compacted soil will be ripped and levelled to re-establish a growth medium. Stockpiles will be removed during the decommissioning phase, the stockpile area ripped and available topsoil that was removed will be spread over worked areas to enhance the establishment of vegetation. All waste materials will be removed from the site and dumped at recognised landfill sites. The applicant will comply with the minimum closure objectives as prescribed by DMRE.

6.2 Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and I&APs

This report, the Basic Assessment Report, includes all the environmental objectives in relation to closure and is available for perusal by I&AP's and stakeholders. Any additional comments received during the commenting period will be added to the Final Basic Assessment Report to be submitted to DMRE for approval.

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

The requested rehabilitation plan will be conducted for final submission. Upon closure of the mine, all infrastructures will be removed. The compacted areas will be ripped and levelled upon which the topsoil will be replaced. The sides of the pit will be sloped to ensure safety and prevent erosion. No permanent structures will remain upon closure of the site.

6.4 Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives

The decommissioning phase will entail the rehabilitation of the mining site. Upon cessation of the mining activities, the area will be fully rehabilitated. The perimeter walls of the opencast pit will be sloped at 1:3 to the pit floor to prevent soil erosion or stepped by creating benches of not more than 3 m. The rehabilitation of the Coal pit as indicated on the rehabilitation plan will comply with the minimum closure objectives as prescribed by DMRE and detailed in the following, and therefore is deemed to be compatible.

6.4.1 Rehabilitation of the excavated area

- Rocks and coarse material removed from the excavation must be dumped into the excavation.
- No waste will be permitted to be deposited in the excavations.
- Once overburden, rocks and coarse natural materials has been added to the excavation and was profiled with acceptable contours and erosion control measures, the topsoil previously stored will be returned to its original depth over the area.
- The area will be fertilised if necessary to allow vegetation to establish rapidly. The site will be seeded with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from site closure.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a vegetation seed mix to their specification.

6.4.2 Rehabilitation of plant area

- The compacted areas will be ripped, and the topsoil returned over the area.
- Coarse natural material used for the construction of ramps will be removed and dumped into the excavations.
- Stockpiles will be removed during the decommissioning phase, the area ripped, and the topsoil returned to its original depth to provide a growth medium.
- On completion of operations, all structures or objects will be dealt with in accordance with Section 44 of the MPRDA, 2002 (Act 28 of 2002):
 - Where sites have been rendered devoid of vegetation/grass or soils have been compacted owing to traffic, the surface will be scarified or ripped.
 - The site will be seeded with a vegetation seed mix adapted to reflect the local indigenous flora if natural vegetation does not re-establish within 6 months of the closure of the site.
- Photographs of the mining area and office sites, before and during the mining operation and after rehabilitation, will be taken at selected fixed points and kept on record for the information of the Regional Manager.
- On completion of mining operations, the surface of these areas, if compacted due to hauling and dumping operations, will be scarified to a

depth of at least 300 mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.

- Prior to replacing the topsoil, the overburden material that was removed from these areas will be replaced in the same order as it originally occurred.
- The area shall then be fertilised if necessary to allow vegetation to establish rapidly. The site will be seeded with a local, adapted indigenous seed mix if natural vegetation does not re-establish within 6 months after site closure.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a seed mix to their specification.

6.4.3 Final rehabilitation

- Rehabilitation of the surface area will entail landscaping, levelling, top dressing, land preparation, seeding (if required), maintenance, and weed/ alien clearing.
- All infrastructures, equipment, plant, temporary housing, and other items used during the mining period will be removed from the site (section 44 of the MPRDA).
- Waste material of any description, including receptacles, scrap, rubble, and tyres, will be removed entirely from the mining area and disposed of at a recognised landfill facility. It will not be permitted to be buried/burned on site.
- Weed/alien clearing will be done in a sporadic manner during the life of the mining activities.
- Species considered Category 1 weeds as per CARA, 1983 – Act 43, Regulations 15 & 16 (as amended in March 2001) must be eradicated from site.
- Final rehabilitation will be completed within a period specified by the Regional Manager.

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

The calculation of the quantum for financial provision was according to Section B of the working manual.

6.5.1 Mine type and saleable mineral by-product

Mine type	Coal, Coal
Saleable mineral by-product	None

6.5.2 Risk ranking

Primary risk ranking (either Table B.12 or B.13)	C (Low risk)
Revised risk ranking (B.14)	N/A

6.5.3 Environmental sensitivity of the mine area

Environmental sensitivity of the mine area	Low
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6.5.4 Level of information

Level of information available	Limited
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6.5.5 Identify closure components

Component nr	Main description	Applicability of closure components	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)		No
2 (A)	Demolition of steel buildings and structures		No
2 (B)	Demolition of reinforced concrete buildings and structures		No
3	Rehabilitation of access roads	Yes	
4 (A)	Demolition and rehabilitation of electrified railway lines		No
4 (B)	Demolition and rehabilitation of non-electrified railway lines		No
5	Demolition of housing and facilities		No
6	Opencast rehabilitation including final voids and ramps	Yes	
7	Sealing of shafts, audits and inclines		No
8 (A)	Rehabilitation of overburden and spoils	Yes	
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)		No
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)		No
9	Rehabilitation of subsided areas		No
10	General surface rehabilitation, including grassing of all denuded areas	Yes	
11	River diversions		No
12	Fencing		No
13	Water management (Separating clean and dirty water, managing polluted water, and managing the impact on groundwater)	Yes	
14	2 to 3 years of maintenance and aftercare		No

6.5.6 Calculation of closure costs

"Rules-based" assessment of the quantum for financial provision.

Applicant Evaluator: Valentine Mhlanga		CALCULATION OF THE QUANTUM					DMRE Ref No.: MP 30/5/1/3/2/13242 MP Date: August-2022	
No.	Description	Unit	A	B	C	D	E=A*B*C*D	
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0	
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0	
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0	
3	Rehabilitation of access roads	m2	0	49	1	1	0	
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0	
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0	
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0	
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	0.07	1	0	
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0	
8 (A)	Rehabilitation of overburden and spoils	ha	0.32	189528	1	1	60648.96	
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0	
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0.09	685612	1	1	61705.08	
9	Rehabilitation of subsided areas	ha		158701	1	1	0	
10	General surface rehabilitation	ha	5	150138	0.8	1	600552	
11	River diversions	ha	0	150138	1	1	0	
12	Fencing	m	0	171	1	1	0	
13	Water management	ha	0.06	57087	1	1	3425.22	
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0	
15 (A)	Specialist study	Sum	0			1	0	
15 (B)	Specialist study	Sum				1	0	
Sub Total 1							726331.26	
1	Preliminary and General		87159.7512		weighting factor 2		87159.7512	
					1			
2	Contingencies			72633.126			72633.126	
Subtotal 2							886124.14	
Sign	Valentine Mhlanga						VAT (15%)	132918.62
Date	12/8/2022						Grand Total	1019043

The amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum total of **R1, 019 043**

6.6 Confirm that the financial provision will be provided as determined

The financial provision will be provided as determined. Mechanisms for monitoring compliance with a performance assessment against the EMPr.

