PROPOSED PROSPECTING RIGHT ON PORTION 5 OF THE FARM KLOPPERSBOS 128 JR AND PORTIONS 1, 7 AND 8 OF THE FARM EKUPHUMULENI 716 JR (409.7979 HA), WHICH FALLS IN MAGISTERIAL DISTRICT OF CULLINAN (NOKENG TSA TAEMANE LOCAL MUNICIPALITY), CITY OF TSHWANE, GAUTENG PROVINCE

DRAFT BASIC ASSESSMENT REPORT

SEPTEMBER 2020

REFERENCE NUMBER: *GP30/5/1/1/2/10650PR*

PREPARED FOR:	**PREPARED BY:**
Lomeza Opencast Operations (Pty) Ltd Postnet Suite 398 Private Bag x 7297 Witbank 1035 Tel: 012 665 2261/2	Greenmined Environmental Tel: 021 851 2673 Cell: 084 585 5706 Fax: 086 546 0579 E -mail: sonette.s@greenmined.co.za

EXECUTIVE SUMMARY

Lomeza Opencast Operations (Pty) Ltd ("hereinafter referred to as "the Applicant"), applied for environmental authorisation (EA) and a prospecting right for coal on portion 5 of the farm Kloppersbos 128 JR and portions 1, 7 and 8 of the farm Ekuphumuleni 716 JR (409.7979 ha), which falls in Magisterial District of Cullinan (Nokeng Tsa Taemane Local Municipality), City of Tshwane, Gauteng Province.

All documentation, to date, was based on preliminary data, surrounding information and desktop studies. Access to the study area was denied by the landowners, resulting in limited information being provided to all commenting parties. Numerous attempts and letters requesting access to the properties by the applicant was all in vain. Greenmined is unable to provide the I&AP's and stakeholders with material information with regards to this prospecting right application and it is therefore clear that the relevant authorities will not be able to provide informed comments, irrespective should it be positive or negative. However, due to the landowners' refusal to grant access to the properties, the proper studies could not be conducted.

The proposed project triggers listed activities in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations 2014 (as amended 2017) and therefore requires an environmental impact assessment (basic assessment process) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation. This report, the Draft Basic Assessment Report, forms part of the departmental requirements, and presents the first report of the EIA process.

Site Alternative 1 (Preferred and Only Site Alternative):

Site Alternative 1, which entails the prospecting area in which drilling sites can be moved to various positions in consultation with the land owners depending on sensitivity and accessibility. However, the proposed prospecting area was identified as the preferred and only viable site alternative. In light of this, S1 was identified during the assessment phase of the environmental impact assessment, by the Applicant and project team due to the following:

- The geological setting of the area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top.
- Availability of the coal resource will only be determined should prospecting the prospecting right be granted and drilling can take place.

No-go Alternative:

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

- The applicant will not be able to prospect for any possible coal resource;
- The application, if approved, would allow the applicant to determine the available coal as well as provide employment opportunities to local employees. Should the no-go alternative be followed these opportunities will be lost to the applicant, potential employees and clients; and
- The applicant will not be able to diversify the income of the property.

Not proceeding with the proposed operation will entail that a mineral which if found will contribute towards the local and provincial social and economic structures of the area, will not be mined, and that this opportunity will be lost.

Public Participation Process:

During the initial public participation process the stakeholders and I&AP's were informed of the project by means of background information documents that were sent directly to the contact persons. An advertisement that was placed in The Beeld on the 8th July 2020, and two on-site notices were placed one at the entrance to the farm and one at the Spaza shop at D327 (Kwamahlanga and Klopperbos Pyramid Crossing) on the 7th July 2020. A 30-days commenting period was allowed which expired on 11th August 2020. Thus far, only the landowners registered on the project; no other comments or objections have been received. In accordance with the timeframes stipulated in the EIA Regulations, 2014 (as amended by GNR 326 effective 7 April 2017) the Draft Basic Assessment Report was compiled and will be distributed for comment and perusal to the I&AP's and stakeholders. A 30-day commenting period, ending 05 October 2020, will be allowed for perusal of the documentation and submission of comments. The comments received on the DBAR will be incorporated into the Final Basic Assessment Report (FBAR) to be submitted for decision making to DMR.

Basic Assessment Report:

The Basic Assessment Report identifies the potential positive and negative impacts that the proposed activity will have on the environment and the community as well as the aspects that may impact on the socio-economic conditions of directly affected persons, and proposes possible mitigation measure that could be applied to modify / remedy / control / stop the identified impacts.

The key finding of the environmental impact assessment entail the following:

Topography:

The study area consist of undulating terrain occurs mainly in a broad arc south of the Springbokvlakte from the Pilanesberg in the west through Hammanskraal and Groblersdal to GaMasemola in the east. A generally narrow irregular band along the northwestern edge of the Springbokvlakte (including Modimolle) extending into a series of valleys and lower-altitude areas within the Waterberg including the upper Mokolo River Valley near Vaalwater, the corridor between Rankins Pass and the Doorndraai Dam, and the lowlands from the Mabula area to south of the Hoekberge. Some isolated sandy rises are found on the Springbokvlakte. The altitude varies between 1100–1 217 m.

Visual Characteristics:

The viewshed analysis showed that the visual impact of the proposed prospecting operation will be of low significance. The small scale of the proposed operation contributes to the low visual significance. Should the Applicant successfully rehabilitate the prospecting areas (upon closure), no residual visual impact is expected upon closure of the prospecting activities.

Air and Noise Quality:

The proposed activity will contribute the emissions of a drilling rig and a field vehicle to the receiving environment for the duration of the operational phase. Should the prospecting holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the machinery already operational at the property.

Geology and Soil:

The large southern and eastern parts of this area are underlain by granite of the Lebowa Granite Suite and some granophyre of the Rashoop Granophyre Suite (both Bushveld Complex, Vaalian). In the north, the sedimentary rocks of the Waterberg Group (Mokolian Erathem) are most important. specifically, sandstone, conglomerate and siltstone of the Alma Formation and sandstone, siltstone and shale of the Vaalwater Formation. Well-drained, deep Hutton or Clovelly soils often with a catenary sequence from Hutton at the top to Clovelly on the lower slopes; shallow, skeletal Glenrosa soils also occur. Land types mainly Bb, Fa, Ba, Bd and Ac

Soils vary from planted grassland previously improved grassland, to cultivated, temporary/permanent, commercial/subsistence irrigated/dryland. Soil fall within the following patterns:

LP1 – soils with minimal development, usually shallow or hard or weathered rock, with or without intermitted diverse soils. Lime rate to absent in in the landscape.

Hydrology:

The proposed site falls within the Crocodile (West) and Marico Water Management Area, in the A23B quaternary catchment area. There are various streams and small farm dams in the area. The Pienaars River is located approximately 3 km south west of the site and the Boekenhoutspruit located approximately 3 km to the east of the site area.

Mining, Biodiversity and Groundcover:

The prospecting activities does not require the removal of any large trees or vegetation of significance. Due to the small footprint of a borehole, the drill position can be manipulated to drill between the trees. In light of this, the impact of the prospecting operation on the vegetation cover of the receiving environment is deemed to be of Low significance.

Fauna:

Various small mammals and reptiles occur are likely to on the property. The fauna at the site will not be impacted by the proposed prospecting activity as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. As access to the site was denied at this stage no resident protected or red data faunal species could be identified within the earmarked footprint, and the project is expected to have a negligible impact in this regard as prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. The study area falls over properties that is noted to be operational game farms, should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers.

Cultural and Heritage Environment:

The proposed site falls in the surrounding area of the Komjekejeke Heritage site therefore a Heritage Impact Assessment will be conducted as soon as access to the site was granted by the landowners. The Applicant will implement a chance-find protocol on site for the duration of the planning and design / site establishment, operational- and decommissioning phase.

Site Specific Infrastructure:

The prospecting site will contain the following:

- Surveying Equipment;
- Drilling equipment;
- Geophysical logging equipment;
- Field Vehicles;
- Sample Analysis equipment; and
- Other relevant field equipment.

During the Environmental Impact Assessment process the feasibility of the proposed site was assessed to identify fatal flaws that are deemed as severe as to prevent the activity continuing, or warrant a site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing.

Environmental Management Programme (EMPR)

The EMPR provides a description of the impact management outcomes and closure objectives. It presents the impacts to be mitigated in their respective phases as well as stipulates the mitigation measures to be applied on site.

The financial provision 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 R 84 828.63**.

LIST OF ABBREVIATIONS

BID	Background Information Document
BGIS	Biodiversity GIS
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
DBAR	Draft Basic Assessment Report
DMRE	Department of Mineral and Resources and Energy
DoT	Department of Transport
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIA Regulations	Environmental Impact Assessment Regulations, 2014 (as amended 2017)
EISC	Ecological Importance and Sensitivity Category
EMPR	Environmental Management Programme
FBAR	Final Basic Assessment Report
GDARD	Gauteng Department of Agricultural an Rural Development
GDP	Gross Domestic Product
GPBP	Gauteng Biodiversity Plan
GNR	Government Notice
I&AP's	Interested and Affected Parties
MHSA	Mine Health and Safety Act, 1996 (Act No. 29 of 1996)
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NRTA	National Road Traffic Act, 1996 (Act No. 93 of 1996)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PCB's	Polychlorinated Biphenyl

PCO	Pest Control Officer
PES	Present Ecological State
PPE	Personal Protective Equipment
PR	Prospecting Right
PSM	Palaeontological Sensitivity Map
RA	Risk Assessment
REC	Recommended Ecological Category
S1	Site Alternative 1
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SAMBF	South African Mining and Biodiversity Forum
USBM	US Bureau of Mines
WMA	Water Management Area
WULA	Water Use Licence Application

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mineral resources
Department:
Mineral Resources
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).

NAME OF APPLICANT:	Lomeza Opencast Operations (Pty) Ltd
TEL NO:	012 665 2261/2
FAX NO:	N/A
POSTAL ADDRESS:	Postnet Suite 398, Private Bag x 7297, Witbank, 1035
FILE REFERENCE NUMBER SAMRAD:	GP30/5/1/1/2/10650PR

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 29 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 can be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) identify the alternatives considered, including the activity, location, and technology alternatives;

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:

  (i) the nature, signification, consequence, extent, duration, and probability of the impacts occurring to; and

  (ii) the degree to which these impacts –

    (aa) can be reversed;

    (bb) may cause irreplaceable loss of resources; and

    (cc) can be managed, avoided or mitigated;

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –

  (i) identify and motivate a preferred site, activity and technology alternative;

  (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and

  (iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) Details of: Greenmined Environmental

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the environmental impact assessment (EIA) of any activities regulated in terms of the aforementioned Act. Lomeza Opencast Operations (Pty) Ltd appointed Greenmined Environmental to undertake the study needed. Greenmined Environmental has no vested interest in Lomeza Opencast Operations (Pty) Ltd or the proposed project and declares its independence as required by the Environmental Impact Assessment Regulations, 2014 (as amended April 2017) (EIA Regulations).

i) Details of the EAP

Name of the Practitioner:	Mrs Sonette Smit (Senior Environmental Specialist)
Tel No.:	021 851 2673
Fax No.:	086 546 0579
E-mail address:	sonette.s@greenmined.co.za

ii) Expertise of the EAP.

(1) The qualifications of the EAP
(with evidence).

Mrs. S Smit has fourteen years of experience in environmental legal compliance audits, (GIS) geographic information system, mining right and permit applications and applications for environmental authorisations & Water use applications.. Please find full CV attached in Appendix M.

(2) Summary of the EAP's past experience.
(In carrying out the Environmental Impact Assessment Procedure)

Sonette Smit is an Environmental Consultant with 14 years' experience in the environmental sector. She specialized the last 8 years in the mining sector where she conducted the mining related report and programs. She has also been involved in a number of other environmental and water use application projects

where she compiled environmental management plans, environmental impact assessments, environmental audits, IWULA's/IWWMP's.

b) Location of the overall Activity.

Table 1: Location of the proposed project.

Farm Name:	Portion 5 of the farm Kloppersbos 128 JR and portions 1, 7 and 8 of the farm Ekuphumuleni 716 JR
Application area (Ha)	409.7979 ha
Magisterial district:	Cullinan
Distance and direction from the nearest town	The farms portion 5 of the farm Kloppersbos 128 JR and portions 1, 7 and 8 of the farm Ekuphumuleni 716 JR is situated approximately 15.63 km North-West of Cullinan.
21 digit Surveyor General Code for each farm portion	T0JR00000000012800005 T0JR00000000071600001 T0JR00000000071600007 T0JR00000000071600008

c) Locality map

(show nearest town, scale not smaller than 1:250000).

The requested map is attached as Appendix F.

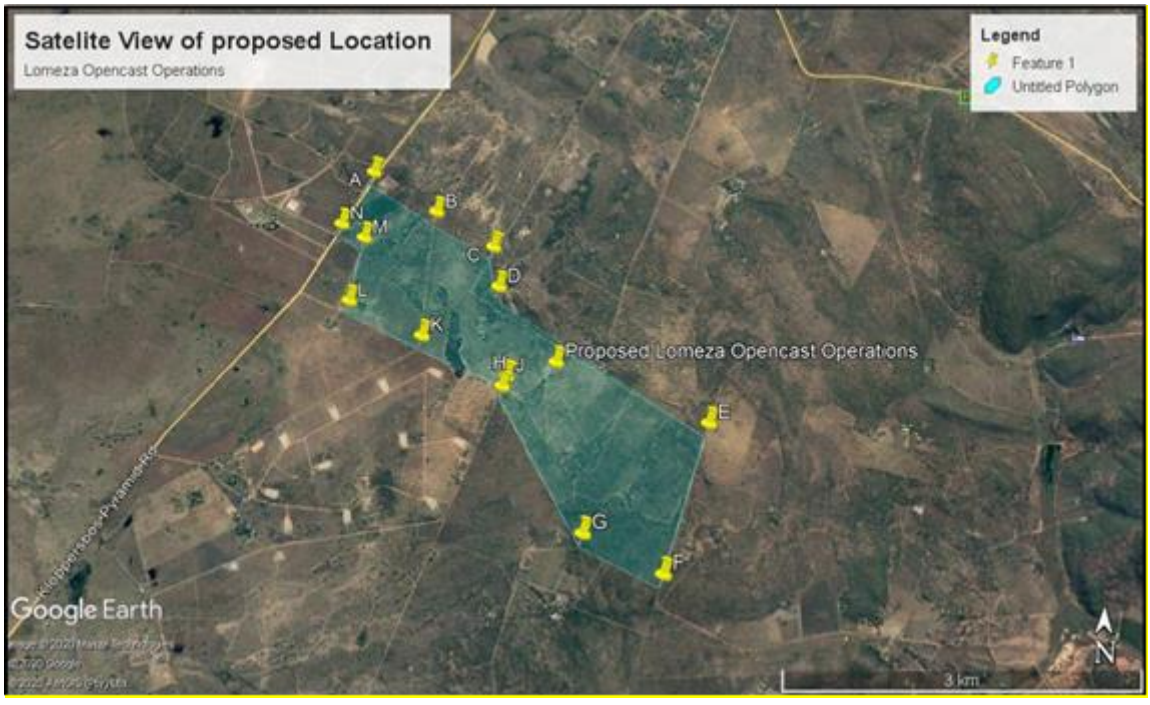


Figure 1: Satellite view of the proposed prospecting right area of Lomeza Opencast Operations (image obtained from Google Earth).

d) Description of the scope of the proposed overall activity.

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

Lomeza Opencast Operations (Pty) Ltd ("hereinafter referred to as "the Applicant") applied for a prospecting right on portion 5 of the farm Kloppersbos 128 JR and portions 1, 7 and 8 of the farm Ekuphumuleni 716 JR (409.7979 ha), which falls in Magisterial District of Cullinan (Nokeng Tsa Taemane Local Municipality), City of Tshwane, Gauteng Province. The proposed prospecting area is a natural area. The planned activities for the proposed site's is detailed below under point ii.

All activities will be contained within the boundaries of the site.

i) Listed and specified activities

Table 2: Listed and specified activities triggered by the associated prospecting activities

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablution facilities, accommodation, equipment storage, sample storage, site office, access route etc... etc... etc E.g. for mining – excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	**Aerial extent of the activity** Ha or m^2	**LISTED ACTIVITY** Mark with an X where applicable or affected	**APPLICABLE LISTING NOTICE** (GNR 324, GNR 325, GNR 326 OR GNR 327)
SITE VISISTS BY VARIOUS SPECIALIST	409.7979 ha	N/A	Not Listed
DEMARCATION OF SITE WITH VISIBLE BEACONS.	409.7979 ha	N/A	Not Listed
STRIPPING AND STOCKPILING OF TOPSOIL	0.04 ha	X	GNR 327 Listing Notice 1: Activity 20 GNR 324 Listing Notice 3 of 2017 Activity 12
DRILLING	0.04 ha	X	GNR 327 Listing Notice 1: Activity 20 GNR 324 Listing Notice 3 of 2017 Activity 12
GENERAL	0.04 ha	X	GNR 327 Listing Notice 1: Activity 20 GNR 324 Listing Notice 3 of 2017 Activity 12
OVERALL FINAL REHABILITATION ACTIVITITES	409.7979 ha	X	GNR 327 Listing Notice 1: Activity 20 GNR 327 Listing Notice 1: Activity 22

ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to the prospected/mined and for a linear activity, a description of the rout of the activity)

DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

(These activities do not disturb the land where prospecting will take place, e.g. aerial photography, desktop studies, aeromagnetic surveys, etc.)

Phase 1 (months 1 to 2), phase 3 (months 6 to 9) and phase 4 (months 10 to 12)

Desktop studies form a very important preparatory step in a new coal exploration project, and as the name suggests, this task is executed mainly from an office environment. Desktop studies will be conducted by the project geologist as part of preliminary investigations into the prospecting area by looking at all relevant published literature, geological maps, mining maps and any available evidence or records of coal findings. The outcome of the desktop studies will be a geological report of the prospecting area with a particular emphasis on the prospectivity of the area. This report will also inform other subsequent prospecting steps.

Field geological studies will follow after the desktop studies, and they typically include walking over the prospecting area making general observations of the geology and topography. Geological mapping activities, if terrain is suitable, may include detailed outcrop mapping, identification of coal hosting strata, coal seam outcrop mapping and sampling of exposed coal seams where available.

The 3D geological modelling and resource estimation step will follow after favourable exploration drilling results. This geological modelling step mainly entails geological interpretation of collected log sheet data and the subsequent geological domaining. The geological model, which shows the physical continuity of the coal seams and the distribution of the coal qualities, is a critical input in coal resource estimation. The coal resource statement, which is an outcome of the resource estimation process, gives an indication of the amount of available coal resources in tonnage and associated qualities.

DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc.)

Phase 2 (months 3 to 5)

The objective of the exploration drilling is to confirm the presence of coal measures, delineate the vertical and lateral extents of the coal measures and through suitable tests the quality of the coal. Percussion and diamond coring are the preferred drilling methods. The resultant drill holes will be cased and capped to make it safe for people and animals, and also allow for future access by the exploration team.

DESCRIPTION OF PRE-/FEASIBILITY STUDIES:

(Activities in this section include but are not limited to: initial geological modelling, resource determination, possible future funding models, etc.)

The pre-/feasibility studies team will comprise of a diverse team of technical expertise in the field of mineral projects, including, geologists, mining engineers, metallurgical engineers, civil engineers, mechanical engineers, environmental scientists, marketing professionals and mineral project finance professionals. The list of activities under pre-/feasibility studies includes the following:

- Geological modelling and coal resource estimation;
- Coal reserve estimation;
- Mine design and scheduling;
- Metallurgical processing;
- Market development;
- Infrastructure design
- Engineering development
- Human resourcing
- Project development and operational costing

The prospecting site will contain the following:

- Surveying Equipment;
- Drilling equipment;
- Geophysical logging equipment;
- Field Vehicles;
- Sample Analysis equipment; and
- Other relevant field equipment.

MAIN PROSPECTING ACTIVITIES:

Drill site establishment:

- A drill site of approximately 200 m² will be established that will require:
- Clearing of vegetation for sumps and the drill entrance point – a maximum of three sumps, with each sump not measuring more than 1 m² will be operation at a time, a total of 3 m² will be cleared per site.
- Laydown area for drill rods,
- Fuel and chemical will be stored in a field vehicle;
- Chemical toilets will be placed in the vicinity of the site.

Drilling and removal of geological cores:

- Drilling a hole of approximately 67 mm in diameter and removing of rock core. Number of boreholes will be finalised once non-invasive prospecting is completed.

See attached as Appendix C a copy of the site activities map for the proposed project.

The table below lists the GPS coordinates of the proposed prospecting area as shown on the Regulation 2(2) Mine Plan attached as Appendix A.

Table 3: GPS Coordinates of the proposed prospecting footprint.

Name	DEC DEGREES	
	LAT	LONG
A	-25.493619831	28.381092381
B	-25.497155124	28.387415755
C	-25.500204797	28.393007643
D	-25.503179312	28.391373813
E	-25.51496320	28.413069678
F	-25.526847987	28.409158355
G	-25.523968817	28.402242076
H	-25.512392208	28.394590841
J	-25.511548660	28.394936059
K	-25.508341210	28.387014650
L	-25.505521377	28.380050866
M	-25.499793584	28.380818082
N	-25.498606615	28.378577787
A	-25.493619831	28.381092381

Should the PR be issued and the prospecting for coal will be allowed, the proposed project will comprise of activities that can be divided into four key phases (discussed in more detail below) namely the:

Phase	**Activity** (what are the activities that are planned to achieve optimal prospecting)	**Skill(s) required** (refers to the competent personnel that will be employed to achieve the required results)	**Timeframe** (in months) for the activity)	**Outcome** (what is the expected deliverable, e.g. geological report, analytical results, feasibility study, etc)	**Timeframe for outcome** (deadline for the expected outcome to be delivered)	**What technical expert will sign off on the outcome?** (e.g. geologist, mining engineer, surveyor, economist, etc)
1	Non-Invasive prospecting - Desktop study	Geologist	1 month	Geological report based on literature survey of records or evidence of coal findings in the prospecting area.	Month 1	Geologist
1	Non-invasive prospecting - Geological mapping	Geologist	1 month	Geological map of the prospecting area	Month 2	Geologist
2	Invasive prospecting - First phase drilling on a widely spaced grid using percussion and geophysical logging of boreholes	Geologist, surveyor, geophysicist and drilling contractor	1 month	First phase exploration drilling report	Month 3	Geologist
2	Invasive prospecting - Second phase drilling using diamond coring. Laboratory test work on recovered core samples	Geologist, surveyor, geophysicist, drilling contractor and laboratory contractor	1 – 2 months	Second phase exploration drilling report	Month 5	Geologist
3	Non-invasive prospecting - 3D geological modelling and resource estimation	Geologist	1 – 2 months	3D geological model and coal resource statement	Month 7	Geologist
3	Non-invasive prospecting - Prefeasibility study	Geologist, Mining Engineer, Environmental practitioner, Metallurgist, Marketing specialist, Accountant	1 – 2 months	Prefeasibility report	Month 9	Geologist and Mining Engineer
4	Non-invasive prospecting - Bankable feasibility study	Geologist, Mining Engineer, Environmental practitioner, Metallurgist, Marketing specialist, Accountant	2 – 3 months	Bankable feasibility report	Month 12	Geologist and Mining Engineer

e) Policy and Legislative Context

Table 4: Policy and Legislative Context.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity: *Physical Environment – Geology and Soil.* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of invader plant species*.	The mitigation measures proposed for the site includes specifications of the CARA, 1983.
Mine Health and Safety Act, 1996 (Act No 29 of 1996) read together with applicable amendments and regulations thereto including relevant OHSA regulations.	Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of Health and Safety Risks.*	The mitigation measures proposed for the site includes specifications of the MHSA, 1996
Mineral and Petroleum Resources Development Act, 2002, (Act No. 28 of 2002) read together with applicable amendments and regulations thereto. • Section 16	Part A(1)(d) Description of the scope of the proposed overall activity	Application for a prospecting right submitted to DMRE-GP. Ref No: GP30/5/1/1/2/10650PR
National Environmental Management Act,1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended by GNR 326 effective 7 April 2017) • GNR 324 Listing Notice 3 Activity 12 • GNR 327 Listing Notice 1 Activity 20 • GNR 327 Listing Notice 1 Activity 22	Part A(1)(d)(i) Listed and specified activities.	Application for environmental authorisation submitted to DMRE-GP Ref No: GP30/5/1/1/2/10650PR
National Environmental Management: Air Quality Control Act, 2004 (Act No 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Air and Noise Quality.* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Dust Handling*.	The mitigation measures proposed for the site take into account the NEM:AQA, 2004 and the National Dust Control Regulations.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity - *Biological Environment* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of invader plant species*.	The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004.
National Environmental Management: Waste Act, 2008 (Act No 59 of 2008) read together with applicable amendments and regulations thereto. NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)	Part A(1)(d)(ii) Description of the activities to be undertaken	The mitigation measures proposed for the site take into account the NEM:WA.
National Heritage Resources Act. 1999 (Act No 25 of 1999).	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Human Environment*	The mitigation measures proposed for the site includes specifications of the NHRA, 1999.
Guideline on Need and Desirability	Part A(1)(f) Need and desirability of the proposed activities.	The need and desirability of the project was assessed in accordance with these guidelines.
The South African Constitution	Implied throughout the document	To be upheld throughout the EIA assessment, planning-, construction-, operational- and decommissioning phases.
Public Participation Guideline in terms of the NEMA EIA Regulations	Part A(1)(h)(ii) Details of the Public Participation Process Followed	Public participation was conducted in accordance with the guidelines published in terms of the NEMA EIA Regulations

f) Need and desirability of the proposed activities.

(Describe Methodology or technology to be employed, including the type of commodity to the prospected/mined and for a linear activity, a description of the rout of the activity)

Table 5: Need and desirability determination.

