MINING RIGHTS APPLICATION:

THE MINING RIGHT APPLICATION FOR THE PROPOSED MINING DEVELOPMENT FOR DIAMOND KIMBERLITE (DK) AND DIAMOND GENERAL (DG) ON FARM VILJOENSHOF 1655 IN BOSHOF, FREE STATE, SOUTH AFRICA

DMRE Ref No: FS 30/5/1/2/2/10064MR

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

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ABBREVIATIONS; ACRONYMS AND DEFINITIONS

Activity*-any action needed for the design, construction and completion of a project.*

Alien species *- a species occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal by human activities.*

Alternative- *in relation to the proposed activity means a different way of meeting the general purpose and requirements of the activity.*

a) Any part or combination of a) and b) and the interrelationships among and between them; and

Basic Assessment *– means the independent investigation conducted by an Environmental Practitioner in compliance with the environment legal requirements of the National Environmental Management Act (Act No.107 of 1998) (NEMA) and the EIA Regulations published in Government Notice R.385 and R.386 in Government Gazette No.28753 of April 2006, promulgated under section 23(1) of NEMA in application for environmental authorisation.*

CEMP *– Construction Environmental Management Plan*

Client -

Construction Activity *- any action taken by the Contractor their sub-contractors, suppliers or personnel during the construction process.*

Contaminated water *– means water contaminated by the contractors' activities, e.g. concrete water and runoff from plant / personnel wash areas.*

DWS*-Department of Water and Sanitation*

Environment –*The surrounding in which humans exist, and which comprise:*

Environmental Audit *– a systematic, documented, regular and objective evaluation to see how well an organisation or facility is operating in terms of the EMP and is complying with statutory requirements and the organisation's environmental policy.*

Environmental Authorisation (EA*) -the formal written document indicating the granting or refusal of authorisation for a proposed development, issued by the relevant approving authority*

Environmental Impact*- any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects*

Environmental Management Plan (EMP)-*this document is recognised as the tool that can provide the assurance that the project proponent has made suitable provision for mitigation. The EMP is the document that provides a description of the methods and procedures for mitigating and monitoring impacts. It also contains environmental objectives and targets which the proponent needs to achieve in order to reduce or eliminate negative impacts.*

***Environmental Monitoring (EM**) - the person to be appointed by the Consulting Engineers to oversee the design and construction phases of Project and to ensure that all environmental specifications and EMP obligations are met during these phases. The Environmental Monitor will be responsible for the monitoring, reviewing and verifying of compliance with the EMP by the Contractor.*

***Fauna**- All living biological creatures, usually capable of motion, including insects and predominantly of protein based consistency.*

***Fence**- a physical barrier in the form of posts and barbed wire or any other concrete construction, ("palisade"- type fencing included, constructed with the purpose of keeping humans and animals within or out of defined boundaries.*

***Fine** - A monetary penalty against the Contractor by the PM as per request from the ECO.*

***Flood line** – The line or mark to which a flood could rise 50 (1:50 year flood line), or 100(1:100 year flood line) years.*

***Flora** –All living plants, grasses, shrubs, trees, etc., usually incapable of easy motion and capable of photosynthesis.*

***Groundwater** –The water that fills the natural openings present in rock or unconsolidated sands.*

***Hazardous wastes**- waste that because of their chemical reactivity, toxic, explosive, corrosive radioactive or other characteristics, cause danger, or are likely to cause danger, to health or the environment.*

***Heritage** – the sum total of sites of geological, zoological, botanical and historical importance, national monuments, historic building and structures, works of art literature and music, oral traditions and museum collections and their documentation which provides the basis for a shared culture and creativity in the arts.*

***Heritage Resources** – there are various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources i.e. places or object of cultural significance.*

***Induction training**- Training provided to all new employees prior to them being allowed on site.*

***Interested and Affected Party (I&AP)** – Refers to any person, or group of persons, concerned with, or affected by, an activity and its consequences. These include the authorities, local communities, investors, work force, customers, and consumers, environmental interest groups, and the general public (after the EIA Regulations of September 1997 and Guideline Document: EIA Regulations of 2014)*