6.7 Mechanisms for compliance monitoring against EMP

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including:

- a) Monitoring of Impact Management Actions
- b) Monitoring and reporting frequency
- c) Responsible persons
- d) Time period for implementing impact management actions
- e) Mechanisms for monitoring compliance

Source activity	Impacts required monitoring programme	Functional requirements for monitoring	Roles and responsibilities for the execution of monitoring programmes	Monitoring and reporting frequency and time periods for implementing impact management actions
<ul style="list-style-type: none"> • Topsoil stripping and stockpiling • Blasting • Excavation • Crushing • Stockpiling and transporting • Sloping and landscaping during rehabilitation 	Dust monitoring <ul style="list-style-type: none"> • The dust generated by the mining activities should be continuously monitored and addressed by the implementation of dust suppression methods. 	Dust handling and monitoring <ul style="list-style-type: none"> • Dust suppression equipment, like a water car and water dispenser. The applicant already has this equipment available. 	Role <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. • Compliance to be monitored by the Environmental Control Officer. Responsibility <ul style="list-style-type: none"> • Control dust liberation into surrounding environment by using, e.g., water spraying and/or other dust-allaying agents. • Limit speed on access roads to 40km/h to prevent excess dust generation. • Spray roads with water/environmentally friendly dust allaying agent that contains no PCBs (e.g., DAS products) if dust is generated above acceptable limits. • Assess effectiveness of dust suppression equipment. • Re-vegetate all disturbed/exposed areas as soon as possible to prevent any dust source from being created. • Ensure the crusher is equipped with water sprayers. 	Throughout construction, operational and decommissioning phase <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer.
<ul style="list-style-type: none"> • Topsoil stripping and stockpiling 	Noise monitoring <ul style="list-style-type: none"> • The noise generated 	Noise handling and monitoring	Role <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. 	Throughout construction, operational and

Source activity	Impacts required monitoring programme	Functional requirements for monitoring	Roles and responsibilities for the execution of monitoring programmes	Monitoring and reporting frequency and time periods for implementing impact management actions
<ul style="list-style-type: none"> • Blasting • Excavation • Crushing • Sloping and landscaping during rehabilitation 	<p>by the mining activities should be continuously monitored, and any excessive noise should be addressed.</p>	<ul style="list-style-type: none"> • Site manager to ensure that the vehicles are equipped with silencers and kept roadworthy. • Compliance with the appropriate legislation with respect to noise will be mandatory. 	<ul style="list-style-type: none"> • Compliance to be monitored by the Environmental Control Officer. <p>Responsibility</p> <ul style="list-style-type: none"> • Ensure that staff conduct themselves in an acceptable manner while on site. • No loud music permitted at mining area. • Ensure that all mining vehicles are equipped with silencers and kept roadworthy in terms of the Road Transport Act. • Plan the type, duration, and timing of the blasting procedures with due cognizance of other land users and structures in the vicinity. • Notify surrounding landowners in writing prior blasting occasions. • Use noise mufflers and/or soft explosives during blasting. 	<p>decommissioning phase</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer.
<ul style="list-style-type: none"> • Topsoil stripping and stockpiling • Excavation Stockpiling and transporting 	<p>Management of weed or invader plants</p> <ul style="list-style-type: none"> • The presence of weed and/or invader plants should be continuously monitored, and any unwanted plants should be removed. 	<p>Management of weed or invader plants</p> <ul style="list-style-type: none"> • Removal of weeds should be manually or using an approved herbicide 	<p>Role</p> <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. <p>Compliance to be monitored by the Environmental Control Officer.</p> <p>Responsibility</p> <ul style="list-style-type: none"> • Implement a weed and invader plant control management plan. • Control declared invader or exotic species on the rehabilitated areas. • Keep the temporary topsoil stockpiles free of weeds. 	<p>Throughout operational and decommissioning phase</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer.
<ul style="list-style-type: none"> • Stockpiling and transporting • Sloping and Landscaping during rehabilitation 	<p>Surface and storm water monitoring</p> <ul style="list-style-type: none"> • The effectiveness of the storm water infrastructure needs to be continuously 	<p>Surface and storm water handling</p> <ul style="list-style-type: none"> • Trenches and contours to be made to direct storm- and runoff 	<p>Role</p> <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. <p>Compliance to be monitored by the Environmental Control Officer.</p> <p>Responsibility</p> <ul style="list-style-type: none"> • Divert storm water around topsoil heaps, stockpile areas 	

Source activity	Impacts required monitoring programme	Functional requirements for monitoring	Roles and responsibilities for the execution of monitoring programmes	Monitoring and reporting frequency and time periods for implementing impact management actions
	monitored.	water around the stockpile areas.	<p>and access roads to prevent erosion and material loss.</p> <ul style="list-style-type: none"> • Divert runoff water around the stockpile areas with trenches and contour structures to prevent erosion of the work areas. • Conduct mining in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the DWS, and any other conditions the DWS may impose. 	
<ul style="list-style-type: none"> • Blasting • Excavation • Sloping and Landscaping during rehabilitation 	<p>Management of health and safety</p> <ul style="list-style-type: none"> • All health and safety aspects need to be monitored daily. 	<p>Management of health and safety risks</p> <ul style="list-style-type: none"> • Site manager to ensure that workers are equipped with required PPE while operating on site. • The necessary warning signs must be present at the site to inform the public and workers of mining activities. 	<p>Role</p> <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. • Compliance to be monitored by the Environmental Control Officer. <p>Responsibility</p> <ul style="list-style-type: none"> • Submit an application for approval of access onto the R555 to the Department of Roads and Public Works prior to the commencement of work. • Inform the Traffic Department of each blast. If necessary, arrange for temporary road closure during a blast. • Plan the type, duration, and timing of the blasting procedures with due cognizance of other land users and structures in the vicinity. • Inform the surrounding landowners and communities of any blasting event. • Use noise mufflers and/or soft explosives during blasting. • Limit fly rock. • Give audible warning of a pending blast at least 3 minutes before the blast. • Remove all fly rock (diameter 150mm and larger) which falls beyond working area, together with the rock spill. 	<p>Throughout construction, operational and decommissioning phase</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an Environmental Control Officer

Source activity	Impacts required monitoring programme	Functional requirements for monitoring	Roles and responsibilities for the execution of monitoring programmes	Monitoring and reporting frequency and time periods for implementing impact management actions
			<ul style="list-style-type: none"> • Ensure that workers have access to the correct PPE as required by law. 	
<ul style="list-style-type: none"> • Excavation • Crushing stockpiling and transporting • Sloping and landscaping during rehabilitation 	<p>Waste management</p> <ul style="list-style-type: none"> • Management of waste should be a daily monitoring activity. • Hydrocarbon spills need to be cleaned immediately and the site manager should check compliance daily. 	<p>Waste management</p> <ul style="list-style-type: none"> • Closed containers for the storage of general/hazardous waste until waste is removed to the appropriate landfill site. • Hydrocarbon spill kits to enable sufficient clean-up of contaminated areas. • Drip trays should be available to place underneath haul vehicles while the vehicles are parked at night. • Should a vehicle have a break down, it should be serviced immediately. 	<p>Role</p> <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. Compliance to be monitored by the Environmental Control Officer. <p>Responsibility</p> <ul style="list-style-type: none"> • Ensure that vehicle repairs only take place in the service bay area and all waste products are disposed of in a 200L closed container/bin inside the emergency service area. • Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and remove from site, for resale or appropriate disposal at a recognized facility. • Clean spills immediately to the satisfaction of the Regional Manager by removing the spillage and polluted soil and by disposing of them at a recognized facility. • Ensure availability of suitable covered, conveniently placed receptacles always for waste disposal. • Place all used oils, grease, or hydraulic fluids therein and remove receptacles from site regularly for disposal at a registered/licensed hazardous disposal facility. • Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Collection should take place regularly and disposed of at the recognized landfill site at Bronkhorstspuit. Prevent refuse from being dumped on or in the vicinity of the mine area. • Biodegradable refuse to be handled as indicated above. 	<p>Throughout construction, operational and decommissioning phase</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer.