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
How were ecological integrity considerations taken into account?	As discussed under *Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity*, the prospecting activities does not require the removal of any large trees or vegetation of significance. Due to the small footprint of a borehole, the drill position can be manipulated to drill between the trees. In light of this, the impact of the prospecting operation on the vegetation cover of the receiving environment is deemed to be of Low significance. Also refer to: • Part A(1)(g)(i) Details of the development footprint alternatives considered; • Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Vegetation; • Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk.	Desirable
How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity?		
How will this development pollute and/or degrade the biophysical environment?	Due to the small scale and nature of the prospecting activities the pollution potential is of low significance. The project is expected to have a negligible impact in this regard as prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners., thereby keeping the impact on the receiving environment as low as possible.	
What waste will be generated by this development?	The general waste generated by the prospecting activities mainly consist of items such as food wrappers of the drilling operators. This is kept within the site vehicles and daily removed from site. As mentioned earlier, hazardous waste is mainly the result of accidental spillages/breakdowns. Such contaminated areas are immediately (within first hour of the occurrence) cleaned and the contaminated soil is contained in a designated hazardous waste container that is daily (when applicable)	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
	removed, from where it is disposed of as hazardous waste at the nearest hazardous waste disposal site. The chemical toilet will be serviced by an accredited contractor. No waste is/will be disposed of or treated on site.	
How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage?	The proposed site falls in the surrounding area of the Komjekejeke Heritage site, therefore a Heritage Impact Assessment will be conducted as soon as access to the site was granted by the landowners. The Applicant will implement a chance-find protocol on site for the duration of the planning and design / site establishment, operational- and decommissioning phase"	Could not be determined
How will this development use and/or impact on non-renewable natural resources?	As per the prospecting work programme (PWP) The area of interest is situated just north of the Witbank Coalfield, which extends about 190 km west-east between the towns of Springs and Belfast and about 60 km in a north-south direction between the towns of Middelburg and Ermelo. The area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top. For over a century the Witbank Coalfield has been the major coal producing area in South Africa and continues to be so; it is estimated that since the first commercial exploitation of coal in 1870, over 50% of the coal produced in South Africa has come from the Witbank Coalfield. Therefore, only should this prospecting right be approved the applicant will be able to, prospect for any possible coal resource; Only should the prospecting right be approved a reserve of coal will be determined.	Could not be determined
How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part?	The prospecting activities does not make use of electricity and no water is needed to allow the operation of the activity.	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
How were a risk-averse and cautious approach applied in terms of ecological impacts?	If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that ecological impacts should be fully mitigated.	Desirable
How will the ecological impacts resulting from this development impact on people's environmental right?	Should the prospecting activities be approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of very low significance. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that no environmental rights of the surrounding residents/public will be affected by the ecological impacts associated with the proposed activity.	Highly Desirable
Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts. Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area? Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified, resulted	As access to the site was denied at this stage no resident protected or red data species could be identified within the earmarked footprint, and the project is expected to have a negligible impact in this regard as prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. The study area falls over properties that is noted to be operational game farms, should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers.	Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
in the selection of the "best practicable environmental option" in terms of ecological considerations		
2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
What is the socio-economic context of the area?	Please refer to Heading 2(h)(iv)(1)(a) Socio-economic Environment.	Highly Desirable
Considering the socio-economic context, what will the socio-economic impacts be of the development, and specifically also on the socio-economic objectives of the area?	As mentioned earlier, should this prospecting right be approved the applicant will be able to, • Prospect for any possible coal resource; • Determine the available coal as well as provide employment opportunities to local employees. • It will also diversify the income of the property as well as potential employees and clients.	
How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the prospecting activities will not affect the physical, psychological, cultural or social needs of the community in a negative manner. nor will the it impact negatively on the socio-economic status of the area.	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
Will the development result in equitable impact distribution, in the short- and long-term?	The prospecting activities proposes to operate in a socially and economically sustainable manner during both the short- and long term.	Highly Desirable
In terms of location, describe how the placement of the proposed development will contribute to the area.	As per the prospecting work programme (PWP) The area of interest is situated just north of the Witbank Coalfield, which extends about 190 km west-east between the towns of Springs and Belfast and about 60 km in a north-south direction between the towns of Middelburg and Ermelo. The area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top. For over a century the Witbank Coalfield has been the major coal producing area in South Africa and continues to be so; it is estimated that since the first commercial exploitation of coal in 1870, over 50% of the coal produced in South Africa has come from the Witbank Coalfield. Therefore only should this prospecting right be approved the applicant will be able to, prospect for any possible coal resource;	Highly Desirable
How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	No negative socio-economic impacts could, at this stage, be identified that cannot be managed through the implementation of mitigation measures.	Highly Desirable
How will the socio-economic impacts resulting from this development impact on people's environmental right?	As mentioned in Heading *3(j)(1) Impact on the socio-economic condition of any directly affected person*, the activity may have an impact on the visual characteristics of the surrounding environment, and may potentially affect air quality and possibly the noise ambiance of the study area. However, should the prospecting activities be approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of very low significance. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that no environmental rights of the surrounding residents/public will be affected by the socio-economic impacts associated with the proposed activity	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts?	As mentioned above should the prospecting activities be approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of very low significance. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that no environmental rights of the surrounding residents/public will be affected by the socio-economic impacts associated with the proposed activity.	Highly Desirable
What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	Please refer to: • Part A(1)(g)(vii) The positive and negative impacts that the proposed activity and alternatives will have on the environmental and the community that may be affected.	Highly Desirable
What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons?		
What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure	The prospecting site will (if approved) operate in accordance with, amongst others, the following: • CARA, 1983 – to ensure agriculture related compliance; • Financial Provision Regulations, 2015 – to ensure compliance in terms of rehabilitation;	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination? What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	• Mine Health and Safety Act, 1996 (as amended) – to ensure employee safety; • MPRDA, 2002 (as amended) – to ensure prospecting related compliance; • NEM:AQA, 2004 – to ensure air quality related compliance; • NEM:BA, 2004 – to ensure biodiversity related compliance; • NEM:WA, 2008 – to ensure waste related compliance; • NEMA, 1998 (as amended) – to ensure environmental related compliance;	
Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community that is consistent with the priority needs of the local area.	The proposed prospecting will also contribute to the diversification of activities on the property, extending it from agriculture to include small scale mining. The need is to find coal, qualify and quantify the coal to develop a business model.	Highly Desirable
What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of	The prospecting right activities will be in accordance with the specifications of the Mine Health and Safety Act, 1996. Site management will have daily discussions with the drill rig operators regarding the work to be performed and the environment in which the work will take place. Grievances/concerns can be lodged during the daily site meetings.	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
workers to refuse such work will be respected and protected.		
Describe how the development will impact on job creation in terms of, amongst other aspects?	As mentioned earlier, should this prospecting right be approved the applicant will be able to, • Prospect for any possible coal resource; • Determine the available coal as well as provide employment opportunities to local employees. • It will also diversify the income of the property as well as potential employees and clients.	Highly Desirable
What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage.	Should the prospecting right be approved the activities will operate under a valid prospecting right issued by the DMRE. Compliance of the mine with the approval conditions can be reported on as per the departmental specifications and also be managed in accordance with all the mining and environmental related legislations.	Highly Desirable
Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left.	It is believed that the mitigation measures proposed in this document is realistic and can be implemented (when needed) by the proposed activities. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, the residual impact on the environment is of low significance.	Highly Desirable
What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health	In terms of Section 41 of the MPRDA, 2002 a prospecting right holder must submit a financial provision to the DMRE that is sufficient to rehabilitate or manage the negative environmental impacts related to the prospecting activity.	Highly Desirable

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	**Response**	**Level of Desirability**
effects and of preventing, controlling or minimising further pollution environmental damage or adverse health effects will be paid for by those responsible for harming the environment.		
Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified, resulted in the selection of the best practicable environmental option in terms of socio-economic considerations	Please refer to: - Part A(1)(g)(i) Details of the development footprint alternatives considered; - Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Socio-Economic Environment; - Part A(1)(g)(vii) The positive and negative impacts that the proposed activity and alternatives will have on the environmental and the community that may be affected.	Highly Desirable
Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area.	If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, it is believed that the prospecting activities will not cause a cumulative socio-economic impact should the prospecting right application be approved, seeing that there is no other rated activities in the vicinity.	Highly Desirable

g) Motivation for the overall preferred site, activities and technology alternative.

Due to the remote location of the study area, the potential impacts on the surrounding environment associated with prospecting is deemed of low significance. It is proposed that all prospecting related temporary infrastructure will be contained within the boundary of the prospecting area. As no permanent buildings will be established on site the layout/position of the temporary infrastructure will be determined by the prospecting progress and available space within the 409.7979 ha of prospecting area.

The Environmental Impact Assessment process assessed the feasibility of the proposed site alternative to identify fatal flaws that are deemed as severe as to prevent the activity continuing, or warrant another site or project alternative. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing. In light of the above, the prospecting proposal was updated to incorporate the project related mitigation measures and monitoring programmes identified during the assessment process. The preferred development footprint was subsequently finalized and is depicted on the attached site activities plan (Appendix C).

h) Full description of the process followed to reach the proposed preferred alternatives within the site.

NB!! – 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, and the consideration of alternatives to the initially proposed site layout.

i) Details of the development footprint alternatives considered.

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

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

The proposed prospecting area is a natural area. The planned activities for the proposed site's is detailed below.

All activities will be contained within the boundaries of the site.

DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

(These activities do not disturb the land where prospecting will take place, e.g. aerial photography, desktop studies, aeromagnetic surveys, etc)

Phase 1 (months 1 to 2), phase 3 (months 6 to 9) and phase 4 (months 10 to 12)

Desktop studies form a very important preparatory step in a new coal exploration project, and as the name suggests, this task is executed mainly from an office environment. Desktop studies will be conducted by the project geologist as part of preliminary investigations into the prospecting area by looking at all relevant published literature, geological maps, mining maps and any available evidence or records of coal findings. The outcome of the desktop studies will be a geological report of the prospecting area with a particular emphasis on the prospectivity of the area. This report will also inform other subsequent prospecting steps.

Field geological studies will follow after the desktop studies, and they typically include walking over the prospecting area making general observations of the geology and topography. Geological mapping activities, if terrain is suitable, may include detailed outcrop mapping, identification of coal hosting strata, coal seam outcrop mapping and sampling of exposed coal seams where available.

The 3D geological modelling and resource estimation step will follow after favourable exploration drilling results. This geological modelling step mainly entails geological interpretation of collected log sheet data and the subsequent geological domaining. The geological model, which shows the physical continuity of the coal seams and the distribution of the coal qualities, is a critical input in coal resource estimation. The coal resource statement, which is an outcome of the resource estimation process, gives an indication of the amount of available coal resources in tonnage and associated qualities.

DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc.)

Phase 2 (months 3 to 5)

The objective of the exploration drilling is to confirm the presence of coal measures, delineate the vertical and lateral extents of the coal measures, and, through suitable tests, the quality of the coal. Percussion and diamond coring are the preferred drilling

methods. The resultant drill holes will be cased and capped to make it safe for people and animals, and also allow for future access by the exploration team.

DESCRIPTION OF PRE-/FEASIBILITY STUDIES:

(Activities in this section include but are not limited to: initial geological modelling, resource determination, possible future funding models, etc.)

The pre-/feasibility studies team will comprise of a diverse team of technical expertise in the field of mineral projects, including, geologists, mining engineers, metallurgical engineers, civil engineers, mechanical engineers, environmental scientists, marketing professionals and mineral project finance professionals. The list of activities under pre-/feasibility studies includes the following:

- Geological modelling and coal resource estimation;
- Coal reserve estimation;
- Mine design and scheduling;
- Metallurgical processing;
- Market development;
- Infrastructure design
- Engineering development
- Human resourcing
- Project development and operational costing

The prospecting site will contain the following:

- Surveying Equipment;
- Drilling equipment;
- Geophysical logging equipment;
- Field Vehicles;
- Sample Analysis equipment; and
- Other relevant field equipment.

Site Alternative 1 (S1) (Preferred and Only Site Alternative): Site Alternative 1 entails the prospecting area for coal within the GPS coordinates as listed in the table below.

Name	DEC DEGREES	
	LAT	LONG
A	-25.493619831	28.381092381
B	-25.497155124	28.387415755
C	-25.500204797	28.393007643
D	-25.503179312	28.391373813
E	-25.51496320	28.413069678
F	-25.526847987	28.409158355
G	-25.523968817	28.402242076
H	-25.512392208	28.394590841
J	-25.511548660	28.394936059
K	-25.508341210	28.387014650
L	-25.505521377	28.380050866
M	-25.499793584	28.380818082
N	-25.498606615	28.378577787
A	-25.493619831	28.381092381

Table 6: GPS Coordinates of Site Alternative 1 (preferred and only site alternative)

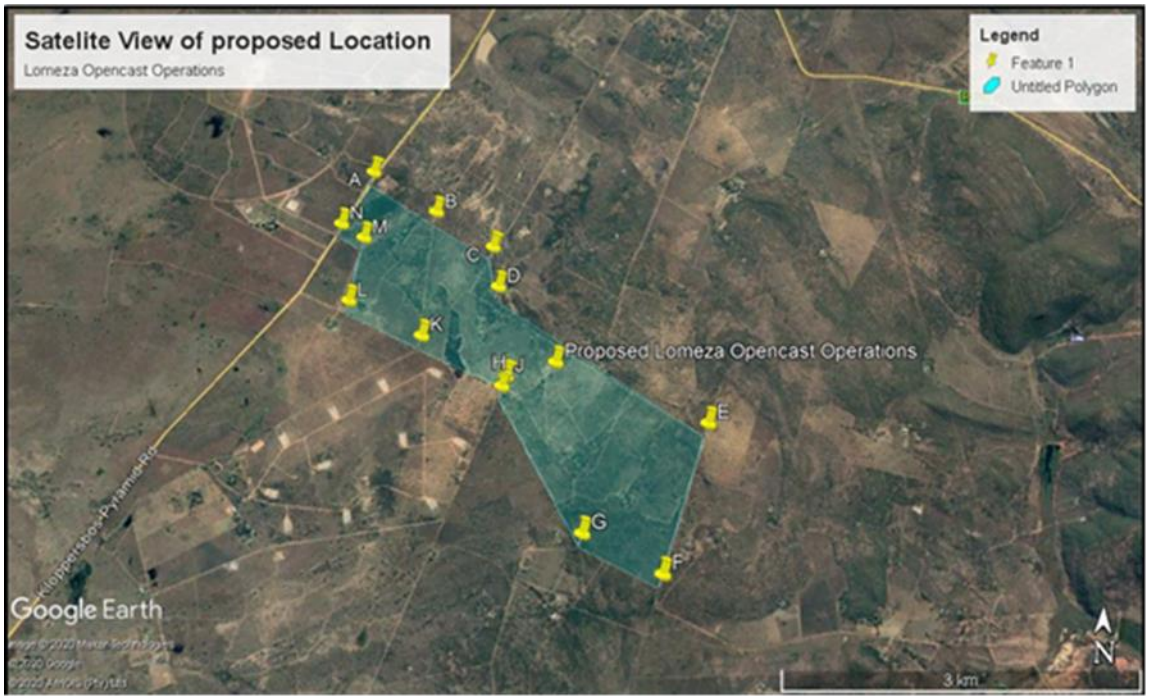


Figure 2: Satellite view showing the position of Site Alternative 1 (white polygon) within the surrounding landscape.

No-go Alternative: The no-go alternative entails no change to the *status quo* and is therefore a real alternative that must be considered.

- The applicant will not be able to prospect for any possible coal resource;
- The application, if approved, would allow the applicant to determine the available coal as well as provide employment opportunities to local employees.
- Should the no-go alternative be followed these opportunities will be lost to the applicant, potential employees and clients; and the applicant will not be able to diversify the income of the property.

Not proceeding with the proposed operation will entail that a mineral which if found will contribute towards the local and provincial social and economic structures of the area, will not be mined, and that this opportunity will be lost.

In light of this, the no-go alternative was no deemed to be the preferred alternative.

ii) Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB 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.

During the initial public participation process the stakeholders and I&AP's were informed of the project by means of background information documents that were sent or hand delivered directly to the contact persons. A 30-days commenting period was allowed which expired on 11th August 2020. The following I&AP's and stakeholders were informed of the project:

Table 7: List of the I&AP's and stakeholders that were notified of the proposed prospecting right project.

SURROUNDING LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
Surrounding landowners & lawful occupiers: • Joubert Trust (Portion 1 of Ekuphumuleni 716) • Brandon Familie Trust (Portion 16 of Ekuphumuleni 716) • Jardim Joelwin Domingos Sardinha • (Portion 8 of Ekuphumuleni 716) • Mr JC Grobler (Portion 5 of Klopperbos 128) • Jardim Joelwin Domingos Sardinha (Portion 79 of Klopperbos 128) • Full Swing Trading 351 CC (Mr J Gelderblom) (Portion 10 of Ekuphumuleni 716) • Republic of South Africa (Portion 1 and 6 of Klopperbos 128) • Joubert Trust (Portion 23 of Paardefontein 282) • Eksderde Trust (Portion 26 of Paardefontein 284) • Mr MJ Bezuidenhout (Portion 26 of Paardefontein 282) • Pioneer Foods (Me Jay Ann Jacobs) (Portion 32 of Paardefontein 282) • Sanpatfontein Pty Ltd (Portion 46 of Paardefontein 282) • HC Loubser Testamentere Trust (Mr T Loubser) (Portion 13 of Boekenhoetskloof 284) • CSIR Klopperbos & Paardefontein Research Centre(Mr I Mthombeni, Ms B Ntsoelengoe, Prof T Majozi, Dr T Dlamini) • La Estancia (Mr J Grobler) • Nulaid Farms Paardefontein	• Gauteng Department of Agricultural and Rural Development; • Department of Environmental Affairs (National) • Department of Infrastructure Development; • Department of Labour; • Department of Roads and Transport; • Department of Rural Development and Land Reform; • Department of Social Development; • Department of Public Works • Department of Water and Sanitation; • Department of Economic Development and Tourism • City of Tshwane Region 5 • City of Tshwane Region 5 – Ward Councillor • Nokeng Tsa Taemane Local Municipality • Nokeng Tsa Taemane Local Municipality – Ward 49 • South African Heritage Resources Agency;
I&AP'S AND STAKEHOLDERS THAT REGISTERED/COMMENTED DURING THE INITIAL NOTIFICATION PERIOD	
Response received from Glynnis Cohen Attorney on 23 July 2020 acting on behalf of • Branron Familie Trust • Joubert Trust • Jardim Familie Trust • Mr Johan Grobler	

Letter received from Jordaan and Smit Attorneys on 6 August 2020
Letter received from Ivan Pauw and Partners on 11 August 2020 on behalf of the Manyane Lodge Sanctury Area • Dean Francois de Kock and Riani de Kock • Domingos Sardinha Jardim • Joelwin Domingos Sardinha Jardim • Ubusika Umlimi (Pty) Ltd

An advertisement was placed in The Beeld on the 8th July 2020, and two on-site notices were placed one at the entrance to the farm and one at the Spaza shop at D327 (Kwamahlanga and Klopperbos Pyramid Crossing) on the 7th July 2020. A 30-days commenting period was allowed which expired on 11thAugust 2020. Thus far, only some of the landowners registered on the project; no other comments or objections have been received.

In accordance with the timeframes stipulated in the EIA Regulations of December 2014 (amended by GNR 326 effective 7 April 2017) the Draft Basic Assessment Report (DBAR) was compiled and will be distributed for comment and perusal to the I&AP's and stakeholders listed above. A 30-day commenting period, ending 01st October 2020, will be allowed for perusal of the documentation and submission of comments. The comments received on the DBAR will be incorporated into the Final Basic Assessment Report (FBAR) to be submitted for decision making to DMRE.

iii) Summary of issues raised by I&APs

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

Table 8: Summary of issues raised by IAPs

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**	**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.**
AFFECTED PARTIES	**X**				
Landowner/s					
Branron Familie Trust – Landowner Mr Chico Martins	X	23 July 2020			Comments and Response Report – Appendix G
Mr Johan Corneluis Grobler – Landowner	X	23 July 2020			Comments and Response Report – Appendix G
Jardim Familie Trust – Landowner Mr Joelwin Jardim	X	23 July 2020			Comments and Response Report – Appendix G
Joubert Trust – Landowner Mr Joubert	X	23 July 2020			Comments and Response Report – Appendix G
Lawful occupier/s of the land					
As above		N/A	N/A	N/A	
Landowners or lawful occupiers on adjacent properties	**X**	-	-	-	-
CSIR Kloppersbos & Paardefontein Research Center - Mr Isaac Mthombeni	X	23 July 2020	Request to include Ms Bongi Ntsoelengoe, Executive Manager for CSIR Future production in correspondence.	Acknowledgement of receipt send to CSIR Kloppersbos & Paardefontein Research Center	Comments and Response Report – Appendix G
Ivan Pauw and Partners on behalf of the Manyane Lodge Sanctury Area • Dean Francois de Kock and Riani de Kock • Domingos Sardinha Jardim • Joelwin Domingos Sardinha Jardim • Ubusika Umlimi (Pty) Ltd • Mantaray Trading 101 (Pty) Ltd • Gev Property Trust	X	11 August 2020			

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**	**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.**
• Armanda Investments 001 CC • V D S Property Trust					
Municipal councillor					
Nokeng Tsa Taemane Local Municipality Ward 49	X	No comments received	N/A	N/A	N/A
City of Tshwane Region 2 Section 49	X	No comments received	N/A	N/A	N/A
Municipality					
Nokeng Tsa Taemane Local Municipality	X	No comments received	N/A	N/A	N/A
City of Tshwane Region 2	X	No comments received	N/A	N/A	N/A
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Department of Infrastructure Development	X	No comments received	N/A	N/A	N/A
Communities	No community were identified within the study area.				
Dept. Land Affairs					
Department of Rural Development and Land Reform	X	No comments received	N/A	N/A	N/A
Traditional Leaders	N/A				

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**	**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.**
Dept. Environmental Affairs		No comments received	N/A	N/A	N/A
Gauteng Department of Agricultural and Rural Development	X	No comments received	N/A	N/A	N/A
Department of Environmental Affairs	X	No comments received	N/A	N/A	N/A
Other Competent Authorities affected					
Department of Labour	X	No comments received	N/A	N/A	N/A
Department of Public Works	X	No comments received	N/A	N/A	N/A
Department of Rural Development and Agrarian Reform	X	No comments received	N/A	N/A	N/A
Department of Economic Development and Tourism	X	No comments received			
Department of Water and Sanitation	X	No comments received	N/A	N/A	N/A
South African Heritage Resources Agency	X	No comments received	N/A	N/A	N/A
OTHER AFFECTED PARTIES					
N/A					
INTERESTED PARTIES					
Ivan Pauw and Partners on behalf of the Manyane Lodge Sanctury Area • Dean Francois de Kock and Riani de Kock • Domingos Sardinha Jardim • Joelwin Domingos Sardinha Jardim • Ubusika Umlimi (Pty) Ltd • Mantaray Trading 101 (Pty) Ltd • Gev Property Trust		11 August 2020			Comments and Response Report – Appendix G

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**	**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.**
• Armanda Investments 001 CC • V D S Property Trust				

iv) The Environmental attributes associated with the alternatives.

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

(1) Baseline Environment

(a) Type of environment affected by the proposed activity.

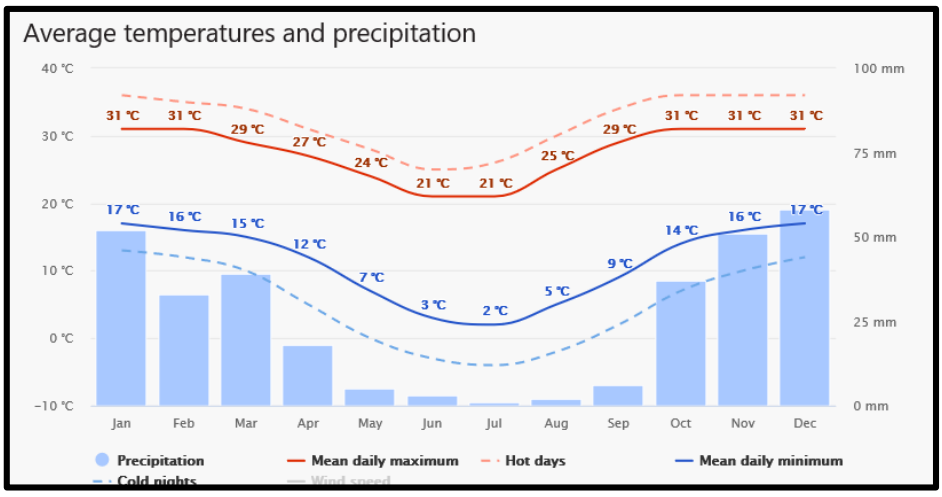
(Its current geographical, physical, biological, socio-economic, and cultural character)

This section describes the biophysical, cultural and socio-economic environment that may be affected and the baseline conditions, which are likely to be affected by the proposed prospecting activity.

PHYSICAL ENVIRONMENT

CLIMATE

According to the meteoblue website, Hammanskraal area normally receives about 697 mm of rain per year, with most rainfall occurring mainly during summer. The chart below (middle) shows the average rainfall values for Hammanskraal area per month. It receives the lowest rainfall (5 mm) in July - August and the highest (55 mm) in December / January. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Hammanskraal area range from >10.0°C in June to > 35°C in January. The region is the coldest during July when the mercury drops to 2°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures.



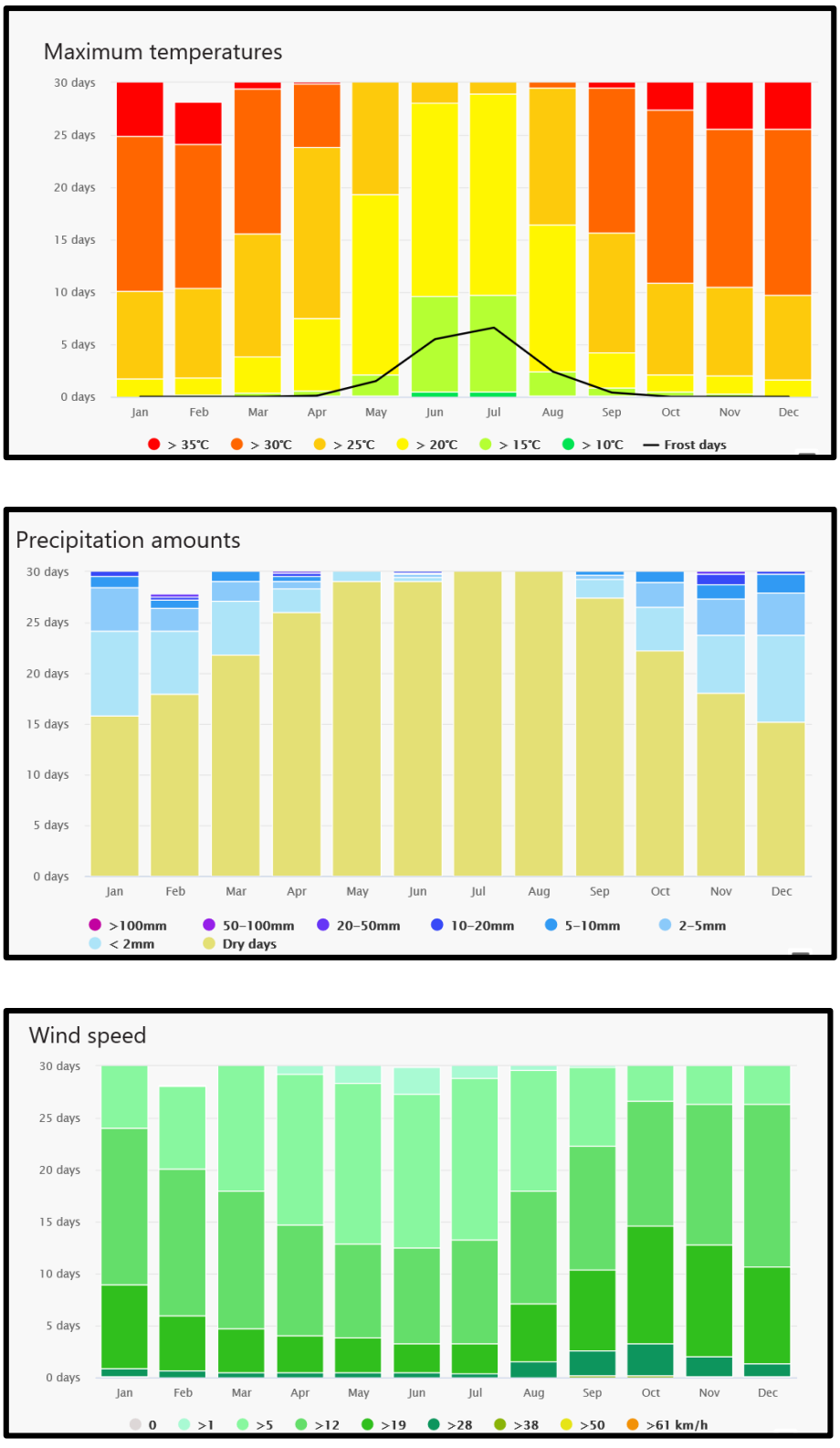


Figure 3: Statistical representation of the average rainfall, maximum temperatures and wind speed for the Hammanskraal region (Chart obtained from meteoblue).