***Land Use**– is characterised by the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it. Definition of land use in this way establishes a direct link between land cover and the actions of people in their environment.*

Method Statement– *A written submission by the Contractor in response to the Specification/EMP or a request by the Resident Engineer, setting out the plant, material, labour and method of the Contractor proposes using to carry out an activity, identified by the relevant specification or the Resident Engineer is enabled to assess whether the Contractor's proposal is in accordance with the EMP and associated specifications.*

b) Micro-organisms, plant and animal life

Mitigate *– The implementation of practical measure to reduce adverse impacts, or to enhance beneficial impacts, of an action.*

MPRDA *– The Mineral and Petroleum Resource Development Act (Act No.28 of 2002)*

MSDSs *- Material Safety Data Sheets*

NEMA *– National Environmental Management Act (Act No.107 of 1998)*

No-Go Area *– Areas where construction activities are referred to no go Areas.*

Noncompliance*- Failure to comply with requirements of the EMP*

Non-renewable resources *– means the resources that have a finite stock and either cannot be reproduced once they are used or lost, or cannot be reproduced within a time span relevant to present or future generations.*

NWA *– National Water Act (Act no.36 of 1998)*

PIMF*- Property Investment Mentor Facility*

Pollution *– Any change to the environment caused by(i)substance; (ii) radioactive or other waves; or (iii) noise, odours, dust, or heat emitted from any activity, including the storage or treatment of waste or substance, construction and the provision of service, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future (after National Environment Management Act, No.107 of 1998).*

PPE *– Personal Protective Equipment*

PPP*-Public Participation Process*

PIMF – *Property Investment Mentor Facility*

Project *– the planning, design, construction, operation and maintenance, and eventual decommissioning of the development.*

RE – *Resident Engineer*

Rehabilitation– *To re-establish or restore to a healthy sustainable capacity or state.*

SAHRA– *South Africa Heritage Resource Agency*

Solid waste- *means all solid waste, including construction debtors, chemical waste, excess cement/ concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).*

c) *The land, water and atmosphere of the earth*

d) *The physical, chemical aesthetic and cultural properties and conditions of the foregoing that can influence human health and well being*

Wetland *–A wetland is land which is transitional between terrestrial and aquatic system where table is usually at or near the surface, or the land is periodically covered with shallow water and which in normal circumstances supported vegetation typically adapted to life in saturated soil (National Water Act, No.36 of 1998).*

IMPORTANT NOTICE

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

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

In terms of section 16(3)(b) of the EIA Regulations, 2014 as amended in April 2017, 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 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The objective of the environmental impact assessment process is to, through a consultative process: -

- determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
- describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- determine the: - (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and degree to which these impacts: - can be reversed; may cause irreplaceable loss of resources, and can be avoided, managed or mitigated.
- identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
- identify suitable measures to manage, avoid or mitigate identified impacts; and
- identify residual risks that need to be managed and monitor.

Table 1: Project Information

PROJECT INFORMATION	
Document Name	Environmental Impact Assessment Report (EIAR)
Document Class	Public
Project Title	The mining right application is for a proposed mining development for Diamond kimberlite (DK) and Diamond General (DG) on Farm Viljoenshof 1655 in Boshof, Free State, South Africa.
Purpose of this Report	This Environmental Impact Assessment Report forms part of a series of reports and information sources that are being provided during the Environmental Impact Assessment (EIA) process for the proposed mining development for Diamond kimberlite (DK) and Diamond General (DG) on Farm Viljoenshof 1655 in Boshof, Free State, South Africa. In accordance with the EIA Regulations, the purpose of the EIA Report is to: • Provide a description of the proposed project, including a sufficient level of detail to enable stakeholders to raise issues and concerns; • Describe the local planning context and environment within which the project is proposed, to assist further in identifying issues and concerns; • Provide an overview of the process being followed in the EIAR Phase, in particular the public participation process, as well as present the Plan of Study for EIA that followed in the EIA phase; and • Present the issues and concerns identified to date from the stakeholder engagement process, together with an explanation of how these issues have been addressed through the EIA process.