Source activity	Impacts required monitoring programme	Functional requirements for monitoring	Roles and responsibilities for the execution of monitoring programmes	Monitoring and reporting frequency and time periods for implementing impact management actions
Stockpiling and transporting	<p>Management of access roads</p> <ul style="list-style-type: none"> • Access road conditions must be continuously monitored. • Vehicles carrying materials must be equipped with adequate tarpaulin type covers to ensure that material being transported will not leave the vehicle during transportation. 	<p>Management of access roads</p> <ul style="list-style-type: none"> • Dust suppression equipment such as a water car and dispenser. • Trenches and contours to be made to direct storm- and runoff water around the access roads. 	<p>Role</p> <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. • Compliance to be monitored by the Environmental Control Officer. <p>Responsibility</p> <ul style="list-style-type: none"> • Maintain newly constructed access roads (if applicable) to minimize dust, erosion, or undue surface damage. • Divert storm water around access roads to prevent erosion. • Erosion of access road: Restrict vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas. • Cover vehicles carrying materials with adequate tarpaulin type covers to ensure that material being transported does leave the vehicle during transportation. • Ensure vehicles entering and using the public road system from the site does not exceed the permissible legal limits on gross vehicle mass and individual axle loads as prescribed in terms of the National Road Traffic Act (Act No 93 of 1996). 	<p>Throughout construction, operational and decommissioning phase</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer.
Topsoil stripping and stockpiling	<p>Topsoil handling</p> <ul style="list-style-type: none"> • When topsoil has been removed from any area the topsoil heaps need to be continuously protected against loss of soil due to wind and water erosion. 	<p>Topsoil handling</p> <ul style="list-style-type: none"> • Excavating equipment to remove the first 300mm of topsoil from the proposed work areas. The applicant already has this equipment available. 	<p>Role</p> <ul style="list-style-type: none"> • Site Manager to ensure compliance with EMPr guidelines. • Compliance to be monitored by the Environmental Control Officer. <p>Responsibility</p> <ul style="list-style-type: none"> • Remove the first 300mm of topsoil in strips and store at the stockpile area. • Keep the temporary topsoil stockpiles free of weeds. • Place topsoil stockpiles on a levelled area and implement measures to safeguard the piles from being 	<p>Throughout construction, operational and decommissioning phase</p> <ul style="list-style-type: none"> • Daily compliance monitoring by site management. • Quarterly compliance monitoring of site by an • Environmental Control Officer.

Source activity	Impacts required monitoring programme	Functional requirements for monitoring	Roles and responsibilities for the execution of monitoring programmes	Monitoring and reporting frequency and time periods for implementing impact management actions
		<ul style="list-style-type: none"> • Trenches and contours to be made to direct storm and runoff water around stockpiled topsoil area. 	<p>washed away in the event of heavy rains/storm water.</p> <ul style="list-style-type: none"> • Topsoil heaps should not exceed 2 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • Divert storm- and runoff water around the stockpile area and access roads to prevent erosion. 	

6.8 Indicate frequency of the submission of the performance assessment/ environmental audit report

The committed time frames for monitoring and reporting are stipulated in the following:

Monitoring aspect	Time frames	Reporting
Dust handling	Throughout construction, operational and decommissioning phase	<ul style="list-style-type: none"> • Daily compliance monitoring by site management
Noise handling		
Management of weed/invader plants	Throughout operational and decommissioning phase	<ul style="list-style-type: none"> • Quarterly compliance monitoring of site by an Environmental Control Officer
Surface and storm water handling		
Management of health and safety risks	Throughout construction, operational and decommissioning phase	
Waste management		
Management of access roads		
Topsoil handling		

It is proposed that the performance assessment/environmental audit report be quarterly submitted to DMR.

6.9 Environmental Awareness Plan

6.9.1 Manner in which the applicant intends to inform employees of any environmental risk which may result from their work

Training, as detailed below, will address the specific measures and actions required for specific emergency events. In this way, each employee will be provided the knowledge required for their job to, firstly, prevent impact and secondly identify if an impact is likely to occur and then to report the possibility of risk or impact immediately to ensure immediate response. The most likely potential environmental emergencies in this proposed mining operation are fires and explosion, chemical spills/leaks, and flooding. In the case of environmental emergencies, the remedial measures and actions as listed in the Emergency Response Plan should be followed, in addition the following relevant authorities should be contacted:

Dept. of Water Affairs

Ms. Wendy Tshwane (General Manager: Mpumalanga)

Postal Private Bag X313, Pretoria, 0001

Physical Sedibeng Building, 185 Francis Baard Street, Pretoria

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Tel 012 336 8387

Fax 012 336 8664

Web www.dws.gov.za

Dept. of Mineral Resources

Mpumalanga

Saveways Crescent Centre, Mandela Drive, Emalahleni, 1035
Private Bag X7279, EMALAHLENI, 1035(013) 653 0500 (013) 690 3288
Secretary
Ms L Maphopha
Lydia.Maphopha@dmre.gov.za

Delmas Fire Department

Van Der Walt St & Samuel Rd, Delmas, 2210
P.O. Box 6, Delmas, Mpumalanga, 2210
Contact number (s) (013) 665 3333 / (013) 665 2939
Fax (013) 665 2913

6.9.1.1 Fire and explosion control measures

Hazardous waste and dangerous substances can, by definition, be flammable and reactive. As such, special precautionary measures must be taken when handling these substances. On the other hand, veld fires and fires resulting from other sources must be handled with extreme caution. In the event of a fire:

- Fire extinguishers must be placed around the mine at accessible locations and needs to be frequently inspected and maintained in working condition.
- An alarm must be activated to alert all employees and contractors.
- Identify the type of fire and the appropriate extinguishing material. E.g., water for a grass fire and mono ammonium phosphate-based fire extinguisher for chemical and electrical fires
- In the event of a small fire, the fire extinguishers placed around the mine should be used to contain and extinguish the fire.
- In the event of a large fire, the fire department will be notified.
- All staff will receive training in response to a fire emergency on site, including evacuation procedures.
- A Fire Association should be set up with the mine and surrounding landowners (especially farm owners in proximity) to facilitate communication during fire events and assist in fighting fires, where necessary. If such an association exists, the mine will join it.
- If possible, surrounding drains, such as storm water drains must be covered and/or protected to prevent any contaminated water from entering the drains.
- In case of a chemical or petroleum fire, run-off from the area must be contained as far as possible using the most appropriate measures, e.g., spill absorbent cushions or a physical barrier.
- Contaminated run-off must be diverted into an oil sump or cleaned up.

Control measures include:

- Minimising the storage of flammable liquids on site (e.g., fuel, flammable wastes)
- Using a nitrogen atmosphere for organic waste liquid with a low flashpoint stored in tanks
- Not allowing smoking anywhere on site
- Providing an emergency tipping area for waste loads identified to be on fire or otherwise deemed an immediate risk
- Preparing and annually reviewing a fire risk assessment
- Ensuring all staff are appropriately trained for fire and explosion hazards

Other than explosion incidents related to mining, explosions can occur in the workshop areas when working with gas cylinders and chemicals. These could result in large numbers of employees being injured and requiring medical assistance.

The procedure to be followed includes:

- Devising safe evacuation routes in the event of an uncontrolled explosion and all staff trained on relevant evacuation routes and assembly points.
- Providing first aid to injured parties, once safe to do so for first responders.
- Notifying relevant emergency response units and hospitals of incoming patients.
- Notifying the DMRE of the incident.

6.9.1.2 Chemical spills

Hydrocarbons such as diesel, petrol, and oil used as fuel for mine machinery will be kept on site, meaning that spillage may occur. As this is a coal mine there is also the possibility of coal spillage occurring. Any chemicals contained on site, such as those associated with explosives may also be detrimental to the environment if spills occur. In the event of a spillage, procedures must be put into place to ensure that there are minimal impacts to the surrounding environment.