The dominant wind direction of Hammanskraal is fairly constant ranging from east -north-east to north- east for most of the year. The figures below presents the wind direction distribution in % for the greater Hammanskraal area.

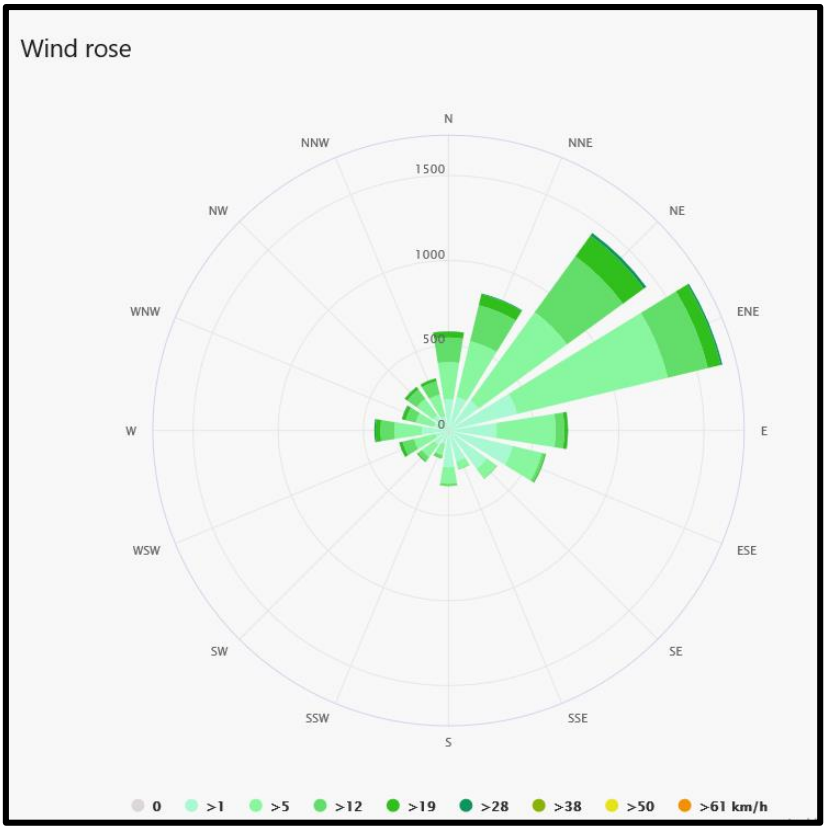


Figure 4: Annual wind direction distribution in % for the Hammanskraal area, (Image obtained from www.meteoblue.com)

TOPOGRAPHY

The study area consist of undulating terrain occurs mainly in a broad arc south of the Springbokvlakte from the Pilanesberg in the west through Hammanskraal and Groblersdal to GaMasemola in the east. A generally narrow irregular band along the northwestern edge of the Springbokvlakte (including Modimolle) extending into a series of valleys and lower-altitude areas within the Waterberg including the upper Mokolo River Valley near Vaalwater, the corridor between Rankins Pass and the Doorndraai Dam, and the lowlands from the Mabula area to south of the Hoekberge. Some isolated sandy rises are found on the Springbokvlakte. The altitude varies between 1100–1 217 m.

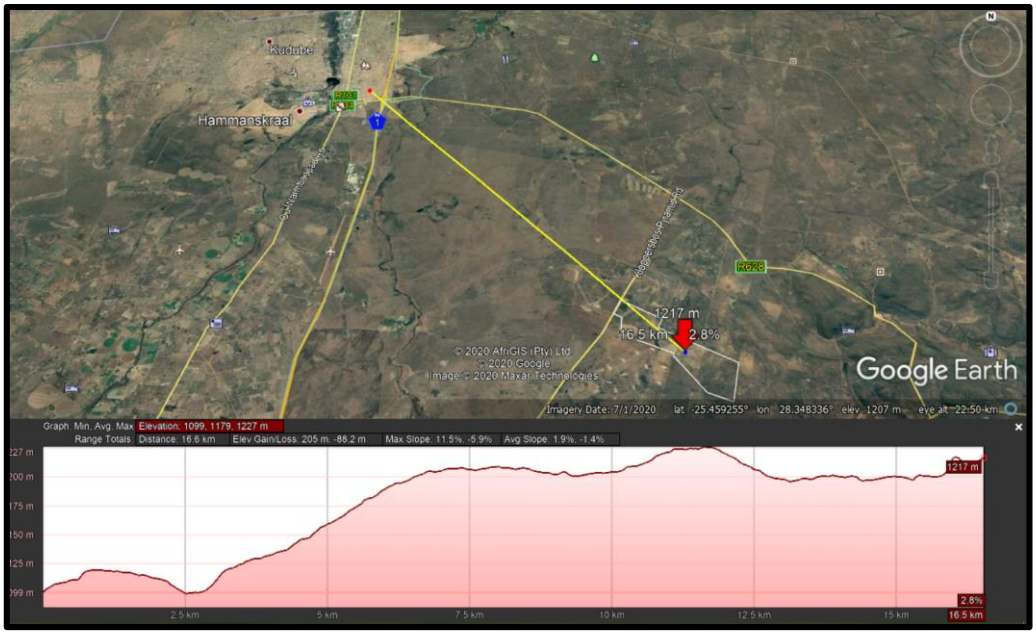


Figure 5: Elevation profile of the proposed prospecting footprint (Image obtained from Google Earth).

VISUAL CHARACTERISTICS

The viewshed analysis showed that the visual impact of the proposed prospecting operation will be of low significance. The small scale of the proposed operation contributes to the low visual significance. Should the Applicant successfully rehabilitate the prospecting areas (upon closure), no residual visual impact is expected upon closure of the prospecting activities.

AIR AND NOISE QUALITY

The air quality of the study area is generally very good given the area's predominant agricultural use and rural character. Likewise, the noise ambiance is very low (classified as ambient rural / pastoral) with noise levels mainly affected by traffic along roads in the vicinity, and the farming equipment operational in the area.

GEOLOGY AND SOIL

The large southern and eastern parts of this area are underlain by granite of the Lebowa Granite Suite and some granophyre of the Rashoop Granophyre Suite (both Bushveld Complex, Vaalian). In the north, the sedimentary rocks of the Waterberg Group (Mokolian Erathem) are most important. Specifically, sandstone, conglomerate and siltstone of the Alma Formation and sandstone, siltstone and shale of the Vaalwater Formation. Well-drained, deep Hutton or

Clovelly soils often with a catenary sequence from Hutton at the top to Clovelly on the lower slopes; shallow, skeletal Glenrosa soils also occur. Land types mainly Bb, Fa, Ba, Bd and Ac

Soils vary from planted grassland previously improved grassland, to cultivated, temporary/permanent, commercial/subsistence irrigated/dryland. Soil fall within the following patterns:

LP1 – soils with minimal development, usually shallow or hard or weathered rock, with or without intermitted diverse soils. Lime rate to absent in in the landscape

The area of interest is situated just north of the Witbank Coalfield (figure 6), which extends about 190 km west-east between the towns of Springs and Belfast and about 60 km in a north-south direction between the towns of Middelburg and Ermelo. The area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top. For over a century the Witbank Coalfield has been the major coal producing area in South Africa and continues to be so; it is estimated that since the first commercial exploitation of coal in 1870, over 50% of the coal produced in South Africa has come from the Witbank Coalfield.

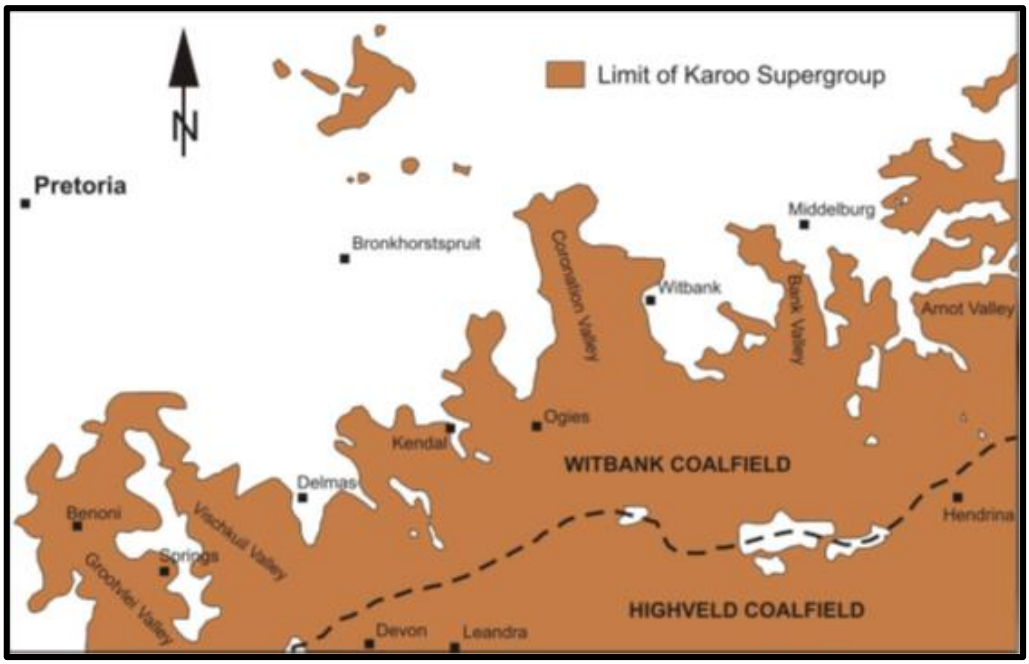


Figure 6: Geological map of the area concerned. (Image obtained from the Prospecting Work Programme (PWP) for the proposed prospecting right)

Five coal seams are contained in a 70 m thick succession of sandstone with subordinate siltstone and mudstone and are distinguished numerically in ascending order from the bottom upwards.

The distribution and attitudes of the No. 1 and 2 seams are largely determined by the pre-Karoo topography, whilst the present distribution of the No. 4 and No. 5 seams is controlled by the present day land surface; in areas the No. 5 seam is either completely eroded or is patchily distributed, while the top part of the No. 4 seam is eroded or affected by weathering in places. The No. 3 seam is generally uneconomic, usually having a thickness of less than 0.5 m. At the Glisa colliery, on the most eastern edge of the Witbank Coalfield, 5 km south west of the town of Belfast, the No. 3 seam has an average thickness of 1.5 m and is exploited. Five typical stratigraphic columns from five different areas in the Witbank Coalfield are shown on figure 7.

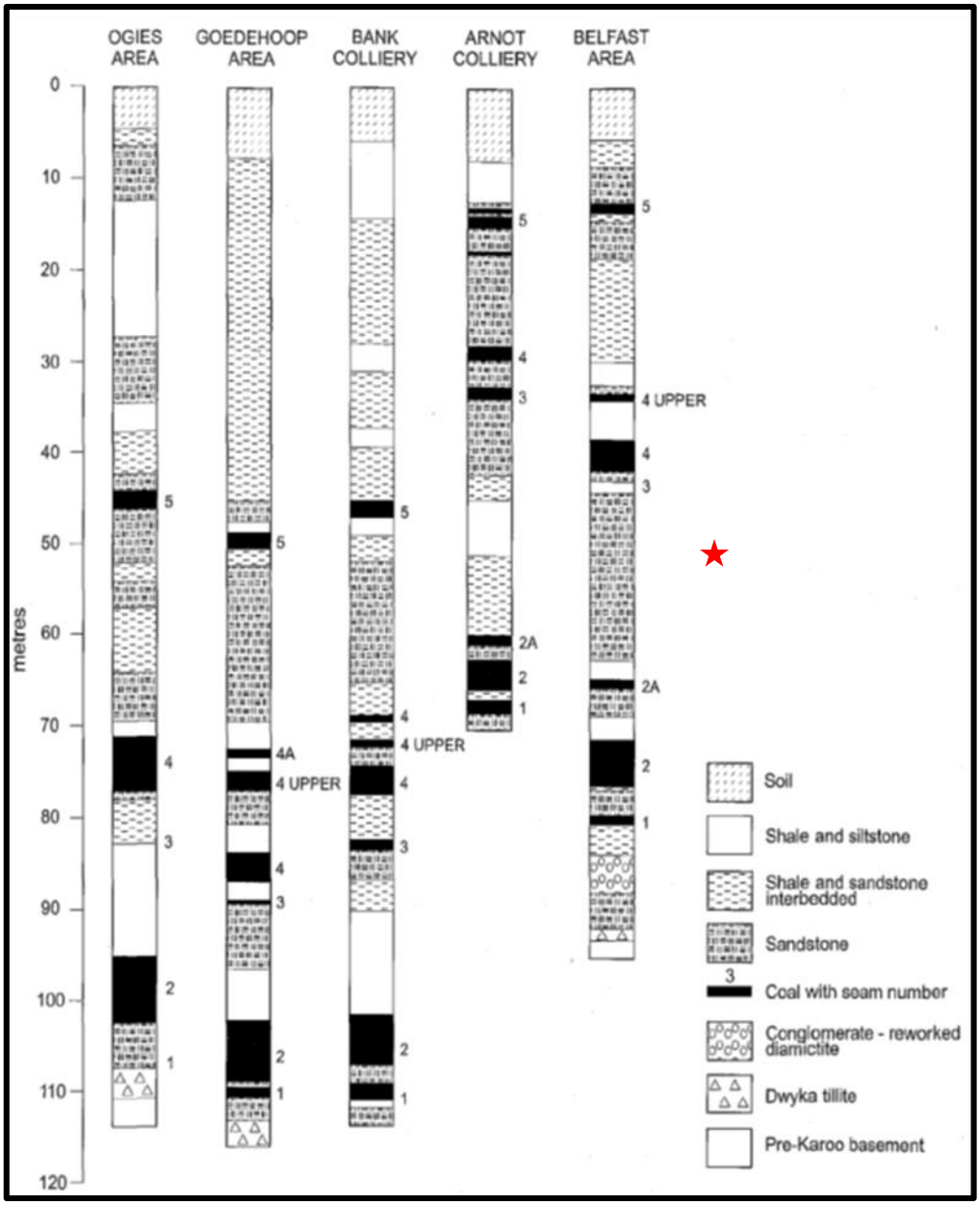


Figure 7: Typical stratigraphic column in the Witbank Coalfield. (Image obtained from the Prospecting Work Programme (PWP) for the proposed prospecting right)

HYDROLOGY

The proposed site falls within the Crocodile (West) and Marico Water Management Area, in the A23B quaternary catchment area. There are various streams and small farm dams in the area. The Pienaars River is located approximately 3 km south west of the site and the Boekenhoutspruit located approximately 3 km to the east of the site area.

Table 9: Aquatic characteristics of the greater study area

Water Management Area	Crocodile (West) and Marico Water Management Area
Quaternary Catchment	A23B

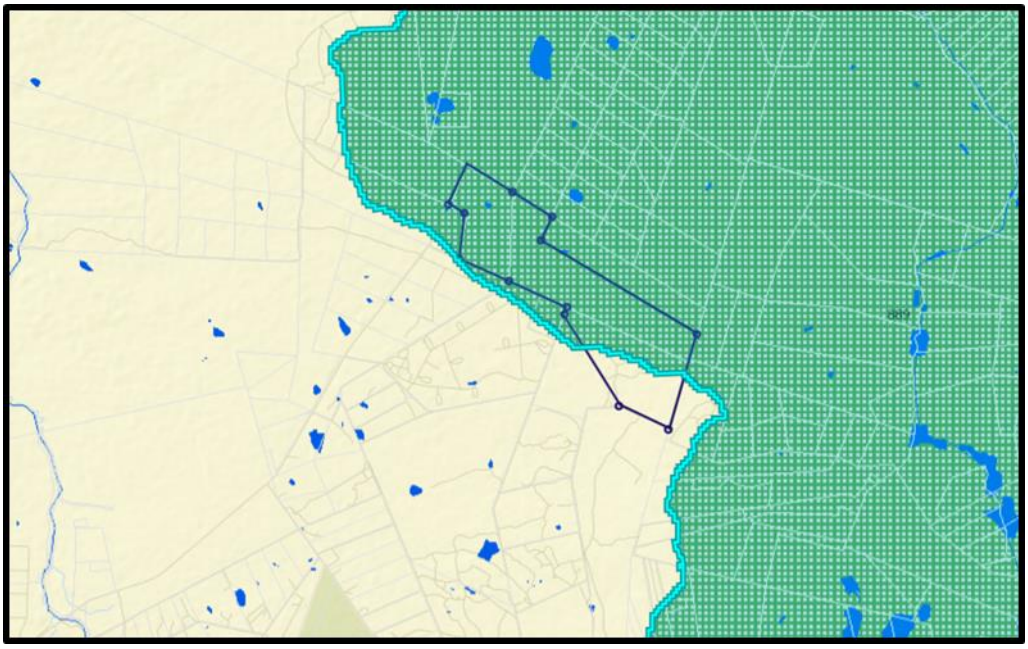


Figure 8: Map showing the proposed prospecting footprint (blue polygon). The dark green area represents a River phase 2 FEPA. (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

BIOLOGICAL ENVIRONMENT

MINING AND BIODIVERSITY

(Information extracted from the Mining and Biodiversity Guideline: Mainstreaming Biodiversity into the Mining Sector, Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, 2013)

The Mining and Biodiversity Guideline, compiled by the South African Mining and Biodiversity Forum (SAMBF) provides the mining sector with a practical, user-friendly manual for integrating biodiversity considerations into planning processes and managing biodiversity during the developmental and operational phases of a mine, from exploration through to closure.

When the prospecting footprint is layered over the Mining and Biodiversity Map, as shown in the figure below, it does not fall over and area of biodiversity importance with a corresponding rating of highest risk for mining. The Mining and Biodiversity Guideline's describes areas of highest biodiversity importance

as: "*these areas are viewed as necessary to ensure protection of biodiversity, environmental sustainability, and human well-being."* The guideline notes that environmental screening, the EIA and specialists should focus on confirming the presence and significance of biodiversity features, and provide a site-specific basis on which to apply the mitigation hierarchy to inform regulatory decision-making.

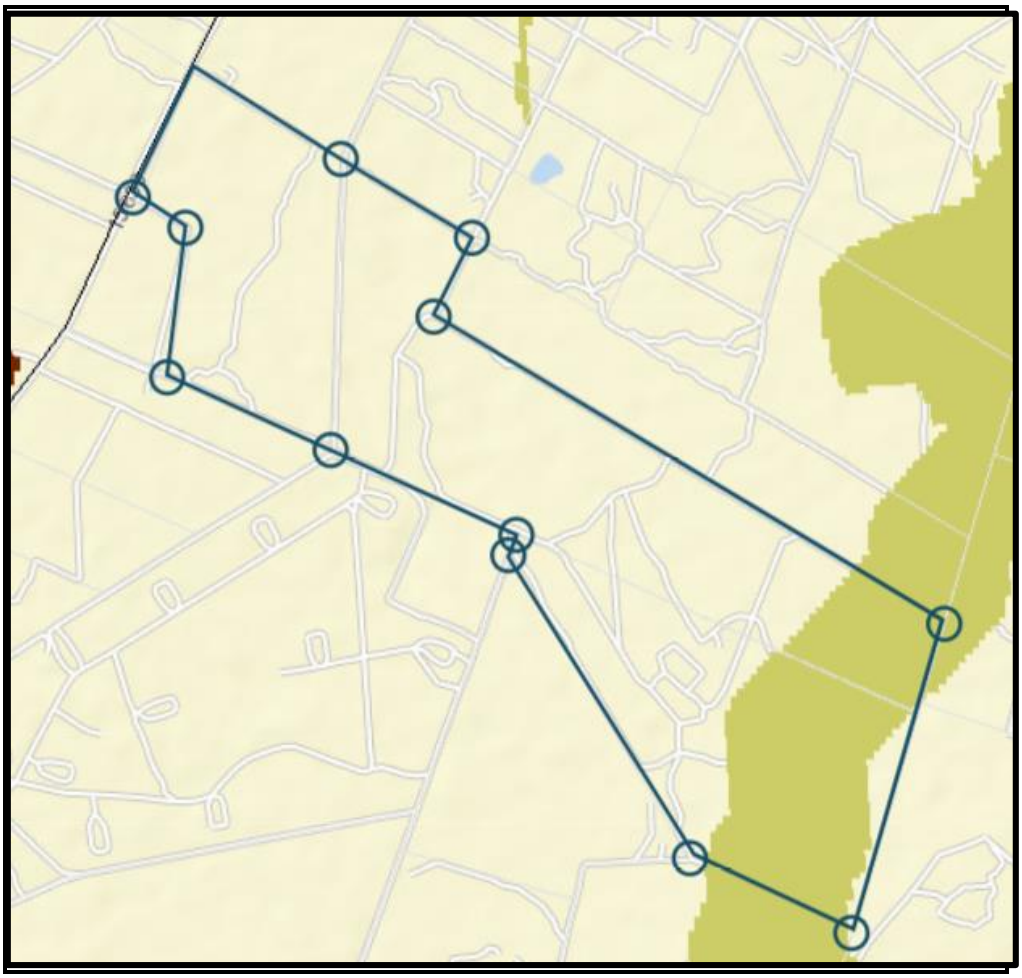


Figure 9: The Mining and Biodiversity importance map with the proposed mining footprint indicated by the blue polygon. light brown – moderate biodiversity importance, (image obtained from the BGIS Map Viewer – Mining Guidelines).

BIODIVERSITY CONSERVATION AREAS

According to the Gauteng C-Plan 3.3 terrestrial Critical Biodiversity Areas (CBAs), sections of the proposed site falls within an Ecological Support Area. This area will be excluded from prospecting activities."

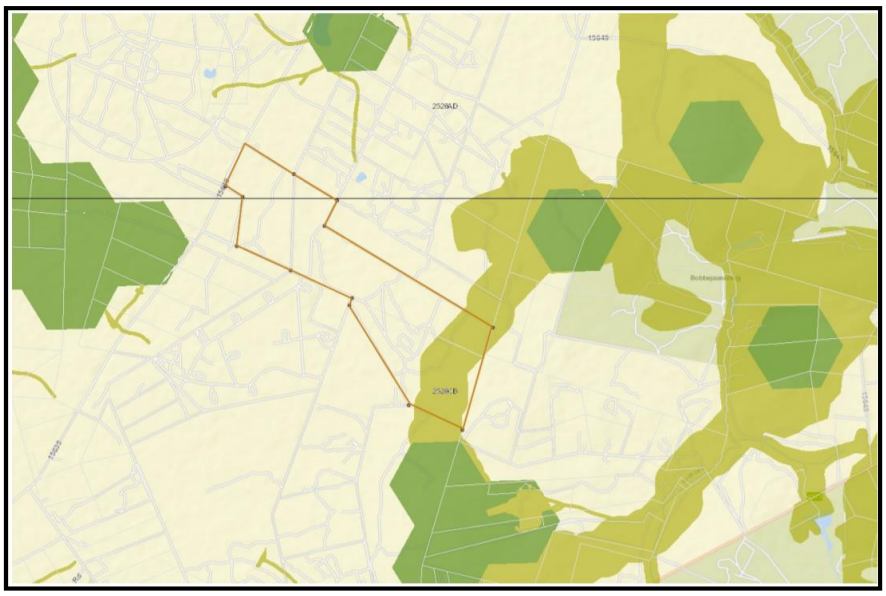


Figure 10: View of the proposed prospecting right area of Lomeza Opencast Operations - Gauteng C-Plan 3.3 terrestrial Critical Biodiversity Areas (CBAs).

GROUNDCOVER

According to Mucina and Rutherford (2012) the vegetation type of the surrounding natural areas are known as the SVcb 12 Central Sandy Bushveld which is listed as a vulnerable ecosystem. The vegetation type of the surrounding natural areas consists of low undulating areas, sometimes between mountains, and sandy plains and catenas supporting tall, deciduous *Terminalia sericea* and *Burkea africana* woodland on deep sandy soils (with the former often dominant on the lower slopes of sandy catenas) and low, broad-leaved *Combretum* woodland on shallow rocky or gravelly soils. Species of *Acacia, Ziziphus* and *Euclea* are found on flats and lower slopes on eutrophic sands and some less sandy soils. *A. tortilis* may dominate some areas along valleys. Grass-dominated herbaceous layer with relatively low basal cover on dystrophic sands. The study area consists of leve plains with some relief, irregular plains with high hills or ridges can be noted in the area. The vegetation of the area is classified as Savanah Biome, specifically the Central Sandy Bushveld.

FAUNA

Various small mammals and reptiles occur are likely to on the property. The fauna at the site will not be impacted by the proposed prospecting activity as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site

is harmed. As access to the site was denied at this stage no resident protected or red data faunal species could be identified within the earmarked footprint, and the project is expected to have a negligible impact in this regard as prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. The study area falls over properties that is noted to be operational game farms, should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers.

HUMAN ENVIRONMENT:

CULTURAL AND HERITAGE ENVIRONMENT

The proposed site falls in the surrounding area of the Komjekejeke Heritage site, therefore a Heritage Impact Assessment will be conducted as soon as access to the site was granted by the landowners. The Applicant will implement a chance-find protocol on site for the duration of the site establishment, operational- and decommissioning phase.

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening paleontologically sensitive areas at the onset of a project. When the footprint of the earmarked mining area is placed on the PSM, it shows the study area to extend over an area of insignificant/zero (grey) concern as presented in the figure below.