The following procedure applies to a chemical spill:

- The incident must be reported to the SHE officer immediately.
- The SHE officer will assess the situation from the information provided and set up an investigation team. Included in this team could be the General Mine Manager, SHE Officer, the employee who reported the incident and an individual responsible for the incident.
- When investigating the incident, priority must be given to safety.
- Once the situation has been assessed, the Environmental Coordinator must report back to the Mine Manager.
- The General Mine Manager and the investigation team must decide on what measures can be taken to limit the damage caused by the incident, and if

possible, any remediation measures that can be taken.

- In the event of a small spillage, the soil must be treated in situ, using Hazmat clean up kits and bioremediation.
- Every precaution must be taken to prevent the spill from entering the surface water environment.
- In the event of a large spillage, adequate emergency equipment for spill containment or collection, such as additional supplies of booms and absorbent materials, will be made available and if required, a specialized clean-up crew will be called in to decontaminate the area. The soil must be removed and treated at a special soil rehabilitation facility.
- Reasonable measures must be taken to stop the spread of spills and secure the area to limit access.

6.9.1.3 Flooding

There is always potential for flooding during the rainy season. This could result in a large volume of water accumulating in a water containment facility, which could cause major damage to equipment and endanger the lives of employees on site. Procedures must be put in place to ensure a quick response to flood events and minimal damage.

The procedure for flooding is as follows:

- During operations, DWS's flood warning system must be reviewed annually.
- The use of emergency pumps must occur if the water floods the pit.
- Mine management must be made aware of any such event so they can take appropriate action to ensure minimal production losses.
- The Pollution Control Dam should have a 0.8m freeboard and an overflow or outlet to ensure that no damage occurs to the facilities.
- All contaminated water must be contained on site, as far as possible and discharges to the environment must only occur if necessary, in an extreme flood event.

7 Manner in which risk will be dealt with to avoid pollution or environmental degradation

7.1 Training (educational needs)

The Safety, Health, and Environment (SHE) Officer must ensure that:

- New employees attend environmental awareness programmes through inductions
- Mine management conducts bi-annual workshops
- Documented training and competency
- Training records be maintained
- Training includes proper management of waste streams, labelling, containers, and emergency procedures outlined
- Hazardous waste handlers and their supervisors/managers must complete training or on-the-job instruction relevant to their duties to include hazardous waste management procedures and contingency plan implementation
- Training of all personnel must be completed before duties are assigned and training in terms of handling of hazardous waste must be repeated annually and as and when required

7.2 Outsourced specialist skills

A training department will be established on site during operations. All inductions and workshops will be hosted by this department. This department, in conjunction with the SHE Officer, is responsible for ensuring job-specific training for personnel performing tasks, which can cause significant environmental (e.g., receipt of bulk hazardous chemicals/fuel, hazardous materials handling, responding to emergency situations etc.). The General Mine Manager (GM) with the assistance of the SHE Officer must identify relevant personnel and training courses. Short courses such as First aid training, Level 1 and 2; Fire Fighting Level; safety representative training; etc. should be mandatory and sourced from the training providers,

7.3 Review and updating of training manual and course layout

Before implementing the emergency and response plans and other environmental standard operating procedure, the SHE Coordinator and GM/Supervisors will designate and train enough people to assist in the safe and orderly emergency evacuation of employees.

All training manual and courses must be reviewed with all employees at the following times:

- Initially when the plan is developed,
- Whenever the employee's responsibilities or designated action under the plan change, and whenever the plan or mining processes has changed.
- At least annually employee meetings are to be held to train employees of the contents of the EP&RP and revise the plan as appropriate.
- Drills will be conducted, and full participation encouraged.
- All training must be documented in writing and copies sent to GM.

Effectiveness of the environmental management training will be done by management through task observations and during internal and external audits. All training material for presentation to personnel and contractors will be reviewed annually to ensure consistency with organisational requirements and best practice guidelines. In addition to this, annual monitoring reports, audit results and all incident reports will be reviewed; any shortcomings and non-compliance will be highlighted, and management measures incorporated or improved upon within the training material.

7.4 Records

The mine will keep records such as waste, water, electricity usage etc. Record of incoming and outgoing waste must be kept, and these must include:

- Types and categories of incoming and outgoing waste
- Quantities of each waste type and category
- Transporter details
- Safe disposal certificate must always be returned and filed at waste disposal site
- Training records for all employees working on the hazardous waste facility
- All records must be computerised or legible paper trails and cross-referenced, waste tracking easily accessed
- Records must be kept in a database on site for 3 years or more

Records from the implementation of this EAP will be kept and controlled in accordance with the SHE Management System Control of Records Procedure of the mine, which is required to be implemented so as to provide evidence of conformity and effective operation of the relevant requirements of the SHE management system.

7.5 Environmental awareness notice boards

The following basic environmental education material will be posted on a monthly basis on accessible notice boards on mine premises, one topic will be selected each month:

WHAT IS THE ENVIRONMENT?

- Soil
- Water
- Plants
- People
- Animals
- Air we breathe
- Buildings, cars and houses



WHY MUST WE LOOK AFTER THE ENVIRONMENT?

- It affects us all as well as future generations
- We have a right to a healthy environment
- A contract has been signed
- Disciplinary action (e.g. construction could stop or fines issued)

ANIMALS

- Do not injure or kill any animals on the site
- Ask your supervisor or Contract's Manager to remove animals found on site



TREES AND FLOWERS

- Do not damage or cut down any trees or plants without permission
- Do not pick flowers



SMOKING AND FIRE

- Put cigarette butts in a rubbish bin
- Do not smoke near gas, paints or petrol
- Do not light any fires without permission
- Know the positions of fire fighting equipment
- Report all fires
- Do not burn rubbish or vegetation without permission



PETROL, OIL AND DIESEL

- Work with petrol, oil & diesel in marked areas
- Report any petrol, oil & diesel leaks or spills to your supervisor
- Use a drip tray under vehicles & machinery
- Empty drip trays after rain & throw away where instructed



DUST

- Try to avoid producing dust - Use water to make ground & soil wet



NOISE

- Do not make loud noises around the site, especially near schools and homes
- Report or repair noisy vehicles



TRUCKS AND DRIVING

- Always keep to the speed limit
- Drivers - check & report leaks and vehicles that belch smoke
- Ensure loads are secure & do not spill



RUBBISH

- Do not litter - put all rubbish (especially cement bags) into the bins provided
- Report full bins to your supervisor
- The responsible person should empty bins regularly



EATING

- Only eat in demarcated eating areas
- Never eat near a river or stream
- Put packaging & leftover food into rubbish bins



TOILETS

- Use the toilets provided
- Report full or leaking toilets



HOW DO WE LOOK AFTER THE ENVIRONMENT?

- Report problems to your supervisor/ foreman
- Team work
- Follow the rules in the EMP



WORKING AREAS

- Workers & equipment must stay inside the site boundaries at all times



The operations manager must ensure that they understand the EMPr document, its requirements and commitments before any mining takes place. An Environmental Control Officer must ensure compliance of mining activities to the management programmes described in the EMPr. The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks.

7.5.1 Site management

- Stay within site boundaries – do not enter adjacent properties
- Keep tools and material properly stored
- Smoke only in designated areas
- Use toilets provided – report full or leaking toilets

7.5.2 Water management and erosion

- Check that rainwater flows around work areas and is not contaminated
- Report any erosion
- Check that dirty water is kept from clean water
- Do not swim in or drink from streams

7.5.3 Waste management

- Take care of your own waste
- Keep waste separate into labelled containers – report full bins
- Place waste in containers and always close lid
- Don't burn waste
- Pick-up any litter laying around

7.5.4 Hazardous waste management (petrol, oil, diesel, grease)

- Never mix general waste with hazardous waste
- Use only sealed, non-leaking containers
- Keep all containers closed and store only in approved areas
- Always put drip trays under vehicles and machinery
- Empty drip trays after rain
- Stop leaks and spills, if safe
- Keep spilled liquids moving away
- Immediately report the spill to the site manager/supervision
- Locate spill kit/supplies and use to clean-up, if safe

- Place spill clean-up wastes in proper containers
- Label containers and move to approved storage area

7.5.5 Discoveries

- Stop work immediately
- Notify site manager/supervisor
- Includes archaeological finds, cultural artefacts, contaminated water, pipes, containers, tanks and drums, any buried structures

7.5.6 Air quality

- Wear protection when working in dusty areas
- Implement dust control measures:
 - Sweep paved roads
 - Water all roads and work areas
 - Minimise handling of material
 - Obey speed limit and cover trucks

7.5.7 Driving and noise

- Use only approved access roads
- Respect speed limits
- Only use turn-around areas – no crisscrossing through undisturbed areas
- Avoid unnecessary loud noises
- Report or repair noisy vehicles

7.5.8 Vegetation and animal life

- Do not remove any plants or trees without approval of the site manager
- Do not collect firewood
- Do not catch, kill, harm, sell or play with any animal, reptile, bird, or amphibian on site
- Report any animal trapped in the work area
- Do not set snares or raid nests for eggs or young

7.5.9 Fire management

- Do not light any fires on site, unless contained in a drum at demarcated area
- Put cigarette butts in a rubbish bin
- Do not smoke near gas, paints, or petrol

- Know the position of firefighting equipment
- Report all fires
- Don't burn waste or vegetation

7.6 Specific information required by the Competent Authority

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

The applicant undertakes to annually review and update the financial provision calculation, upon which it will be submitted to DMR for review and approved as sufficient to cover the environmental liability at the time and for closure of the mine at that time.

8 Undertaking

The EAP herewith confirms

- the correctness of the information provided in the reports
- the inclusion of comments and inputs from stakeholders and I&APs
- the inclusion of inputs and recommendations from the specialist reports where relevant
- that the information provided by the EAP to I&APs and any response of the EAP to comments or inputs made by I&APs are correctly reflected herein