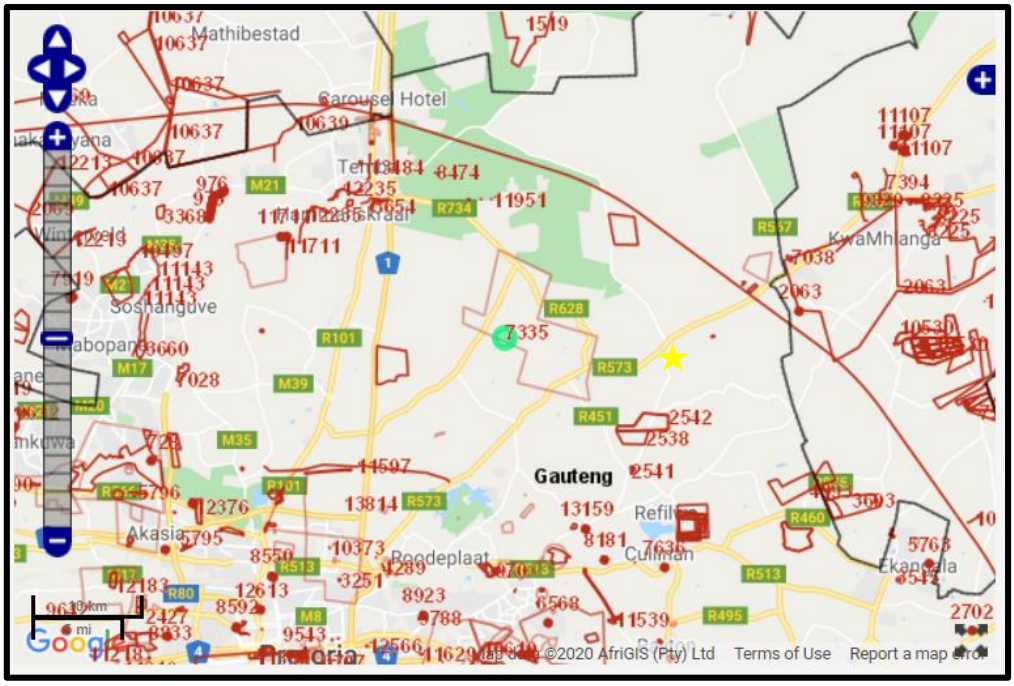


Figure 11: The SAHRA palaeontological sensitivity map shows the proposed prospecting footprint (green circle) falls in an area of insignificant/zero (grey) concern.

SOCIO-ECONOMIC ENVIRONMENT

(Information extracted from the City of Tshwane Integrated Development Plan 2017/21)

The proposed prospecting area is located within ward 49 of region 2 of City of Tshwane. City of Tshwane is classified as a Category A municipality by the Municipal Demarcation Board in terms of section 4 of the Local Government Municipal Structures Act, 1998 (Act 117 of 1998). The Municipality was established on 5 December 2000 through the integration of various municipalities and councils that had previously served the greater Pretoria regime and surrounding areas. The boundary of the city was further amended on 28 May 2008 through a proclamation in the Government Gazette which incorporated the former Metsweding District Municipality, including Nokeng tsa Taemane (Cullinan) and Kungwini (Bronkhorstspruit), into the borders of the city of Tshwane. The incorporation, which gave birth to the new City of Tshwane in May 2011 after the local government elections, was in line with the Gauteng Global City Region Strategy to reduce the number of municipalities in Gauteng by the year 2016.

The City of Tshwane has a Mayoral Executive System combined with a ward participatory system in accordance with Section 8(g) of the Municipal Structures Act, Act 117 of 1998. It consists of 107 geographically demarcated wards, 214 elected councillors (107 ward councillors and 107 proportional representative councillors) and has just over 3,3 million1 residents. For administrative purposes and to enhance service delivery, it is divided into seven regions. As the administrative seat of Government and host to a number of Embassies, City of Tshwane has proven to be a leader on the African continent in providing affordable industrial sites, various industries, office space, education and research facilities. An estimated 90% of all research and development in South Africa is conducted in Tshwane by institutions such as Armscor, the Medical Research Council, the Council for Scientific and Industrial Research, the Human Sciences Research Council and educational institutions such as the University of South Africa, the University of Pretoria and the Tshwane University of Technology.

Population and Gender Profile

In 2017, the City of Tshwane's population comprised of: 78.94% of the African population (2.61 million); 17.11% of the White population (566 000); 2.07% of

the Coloured (68 500); and 1.88% of the Asian (62 100). Though the Asian population contributes the least in population shares in the City of Tshwane, it should be noted that it has recorded the highest average annual population growth rate over the 2007-2017 period. The largest share of population in Tshwane is within the young working age (25-44 years) age category, with 1.21 million or 36.5% of the total population. The age category with the second largest population share is the (0-14 years) age category, with 24.5%; then followed by the older working age population (i.e. 45-64 year age category), with 592 000 people. The age category with the lowest number of people is the elderly population (i.e. 65 years and older age category), with only 207 000 people.

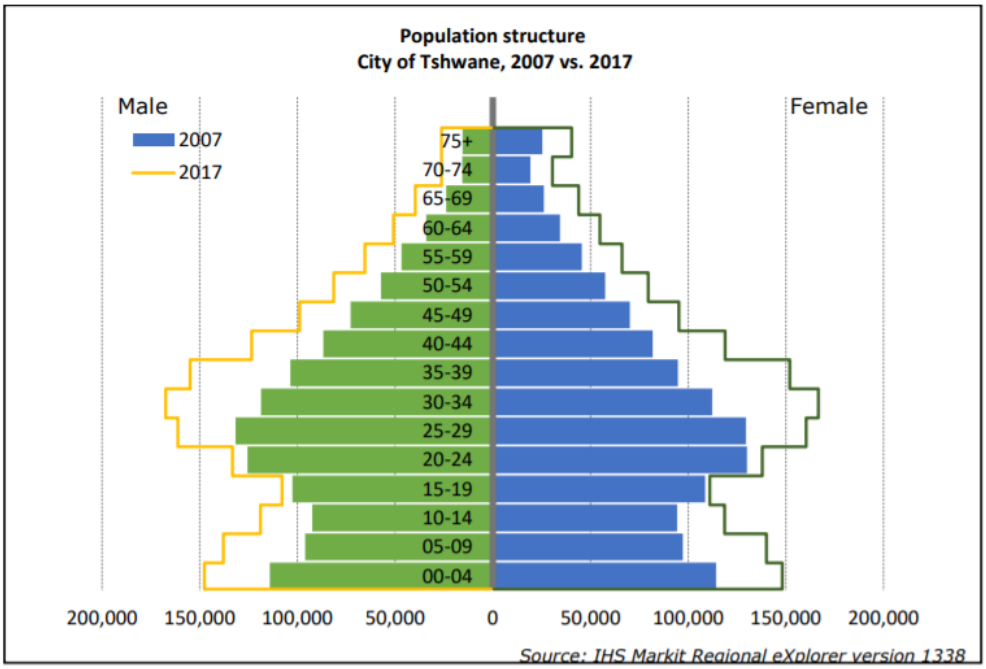


Figure 12: Population Pyramid – City of Tshwane Metropolitan Municipality, 2007 VS. 2017.

A population pyramid is a graphic representation of the population, categorised by gender and age, for a specific year and region. The horizontal axis depicts the share of people; the male population is charted on the left-hand side; the female population is charted on the right-hand side of the vertical axis. The vertical axis is divided into 5-year age categories.

Economic Profile

The WSLM had the highest average annual economic growth, averaging 3.55% between 2006 and 2016, when compared to the rest of the municipalities within

the Joe Gqabi District Municipality. The greatest contributor to the Joe Gqabi District Municipality economy is the Walter Sisulu local municipality with a share of 50.48% or R 5.27 billion, increasing from R 1.84 billion in 2006.

Education Levels

7.4% of the population above the age of 20 has no schooling, 24.8% has obtained matric and 7.9% obtained higher education. The matric rate increased from 19.2% in 2011 to 24.8% in 2016, the no schooling rate decreased from 12.5% to 7.4% and the Higher Education decreased slightly from 8.5% to 7.9%.

Employment Profile

In the City of Tshwane, the economic sector that recorded the highest employment figures in 2017 was the community services sector, with 290 000 employed people or 23.7% of total employment in the metropolitan municipality. The finance sector employs 269 000 people (22.0% of total employment in Tshwane), which is the sector with the second highest contribution to employment in the City. The electricity sector employs 5 570 people or 0.5% of total employment in Tshwane whilst the agriculture sector employs 12 300 people or 1.0% people employed in Tshwane, these sectors contribute the least to total employment in Tshwane.

Total employment can be broken down into formal and informal sector employment. Formal sector employment is measured from the formal business side, and informal employment is measured from the household side, as formal businesses have not been established. Formal employment is much more stable than informal employment. Informal employment is much harder to measure and manage, simply because it cannot be tracked through the formal business side of the economy. Informal employment is, however, a reality in South Africa and cannot be ignored. The number of people formally employed in City of Tshwane Metropolitan Municipality was 1.06 million in 2017, which was about 86.43% of total employment. The number of people employed in the informal sector was 166 000 or 13.57% of total employment. Informal employment in City of Tshwane increased from 144 000 in 2007 to an estimated 166 000 in 2017. In 2017, the trade sector recorded the highest number of informally employed people, with a total of 67 400 employees or 40.59% of total informal employment. This can be expected, as the barriers to enter the trade

sector in terms of capital and skills required is lower than with most of the other sectors. The manufacturing sector has the lowest informal employment - 11 000 - and only contributes 6.65% to total informal employment.

	Formal employment	Informal employment
Agriculture	12,300	N/A
Mining	47,600	N/A
Manufacturing	108,000	11,000
Electricity	5,570	N/A
Construction	55,700	25,900
Trade	172,000	67,400
Transport	59,700	15,400
Finance	253,000	16,000
Community services	260,000	30,200
Households	83,000	N/A

Figure 13: Formal and informal employment by broad economic sector – City of Tshwane Metropolitan Municipality,

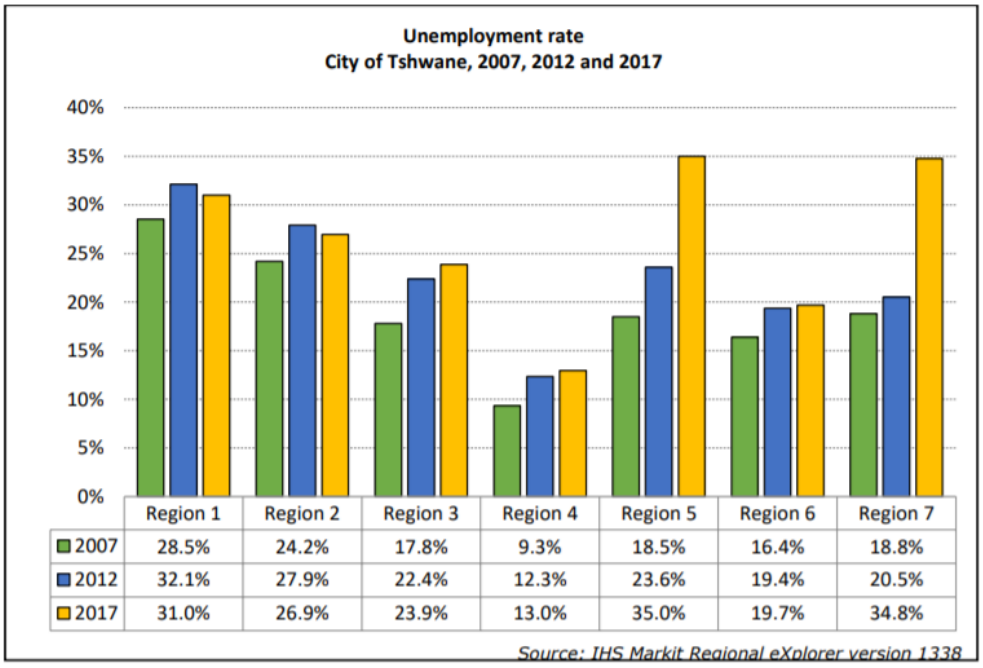


Figure 14: Unemployment rate per region – City of Tshwane Metropolitan Municipality,

Income Profile

The City of Tshwane is the fourth biggest municipality in South Africa and second biggest in Gauteng in terms of gross value added by region with gross value add of R313 billion. In 2017, City of Tshwane contributed 28.4 percent to the provincial economy. Moreover, Tshwane accounted for 10.0 percent of the

Country's economic compared as compared to 15.7 percent for the City of Johannesburg. The City of Tshwane has emerged as a diversified and vibrant economy with significant community services, finance and transport. Tshwane has a large government sector (community services), reflecting the presence of national and provincial departments and parastatals. The sector recorded 30.2 percent contribution to Tshwane's GVA in 2017. The five main sectors in 2017 were community services (30.2 percent), finance (24.9 percent), trade (13.1 percent), manufacturing (11.7 percent) and transport (11.6 percent). Overall, the significant sectors of growth in Tshwane include construction, trade, transport and finance with the green economy and research and innovation and development representing crucial multi-dimensional and dynamic sectors of growth.

(b) Description of the current land uses

The current surrounding land uses can be classified as agricultural land, chicken farming, grazing, game farming and tourism. The Kloppersbos Explosion Research facility is located to the west of the property. It was noted that there were plantations on the property:

Table 10: Land uses and/or prominent features that occur within 500 m radius of S1

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area is surrounded by natural areas used for agricultural purposes.
Low density residential	-	**NO**	
Medium density residential	-	**NO**	
High density residential	-	**NO**	
Informal residential	-	**NO**	
Retail commercial & warehousing	-	**NO**	
Light industrial	-	**NO**	
Medium industrial	-	**NO**	
Heavy industrial	-	**NO**	
Power station	-	**NO**	
High voltage power line	-	**NO**	
Office/consulting room	-	**NO**	
Military or police base / station / compound	-	**NO**	
Spoil heap or slimes dam	-	**NO**	
Quarry, sand or borrow pit		**NO**	
Dam or reservoir		**NO**	
Hospital/medical centre	-	**NO**	
School/ crèche	-	**NO**	
Tertiary education facility	-	**NO**	
Church	-	**NO**	
Old age home	-	**NO**	
Sewage treatment plant	-	**NO**	

LAND USE CHARACTER	YES	NO	DESCRIPTION
Train station or shunting yard	-	**NO**	
Railway line	-	**NO**	
Major road (4 lanes or more)	-	**NO**	
Airport	-	**NO**	
Harbour	-	**NO**	
Sport facilities	-	**NO**	
Golf course	-	**NO**	
Polo fields	-	**NO**	
Filling station	-	**NO**	
Landfill or waste treatment site	-	**NO**	
Plantation	**YES-**		It was indicated that there were plantations on the property. This was also clear during the site inspections as the area close to the Klopperbos/Pyramid Road (D327) has thick vegetation. It could not be determined what type of plantations existed in the area
Agriculture	**YES**	-	The proposed footprint forms part of an active game farm. Nulaid/ Paardefontein Pullet Rearing farm
River, stream or wetland		**NO**	
Nature conservation area	-	**NO**	
Mountain, hill or ridge		**NO**	
Museum	-	**NO**	
Historical building	-	**NO**	
Protected Area	**YES** -		The area adjacent to the application property is protected
Graveyard	-	**NO**	
Archaeological site	**YES** -		Komjekejeke Heritage site
Other land uses (describe)	**YES**-		The Klopperbos Explosion Research facility CSIR Paardefontein Paardefontein Explosives Facility

(c) Description of specific environmental features and infrastructure on the site.

SPECIFIC ENVIRONMENTAL FEATURES

Please note all the information below is based on preliminary data, surrounding information and desktop studies as access to the study area was denied by the landowners, resulting in limited information being provided to all commenting parties. Numerous attempts and letters requesting access to the properties by the applicant was all in vain. Greenmined is unable to provide the I&AP's and stakeholders with material information with regards to this prospecting right application and it is therefore clear that the relevant authorities will not be able to provide informed comments, irrespective should it be positive or negative. However, due to the landowners' refusal to grant access to the properties that proper studies could not be conducted.

SITE SPECIFIC TOPOGRAPHY

The study area consist of undulating terrain occurs mainly in a broad arc south of the Springbokvlakte from the Pilanesberg in the west through Hammanskraal and Groblersdal to GaMasemola in the east. A generally narrow irregular band along the northwestern edge of the Springbokvlakte (including Modimolle) extending into a series of valleys and lower-altitude areas within the Waterberg including the upper Mokolo River Valley near Vaalwater, the corridor between Rankins Pass and the Doorndraai Dam, and the lowlands from the Mabula area to south of the Hoekberge. Some isolated sandy rises are found on the Springbokvlakte. The altitude varies between 1100–1 217 m.

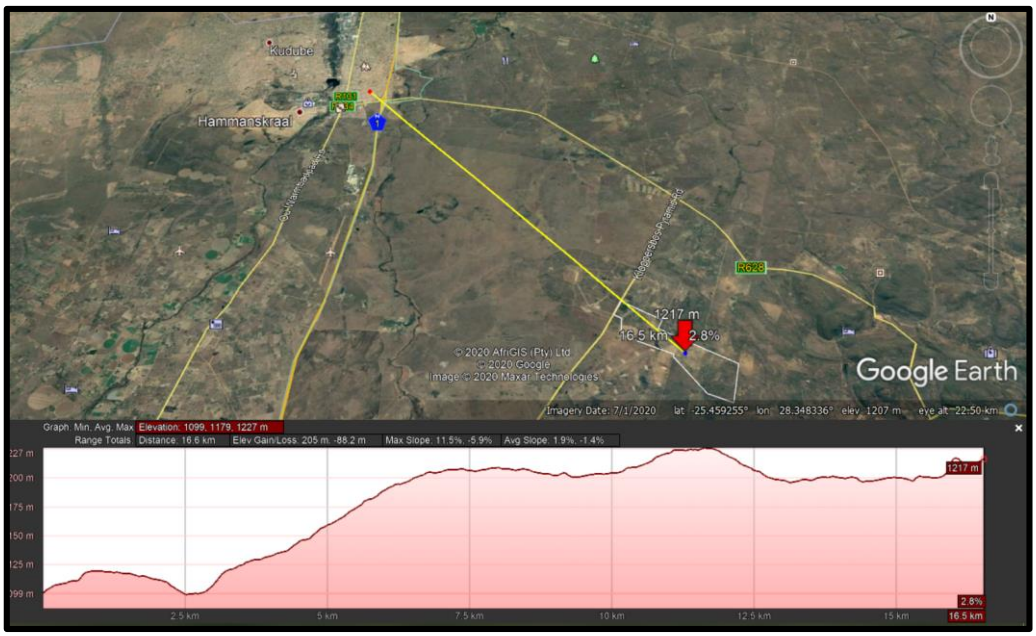


Figure 15: Elevation profile of the proposed prospecting footprint (Image obtained from Google Earth).

SITE SPECIFIC VISUAL CHARACTERISTICS

The figure below shows the viewshed analysis for the footprint within a ±10 km radius. The green shaded areas shows the positions from where the prospecting area will be visible. From this analysis it is proposed that the visual impact of the proposed prospecting right operation will be of low significance, especially as no permanent structures. Should the Applicant successfully rehabilitate the prospecting areas (upon closure), no residual visual impact is expected upon closure of the prospecting activities.

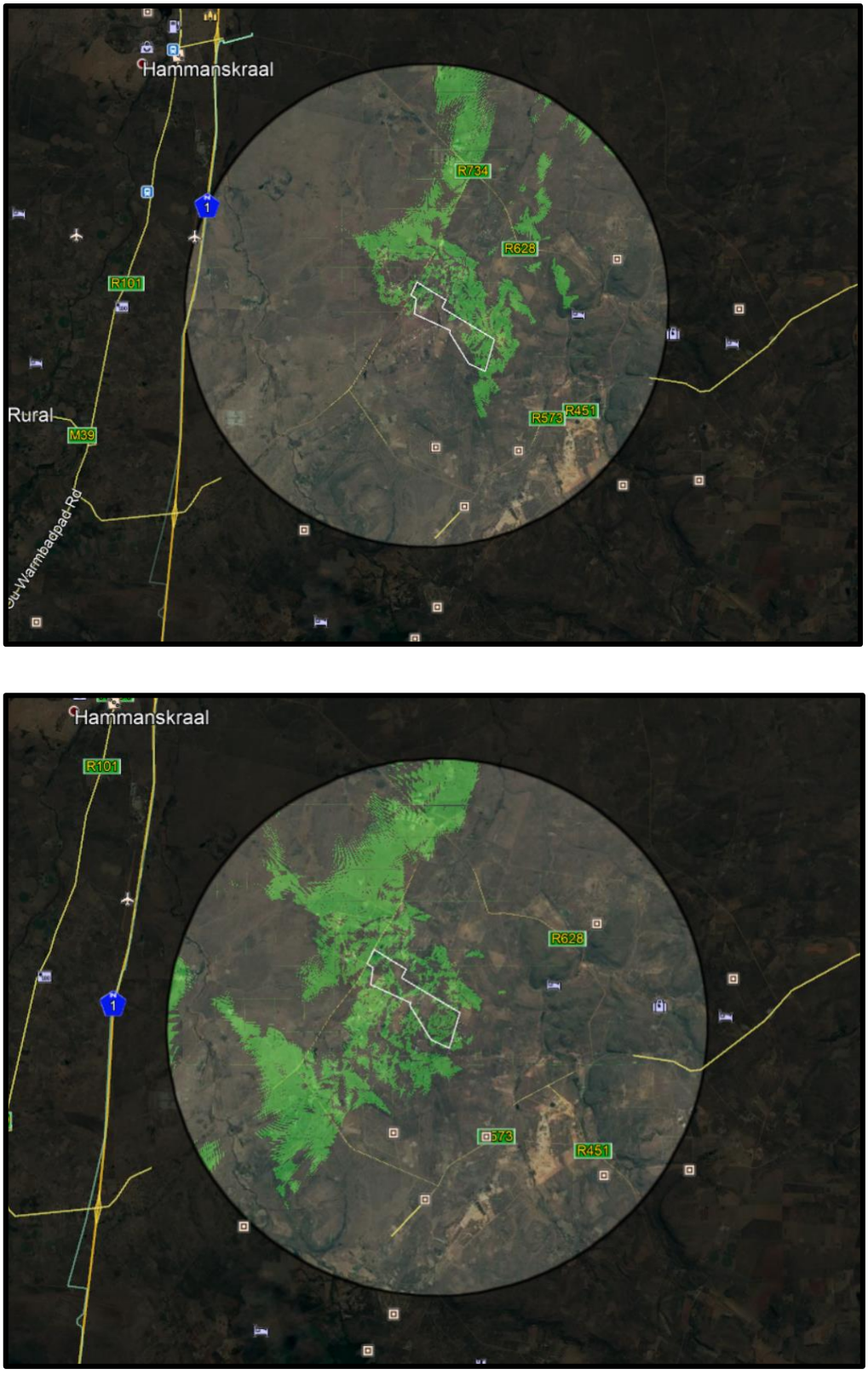


Figure 16.1-2: Viewshed of the proposed prospecting footprint where the green shaded areas shows the positions from where the prospecting area (white polygon) will be visible. (Image obtained from Google Earth).

SITE SPECIFIC AIR AND NOISE QUALITY

The proposed activity will contribute the emissions of drilling equipment and field vehicles the receiving environment for the duration of the operational phase. Should the prospecting right holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the machinery already operational at the property.

Emission into the atmosphere is controlled by the National Environmental Management: Air Quality Act, 2004. The proposed prospecting activity does not trigger an application in terms of the said act. The proposed activity will contribute the emissions of one excavator, one front-end-loader and two tippers to the receiving environment for the duration of the operational phase. Should the prospecting right holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use.

SITE SPECIFIC GEOLOGY AND SOIL

(Information extracted from the Prospecting Work Programme (PWP) for the proposed prospecting right)

The area of interest is situated just north of the Witbank Coalfield (figure 18), which extends about 190 km west-east between the towns of Springs and Belfast and about 60 km in a north-south direction between the towns of Middelburg and Ermelo. The area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top. For over a century the Witbank Coalfield has been the major coal producing area in South Africa and continues to be so; it is estimated that since the first commercial exploitation of coal in 1870, over 50% of the coal produced in South Africa has come from the Witbank Coalfield.

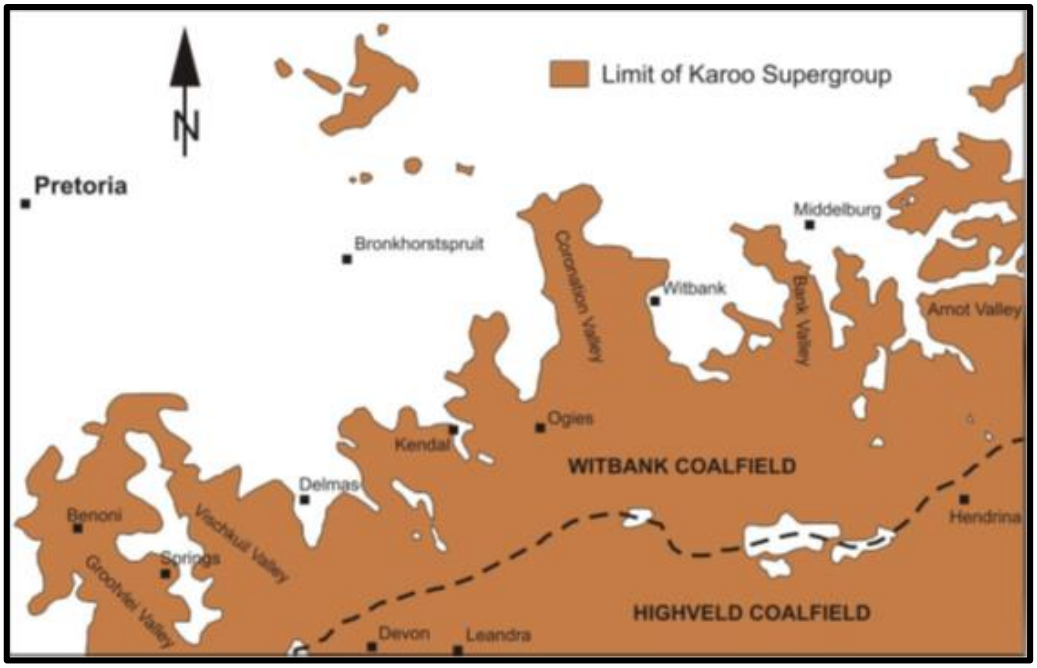


Figure 17: Geological map of the area concerned. (Image obtained from the Prospecting Work Programme (PWP) for the proposed prospecting right)

Five coal seams are contained in a 70 m thick succession of sandstone with subordinate siltstone and mudstone and are distinguished numerically in ascending order from the bottom upwards.