Signature of the Environmental Assessment Practitioner

Singo Consulting (Pty) Limited

Name of company

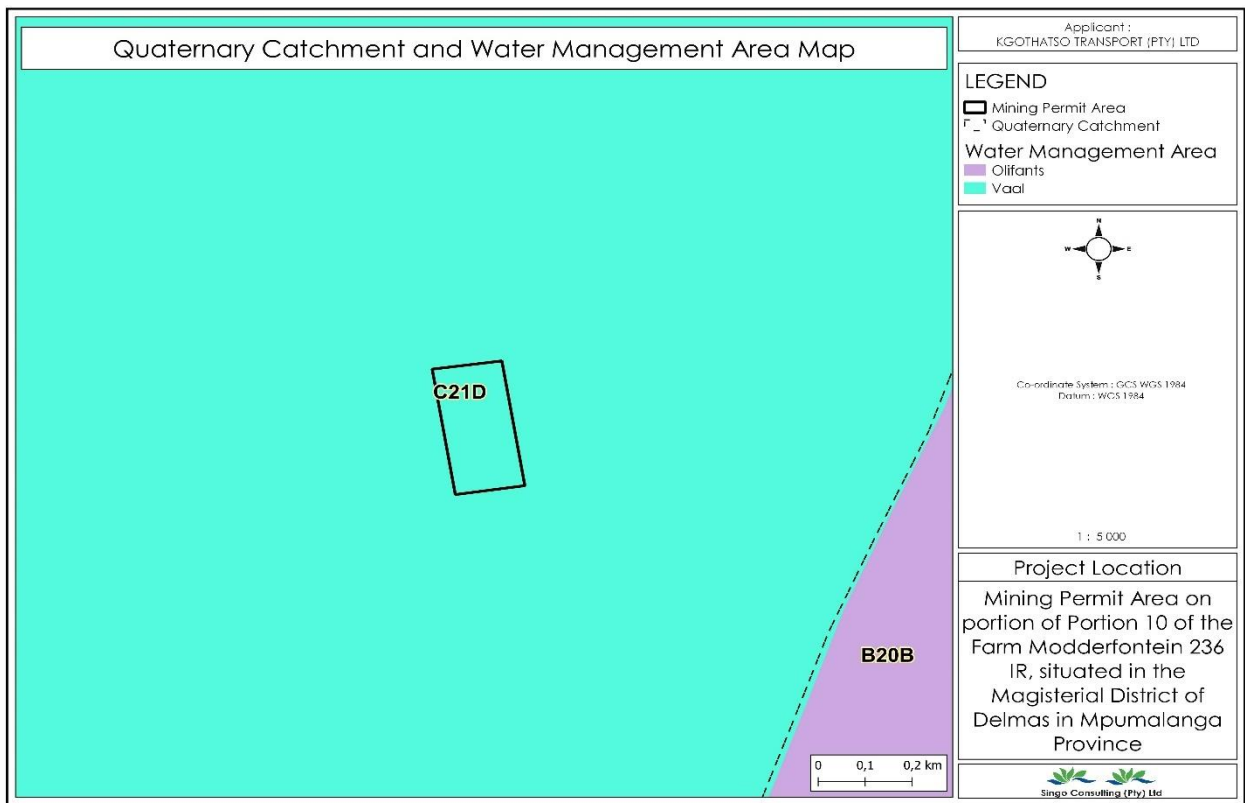
18/08/2022

Date

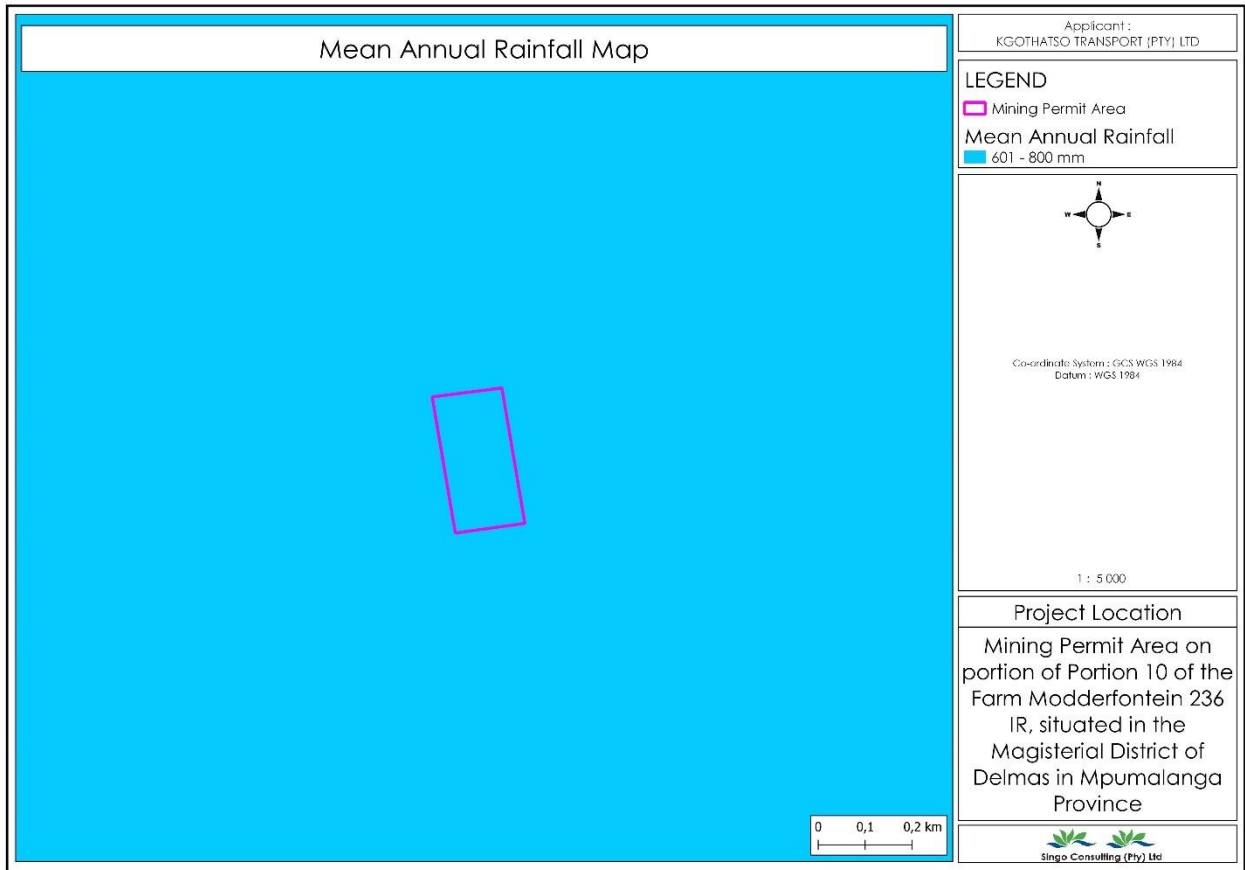
-END-



Moisture Availability



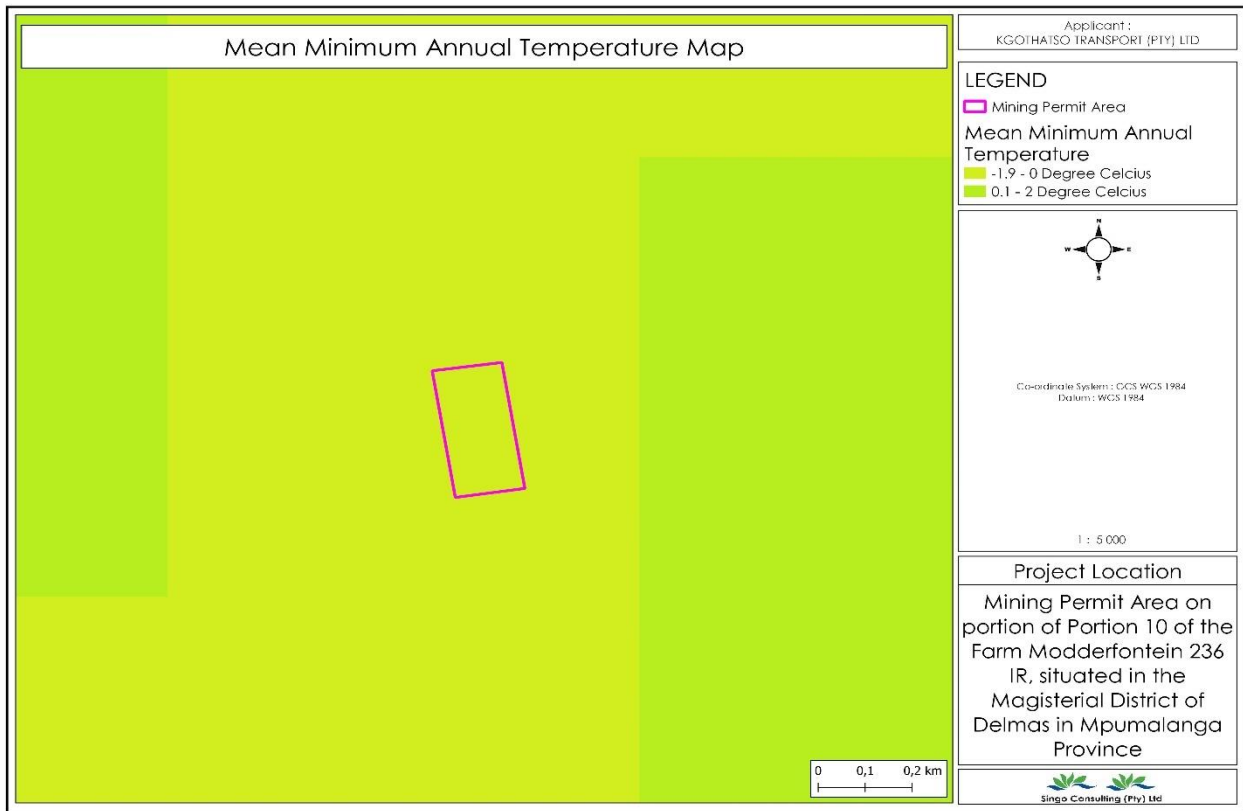
Quaternary Catchment Map



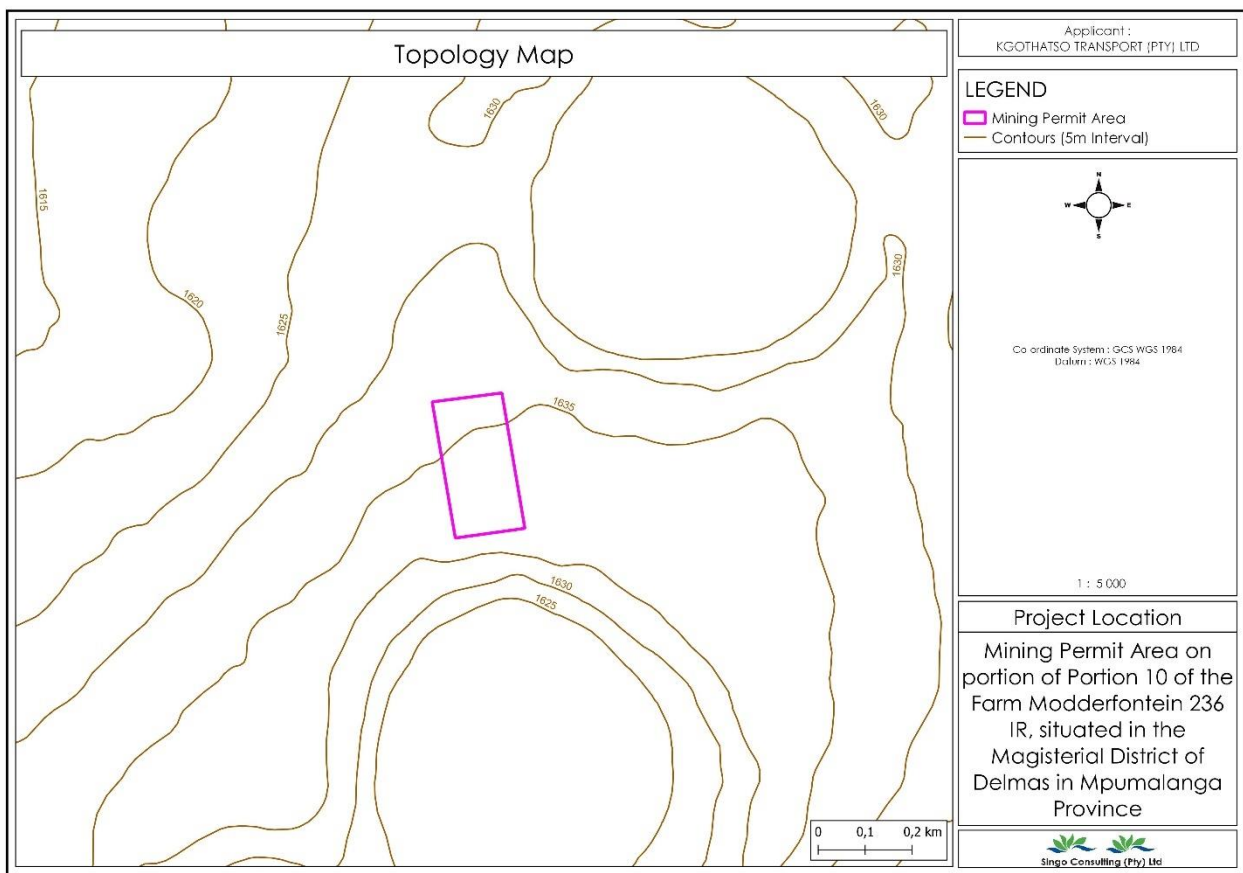
Mean Annual Rainfall Map



Soil Classes



Mean Minimum Annual Temperature



Topology Map



Vegetation Type Map

Appendix 2: Consultation with Stakeholders

Due to POPIA, this information will only be available on the final BAR.