The distribution and attitudes of the No. 1 and 2 seams are largely determined by the pre-Karoo topography, whilst the present distribution of the No. 4 and No. 5 seams is controlled by the present day land surface; in areas the No. 5 seam is either completely eroded or is patchily distributed, while the top part of the No. 4 seam is eroded or affected by weathering in places. The No. 3 seam is generally uneconomic, usually having a thickness of less than 0.5 m. At the Glisa colliery, on the most eastern edge of the Witbank Coalfield, 5 km south west of the town of Belfast, the No. 3 seam has an average thickness of 1.5 m and is exploited. Five typical stratigraphic columns from five different areas in the Witbank Coalfield are shown on figure 19.

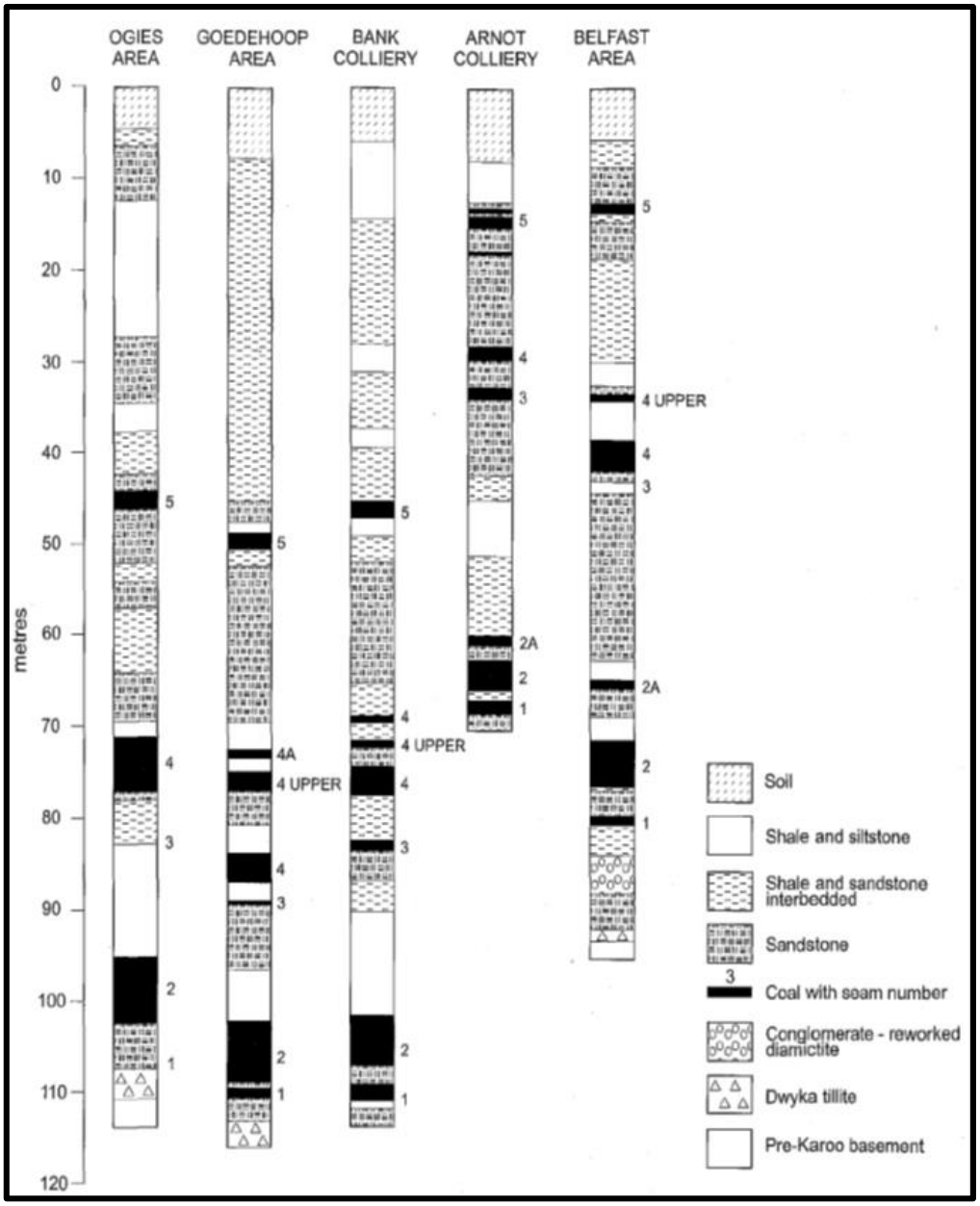


Figure 18: Typical stratigraphic column in the Witbank Coalfield.. (Image obtained from the Prospecting Work Programme (PWP) for the proposed prospecting right)

The area concerned is covered by rocks of the Vryheid Formation, which are well known for their coal measures. A geological map of the area is shown in figure 4 below.

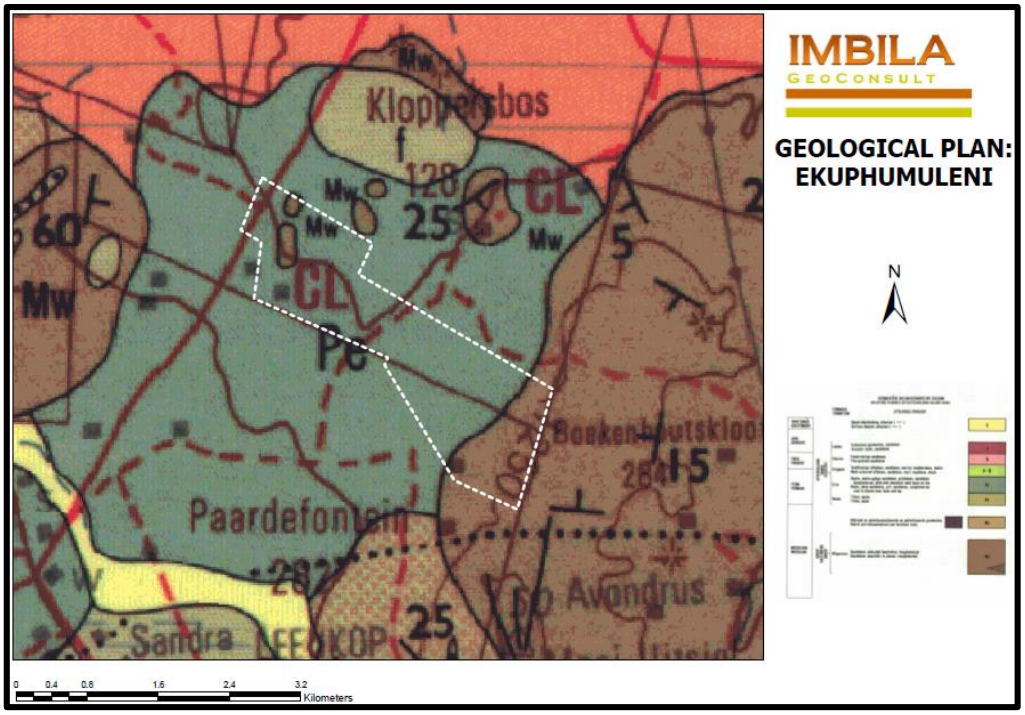


Figure 19: Geological map of the area concerned. (Image obtained from the Prospecting Work Programme (PWP) for the proposed prospecting right)

SITE SPECIFIC HYDROLOGY

The proposed site falls within the Crocodile (West) and Marico Water Management Area, in the A23B quaternary catchment area. There are various streams and small farm dams in the area. The Pienaars River is located approximately 3 km south west of the site and the Boekenhoutspruit located approximately 3 km to the east of the site area.

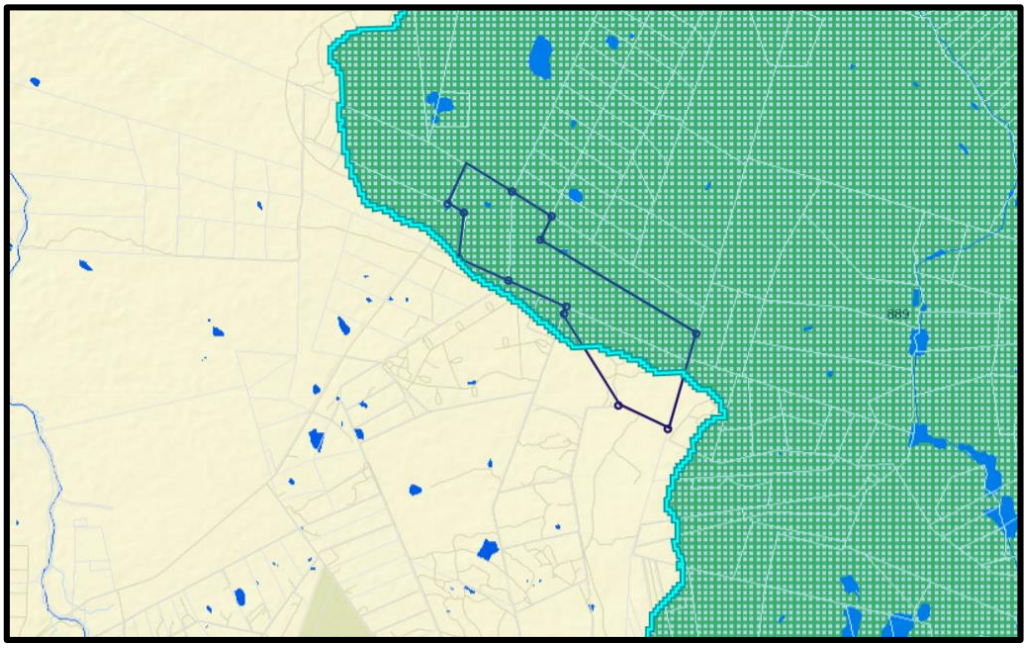


Figure 20: Map showing the proposed prospecting footprint (blue polygon) in the. The dark green area represents a River phase 2 FEPA (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

SITE SPECIFIC MINING AND BIODIVERSITY CONSERVATION AREAS

The prospecting activities does not require the removal of any large trees or vegetation of significance. Due to the small footprint of a borehole, the drill position can be manipulated to drill between the trees. In light of this, the impact of the prospecting operation on the vegetation cover of the receiving environment is deemed to be of Low significance. The Applicant will make use of the existing access roads. It is proposed that should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the vegetation and groundcover in general is deemed to be of low significance.

SITE SPECIFIC GROUNDCOVER

As indicated below all the information below is based on preliminary data, surrounding information and desktop studies as access to the study area was denied by the landowners.

The proposed area has a grazing capacity of between 4-7 Livestock per Ha

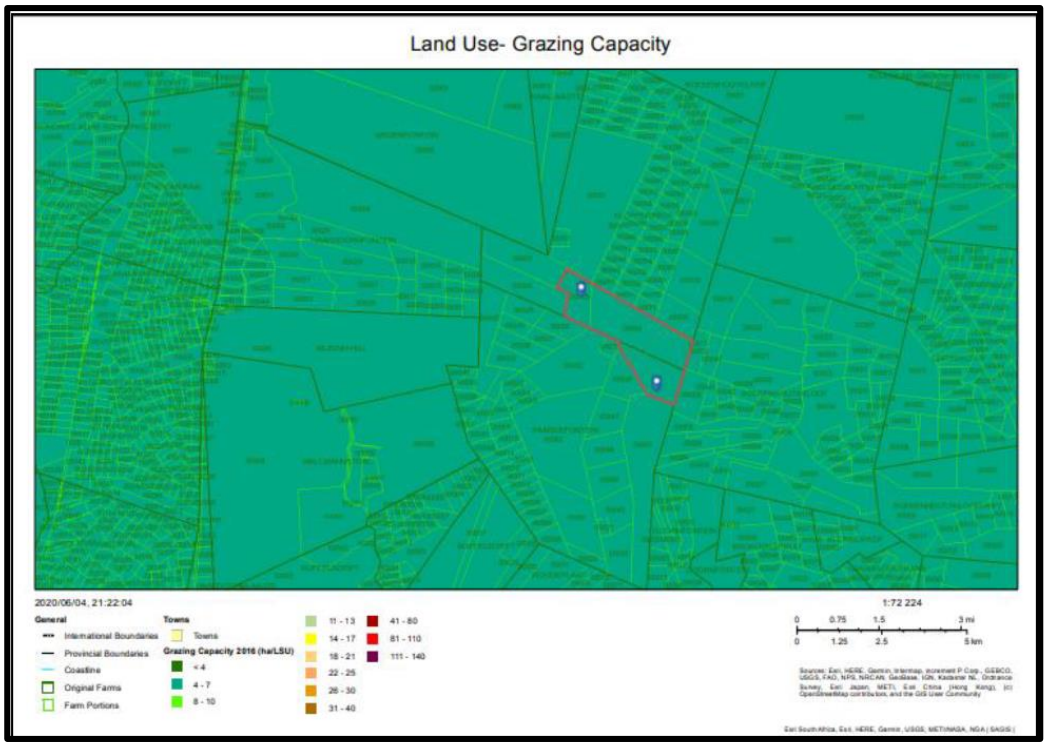


Figure 21: Grazing Capacity

It was indicated that there were plantations on the property. This was also clear during the site inspections as the area close to the Klopperbos/Pyramid Road (D327) has thick vegetation. It could not be determined what type of plantations existed in the area.

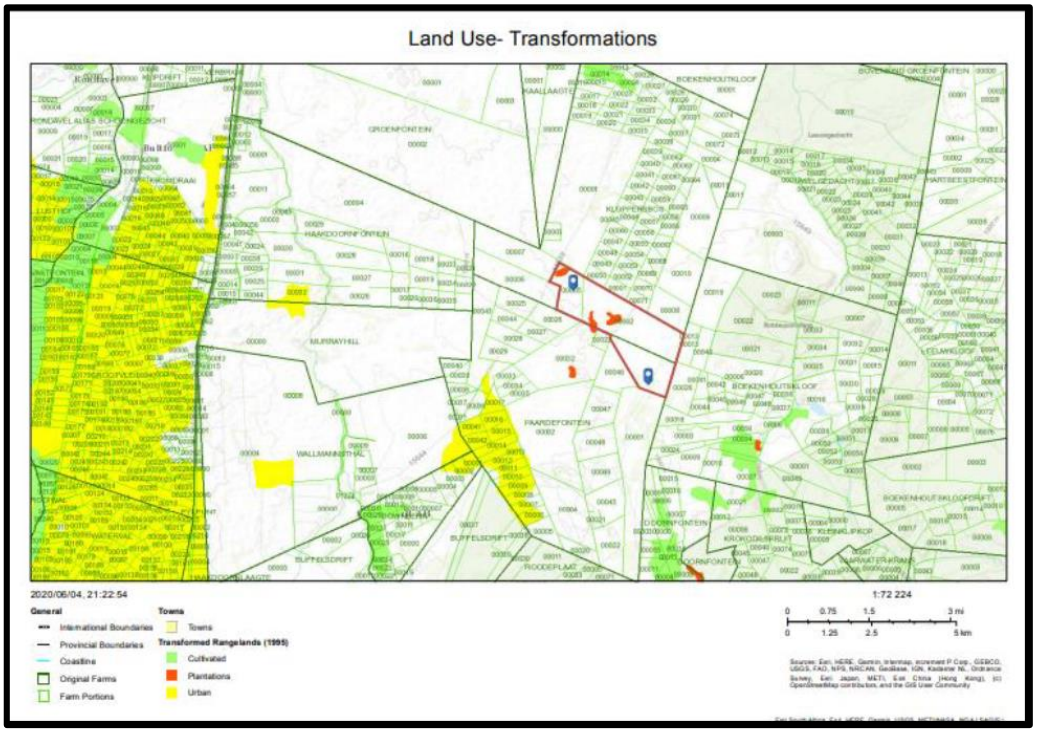


Figure 22: Transformations

From the figure below it is indicated that the area is widely used for hunting of game. Game fencing and security cameras were also noted in the area.

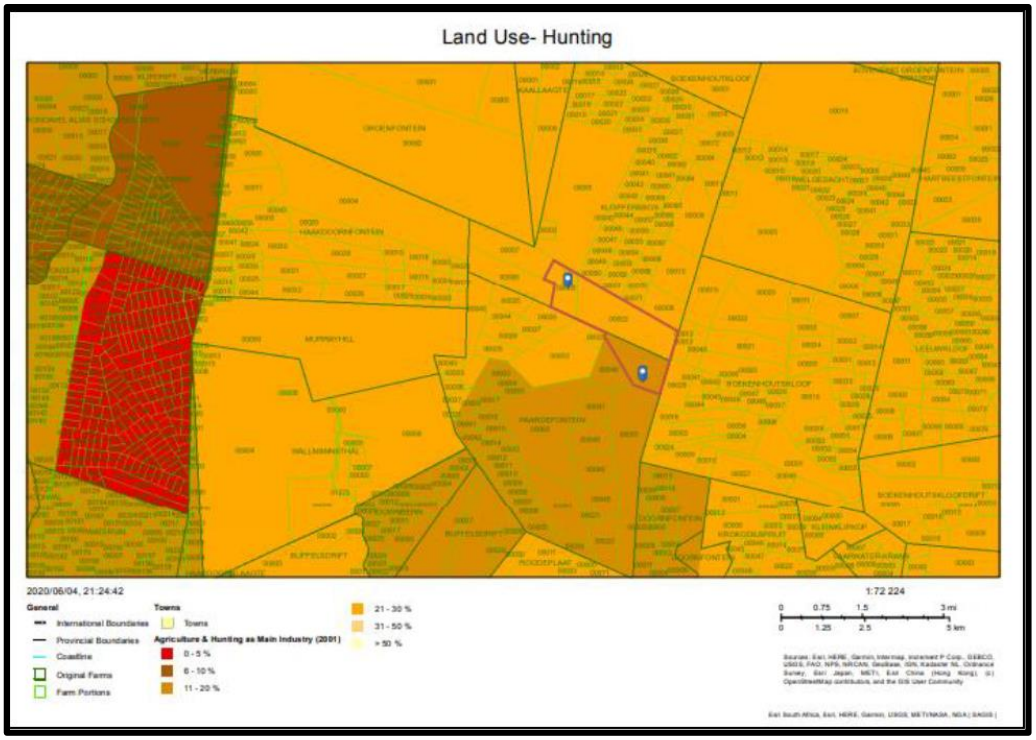


Figure 23: Hunting in the area

The land has a capability of v vi vii, viii which indicted it is non arable, and recommended for livestock grazing.

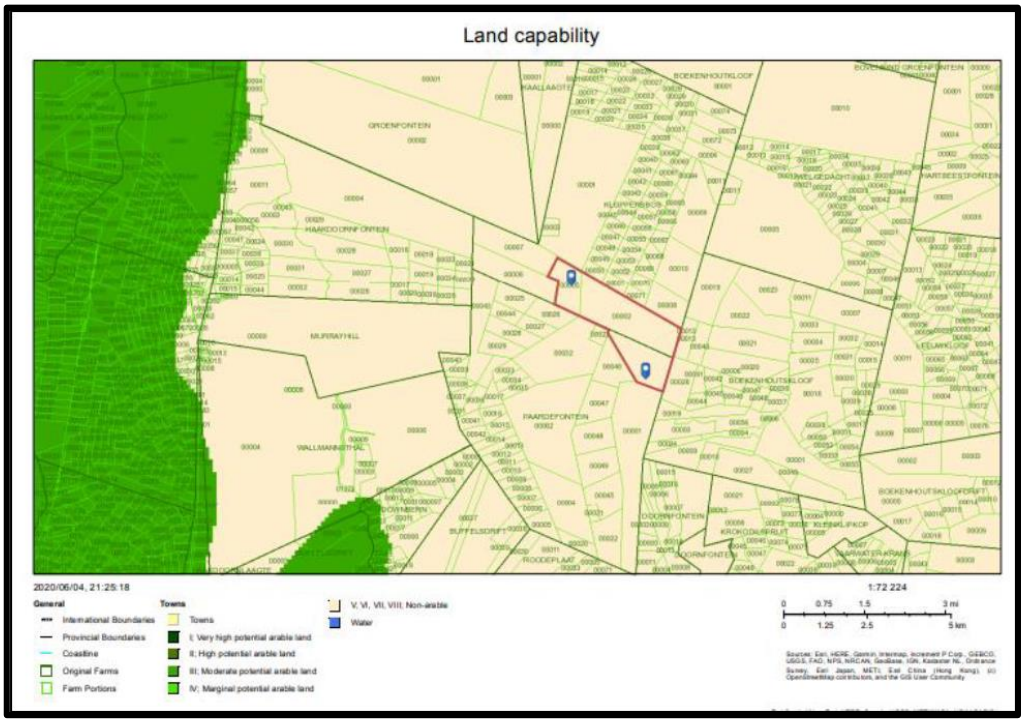


Figure 24: Land Capability

SITE SPECIFIC FAUNA

Various small mammals and reptiles occur are likely to on the property. The fauna at the site will not be impacted by the proposed prospecting activity as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. As access to the site was denied at this stage no resident protected or red data faunal species could be identified within the earmarked footprint, and the project is expected to have a negligible impact in this regard as prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. The study area falls over properties that is noted to be operational game farms, should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers.

SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT

The proposed site falls in the surrounding area of the Komjekejeke Heritage site, therefore a Heritage Impact Assessment will be conducted as soon as access to the site was granted by the landowners. The Applicant will implement a chance-find protocol on site for the duration of the site establishment, operational- and decommissioning phase.

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening paleontologically sensitive areas at the onset of a project. When the footprint of the earmarked prospecting area is placed on the PSM, it shows the study area to extend over an area of insignificant/zero concern.

(d) Environmental and current land use map.

(Show all environmental and current land use features)

The environmental and current land use map is attached as Appendix D.

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

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

The following potential impacts were identified of each main activity in each phase of the proposed project. 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.

vi) -Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

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

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

DEFINITIONS AND CONCEPTS:

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 particular consequences being realised (Environment Australia (1999) Environmental Risk Management).

Impact

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

Consequence

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

Likelihood

A qualitative term covering both probability and frequency.

Frequency

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

Probability

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

Environment

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

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 and the outcome can be positive or negative. Several factors can be used to 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 tables below.

Determination of Severity / Intensity

Severity relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment.

The table below will be used to obtain an overall rating for severity, taking into consideration the various criteria.

Table 11: Table to be used to obtain an overall rating of severity, taking into consideration the various criteria.

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-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.

Table 12: Criteria for the rating of duration.

Rating	Description
1	Up to ONE MONTH
2	ONE MONTH to THREE MONTHS (QUARTER)
3	THREE MONTHS to ONE YEAR
4	ONE to TEN YEARS
5	Beyond TEN YEARS

Determination of Extent/Spatial Scale

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

Table 13: Criteria for the 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/neighbouring farm area
5	Regional, National, International

Determination of Overall Consequence

Overall consequence is determined by adding the factors determined above and summarized below, and then dividing the sum by 3.

Table 14: 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 below and in tables 6 and 7.

Determination of Frequency

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

Table 15: Criteria for the 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.

Table 16: Criteria for the 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 then dividing the sum by 2.

Table 17: Example of calculating overall likelihood.

Consequence	Rating
Frequency	Example 4
Probability	Example 2
SUBTOTAL	**6**
TOTAL LIKELIHOOD (Subtotal divided by 2)	**3**

Determination of Overall Environmental Significance:

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of **LOW**, **LOW-MEDIUM**, **MEDIUM**, **MEDIUM-HIGH** or **HIGH**, as shown in the table below.

Table 18: 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

Qualitative description or magnitude of Environmental Significance

This description is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritisations and decision making process associated with this event, aspect or impact.

Table 19: Description of environmental significance and related action required.

Significance	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 management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible.	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

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 of 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 a number of 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.

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

(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 prospecting area in which drilling sites can be moved to various positions in consultation with the land owners depending on sensitivity and accessibility.

However, the proposed prospecting area was identified as the preferred and only viable site alternative. In light of this, S1 was identified during the assessment phase of the environmental impact assessment, by the Applicant and project team due to the following:

- The geological setting of the area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top.

- Availability of the coal resource will only be determined should prospecting the prospecting right be granted and drilling can take place.

PROJECT ASSOCIATED POSITIVE IMPACTS:

- Work opportunities to local residents should prospecting be successful contributing to the socio-economic status of the area;
- Easy movement of infrastructure as processing progress
- Complete removal of infrastructure at closure of the mine.
- Return of the prospecting area to agricultural use upon closure of the project; and
- Diversification of the land use of the property.

POTENTIAL NEGATIVE IMPACTS:

PLANNING AND DESIGN PHASE

- Air quality and emissions as a result of planning and design phase,
- Visual intrusion as a result of planning and design phase;
- Potential hydrocarbon contamination from leaks or spills leeching into the water table;
- Potential impact on fauna within the footprint area;
- Dust nuisance as a result of the result of planning and design phase;
- Noise nuisance as a result of the result of planning and design phase;
- Safety and security on properties due to trespassing of contractors / workers;

OPERATIONAL PHASE (DRILLING)

- Visual intrusion as a result of prospecting activities;
- Potential impact associated with littering and hydrocarbon spills;
- Disturbance to fauna within the footprint area;
- Noise nuisance as a result of the prospecting activities;

- Dust nuisance as a result of the prospecting activities;
- Loss of topsoil a result of the prospecting activities;
- Infestation of denuded areas with invader plant species;
- Deterioration of the access road to the prospecting area;
- Safety and security on properties due to trespassing of contractors / workers;

SLOPING AND LANDSCAPING UPON CLOSURE OF THE PROSPECTING AREA

- Visual intrusion as a result of the decommissioning activities;
- Erosion of returned topsoil after rehabilitation;
- Infestation of denuded areas with invader plant species;
- Noise nuisance as a result of the decommissioning activities;
- Dust nuisance as a result of the decommissioning activities
- Potential impact associated with litter/hydrocarbon spills left at the decommissioning activities;
- Disturbance to fauna within the footprint area;
- Safety and security on properties due to trespassing of contractors / workers;
- Deterioration of the access road to the decommissioning activities.

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

(With regard to 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)

The following mitigation measures are proposed to address/minimize the impact of the proposed activity on the surrounding environment:

VISUAL CHARACTERISTICS

Visual Mitigation:

The risk of the proposed prospecting activities having a negative impact on the aesthetic quality of the surrounding environment can be reduced to a low-medium risk through the implementation of the mitigation measures listed below.

- The applicant should however ensure that housekeeping is managed to standard, as this will mitigate the visual impacts during the operational phase of the prospecting activities.
- Upon closure the site will be rehabilitated and sloped to insure that the visual impact on the aesthetic value of the area is kept to a minimum.
- The site will have a neat appearance and be kept in good condition at all times.

AIR AND NOISE QUALITY

Fugitive Dust Emission Mitigation:

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

- The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).
- The site manager must ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust.
- Areas devoid of vegetation, which could act as a dust source, must be minimized.
- Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.
- All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).
- Best practice measures shall be implemented during the stripping of topsoil (if required), drilling, and decommissioning and landscaping to minimize potential dust impacts.

Noise Handling:

The risk of noise, generated as a result of the proposed prospecting activity, having a negative impact on the surrounding environment can be reduced to being low through the implementation of the mitigation measures listed below:

- The prospecting right holder must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- No loud music may be permitted at the prospecting area.
- All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).

- Best practice measures shall be implemented in order to minimize potential noise impacts.
- A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA, 2004, SANS 10103:2008.

GEOLOGY AND SOIL

Topsoil Management:

The following topsoil management mitigation measures are proposed (stockpile area):

- The upper 300 mm of the soil must be stripped and stockpiled.
- Topsoil is a valuable and essential resource for rehabilitation and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
- Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The prospecting plan have to be such that topsoil is stockpiled for the minimum possible time.
- The topsoil must be placed on a levelled area, within the prospecting footprint. no topsoil may be stockpiled in undisturbed areas.
- Topsoil stockpiles must be protected against losses by water and wind erosion. Stockpiles must be positioned so as not to be vulnerable to erosion by wind and water.
- Topsoil heaps may not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.
- The temporary topsoil stockpiles must be kept free of invasive plant species.
- Storm- and runoff water must be diverted around the stockpile area to prevent erosion.
- The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site.
- The prospecting right holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal.

- The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.

MINING AND BIODIVERSITY & GROUNDCOVER

Management of Invasive Plant Species:

The risk of weeds or invader plants invading the disturbed area can be reduced to being Low through the implementation of the mitigation measures listed below:

- An invasive plant species management plan (Appendix J) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the prospecting activities.
- All stockpiles (topsoil) must be kept free of invasive plant species.
- 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 can be destroyed completely.
  - The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.

FAUNA

Protection of Fauna:

The risk resulting from the proposed prospecting activity on terrestrial fauna of the footprint area as well as the surrounding environment, can be reduced to Low through the implementation of the mitigation measures listed below:

- The site manager must ensure 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.

GENERAL

Waste Management:

The risk of uncontrolled waste generation having a negative impact on the surrounding environment can be reduced to being Low through the implementation of the mitigation measures listed below:

- Regular vehicle maintenance, repairs and services may only take place at the off-site workshop and service area of the prospecting right holder, and none of the above may be allowed on site. When a breakdown occurs in on site, the prospecting right holder must arrange for the removal of the machine, within 6 hours, to a recognised workshop where it can be mended.
- Ablution facilities must be provided in the form of a chemical toilet. The chemical toilet must be placed outside the 1:100 year floodline of any open water source, and must be serviced at least once every two weeks for the duration of the prospecting activities.
- The use of any temporary, chemical toilet facilities may not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the prospecting right holder.
- If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.
- Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site.
- A spill kit must be available on-site which can be operated by trained employees for the *adhoc* remediation of minor chemical and hydrocarbon spillages.
- 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 recognized facility.
- Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.

- General waste must be contained in marked, sealable, refuse bins placed at a designated area, to be removed when filled to capacity to a recognised general waste landfill site.
- No waste may be buried or burned on the site.
- No chemicals or hazardous materials may be stored at the prospecting area.
- It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities is reported to the Department of Water and Sanitation and other relevant authorities.
- All machinery must be parked at the stockpile area with drip trays placed underneath stationary vehicles.

Management of Health and Safety Risks:

The following mitigation measures are proposed to minimise the potential health and safety impacts:

- Adequate ablution facilities and water for human consumption must daily be available on site.
- Workers must have access to the correct personal protection equipment (PPE) as required by law.
- All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).
- No trespassing on private property outside the approved area will be allowed

ix) Motivation where no alternative sites were considered.

As mentioned previously, the prospecting area in which drilling sites can be moved to various positions in consultation with the land owners depending on sensitivity and accessibility. However, the proposed prospecting area was identified as the preferred and only viable site alternative. In light of this, S1 was identified during the assessment phase of the environmental impact assessment, by the Applicant and project team due to the following:

- The geological setting of the area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top.
- Availability of the coal resource will only be determined should prospecting the prospecting right be granted and drilling can take place.

x) Statement motivating the alternative development location within the overall site.

(Provide a statement motivating the final site layout that is proposed)

Site Alternative 1 was identified during the assessment phase of the environmental impact assessment as the preferred and only site alternative. The following matters contributed to the identification of the preferred development footprint:

1. **Topography** – The study area consist of undulating terrain occurs mainly in a broad arc south of the Springbokvlakte from the Pilanesberg in the west through Hammanskraal and Groblersdal to GaMasemola in the east. A generally narrow irregular band along the northwestern edge of the Springbokvlakte (including Modimolle) extending into a series of valleys and lower-altitude areas within the Waterberg including the upper Mokolo River Valley near Vaalwater, the corridor between Rankins Pass and the Doorndraai Dam, and the lowlands from the Mabula area to south of the Hoekberge. Some isolated sandy rises are found on the Springbokvlakte. The altitude varies between 1100–1 217 m.

2. **Visual Characteristics** – The viewshed analysis showed that the visual impact of the proposed prospecting operation will be of low significance. The small scale of the proposed operation contributes to the low visual significance. Should the Applicant successfully rehabilitate the prospecting areas (upon closure), no residual visual impact is expected upon closure of the prospecting activities.

3. **Air and Noise Quality** – The proposed activity will contribute the emissions of one excavator, one front-end-loader and two tippers to the receiving environment for the duration of the operational phase. Should the prospecting right holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the machinery already operational at the property.

4. **Geology and Soil –** The large southern and eastern parts of this area are underlain by granite of the Lebowa Granite Suite and some granophyre of the Rashoop Granophyre Suite (both Bushveld Complex, Vaalian). In the north, the sedimentary rocks of the Waterberg Group (Mokolian Erathem) are most important. Specifically, sandstone, conglomerate and siltstone of the Alma Formation and sandstone, siltstone and shale of the Vaalwater Formation. Well-drained, deep Hutton or

Clovelly soils often with a catenary sequence from Hutton at the top to Clovelly on the lower slopes; shallow, skeletal Glenrosa soils also occur. Land types mainly Bb, Fa, Ba, Bd and Ac

Soils vary from planted grassland previously improved grassland, to cultivated, temporary/permanent, commercial/subsistence irrigated/dryland. Soil fall within the following patterns:

LP1 – soils with minimal development, usually shallow or hard or weathered rock, with or without intermitted diverse soils. Lime rate to absent in in the landscape.

5. **Hydrology –** The proposed project does not require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As mentioned earlier, the prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners, and no activity will take place in any water bodies.

6. **Mining, Biodiversity and Groundcover –** The prospecting activities does not require the removal of any large trees or vegetation of significance. Due to the small footprint of a borehole, the drill position can be manipulated to drill between the trees. In light of this, the impact of the prospecting operation on the vegetation cover of the receiving environment is deemed to be of Low significance. The Applicant will make use of the existing access roads. It is proposed that should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the vegetation and groundcover in general is deemed to be of low significance.

7. **Fauna -** Various mammals and reptiles are likely to occur on the property. The fauna at the site will not be impacted by the proposed prospecting activity as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. As access to the site was denied at this stage no resident protected or red data faunal species could be identified within the earmarked footprint, and the project is expected to have a negligible impact in this regard as prospecting activities will be

done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. The study area falls over properties that is noted to be operational game farms, should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers.

8. **Cultural and Heritage Environment** - The proposed site falls in the surrounding area of the Komjekejeke Heritage site, therefore a Heritage Impact Assessment will be conducted as soon as access to the site was granted by the landowners. The Applicant will implement a chance-find protocol on site for the duration of the site establishment, operational- and decommissioning phase. The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening paleontologically sensitive areas at the onset of a project. When the footprint of the earmarked mining area is placed on the PSM, it shows the study area to extend over an area of insignificant/zero concern.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.

(Including (i) a description of all environmental issues and risks that 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 the following potential impacts were identified of each main activity in each phase. An initial significance rating (listed under *v) Impacts and Risks Identified*) was determined for each potential impact should the mitigation measures proposed in this document not be implemented on-site. The impact assessment process then continued in identifying mitigation measures to address the impact that the proposed prospecting activity may have on the surrounding environment.

The significance rating was again determined for each impact using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact ratings listed below was determined for each impact **after** bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

PLANNING AND DESIGN PHASE

Air quality and emissions as a result of planning and design phase

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Partial**		
1	1	1	1	1	4	2.5	**2.5**

Visual intrusion as a result of planning and design phase

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Partial**		
2	1	1	1.3	1	4	2.5	**3.25**

Potential hydrocarbon contamination from leaks or spills leeching into the water table

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
3	1	1	1.6	3	2	2.5	**4**

Potential impact on fauna within the footprint area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-					**Degree of Mitigation: Full**		
3	1	1	1.6	1	1	1.6	**1.6**

Dust nuisance as a result of the result of planning and design phase

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
1	1	1	1	1	5	3	**3**

Noise nuisance as a result of the result of planning and design phase

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Partial**		
1	1	1	1	1	5	3	**3**

Safety and security on properties due to trespassing of contractors / workers.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
1	1	1	1	2	5	3.5	**3.5**

OPERATIONAL PHASE

Visual intrusion as a result of prospecting activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Partial**		
2	1	1	1.3	1	4	2.5	**3.25**

Potential impact associated with littering and hydrocarbon spills

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low -Medium					**Degree of Mitigation: Full**		
3	4	1	2.6	3	2	2	**5.2**

Disturbance to fauna within the footprint area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
3	4	1	2.6	1	1	1	**2.6**

Noise nuisance as a result of the prospecting activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Partial**		
1	4	1	2	4	5	4.5	**9**

Dust nuisance as a result of the prospecting activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low					**Degree of Mitigation: Full**		
1	4	1	2	2	2	2	**4**

Loss of topsoil a result of the prospecting activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low-Medium					**Degree of Mitigation: Full**		
3	4	1	2.6	2	2	2	**5.2**

Infestation of denuded areas with invader plant species

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low -Medium					**Degree of Mitigation: Full**		
1	4	1	2	2	2	2	**4**

Deterioration of the access road to the prospecting area

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low						**Degree of Mitigation: Full**	
1	4	1	2	1	1	1	**2**

Safety and security on properties due to trespassing of contractors / workers.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low						**Degree of Mitigation: Full**	
1	4	1	2	1	1	1	**2**

SLOPING AND LANDSCAPING UPON CLOSURE OF THE PROSPECTING AREA

Visual intrusion as a result of the decommissioning activities

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low						**Degree of Mitigation: Partial**	
2	1	1	1.3	1	4	2.5	**3.25**

Erosion of returned topsoil after rehabilitation

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium						**Degree of Mitigation: Full**	
3	5	1	3	2	2	2	**6**

Infestation of denuded areas with invader plant species

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low -Medium						**Degree of Mitigation: Full**	
2	5	1	2.6	2	2	2	**5.2**

Noise nuisance as a result of the decommissioning activities

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium						**Degree of Mitigation: Partial**	
1	4	1	2	4	5	4.5	**9**

Dust nuisance as a result of the decommissioning activities

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low						**Degree of Mitigation: Full**	
1	4	1	2	2	2	2	**4**

Potential impact associated with litter/hydrocarbon spills left at the decommissioning activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Low Medium					**Degree of Mitigation: Full**		
3	4	1	2.6	3	2	2.5	**6.5**

Disturbance to fauna within the footprint area

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Low					**Degree of Mitigation: Full**		
3	4	1	2.6	1	1	1	**2.6**

Safety and security on properties due to trespassing of contractors / workers.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Low					**Degree of Mitigation: Full**		
1	4	1	2	1	1	1	**2**

Deterioration of the access road to the decommissioning activities

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Low					**Degree of Mitigation: Full**		
1	4	1	2	1	1	1	**2**

Return of the prospecting area to agricultural use **(Positive Impact)**

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Medium-High					**Degree of Mitigation: N/A**		
1	5	5	3.7	5	5	5	**18.5**

j) 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 interested and affected parties).

Table 20: Assessment of each identified potentially significant impact and risk

ACTIVITY Whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or 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…etc…etc.)	POTENTIAL IMPACT (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution, etc…etc…etc.)	ASPECTS AFFECTED	PHASE In which impact is anticipated. (E.g. Construction, commissioning, operational Decommissioning closure, post closure.)	SIGNIFICANCE If not mitigated.	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g. Modify through alternative method Control through noise control Control through management and monitoring through rehabilitation.	SIGNIFICANCE If mitigated.
• Demarcation of site with visible beacons.	• No impact could be identified other than the beacons being outside the boundaries of the approved prospecting area.	N/A	Planning and design phase	N/A	Control through management and monitoring.	N/A
• Planning and design phase • Prospecting activities • Sloping and landscaping upon closure of the prospecting area	• Visual intrusion as a result of planning and design phase • Visual intrusion as a result of prospecting activities • Visual intrusion as a result of sloping and landscaping upon closure of the prospecting area	The visual impact may affect the aesthetics of the landscape.	Planning and design, Operational and Decommissioning Phase	• Low • Low • Low	<u>Control:</u> Implementing proper housekeeping.	• Low- • Low • Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
• Prospecting activities • Sloping and landscaping upon closure of the prospecting area.	• Loss of topsoil and fertility during prospecting activities • Erosion of returned topsoil after rehabilitation	Loss of topsoil will affect the rehabilitation success upon closure of the prospecting area.	Operational and Decommissioning Phase	• Low-Medium • Low-Medium	Control & Remedy: Proper housekeeping.	• Low • Low
• Prospecting activities • Sloping and landscaping upon closure of prospecting area.	• Infestation of the topsoil heaps and prospecting area with invader plant species. • Infestation of denuded areas with invader plant species	This will impact on the biodiversity of the receiving environment.	Operational and Decommissioning Phase	• Low - Medium • Low -Medium	Control: Implementing good management practices.	• Low - Medium • Low - Medium
• Planning and design phase • Prospecting activities • Sloping and landscaping upon closure of the prospecting area.	• Potential impact on fauna within the footprint area. • Disturbance to fauna within the footprint area	This will impact on the biodiversity of the receiving environment.	Planning and design, Operational and Decommissioning Phase	• Low - Medium • Medium • Medium	Control & Stop: Implementing good management practices.	• Low • Low • Low
• Planning and design phase • Prospecting activities • Sloping and landscaping upon closure of the prospecting area.	• Dust nuisance as a result of the prospecting activities. • Dust nuisance as a result of the prospecting activities.	Increased dust generation will impact on the air quality of the receiving environment.	Planning and design, Operational and Decommissioning Phase	• Low • Low - Medium • Low - Medium	Control: Dust suppression methods and proper housekeeping.	• Low • Low • Low
• Planning and design phase	• Noise nuisance as a result of the prospecting activities.	Should noise levels become excessive it	Planning and design,	• Low-Medium	Control: Noise suppression methods and proper housekeeping.	• Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
• Prospecting activities • Sloping and landscaping upon closure of the prospecting area	• Noise nuisance as a result of the decomissiononig activities.	may have an impact on the noise ambiance of the receiving environment.	Operational and Decommissioning Phase	• Low - Medium • Low - Medium		• Low • Low
• Planning and design phase • Prospecting activities • Sloping and landscaping upon closure of the prospecting area	• Soil contamination from hydrocarbon spills. • Potential impact assocaited with littering and hydrocarbon spills. • Potential impact associated with litter left at the prospecting area.	Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the prospecting right holder.	Planning and design, Operational and Decommissioning Phase	• Low -Medium • Medium • Medium	<u>Control & Remedy:</u> Proper housekeeping and implementation of an emergency response plan and waste management plan.	• Low • Low - Medium • Low - Medium
• Prospecting activities • Sloping and landscaping upon closure of the prospecting area	• Deterioration of the access road to the prospecting area.	Collapse of the road infrastructure will affect the landowner.	Operational and Decommissioning Phase	• Low-Medium • Low-Medium	<u>Control & Remedy:</u> Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	• Low • Low
• Planning and design phase • Prospecting activities • Sloping and landscaping upon closure of the prospecting area.	• Safety and security on properties due to trespassing of contractors / workers.	Trespassing will negatively affect the landowner due to possible loss of fauna.	Planning and design, Operational and Decommissioning Phase	• Low • Low • Low	<u>Control:</u> Proper site management.	• Low • Low • Low

The supporting Impact Assessment conducted by the EAP must be attached as an appendix, marked Appendix H

k) 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):

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORISATION AS REQUIRED BY THE 2014 EIA REGULATIONS:

The report identified the following list of specialist assessment for inclusion in the assessment report:

- Agricultural Impact Assessment;
- Archaeological and Cultural Heritage Impact Assessment;
- Palaeontology Impact Assessment;
- Terrestrial Biodiversity Impact Assessment;
- Aquatic Biodiversity Impact Assessment;
- Hydrology Assessment;
- Noise Impact Assessment;
- Radioactivity Impact Assessment;
- Plant Species Assessment;
- Animal Species Assessment.

Table 21: Summary of specialist reports

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
Please note: All documentation, to date, was based on preliminary data, surrounding information and desktop studies. Access to the study area was denied by the landowners, resulting in limited information being provided to all commenting parties. Numerous attempts and letters requesting access to the properties by the applicant was all in vain. Greenmined is unable to provide the I&AP's and stakeholders with material information with regards to this prospecting right application and it is therefore clear that the relevant authorities will not be able to provide informed comments, irrespective should it be positive or negative. However, due to the landowners' refusal to grant access to the properties the proper studies could not be conducted. No specialist studies was conducted as a result hereof.			
Archaeological and Cultural Heritage Impact Assessment (HIA) & Palaeontology Impact Assessment (PIA)	The proposed site falls in the surrounding area of the Komjekejeke Heritage site, therefore a Heritage Impact Assessment will be conducted as soon as access to the site is granted by the landowners. This report will be made available for public comments.		
Agricultural Impact Assessment (AIA): The potential impact that the prospecting activity may have on the agricultural potential of the farms will be assessed as part of the Draft Basic Assessment Report (DBAR).However Greenmined is of the opinion that a specialist AIA is not needed as the prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. The proposed project will not necessitate the loss of any agricultural field.			

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED

- Terrestrial Biodiversity Impact Assessment (TBIA) & Plant Species Assessment (PSA) & Animal Species Assessment (ASA):

  As access to the site was denied at this stage no resident protected or red data faunal species could be identified within the earmarked footprint, and the project is expected to have a negligible impact in this regard as prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. The study area falls over properties that is noted to be operational game farms, should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers. It is proposed that should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the riparian vegetation, groundcover and/or fauna is deemed to be of low significance. Therefore, in light of the site-specific state of the earmarked area there is no need for a TBIA, PSA or ASA.

- Aquatic Biodiversity Impact Assessment (ABIA) & Hydrology Assessment (HA):

  The proposed project does not require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As mentioned earlier, the prospecting activities will be done by drilling prospecting boreholes in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners, and no activity will take place in any water bodies.

- Noise Impact Assessment (NIA):

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED

The proposed operation will contribute the noise emission of one drill rig, and field vehicles to the receiving environment for the duration of the operational phase. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the machinery already operational at the property. Due to the small scale of the operation a NIA is not deemed applicable.

- Radioactivity Impact Assessment

A Radioactivity Impact ssessment is not deemed necessary for the proposed prospecting operation that will not store any chemicals on site, perform activities of radioactive nature or generate hazardous waste of radioactive nature.

In light of the above mentioned, we propose that the Heritage Impact Assessment will be the only specialist study currently deemed applicable to the proposed prospecting right application.

l) Environmental impact statement

i) Summary of the key findings of the environmental impact assessment;

The key findings of the environmental impact assessment entail the following:

Project Proposal

Lomeza Opencast Operations (Pty) Ltd applied for a prospecting right on portion 5 of the farm Kloppersbos 128 JR and portions 1, 7 and 8 of the farm Ekuphumuleni 716 JR (409.7979 ha), which falls in Magisterial District of Cullinan (Nokeng Tsa Taemane Local Municipality), City of Tshwane, Gauteng Province.

The farms portion 5 of the farm Kloppersbos 128 JR and portions 1, 7 and 8 of the farm Ekuphumuleni 716 JR is situated approximately 15.63 km North-West of Cullinan. The commodity of interest is Coal. Potable water will daily be transported to site. The solid waste produced during the operational phase of the project will be transported from site to the nearest recognised landfill site. Prospecting will be done in daylight hours.

Site vehicles will use the existing gravel farm roads in consultation with the land owners.

Prospecting is proposed in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. As per the figure below (which is only an estimated proposal) only once the applicant consulted land owner a final plan can be developed.

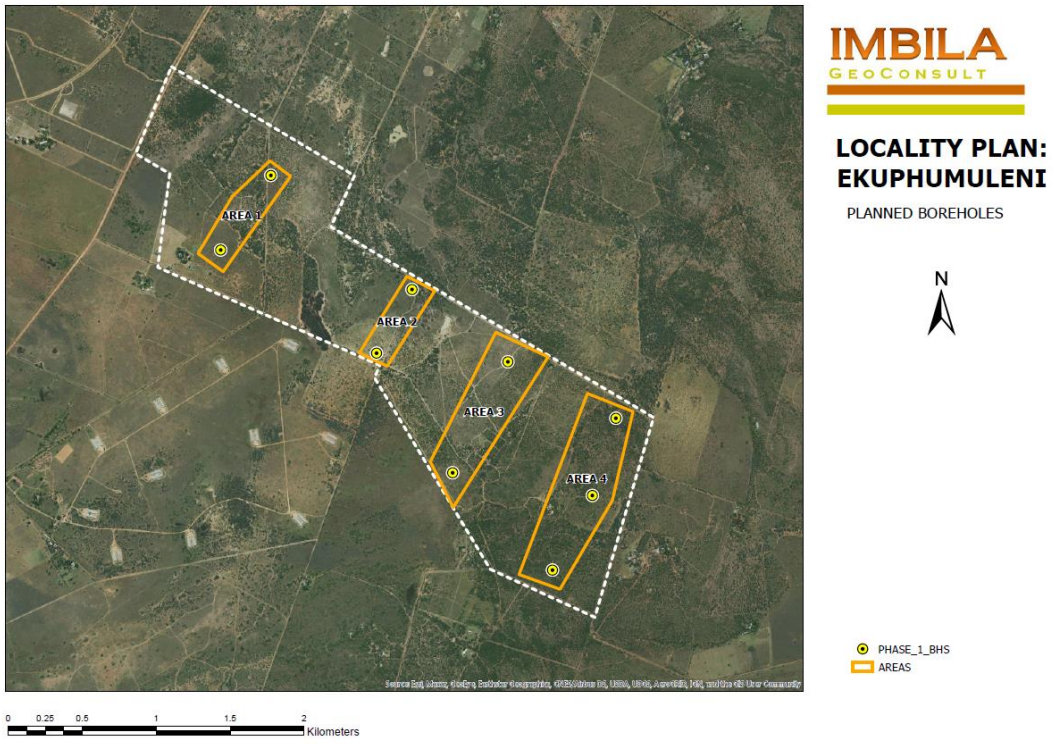


Figure 25: Satellite view of the proposed prospecting boreholes of Lomeza Opencast Operations.

LAND USE

Lomeza Opencast Operations (Pty) Ltd - Ekuphumuleni- will not have to compete with other land uses at the site. Upon closure of the prospecting area, the land will revert back to agricultural grazing for livestock / game farming.

Due to the remote location of the proposed project very little to no negative impacts on the community could be identified that were deemed to be of significant importance. The dust and noise impacts that may emanate from the prospecting area during the operational phase could have a negative impact on the surrounding community if the mitigation measures proposed in this document is not implemented and managed on-site.

Topography

The study area consist of undulating terrain occurs mainly in a broad arc south of the Springbokvlakte from the Pilanesberg in the west through Hammanskraal and Groblersdal to GaMasemola in the east. A generally narrow irregular band along the northwestern edge of the Springbokvlakte (including Mo

dimolle) extending into a series of valleys and lower-altitude areas within the Waterberg including the upper Mokolo River Valley near Vaalwater, the corridor between Rankins Pass and the Doorndraai Dam, and the lowlands from the Mabula area to south of the Hoekberge. Some isolated sandy rises are found on the Springbokvlakte. The altitude varies between 1100–1 217 m.

Visual Characteristics

The viewshed analysis showed that the visual impact of the proposed prospecting operation will be of low significance. The small scale of the proposed operation contributes to the low visual significance. Should the Applicant successfully rehabilitate the prospecting areas (upon closure), no residual visual impact is expected upon closure of the prospecting activities.

Air and Noise Quality

The proposed activity will contribute the emissions of to drilling equipment and field vehicles the receiving environment for the duration of the operational phase. Should the prospecting right holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use. The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the machinery already operational at the property.

Geology and Soil

The large southern and eastern parts of this area are underlain by granite of the Lebowa Granite Suite and some granophyre of the Rashoop Granophyre Suite (both Bushveld Complex, Vaalian). In the north, the sedimentary rocks of the Waterberg Group (Mokolian Erathem) are most important. Specifically, sandstone, conglomerate and siltstone of the Alma Formation and sandstone, siltstone and shale of the Vaalwater Formation. Well-drained, deep Hutton or Clovelly soils often with a catenary sequence from Hutton at the top to Clovelly on the lower slopes; shallow, skeletal Glenrosa soils also occur. Land types mainly Bb, Fa, Ba, Bd and Ac

Soils vary from planted grassland previously improved grassland, to cultivated, temporary/permanent, commercial/subsistence irrigated/dryland. Soil fall within the following patterns:

LP1 – soils with minimal development, usually shallow or hard or weathered rock, with or without intermitted diverse soils. Lime rate to absent in in the landscape.

Hydrology

The proposed site falls within the Crocodile (West) and Marico Water Management Area, in the A23B quaternary catchment area. There are various streams and small farm dams in the area. The Pienaars River is located approximately 3 km south west of the site and the Boekenhoutspruit located approximately 3 km to the east of the site area.

Mining, Biodiversity and Groundcover

The prospecting activities does not require the removal of any large trees or vegetation of significance. Due to the small footprint of a borehole, the drill position can be manipulated to drill between the trees. In light of this, the impact of the prospecting operation on the vegetation cover of the receiving environment is deemed to be of Low significance. The Applicant will make use of the existing access roads. It is proposed that should the Applicant implement the mitigation measures proposed in the EMPr the impact of the proposed activity on the vegetation and groundcover in general is deemed to be of low significance.

Fauna

Various mammals and reptiles are likely to occur on the property. The fauna at the site will not be impacted by the proposed prospecting activity as they will be able to move away or through the site, without being harmed. Workers should be educated and managed to ensure that no fauna at the site is harmed. As access to the site was denied at this stage no resident protected or red data faunal species could be identified within the earmarked footprint, and the project is expected to have a negligible impact in this regard as prospecting activities will be done in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time.

The study area falls over properties that is noted to be operational game farms, should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers.