Appendix 3: Supporting impact assessment.

Environmental impact statement

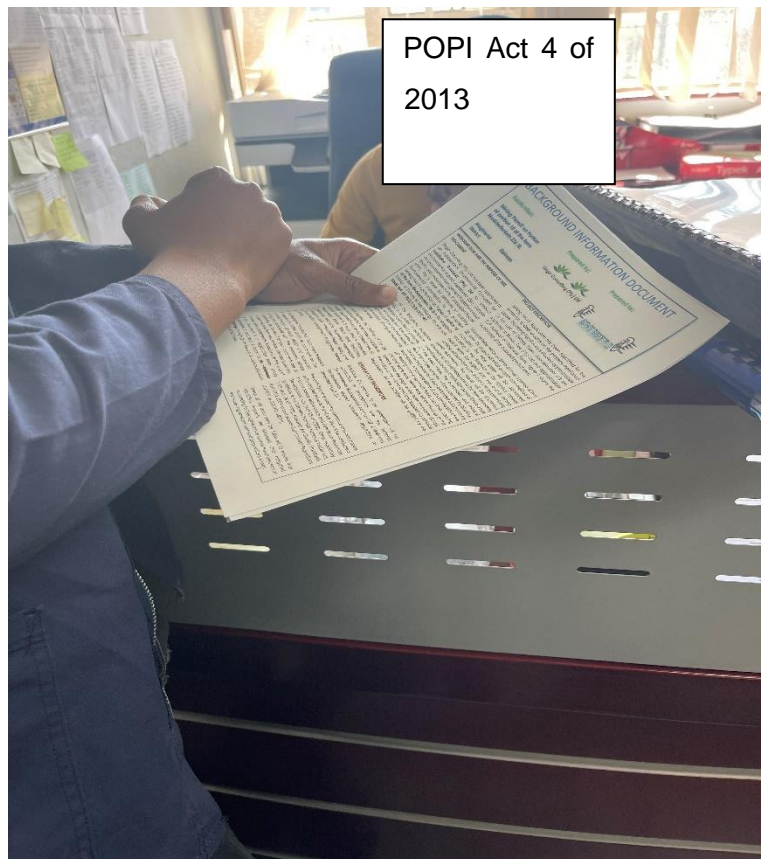
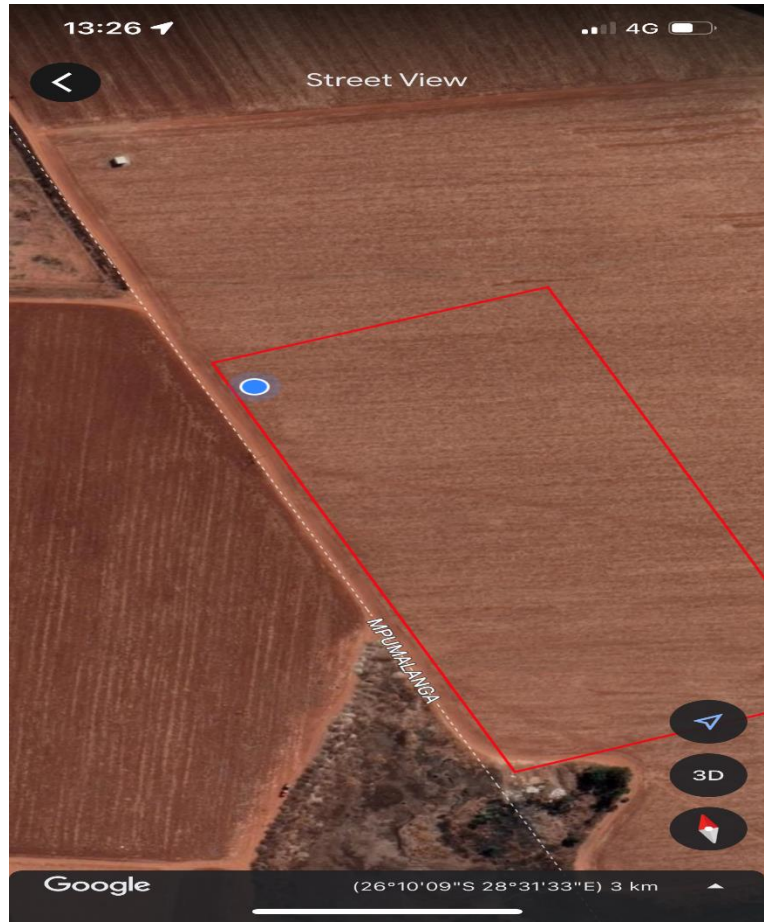
Taking the assessment of potential impacts into account, herewith please receive an environmental impact statement that summarises the impact that the proposed activity may have on the environment after the management and mitigation of impacts have been considered, with specific reference to types of impact, duration of impacts, likelihood of potential impacts occurring and significance of impacts.

Type of impact	Likelihood	Significance
Site establishment/ construction phase	Duration: Planning phase	
Topsoil stripping and stockpiling		
Visual intrusion associated with mining area establishment	Possible	Medium concern
Dust nuisance caused by soil disturbance	Low possibility	Low concern
Noise nuisance caused by machinery stripping and stockpiling topsoil	Low possibility	Low concern
Infestation of topsoil heaps by weeds and invader plants	Low possibility	Low concern
Loss of topsoil due to incorrect storm water management	Low possibility	Low concern
Area contamination with hydrocarbon/hazardous waste	Low possibility	Low concern
Operational phase	Duration: Operational phase; minimum of 3 years	
Blasting		
Health and safety risk posed by blasting activities	Low possibility	Low concern
Dust nuisance caused by blasting activities	Definite	Low-medium concern
Noise nuisance caused by blasting activities	Definite	Low-medium concern
Excavation		
Visual intrusion associated with the excavation activities	Definite	Medium concern
Dust nuisance due to excavation activities	Low possibility	Low concern
Noise nuisance generated by excavation equipment	Low possibility	Low-medium concern
Unsafe working conditions for Employees	Low possibility	Low concern
Negative impact on the fauna and flora of the area	Low possibility	Low concern
Area contamination with hydrocarbon/hazardous waste	Low possibility	Low concern

Weed and invader plant infestation of the area	Low possibility	Low concern
--	-----------------	-------------