Cultural and Heritage Environment

The proposed site falls in the surrounding area of the Komjekejeke Heritage site, therefore a Heritage Impact Assessment will be conducted as soon as access to the site was granted by the landowners. The Applicant will implement a chance-find protocol on site for the duration of the site establishment, operational- and decommissioning phase.

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening paleontologically sensitive areas at the onset of a project. When the footprint of the earmarked mining area is placed on the PSM, it shows the study area to extend over an area of insignificant/zero (grey) concern.

ii) 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 any areas that should be avoided, including buffers. Attach as Appendix.

See the map indicating site activities attached as Appendix C.

iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

PROJECT ASSOCIATED POSITIVE IMPACTS:

- Work opportunities to local residents should prospecting be successful contributing to the socio-economic status of the area;
- Easy movement of infrastructure as processing progress
- Complete removal of infrastructure at closure of the mine.
- Return of the prospecting area to agricultural use upon closure of the project; and
- Diversification of the land use of the property.

POTENTIAL NEGATIVE IMPACTS:

PLANNING AND DESIGN PHASE

- Air quality and emissions as a result of planning and design phase,
- Visual intrusion as a result of planning and design phase;
- Potential hydrocarbon contamination from leaks or spills leeching into the water table;
- Potential impact on fauna within the footprint area;

- Dust nuisance as a result of the result of planning and design phase;
- Noise nuisance as a result of the result of planning and design phase;
- Safety and security on properties due to trespassing of contractors / workers;

OPERATIONAL PHASE (DRILLING)

- Visual intrusion as a result of prospecting activities;
- Potential impact associated with littering and hydrocarbon spills;
- Disturbance to fauna within the footprint area;
- Noise nuisance as a result of the prospecting activities;
- Dust nuisance as a result of the prospecting activities;
- Loss of topsoil a result of the prospecting activities;
- Infestation of denuded areas with invader plant species;
- Deterioration of the access road to the prospecting area;
- Safety and security on properties due to trespassing of contractors / workers;

SLOPING AND LANDSCAPING UPON CLOSURE OF THE PROSPECTING AREA

- Visual intrusion as a result of the decommissioning activities;
- Erosion of returned topsoil after rehabilitation;
- Infestation of denuded areas with invader plant species;
- Noise nuisance as a result of the decommissioning activities;
- Dust nuisance as a result of the decommissioning activities
- Potential impact associated with litter/hydrocarbon spills left at the decommissioning activities;
- Disturbance to fauna within the footprint area;
- Safety and security on properties due to trespassing of contractors / workers;
- Deterioration of the access road to the decommissioning activities.

The negative impacts associated with the project that was deemed to have a Low-Medium or higher significance includes:

- Infestation of denuded areas with invader plant species as a result of operational and decommissioning phase **Low-Medium**
- Potential impact associated with littering and hydrocarbon spills as a result of operational phase **Low-Medium**

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

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

Table 22: Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
VISUAL CHARACTERISTICS Mitigating the visual impact.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Contain prospecting to the boundaries of the authorised area. • Ensure that the site have a neat appearance and is kept in good condition at all times. • Limit vegetation removal, and only strip topsoil immediately prior to the use of a specific area. • Rehabilitate and level the site upon closure to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.	• Minimise the impact of the proposed project on the visual characteristics of the receiving environment during the operational phase, and ensure no residual impact remains after closure.
AIR QUALITY Dust management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Control the liberation of dust into the surrounding environment by the use of; inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). • Ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. • Limit speed on the access roads to 40 km/h to prevent the generation of excess dust. • Minimise areas devoid of vegetation. • Take weather conditions into consideration upon commencement of daily operations. Limit operations during very windy periods to reduce airborne dust and resulting impacts. • Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012).	• Dust prevention measures are applied to minimise the generation of dust.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Implement best practice measures during the operation to minimize potential dust impacts.	
NOISE AMBIANCE Noise mitigation.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the prospecting area. • Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996. • Implement best practice measures to minimise potential noise impacts.	• Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.
GEOLOGY AND SOIL Topsoil management mitigation measures	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Strip and stockpile the upper 300 mm of the soil. • Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. • Ensure topsoil stripping, stockpiling and re-spreading is done in a systematic way. Plan prospecting in such a way that topsoil is stockpiled for the minimum possible time. • Place topsoil heaps on a levelled area within the prospecting footprint area. Do not stockpile topsoil in undisturbed areas. • Protect topsoil stockpiles against losses by water and wind erosion. Position stockpiles so as not to be vulnerable to erosion by wind and water. Establishment of plants on the stockpiles will help prevent erosion. • Ensure that topsoil heaps do not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • Keep temporary stockpiles free of invasive plant species. • Divert storm- and runoff water around the stockpile area (if applicable) to prevent erosion. • Spread the topsoil evenly over the rehabilitated area, to a depth of 300 mm, upon closure of the site.	• Adequate fertile topsoil is available to rehabilitate the mined area upon closure.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. • Plant and irrigate a cover crop immediately after spreading topsoil to stabilise the soil and protect it from erosion. Fertilise the cover crop for optimum biomass production. Rehabilitation extends until the first cover crop is well established. • Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
HYDROLOGY Storm water management.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Divert storm water around the topsoil heaps to prevent erosion. • Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS.	• Impact to the environment caused by storm water discharge is avoided.
GROUNDCOVER Mitigating invader plants.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Implement an invasive plant species management plan to control all invasive plant species on site in terms of NEM:BA, 2004 and CARA, 1983. • Keep all stockpiles (topsoil) if any free of invasive plant species. • Control declared invader or exotic species on the rehabilitated areas.	• Prospecting area is kept free of invasive plant species.
FAUNA Mitigating the fauna component.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• 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.	• Disturbance to fauna is minimised.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Prospecting areas should be done in consultation with the land owner in order to insure the safety and security of animals that might occur in the prospecting areas.	
CULTURE/HERITAGE Mitigating cultural/heritage aspects.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Confine all prospecting to the approved footprint area. • Implement the following change find procedure when discoveries are made on site: ▪ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify SAHRA. ▪ Work may only continue once the go-ahead was issued by SAHRA.	• Impact to cultural/heritage resources is avoided or at least minimised.
EXISTING INFRASTRUCTURE Control of access road.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Divert storm water around the access road to prevent erosion. • Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. • Repair rutting and erosion of the access road caused as a direct result of the prospecting activities.	• The access road remains accessible to the road users during the operational phase, and upon closure the road is returned in a better, or at least the same state as received by the prospecting right holder.
GENERAL Waste management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.	• Ensure regular vehicle maintenance, repairs and services takes place at the off-site workshop and service area of the right holder, and that none of the above is allowed in the on	• Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
	Compliance to be monitored by the Environmental Control Officer.	the farms. When a breakdown occurs in the prospecting area, arrange for the removal of the machine within 6 hours to a recognised workshop where it can be mended. • Provide ablution facilities in the form of a chemical toilet that is placed outside the 1:100 year floodline of any open water source. Ensure the toilet is serviced at least once every two weeks for the duration of the prospecting activities. • Ensure that the use of any temporary, chemical toilet facilities does not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately. • Equip the diesel bowser with a drip tray if used on site. The nozzle of the bowser must rest in a sleeve to prevent dripping after refuelling. • Clean drip trays after use. Do not use dirty drip trays. • Keep a spill kit on site. • Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. • Collect the contaminated soil from spillage that occurred, such as oil or diesel leaking from a burst pipe, within the first hour of occurrence, in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. File proof. • Compile a waste management plan and implement it on site. The plan must focus on the waste hierarchy of the NEM:WA. • Contain general waste in marked, sealable, refuse bins placed at a designated area and remove waste from the prospecting area to a recognised general waste landfill site. • Prevent the burning or burying of waste on site.	

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		• Report any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities to the Department of Water and Sanitation and other relevant authorities. • Park the drill machinery at the prospecting area with drip trays placed underneath stationary vehicles.	
GENERAL Health and safety aspects.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	• Ensure adequate ablution facilities and water for human consumption is daily available on site. • Ensure that workers have access to the correct PPE as required by law. • Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).	• Employees work in a healthy and safe environment.

n) 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 under *Part A(1)(m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* above should be considered for inclusion in the environmental authorisation.

o) 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 site inspections, desktop studies as well as the specialist study. No uncertainty regarding the proposed project or the receiving environment could be identified.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

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

Should the mitigation measures and monitoring programmes proposed in this document be implemented on site, no fatal flaws could be identified that were deemed as severe as to prevent the activity continuing.

ii) Conditions that must be included in the authorisation

The management objectives listed in this report under *Part A(1)(m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* should be considered for inclusion in the environmental authorisation.

q) Period for which the Environmental Authorisation is required.

The Applicant requests the Environmental Authorisation to be valid for a five-year period to correspond with the validity of the prospecting right.

r) 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 both 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 both the Basic Assessment Report and the Environmental Management Programme report.

s) Financial Provision

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

i) Explain how the aforesaid amount was derived

The amount required to manage and rehabilitate the environment was estimated to be R 84 828.63. As indicated the prospecting activities will be done in phases of 4 areas consisting of a total of 9 drilling prospecting boreholes comprising and area of less than 400 square meters per site with a total of less than 0.4 ha disturbed at any given time. Prior to moving to the next drill block these sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners.

ii) 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 Prospecting Work Programme as the case may be).

Lomeza Opencast Operations (Pty) Ltd will be responsible for the financial and technical aspects of the proposed prospecting project. The operating expenditure is provided for as such in the Prospecting Work Programme attached as Appendix K to this report.

t) Specific Information required by the competent Authority

i) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3)(a) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person.

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

The following potential impacts were identified that may impact on socio-economic conditions of directly affected persons:

- **Visual intrusion associated with the proposed prospecting activities:**

  The viewshed analysis showed that the visual impact of the proposed prospecting operation will be of low significance. The small scale of the proposed operation contributes to the low visual significance. Should the Applicant successfully rehabilitate the prospecting areas (upon closure), no residual visual impact is expected upon closure of the prospecting activities.

- **Dust nuisance caused as a result of the proposed prospecting activities:**

The proposed activity will contribute the emissions of one excavator, one front-end-loader and two tippers to the receiving environment for the duration of the operational phase. Should the prospecting right holder implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use.

- **Noise nuisance as a result of prospecting activities:**

The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the machinery already operational at the property. The distance of the proposed prospecting area from residential infrastructure further lessens the potential noise impact.

- **Employment opportunities and socio-economic impact:**

The proposed labour component of the activity will be four employees. The operation will contribute to the local economy in the area, both directly and through the multiplier effect that its continued presence will create.

Equipment and supplies will be purchased locally, and wages are spent at local businesses, generating both jobs and income in the area. Although the employees are not resident on the site, they will be from the surrounding community.

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

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

The proposed site falls in the surrounding area of the Komjekejeke Heritage site, therefore a Heritage Impact Assessment will be conducted as soon as access to the site was granted by the landowners. The Applicant will implement a chance-find protocol on site for the duration of the site establishment, operational- and decommissioning phase.

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening paleontologically sensitive areas at the onset of a project. When the footprint of the earmarked prospecting area is placed on the PSM, it shows the study area to extend over an area of insignificant/zero concern.

u) 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 Appendix)

Site Alternative 1, which entails the prospecting area in which drilling sites can be moved to various positions in consultation with the land owners depending on sensitivity and accessibility. However, the proposed prospecting area was identified as the preferred and only viable site alternative. In light of this, S1 was identified during the assessment phase of the environmental impact assessment, by the Applicant and project team due to the following:

- The geological setting of the area of interest is mainly covered by Ecca Group rocks, shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top.
- Availability of the coal resource will only be determined should prospecting the prospecting right be granted and drilling can take place.

No-go Alternative: The no-go alternative entails no change to the *status quo* and is therefore a real alternative that must be considered.

- The applicant will not be able to prospect for any possible coal resource;
- The application, if approved, would allow the applicant to determine the available coal as well as provide employment opportunities to local employees.
- Should the no-go alternative be followed these opportunities will be lost to the applicant, potential employees and clients; and the applicant will not be able to diversify the income of the property.

Not proceeding with the proposed operation will entail that a mineral which if found will contribute towards the local and provincial social and economic structures of the area, will not be mined, and that this opportunity will be lost.

In light of this, the no-go alternative was no deemed to be the preferred alternative.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME.

a) 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).

The details and expertise of Sonette Smit of Greenmined Environmental that acts as EAP on this project has been included in Part A Section 1(a) as well as Appendix M as required.

b) 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, section (1)(h) herein as required).

The aspects of the activity that are covered by the draft environmental management programme has been described and included in Part A, section (1)(h).

c) Composite Map

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

As mentioned under Part A, section (1)(l)(ii) this map has been compiled and is attached as Appendix C to this document.

d) Description of impact management objectives including management statements

i) Determination of closure objectives.

(Ensure that the closure objectives are informed by the type of environment described in 2.4 herein)

The end objective is for the prospecting area to return to agricultural use. No buildings/infrastructure, other than the chemical toilet and drill rig, need to be removed.

The decommissioning activities will consist of the following:

- Removal of all prospecting machinery from the prospecting area;
- Removal of the chemical toilet from the prospecting area;
- Landscaping and replacing the topsoil (if removed);
- Controlling the invasive plant species.

The Applicant will comply with the minimum closure objectives as prescribed DMR and detailed below:

- Rehabilitation of the Prospecting Area:

  Upon closure of the prospecting activities the Applicant will remove the drilling machinery from the area. The entrance into the river will remain, but should any signs of erosion occur, these will be reinstated and landscaped by the prospecting right holder.

- Final Rehabilitation:

  Final rehabilitation of the surface area shall entail landscaping, levelling, maintenance, and clearing of invasive plant species. All equipment, plant and other items used during the prospecting period will be removed from site (section 44 of the MPRDA, 2002). Waste material of any description will be removed entirely from the prospecting area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site. The management of invasive plant species will be done in a sporadic manner during the life of the prospecting activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site. Final rehabilitation shall be completed within a period specified by the Regional Manager.

ii) Volume and rate of water use required for the operation

No water will be required during this operation

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

The Applicant will not require water use authorisation in terms of the NWA, 1998.

iv) Impacts to be mitigated in their respective phases

Table 23: Impact to be mitigated in their respective phases

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
(as listed in 2.11.1)	of operation in which activity will take place. State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post closure	(volumes, tonnages and hectares or m^2)	(describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	Describe the 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 the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Demarcation of site with visible beacons.	Planning and design / Site establishment phase	0.04 ha	Demarcation of the site will ensure that all employees are aware of the boundaries of the prospecting area, and that work stay within the approved area.	Prospecting of coal is only allowed within the boundaries of the approved area. • MPRDA, 2008 • NEMA, 1998	Beacons need to be in place throughout the life of the activity.
• Planning and design / Site establishment	Planning and design / Site establishment & Operational Phase	0.04 ha	**<u>Visual Mitigation</u>** • Prospecting must be contained to the boundaries of the authorised area. • The site must have a neat appearance and be kept in good condition at all times.	Management closure of prospecting area must be in accordance with the: • MPRDA, 2008 • NEMA, 1998	Throughout the planning and design / site establishment -, and operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• The right holder must limit vegetation removal (if applicable), and stripping of topsoil may only be done immediately prior to the use of a specific area. • Upon closure the stockpile area must be rehabilitated and levelled to remove the visual impact on the aesthetic value of the area.		
• Planning and design / Site establishment	Planning and design / Site establishment phase	0.04 ha	**Impact on Biodiversity:** • The prospecting boundaries must be clearly demarcated and all operations must be contained to the approved prospecting area. • The area outside the prospecting boundaries must be declared a no-go area, and all employees must be educated accordingly. • The invasive plant species management plan attached as Appendix J must be implement on site to control weeds and invasive plants on denuded areas, topsoil heaps and reinstated areas.	Natural vegetated areas must be managed in accordance with the: • NEM:BA 2004 • Gauteng Biodiversity Plan	Throughout the Planning and design / Site establishment phase.
• Planning and design / Site establishment. • Sloping and landscaping upon closure of prospecting area.	Planning and design / Site establishment - and Decommissioning phase	0.04 ha	**Topsoil Management:** • The upper 300 mm of the soil must be stripped and stockpiled. • Topsoil is a valuable and essential resource for rehabilitation and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes. • Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The prospecting plan have to be such that topsoil is stockpiled for the minimum possible time.	Topsoil must be managed in accordance with the: • CARA, 1983 • NEM:BA, 2004 • MPRDA, 2008	Throughout the planning and design / Site establishment -, operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• The topsoil must be placed on a levelled area, within the prospecting footprint. No topsoil may be stockpiled in undisturbed areas. • Topsoil stockpiles must be protected against losses by water and wind erosion. Stockpiles must be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants (weeds or a cover crop) on the stockpiles will help to prevent erosion. • Topsoil heaps may not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • The temporary topsoil stockpiles must be kept free of invasive plant species. • Storm- and runoff water must be diverted around the stockpile area to prevent erosion. • The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site. • The prospecting right holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal. • The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
• Planning and design / Site establishment. • Prospecting activities / drilling.. • Sloping and landscaping upon closure of prospecting area.	Planning and design / Site establishment -, Operational- and Decommissioning phase	0.04 ha	**Management of Invader Plant Species:** • An invasive plant species management plan (Appendix J) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the prospecting activities. • All stockpiles (topsoil) must be kept free of invasive plant species. • 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 can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.	Invader plants must be managed in accordance with the: • CARA, 1983 • NEM:BA 2004 • Invasive Plant Species Management Plan (Appendix J)	Throughout the planning and design / site establishment -, operational, and decommissioning phase.
• Planning and design / Site establishment. • Prospecting activities / drilling.	Planning and design / Site establishment - and Operational phase	0.04 ha	**Protection of Fauna:** • The site manager must ensure 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.	Fauna must be managed in accordance with the: • NEM:BA 2004	Throughout the planning and design / site establishment -, and operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• Prospecting areas should be done in consultation with the land owner in order to insure the safety and security of animals that might occur in the prospecting areas.		
• Site establishment. • Prospecting activities / drilling.	Site Establishment-, Operational Phase	0.04 ha	**<u>Fugitive Dust Emission Mitigation:</u>** • The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). • The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. • Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust. • Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to prospecting. • Loads must be flattened and covered to ensure that minimal spillage of material takes place during transportation, also preventing windblown dust. • Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.	Dust generation must be managed in accordance with the: • NEM:AQA. 2004 Regulation 6(1) • National Dust Control Regulations, GN No R827 • ASTM D1739 (SANS 1137:2012)	Throughout the planning and design / site establishment -, operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).		
• Site establishment. • Prospecting activities / drilling.. • Sloping and landscaping upon closure of prospecting area.	Site Establishment-, Operational-, and Decommissioning Phase	0.04 ha	**Noise Handling:** • The prospecting right holder must ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the prospecting area. • All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996). • Best practice measures shall be implemented in order to minimize potential noise impacts.	Noise generation must be managed in accordance with the: • NEM:AQA. 2004 Regulation 6(1) • NRTA, 1996	Throughout the planning and design / site establishment -, operational-, and decommissioning phase.
• Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	Site Establishment-, Operational-, and Decommissioning Phase	0.04 ha	**Waste Management:** • Regular vehicle maintenance, repairs and services may only take place at the off-site workshop and service area of the prospecting right holder, and none of the above may be allowed on the prospecting right area. When a breakdown occurs in the prospecting right area, the right holder must arrange for the removal of the machine, within 6 hours, to a recognised workshop where it can be mended.	Prospecting related waste must be managed in accordance with the: • NWA, 1998 • NEM:WA, 2008 • NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) • NEMA, 1998 (Section 30)	Throughout the planning and design / site establishment -, operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• Ablution facilities must be provided in the form of a chemical toilet. The chemical toilet must be placed outside the 1:100 year floodline of any open water source, and must be serviced at least once every two weeks for the duration of the prospecting activities. • The use of any temporary, chemical toilet facilities may not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the prospecting right holder. • If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. • Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. • A spill kit must be available on-site which can be operated by trained employees for the adhoc remediation of minor chemical and hydrocarbon spillages. • 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 recognized facility.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed. • A waste management plan must be compiled by site management and implemented on site. The plan must focus on the waste hierarchy of the NEM:WA. • General waste must be contained in marked, sealable, refuse bins placed at a designated area, to be removed when filled to capacity to a recognised general waste landfill site. • No waste may be buried or burned on the site. • No chemicals or hazardous materials may be stored at the prospecting area. • It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities is reported to the Department of Water and Sanitation and other relevant authorities. • To lower the risk of accidental hydrocarbon spillages all machinery must be parked at the prospecting area with drip trays placed underneath stationary vehicles.		
• Propspecting of coal.	Operational Phase	0.04 ha	**Archaeological, Heritage and Palaeontological Aspects:** • All prospecting must be confined to the development footprint area.	Cultural/heritage aspects must be managed in accordance with the: • NHRA, 1999	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. • It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area. • The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify SAHRA. • Work may only continue once the go-ahead was issued by SAHRA.		
• Planning and design / Site establishment. • Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	Planning and design / Site establishment -, Operational-, and Decommissioning phase	2.8 ha	**Management of Health and Safety Risks:** • Adequate ablution facilities and water for human consumption must daily be available on site. • Workers must have access to the correct personal protection equipment (PPE) as required by law. • All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).	Health and safety aspects must be managed in accordance with the: • MHSA, 1996 • OHSA, 1993 • OHSAS, 18001	Throughout the planning and design / site establishment -, operational and decommissioning phase.

e) Impact Management Outcomes

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

Table 24: Impact Management Outcomes

ACTIVITY whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or 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...etc..etc.)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))	MITIGATION TYPE (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...etc..) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation.	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
• Demarcation of site with visible beacons.	• No impact could be identified other than the beacons being outside the boundaries of the approved prospecting area.	N/A	Planning and design / Site establishment phase	Control through management and monitoring.	Prospecting of coal is only allowed within the boundaries of the approved area. • MPRDA, 2008 • NEMA, 1998
• Planning and design / Site establishment	• Visual intrusion as a result of site establishment.	The visual impact may affect the aesthetics of the landscape.	Planning and design / Site establishment & Operational Phase	<u>Control:</u> Implementing proper housekeeping.	Management closure of prospecting area must be in accordance with the: • MPRDA, 2008 • NEMA, 1998
• Planning and design / Site establishment • Prospecting activities / drilling.	• Loss of topsoil and fertility during prospecting and	Loss of topsoil will affect the rehabilitation	Planning and design / Site establishment & Operational Phase -	<u>Control & Remedy:</u> Proper housekeeping and storm water management.	Topsoil must be managed in accordance with the: • CARA, 1983 • NEM:BA, 2004

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
• Sloping and landscaping upon closure of prospecting area.	stockpiling (stockpile area) • Loss of stockpiled material due to ineffective storm water control. • Erosion of returned topsoil after rehabilitation (stockpile area)	success upon closure of the mine.	and Decommissioning phase		• MPRDA, 2008
• Planning and design / Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	• Infestation of the topsoil heaps and prospecting area with invader plant species. • Infestation of denuded areas with invader plant species • Infestation of the reinstated area with invader plant species.	This will impact on the biodiversity of the receiving environment.	Planning and design / Site establishment & Operational Phase - and Decommissioning phase	<u>Control:</u> Implementing soil- and storm water management.	Invader plants must be managed in accordance with the: • CARA, 1983 • NEM:BA 2004 • Invasive Plant Species Management Plan (Appendix J)
• Planning and design / Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	• Potential impact on fauna (terrestrial) within the footprint area.	This will impact on the biodiversity of the receiving environment.	Planning and design / Site establishment & Operational Phase - and Decommissioning phase	<u>Control & Stop:</u> Implementing good management practices.	Fauna must be managed in accordance with the: • NEM:BA 2004
• Planning and design / Site establishment	• Dust nuisance as a result of the prospecting activities.	Increased dust generation will impact on the air	Planning and design / Site establishment & Operational Phase -	<u>Control:</u> Dust suppression methods and proper housekeeping.	Dust generation must be managed in accordance with the: • NEM:AQA. 2004 Regulation 6(1)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
• Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	• Dust nuisance as a result of the prospecting activities.	quality of the receiving environment.	and Decommissioning phase		• National Dust Control Regulations, GN No R827 • ASTM D1739 (SANS 1137:2012)
• Planning and design / Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	• Noise nuisance as a result of the prospecting activities. • Noise nuisance as a result of the decomissiononig activities.	Should noise levels become excessive it may have an impact on the noise ambiance of the receiving environment.	Planning and design / Site establishment & Operational Phase - and Decommissioning phase	Control: Noise suppression methods and proper housekeeping.	Noise generation must be managed in accordance with the: • NEM:AQA. 2004 Regulation 6(1) • NRTA, 1996
• Planning and design / Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area	• Soil contamination from hydrocarbon spills. • Potential impact assocaited with littering and hydrocarbon spills. • Potential impact associated with litter left at the prospecting area.	Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the prospecting right holder.	Planning and design / Site establishment & Operational Phase - and Decommissioning phase	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	Prospecting related waste must be managed in accordance with the: • NWA, 1998 • NEM:WA, 2008 • NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) • NEMA, 1998 (Section 30)
• Prospecting activities / drilling.	• Potential impact on area/infrastructure of heritage or cultural concern.	This could impact on the cultural and heritage legacy of the receiving environment.	Operational Phase	Control & Stop: Implementing good management practices, as well as the chance-find protocol.	Cultural/heritage aspects must be managed in accordance with the: • NHRA, 1999

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
• Prospecting activities / drilling.	• Deterioration of the access road to the prospecting area.	Collapse of the road infrastructure will affect the landowner.	Operational Phase	Control & Remedy: Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	The access road must be managed in accordance with the: • NRTA, 1996

f) Impact Management Actions

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

Table 25: Impact Management Actions

ACTIVITY whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or 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...etc..etc.)	**POTENTIAL IMPACT** (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	**MITIGATION TYPE** (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... etc.) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation.	**TIME PERIOD FOR IMPLEMENTATION** 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 the cessation of mining bulk sampling or alluvial diamond prospecting as the case may be.	**COMPLIANCE WITH STANDARDS** (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)
▪ Demarcation of site with visible beacons.	▪ No impact could be identified other than the beacons being outside the boundaries of the approved prospecting area.	Demarcation of the site will ensure that all employees are aware of the boundaries of the prospecting area, and that work stay within the approved area.	Beacons need to be in place throughout the life of the activity.	Prospecting of coal is only allowed within the boundaries of the approved area. ▪ MPRDA, 2008 ▪ NEMA, 1998
▪ Prospecting activities / drilling.	▪ Visual intrusion as a result of site establishment.	**<u>Visual Mitigation</u>** ▪ Prospecting must be contained to the boundaries of the permitted area.	Throughout the operational Phase - and Decommissioning phase.	Management of the prospecting area must be in accordance with the: ▪ MPRDA, 2008

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
▪ Sloping and landscaping upon closure of the prospecting area		▪ The site must have a neat appearance and be kept in good condition at all times. ▪ The prospecting right holder must limit vegetation removal (if applicable), and stripping of topsoil may only be done immediately prior to the use of a specific area. ▪ Upon closure the stockpile area must be rehabilitated and levelled to remove the visual impact on the aesthetic value of the area.		▪ NEMA, 1998
▪ Prospecting activities / drilling. ▪ Sloping and landscaping upon closure of the prospecting area.	▪ Loss of topsoil and fertility during prospecting ▪ Loss of stockpiled material due to ineffective storm water control. ▪ Erosion of returned topsoil after rehabilitation	**<u>Topsoil Management:</u>** ▪ The upper 300 mm of the soil must be stripped and stockpiled. ▪ Topsoil is a valuable and essential resource for rehabilitation and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes. ▪ Topsoil stripping, stockpiling and re-spreading must be done in a systematic way. The prospecting plan have to be such that topsoil is stockpiled for the minimum possible time. ▪ The topsoil must be placed on a levelled area, within the prospecting footprint. No topsoil may be stockpiled in undisturbed areas. ▪ Topsoil stockpiles must be protected against losses by water and wind erosion. Stockpiles must be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants (weeds or a cover crop) on the stockpiles will help to prevent erosion.	Throughout the operational, and decommissioning phase.	Topsoil must be managed in accordance with the: ▪ CARA, 1983 ▪ NEM:BA, 2004 ▪ MPRDA, 2008

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• Topsoil heaps may not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • The temporary topsoil stockpiles must be kept free of invasive plant species. • Storm- and runoff water must be diverted around the stockpile area to prevent erosion. • The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site. • The prospecting right holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal. • A cover crop must be planted, irrigated and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum biomass production. It is important that rehabilitation be taken up to the point of cover crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established. • The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.		