Crushing		
Dust nuisance due to the crushing activities	Possible	Low-medium concern
Noise nuisance generated by the crushing activities	Possible	Low-medium concern
Area contamination with hydrocarbon/hazardous waste	Low possibility	Low-medium concern
Stockpiling and transporting		
Visual intrusion associated with the stockpiled material and vehicles transporting the material	Low possibility	Low-medium concern
Loss of material due to ineffective storm water handling	Low possibility	Low concern
Weed/invader plant infestation of area due to soil disturbance	Low possibility	Low concern
Dust nuisance from stockpiled material and vehicles transporting the material	Low possibility	Low concern
Degradation of access roads	Possible	Low-medium concern
Noise nuisance caused by vehicles	Low possibility	Low concern
Area contamination with hydrocarbon/hazardous waste	Low possibility	Low concern
Decommissioning phase	Duration: Decommissioning phase	
Sloping and landscaping during rehabilitation		
Soil erosion	Low possibility	Low concern
Health and safety risk posed by un-sloped areas	Low possibility	Low concern
Dust nuisance caused by sloping and landscaping	Low possibility	Low concern
Noise nuisance caused by machinery	Low possibility	Low concern
Area contamination with hydrocarbon/hazardous waste	Low possibility	Low concern
Replacing of topsoil and rehabilitation of disturbed area		
Loss of reinstated topsoil due to absence of vegetation	Low possibility	Low concern
Infestation of the area by weed/invader plants	Low possibility	Low concern

Appendix 4: Photographs of the site







NOTICE OF PUBLIC PARTICIPATION FOR MINING PERMIT AND ENVIRONMENTAL AUTHORIZATION APPLICATION

Notice of Mining Permit Application Process as per the Mineral and Petroleum Resources Development Act (Act 28 of 2002) for the proposed mining permit project on **portion 10 of the Farm Modderfontein 236 IR**, under the Magisterial District of Delmas, Mpumalanga Province, with **DMRE Ref: MP 30/5/1/3/2/13242 MP**.

Mining Permit Area with an extent of approximately 5 Hectares on portion of Portion 10 of the Farm Modderfontein 236 IR, situated in the Magisterial District of Delmas in Mpumalanga Province

Figure 1: Proposed mining permit area: (28.5255135; -26.1684764)

INVITATION TO COMMENT

Notice is given in terms of the Mineral and Petroleum Resources Development Act-1 (MPRDA) (Act 28 of 2002), and EIA regulations 2014, published under Government Notice No.982 in Gazette No. 3622 of 4 December 2014, amended on 7 April 2017. Kgotlhatso Transport (Pty) Ltd has applied for a mining permit for extraction of coal.

As part of the EIA process, more especially the Public Participation Process (PPP) for this proposed prospecting project. Interested and Affected Parties (I&APs) are invited to register and kindly submit any comments or concerns to reach **Ms Valentine Mhlongo** by no later than **Monday the 29th of August 2022**, using the contact details provided below. The public is also invited to review and comment on the Draft Basic Assessment Report (DBAR) and Environmental Management Programme report (EMPR). The Draft BAR & EMP will be available for review for 30 days' calendar period from **Monday the 29th of August 2022** until **Wednesday the 21st of September 2022**. The Draft BAR & EMP will be available at the **Delmas Public Library (Cnr. Sarel Cilliers & Van Riebeeck, 2210 Delmas, Mpumalanga)**, a soft copy upon request from Singo Consulting (Pty) Ltd using the contact details of the EAP below.

ENVIRONMENTAL ASSESSMENT PRACTITIONER **APPLICANT**

Singo Consulting (Pty) Ltd
Office: 870, S. Bataleka Street
Postal: P.O. Box 2, Middelburg, 1045
Ms Valentine Mhlongo
Tel No.: +27 13 492 0241
Fax No.: +27 13 492 0119
Cell No.: +27 81 813 0534
Email: valentines@singoc Consulting.com

KGOTLHATSO TRANSPORT PTY LTD
Registered Office No. 4, Jubbah Centre Park, Delmas, 2210
Mr. Morné Swales Mhlangeniwe
Tel No.: +27 13 492 0242
Fax No.: +27 86 834 3705
Cell No.: +27 81 076 8327
Email: kgotlhatsotransport100@gmail.com



Appendix 5: Letter from Competent Authority (DMRE)



Private Bag X7279, Emalahleni, 1035, Tel: 013 653 0500, Fax 013 690 3288, Saveways Centre, First Floor, Mandela Drive, Emalahleni, 1035, Directorate: Mineral Regulation: Mpumalanga Region, Enquiries: P. Maluleka Email Address: P.Maluleka@dmre.gov.za Sub-directorate: Mineral Laws, Ref: MP 30/5/1/1/3/13242 MP.

BY: Email/Fax

The Director/s
Kgothatso Transport (Pty) limited
Highveld Mall
Witbank
1035

Fax: 086 5144 103

Email Address: kenneth@singoconsulting.co.za

ACCEPTANCE OF AN APPLICATION FOR MINING PERMIT IN TERMS OF SECTION 27 OF THE MINERAL AND PETROLEUM DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) [HEREIN AFTER REFERRED TO AS THE ACT] AS AMENDED BY SECTION 23 OF THE MINERALS AND PETROLEUM RESOURCES DEVELOPMENT AMENDMENT ACT, 2008 (ACT 49 OF 2008) [HEREINAFTER REFERRED TO AS THE AMENDMENT ACT].

1. Please be informed that your application for a mining permit to mine **Coal on Portion of Portion 10 of the farm Modderfontein 236 IR, Magisterial District of Delmas**, is hereby accepted in terms of Section 27 and 9(1) (b) of the Act.
2. Further be informed that there is a prior application received by the same company under file reference number 13132MP which remain a decision to either grant or refuse and should it become successful, yours will automatically falls away.
3. Furthermore, note that acceptance of your application does not grant you the right to commence with mining operations. Your application will be evaluated/ processed and a recommendation will be made on either to issue or refuse your application. Any person operating without an issued mining permit will be in contravention of Section 5(4) of the MPRDA and would be guilty of an offence in terms of the relevant Act.

13242 MP- Acceptance

4. Should you wish to continue with the application **irrespective of the risk associated with Section 9(1)(b) of the Act**. Please take notice that in terms of Section 27(5) of the Act as amended by Section 23(e)(a) and Section 23(e)(b) of the Amendment Act, you are required to:-

4.1. To consult in the prescribed manner with the landowner, lawful occupier and any interested and affected parties and the Land Restitution Commission including and to include the result of such consultation in the relevant environmental reports to be submitted and uploaded on the SAMRAD system.

5. **Please take note that failure to adhere to the timeframe stipulated above and to submit any documentation required in terms of this notice will result into non-compliance with the provision of the Act and the Amendment Act and will result in your application being processed for refusal.**

Yours Faithfully:



REGIONAL MANAGER

MPUMALANGA REGION

DATE: 15/06/2022

Appendix 6: Proof of Submission

SAHRIS

[MyDashboard](#) [Explore](#) [Create](#) [Calendar](#) [Maps](#) [Help](#)

Heritage Cases

VIEW EDIT

MP 30 /5/1/3/2/(13242) MP)

[Add new comment](#) [Subscribe to: This post](#) 6 reads

CaseHeader **LocationInfo** **Admin**

Status: DRAFT

HeritageAuthority(s): SAHRA
MPHRA

Case Type: Section 38 (8) - Statutory Comment Required

Development Type: Mining

ProposalDescription:
Mining Permit on Portion of portion 10 of the farm Modderfontein 236 IR

Expanded_Motivation:
Mining Permit on Portion of portion 10 of the farm Modderfontein 236 IR situated in the magisterial district of Delmas, Mpumalanga Province

ApplicationDate: Thursday, July 14, 2022 - 14:35

CaseID: 19046

Applicants: Kgothatso Transport (Pty) Ltd

Consultants/Experts: Ndinannyi Kenneth

OtherReferences:

Dept	CaseReference	DueDate	FinalDecision
DMR-MP	MP 30 /5/1/3/2/ 13242 MP	14/08/2022	

ReferenceList:

AdditionalDocuments

- [Background Information Documents-Kgothatso.pdf](#)

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Appendix 7: CV of the EAP & EAP Supervisor

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

Appendix 8: Specialist Studies