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
• Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	• Infestation of the topsoil heaps and prospecting area with invader plant species. • Infestation of denuded areas with invader plant species • Infestation of the reinstated area with invader plant species.	**Management of Invader Plant Species:** • An invasive plant species management plan (Appendix J) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the prospecting activities. • All stockpiles (topsoil) must be kept free of invasive plant species. • 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 can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) through the use of an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.	Throughout the operational, and decommissioning phase.	Invader plants must be managed in accordance with the: • CARA, 1983 • NEM:BA 2004 • Invasive Plant Species Management Plan (Appendix J)
• Planning and design / Site establishment • Prospecting activities / drilling.	• Potential impact on fauna (terrestrial) within the footprint area.	**Protection of Fauna:** • The site manager must ensure 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.	Throughout the site establishment-, operational-, and decommissioning phase.	Fauna must be managed in accordance with the: • NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
• Sloping and landscaping upon closure of prospecting area.		• Prospecting areas should be done in consultation with the land owner in order to insure the safety and security of animals that might occur in the prospecting areas.		
• Prospecting activities / drilling. • Sloping and landscaping upon closure of prospecting area.	• Dust nuisance as a result of the prospecting activities. • Dust nuisance as a result of the prospecting activities.	**<u>Fugitive Dust Emission Mitigation:</u>** • The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). • The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. • Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust. • Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to prospecting. • Loads must be flattened and covered to ensure that minimal spillage of material takes place during transportation, also preventing windblown dust. • Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.	Throughout the operational, and decommissioning phase.	Dust generation must be managed in accordance with the: • NEM:AQA. 2004 Regulation 6(1) • National Dust Control Regulations, GN No R827 • ASTM D1739 (SANS 1137:2012)

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).		
• Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of the prospecting area.	• Noise nuisance as a result of the prospecting activities. • Noise nuisance as a result of the decomissiononig activities.	**Noise Handling:** • The prospecting right holder must ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the prospecting area. • All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996). • Best practice measures shall be implemented in order to minimize potential noise impacts. • A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA, 2004, SANS 10103:2008.	Throughout the site establishment-, operational-, and decommissioning phase.	Noise generation must be managed in accordance with the: • NEM:AQA. 2004 Regulation 6(1) • NRTA, 1996
• Prospecting activities / drilling. • Sloping and landscaping upon closure of the prospecting area.	• Soil contamination from hydrocarbon spills. • Potential impact assocaited with littering and hydrocarbon spills.	**Waste Management:** • Regular vehicle maintenance, repairs and services may only take place at the off-site workshop and service area. When a breakdown occurs, the prospecting right holder must arrange for the removal of the	Throughout the Operational-, and decommissioning phase.	Prospecting related waste must be managed in accordance with the: • NWA, 1998 • NEM:WA, 2008

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	• Potential impact associated with litter left at the prospecting area.	machine, within 6 hours, to a recognised workshop where it can be mended. • Ablution facilities must be provided in the form of a chemical toilet. The chemical toilet must be placed outside the 1:100 year floodline of any open water source, and must be serviced at least once every two weeks for the duration of the prospecting activities. • The use of any temporary, chemical toilet facilities may not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the prospecting right holder. • If a diesel bowser is used on site, it must be equipped with a drip tray at all times. Drip trays must be used during each and every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. • Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. • A spill kit must be available on-site which can be operated by trained employees for the adhoc remediation of minor chemical and hydrocarbon spillages. • 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 recognized facility.		• NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) • NEMA, 1998 (Section 30)

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. Proof must be filed. • A waste management plan must be compiled by site management and implemented on site. The plan must focus on the waste hierarchy of the NEM:WA. • General waste must be contained in marked, sealable, refuse bins placed at a designated area, to be removed when filled to capacity to a recognised general waste landfill site. • No waste may be buried or burned on the site. • No chemicals or hazardous materials may be stored at the prospecting area. • It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities is reported to the Department of Water and Sanitation and other relevant authorities. • All machinery must be parked at the stockpile area with drip trays placed underneath stationary vehicles.		

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
▪ Prospecting activities / drilling.	▪ Potential impact on area/infrastructure of heritage or cultural concern.	**Archaeological, Heritage and Palaeontological Aspects:** ▪ All prospecting must be confined to the application footprint area. ▪ If during the planning and design, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify SAHRA. ▪ Work may only continue once the go-ahead was issued by SAHRA.	Throughout the operational phase.	Cultural/heritage aspects must be managed in accordance with the: ▪ NHRA, 1999
▪ Prospecting activities / drilling.	▪ Loss of topsoil due to ineffective storm water control.	**Storm Water Mitigation:** ▪ Storm water must be diverted around the topsoil heaps and stockpile area to prevent erosion.	Throughout the operational phase.	Storm water must be managed in accordance with the: ▪ CARA, 1983 ▪ NEMA, 1998 ▪ NWA, 1998

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• Prospecting must be conducted only in accordance with the Best Practice Guideline for small scale prospecting 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: ▪ 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. You must 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 or seeping into clean water systems. ▪ A storm water management plan must apply for the entire life cycle of the prospecting activity 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 a storm water management plan.		
• Prospecting activities / drilling.	• Deterioration of the access road to the prospecting area.	**<u>Access Road Mitigation:</u>** • Vehicular movement must be restricted to the existing access road to prevent crisscrossing of tracks through undisturbed areas.	Throughout the operational phase.	The access road must be managed in accordance with the: • NRTA, 1996

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• Rutting and erosion of the access road caused as a direct result of the prospecting activities must be repaired by the prospecting holder.		
• Planning and design /Site establishment. • Prospecting activities / drilling • Sloping and landscaping upon closure of the prospecting area.	• Potential health and safety risk to employees.	**<u>Management of Health and Safety Risks:</u>** • Adequate ablution facilities and water for human consumption must daily be available on site. • Workers must have access to the correct personal protection equipment (PPE) as required by law. • All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).	Throughout the planning and design / site establishment-, operational and decommissioning phase.	Health and safety aspects must be managed in accordance with the: • MHSA, 1996 • OHSA, 1993 • OHSAS, 18001

i) Financial Provision

(1) Determination of the amount of Financial Provision.

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

The primary objective is to obtain a closure certificate at the end of the life of the mine at minimum cost and in as short a time period as possible whilst still complying with the requirements of the Minerals and Petroleum Resources Development Act. To realise this, the following objectives must be achieved:

- Remove all temporary infrastructure and waste from the site as per the requirements of this EMPR and of the Provincial Department of Mineral Regulation;
- Demolish / rehabilitate all roads with no post -prospecting use potential;
- Clear all carbonaceous material from site;
- Remove all waste from site;
- Any wetlands in the area should not be compromised or destructed;
- Future public health and safety are not compromised;
- Ensure that no threat to surface and underground water quality remains;
- Ensure that all permanent changes in topography are sustainable and do not cause erosion or the damming up of runoff;
- Shape and contour all disturbed areas in compliance with the EMPR;
- The stockpiled topsoil will be spread over the disturbed area to a depth of at least 500 mm;
- Make safe any dangerous excavations or subsidence on the surface;
- Rehabilitate all disturbed areas in compliance with the EMPR and of the Provincial Department of Mineral Regulation;
- Ensure that all rehabilitated areas are safe, stable and self-sustaining in terms of vegetation;
- Control of weeds and alien invasive plant species is an important aspect after topsoil replacement and seeding has been done in an area;

- Site management will implement an alien invasive plant management plan during the 12 months' aftercare period to address germination of problem plants in the area;
- The applicant will comply with the minimum closure objectives as prescribed by DMRE;
- Any adverse socio-economic impacts are minimised; and
- All socio-economic benefits are maximised

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

This report, the Draft Basic Assessment Report, includes all the environmental objectives in relation to closure and will be made available for perusal by the landowner, registered I&AP's and stakeholders over a 30-days commenting period.

(c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main prospecting activities, including the anticipated prospecting area at the time of closure.

The requested rehabilitation plan is attached as Appendix E.

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

The decommissioning phase will entail the final rehabilitation of the prospecting site. Final landscaping, levelling and top dressing will be done. The rehabilitation of the prospecting area as indicated on the rehabilitation plan attached as Appendix E will comply with the minimum closure objectives as prescribed by DMRE and detailed below, and therefore is deemed to be compatible:

- Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding and maintenance, and weed / alien clearing.
- All Temporary Infrastructures, equipment, plant, temporary housing and other items used during the prospecting period will be removed from the site.
- Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the prospecting area and disposed of at a recognized landfill facility, proof of this removal will be kept on file at the applicant's office. It will not be permitted to be buried or burned on the site.
- Weed / Alien clearing will be done in a sporadic manner during the life of the prospecting activities. Species regarded as the National Environmental Biodiversity Act [NEMBA] (Act No. 10 of 2004) Alien and Invasive Species Regulation GNR 598 and 599 of 2014 Species regarded as need to be eradicated from the site on final closure.
- Final rehabilitation shall be completed within a period specified by the Regional Manager.

(e) 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.

Mine type and saleable mineral by-product

According to Tables B.12, B.13 and B.14

Mine type	Coal
Saleable mineral by-product	None

Risk ranking

According to Tables B.12, B.13 and B.14

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

Environmental sensitivity of the mine area

According to Table B.4

Environmental sensitivity of the mine area	Low

Level of information

According to Step 4.2:

Level of information available	Limited

Identify closure components

According to Table B.5 and site-specific conditions

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
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	-	NO
4(A)	Demolition and rehabilitation of electrified railway lines	-	NO
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	NO

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
5	Demolition of housing and facilities	-	NO
6	Opencast rehabilitation including final voids and ramps	-	NO
7	Sealing of shafts, adits and inclines	-	NO
8(A)	Rehabilitation of overburden and spoils	-	NO
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)	-	NO
14	2 to 3 years of maintenance and aftercare	YES	NO

Unit rates for closure components

According to Table B.6 master rates and multiplication factors for applicable closure components.

Component No.	Main description	Master rate	Multiplication factor
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	-	-
2(A)	Demolition of steel buildings and structures	-	-
2(B)	Demolition of reinforced concrete buildings and structures	-	-
3	Rehabilitation of access roads	-	-
4(A)	Demolition and rehabilitation of electrified railway lines	-	-
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	-
5	Demolition of housing and facilities	-	-
6	Opencast rehabilitation including final voids and ramps	-	-
7	Sealing of shafts, adits and inclines	-	-
8(A)	Rehabilitation of overburden and spoils	-	-
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	-	-
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	-

Component No.	Main description	Master rate	Multiplication factor
9	Rehabilitation of subsided areas	-	-
10	General surface rehabilitation, including grassing of all denuded areas	126 059	1.00
11	River diversions	-	-
12	Fencing	-	-
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)	-	-
14	2 to 3 years of maintenance and aftercare	16 776	1.00

Determine weighting factors

According to Tables B.7 and B.8

Weighting factor 1: Nature of terrain/accessibility	1.00 (Flat)
Weighting factor 2: Proximity to urban area where goods and services are to be supplied	1.05

Calculation of closure costs

Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision

Table 26: Calculation of closure cost

CALCULATION OF THE QUANTUM							
Mine:	Lomeza Opencast Operations (Pty) Ltd - Ekuphumuleni			**Location:**	Cullinun		
Evaluators:	Sonette Smit			**Date:**	21 August 2020		
No	**Description**	**Unit**	**A Quantity**	**B Master rate**	**C Multiplication factor**	**D Weighting factor 1**	**E=A *B*C*D Amount (Rand)**
			Step 4.5	**Step 4.3**	**Step 4.3**	**Step 4.4**	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m^2	0	17	1.00	1.00	R 0.00
2(A)	Demolition of steel buildings and structures	m^2	0	241	1.00	1.00	R 0.00
2(B)	Demolition of reinforced concrete buildings and structures	m^2	0	356	1.00	1.00	R 0.00
3	Rehabilitation of access roads	m^2	0	43	1.00	1.00	R 0.00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	419	1.00	1.00	R 0.00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	229	1.00	1.00	R 0.00
5	Demolition of housing and/or administration facilities	m^2	0	483	1.00	1.00	R 0.00
6	Opencast rehabilitation including final voids and ramps	ha	0	253 019	0.52	1.00	R 0.00
7	Sealing of shaft, audits and inclines	m^3	0	130	1.00	1.00	R 0.00
8(A)	Rehabilitation of overburden and spoils	ha	0	168 679	1.00	1.00	R 0.00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	0	210 087	1.00	1.00	R 0.00
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	610 192	0.51	1.00	R 0.00
9	Rehabilitation of subsided areas	ha	0	141 244	1.00	1.00	R 0.00
10	General surface rehabilitation	ha	0.4	133 622	1.00	1.00	R 53 448.80
11	River diversions	ha	0	133 622	1.00	1.00	R 0.00

12	Fencing	m	0	152	1.00	1.00	R 0.00
13	Water Management	ha	0	50 807	0.17	1.00	R 0.00
14	2 to 3 years of maintenance and aftercare	ha	0.4	17782	1.00	1.00	R 7 112.80
15(A)	Specialists study	Sum	0				R 0.00
15(B)	Specialists study	Sum	0				R 0.00
Sum of items 1 to 15 above							R 60 561.60
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1.05				**Sub Total 1**	R 63 589.68

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00	R 3815.38
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00	-
2	Contingency	10.0% of Subtotal 1	R 6358.97
		Sub Total 2 (Subtotal 1 plus management and contingency)	R 73 764.03
		Vat (15%)	R11 064.60
		GRAND TOTAL (Subtotal 3 plus VAT)	**R 84 828.63**

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 **R 84 828.63**.

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

Herewith I, the person, whose name is stated below confirm that I am the person authorised to act as representative of the Applicant in terms of the resolution submitted with the application. I herewith confirm that the company will provide the amount that will be determined by the Regional Manager in accordance with the prescribed guidelines.

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

g) Monitoring of Impact Management Actions
h) Monitoring and reporting frequency
i) Responsible persons
j) Time period for implementing impact management actions
k) Mechanisms for monitoring compliance

Table 27: Mechanisms for monitoring compliance with and performance assessment against the EMPR and reporting thereon.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
• Demarcation of site with visible beacons	Maintenance of beacons	• Visible beacons need to be placed at the corners of the prospecting area.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Ensure beacons are in place throughout the life of the prospecting activities.	Applicable throughout planning and design / Site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.
• Planning and design / Site establishment	**Visual Characteristics:** • Visual intrusion as a result of site establishment.	• Minimize the visual impact of the activity on the surrounding environment through proper site management and implementing good housekeeping practices.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Contain prospecting to the boundaries of the authorised area. • Ensure that the site have a neat appearance and is kept in good condition at all times.	Applicable throughout planning and design / Site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Limit vegetation removal, and only strip topsoil immediately prior to the use of a specific area. • Rehabilitate and level the site upon closure to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.	
• Planning and design / Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of the prospecting area.	**Geology and Soil:** • Loss of topsoil and fertility during prospecting and stockpiling (stockpile area) • Loss of stockpiled material due to ineffective storm water control. • Erosion of returned topsoil after rehabilitation (stockpile area).	• Earthmoving equipment to reinstate mined-out areas. • Cover crop to be established on reinstated areas. • Erosion control infrastructure (if necessary)	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Strip and stockpile the upper 300 mm of the soil. • Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. • Ensure topsoil stripping, stockpiling and re-spreading is done in a systematic way. Plan prospecting in such a way that topsoil is stockpiled for the minimum possible time. • Place topsoil heaps on a levelled area within the prospecting footprint area. Do not stockpile topsoil in undisturbed areas. • Protect topsoil stockpiles against losses by water and wind erosion. Position stockpiles so as not to be vulnerable to erosion by wind and water. Establishment of plants on the stockpiles will help prevent erosion. • Ensure that topsoil heaps do not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. • Keep temporary stockpiles free of invasive plant species.	Applicable throughout planning and design / Site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Divert storm- and runoff water around the stockpile area to prevent erosion. • Spread the topsoil evenly over the rehabilitated area, to a depth of 300 mm, upon closure of the site. • Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. • Plant and irrigate a cover crop immediately after spreading topsoil to stabilise the soil and protect it from erosion. Fertilise the cover crop for optimum biomass production. Rehabilitation extends until the first cover crop is well established. • Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
• Planning and design / Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of the prospecting area.	**<u>Groundcover:</u>** • Infestation of the topsoil heaps and prospecting area with invader plant species. • Infestateion of denuded areas with invader plant species. • Infestation of the reinstated area with invader plant species.	• Designated team to cut or pull out invasive plant species that germinated on site. • Herbicide application equipment.	<u>Role:</u> • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> • Implement an invasive plant species management plan to control all invasive plant species on site in terms of NEM:BA, 2004 and CARA, 1983. • Keep all stockpiles (topsoil) free of invasive plant species. • Control declared invader or exotic species on the rehabilitated areas.	Applicable throughout planning and design / Site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
• Planning and design / Site establishment. • Prospecting activities / drilling..	**Fauna:** • Potential impact on fauna (terrestrial) within the footprint area.	• Toolbox talks to educate employees how to handle fauna that enter the work areas.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • 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. • Prospecting areas should be done in consultation with the land owner in order to insure the safety and security of animals that might occur in the prospecting areas.	Applicable throughout planning and design / Site establishment -, and operational phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.
• Planning and design / Site establishment • Prospecting activities / drilling.	**Air Quality:** • Dust nuisance as a result of the prospecting activities.	• Dust suppression equipment such as a water car. • Signage that clearly reduce the speed on the access roads.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Control the liberation of dust into the surrounding environment by the use of; inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). • Ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.	Applicable throughout planning and design / Site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Limit speed on the haul roads to 40 km/h to prevent the generation of excess dust. • Minimise areas devoid of vegetation. • Flatten and cover loads to prevent spillage and windblown dust during transportation. • Take weather conditions into consideration upon commencement of daily operations. Limit operations during very windy periods to reduce airborne dust and resulting impacts. • Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012). • Implement best practice measures during the stripping of topsoil, loading, and transporting of material from site to minimize potential dust impacts.	
• Planning and design / Site establishment • Prospecting activities / drilling. • Sloping and landscaping upon closure of the prospecting area.	**<u>Noise Ambiance:</u>** • Noise nuisance as a result of the prospecting activities. • Noise nuisance as a result of the decomissiononig activities.	• Silencers fitted to all project related vehicles, and the use of vehicles that are in road worthy condition in terms of the National Road Traffic Act, 1996.	<u>Role:</u> • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> • Ensure that employees and staff conduct themselves in an acceptable manner while on site. • No loud music may be permitted at the prospecting area. • Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996.	Applicable throughout planning and design / Site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Implement best practice measures to minimise potential noise impacts. • Contract a qualified occupational hygienist to quarterly monitor and report on the personal noise exposure of the employees working at the mine. Monitoring must be in accordance with SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA 2004, SANS 10103:2008.	
• Prospecting activities / drilling.. • Prospecting activities / drilling. • Sloping and landscaping upon closure of the prospecting area.	**Waste Management:** • Soil contamination from hydrocarbon spills. • Potential impact assocaited with littering and hydrocarbon spills. • Potential impact associated with litter left at the prospecting area.	• Oil spill kit. • Sealed drip trays. • Formal waste disposal system with waste registers.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Ensure regular vehicle maintenance, repairs and services takes place at the off-site workshop and service area. When a breakdown occurs, arrange for the removal of the machine within 6 hours to a recognised workshop where it can be mended. • Provide ablution facilities in the form of a chemical toilet that is placed outside the 1:100 year floodline of any open water source. Ensure the toilet is serviced at least once every two weeks for the duration of the prospecting activities. • Ensure that the use of any temporary, chemical toilet facilities does not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage from the temporary, chemical toilets.	Applicable throughout planning and design / Site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			Address any pollution problems arising from the above immediately. • Equip the diesel bowser with a drip tray if used on site. The nozzle of the bowser must rest in a sleeve to prevent dripping after refuelling. • Clean drip trays after use. Do not use dirty drip trays. • Keep a spill kit on site. • Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. • Collect the contaminated soil from spillage that occurred, such as oil or diesel leaking from a burst pipe, within the first hour of occurrence, in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility. File proof. • Compile a waste management plan and implement it on site. The plan must focus on the waste hierarchy of the NEM:WA. • Contain general waste in marked, sealable, refuse bins placed at a designated area and remove waste from the prospecting area to a recognised general waste landfill site. • Prevent the burning or burying of waste on site. • Report any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities to the Department of Water and Sanitation and other relevant authorities.	
• Prospecting activities / drilling.	• Potential impact on areas/infrastructure of heritage or cultural concern.	• Contact number of an archaeologist that can be contacted when a discovery is made on site.	<u>Role:</u> • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.	Applicable throughout planning and design / site establishment -, operational-, and decommissioning phases.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			• Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> • Confine all prospecting to the development footprint area. • Implement the following change find procedure when discoveries are made on site: ▪ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify SAHRA. ▪ Work may only continue once the go-ahead was issued by SAHRA.	• Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
• Prospecting activities / drilling.	**Hydrology:** • Storm water management	• Storm water management structures such as berms to direct storm- and runoff water around the stockpiled topsoil area (when needed).	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Control drainage to ensure that runoff from the stockpile area does not culminate in off-site pollution, flooding or result in damage to properties downstream or storm water discharge points. • Divert storm water around the topsoil heaps to prevent erosion. • Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS.	Applicable throughout planning and design / site establishment -, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.
• Prospecting activities / drilling.	**Existing Infrastructure:** • Deterioration of the access road to the prospecting area.	• Grader to restore the road surface when needed.	Role: • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: • Divert storm water around the access road to prevent erosion. • Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. • Repair rutting and erosion of the access road caused as a direct result of the prospecting activities.	Applicable throughout operational phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
• Planning and design / Site establishment. • Prospecting activities / drilling... • Sloping and landscaping upon closure of the prospecting area.	• Potential health and safety risks to employees.	• Stocked first aid box. • Level 1 certified first aider. • All appointments in terms of the Mine Health and Safety Act, 1996.	<u>Role:</u> • Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. • Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> • Ensure adequate ablution facilities and water for human consumption is daily available on site. • Ensure that workers have access to the correct PPE as required by law. • Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).	Applicable throughout planning and design / site establishment, operational-, and decommissioning phases. • Daily compliance monitoring by site management. • Annual compliance monitoring of site by an Environmental Control Officer.

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

The Environmental Audit Report in accordance with Appendix 7 as prescribed in Regulation 34 of the EIA Regulations, 2014 (as amended) will annually be submitted to DMRE for compliance monitoring purposes or in accordance with the time period stipulated by the Environmental Authorisation.

m) Environmental Awareness Plan

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

Once the Applicant received the prospecting right and may commence with the proposed activity, a copy of the Environmental Management Programme will be handed to the site manager for his perusal. Issues such as the prospecting boundaries, fire principals and waste handling will be discussed.

An induction meeting will be held with all the site workers to inform them of the Basic Rules of Conduct with regard to the environment.

ii) Manner in which risk will be dealt with in order to avoid pollution or the degradation of the environment.

The operations manager must ensure that he/she understands the EMPR document and its requirement and commitments before any prospecting takes place. An Environmental Control Officer needs to check compliance of the prospecting activity 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.

- **Site Management:**

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

- **Water Management and Erosion:**

  - Check that rainwater flows around work areas and are not contaminated.
  - Report any erosion.
  - Check that dirty water is kept from clean water.

- **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.

- **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.

- **Discoveries:**

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

- **Air Quality:**

  - Wear protection when working in very dusty areas.
  - Implement dust control measures:
    - ✓ Water all roads and work areas.

- ✓ Minimize handling of material.
- ✓ Obey speed limit and cover trucks.

- **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.

- **Vegetation and Animal life:**

  - Do not remove any plants or trees without approval of the site manager.
  - Do not collect fire wood.
  - 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.

- **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.

n) Specific information required by the Competent Authority

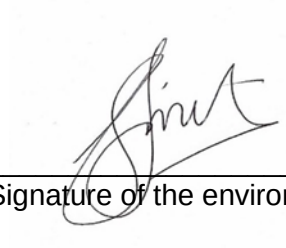
(Among others, confirm that the financial provision will be reviewed annually)

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 being sufficient to cover the environmental liability at the time and for closure of the mine at that time.

2. UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports **X**
b) the inclusion of comments and inputs from stakeholders and I&AP's **X**
c) the inclusion of inputs and recommendations from the specialist reports where relevant, and **X**
d) that the information provided by the EAP to interested and affected parties and any response by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein **X**



Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

Name of Company:

21 August 2020

Date:

-END-

APPENDIX A

REGULATION 2(2) MINE MAP

APPENDIX B
LOCALITY MAP

APPENDIX C
PROSPECTING ACTIVITIES PLAN

APPENDIX D

LAND USE MAP

APPENDIX E
REHABILITATION MAP

APPENDIX G1 & G2

COMMENTS AND RESPONSE REPORT

&

PROOF OF PUBLIC PARTICIPATION

APPENDIX H

SUPPORTING IMPACT ASSESSMENT

APPENDIX I

PHOTOGRAPHS OF THE PROPOSED SITE

APPENDIX J

INVASIVE PLANT SPECIES MANAGEMENT PLAN

APPENDIX K

PROSPECTING WORK PROGRAMME

APPENDIX K

DMRE ACCEPTANCE AND ACKNOWLEDGEMENT LETTERS

APPENDIX M
CV AND PROOF OF EXPERIENCE OF THE EAP