EXECUTIVE SUMMARY

Invest In Property 126 (Pty)Ltd propose to apply for mining right in a small town Boshof in Free State, South Africa. The area cover is approximately 3,389 ha. The mining right application is for a proposed mining development for Diamond kimberlite (DK) and Diamond General (DG). The proposed development is located over Farm Viljoenhof 1655, located 27.9km km north east of Kimberly,120 km west of Bloemfontein and 13 km east of Boshof town. The applicant Mr Verdi Scholtermeyer have lodged a Mining Right with competent authority Department of Mineral Resource and Energy (Welkom Region).

Biomental Services has been appointed by Invest in Property 126 (Pty)Ltd as an independent Environmental Assessment Practitioner (EAP) to provide professional environmental management services for the proposed project. Biomental Services have conducted and compile the Environmental Impact Assessment Report (EIAR) and Environmental Management Programme(EMPr) in terms of Environmental Impact Assessment Regulations 2017 as amended of National Environmental Management Act, 1998 (Act No. 107 of 1998) for the proposed project.

Invest In Property 126 (Pty)Ltd is currently following the necessary processes to obtain environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) for associated listed activities as stipulated in the NEMA Regulations. In conjunction with the NEMA application, Biomental Services on behalf of Invest in Property 126 (Pty)Ltd has submitted a Mining Right Application (MRA) in terms of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA).

PUBLIC PARTICIPATION PROCESS

The Public Participation Process (PPP) for this particular project has been conducted for scoping and EIAR Phase by following the requirements of the National Environmental Management Act (NEMA) as well as those of the Department of Minerals Resources (DMRE). To initiate the PPP, on the 29th of March 2021, a pre-consultative meeting was held with Tokologo municipality primarily to inform the municipality about the proposed diamond kimberlite mine on Farm Viljoenshof 1655 in Boshof. This was later on followed by a public meeting that was held at Boshof Town Hall on the 30th of April 2021(Scoping Phase). A public meeting was held on the 16th of February 2023 at Seretse Community Hall with the community members of Tokologo Local Municipality, this meeting was exclusive to community members. On the 7th of March 2023, a virtual consultative meeting was held for Interested and Affected Parties. Consultative with the Department of Water and Sanitation (DWS) on the 08/03/2023 through Microsoft virtual app. The comments that the Interested and Affected Parties

(I&AP) expressed were captured in Public Participation summary table that has been included in the Public Participation Report as well as on this report.

CONTACT PERSON AND CORRESPONDENCE ADDRESS

Table 2: Details of the EAP

Environmental Assessment Practitioner (EAP)			
Name of EAP:	Mr Macebele T		
Consulting Firm	Biomental Services		
Physical Address:	10 jenny street De Aar 7000		
Postal Code:	7000	Cell:	060 5702 461/068 321 4288
Telephone:	053 004 0204	Fax:	N/A
E-mail:	info@bimental.co.za tiyiselani@biomental.co.za		
Website:	www.biomental.co.za		
Qualifications of the EAP	• Bachelor of Environmental Sciences degree (2008)		
Experience	The EAP, Mr. Macebele Tiyiselani has vast experience in environmental management field and have been involved in number of projects in the public and private sector such as renewable energy projects, mining and construction. Tiyiselani has experience in drafting EMPs, application for Basic assessment, permits & licensing, prospecting mining right and mining rights.		

Environmental Assessment Practitioner (EAP)			
Name of EAP:	**Mr Mahori Nhlawulo**		
Consulting Firm	Biomental Services		
Physical Address:	10 jenny street De Aar 7000		
Postal Code:	7000	Cell:	073 140 43 22
Telephone:	053 004 0204	Fax:	N/A
E-mail:	mahori@biomental.co.za		
Website:	www.biomental.co.za		
Qualifications of the EAP	• Bachelor of Environmental Science		

	honours in Geography (2017). • Bachelor of Environmental Science degree (2016)		
Experience	**Mr Mahori Nhlawulo** has completed his professional registration in terms of section 20(3) (b) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003) in the field of practice Environmental Sciences (Registration number 125490). He is registered in accordance with the prescribed criteria of Regulation 15(1) of the section 24H Registration Authority Regulations (regulation No.849, Gazette No. 40154 of the National Environmental Management Act (NEMA) Act No. 107 of 1998) as amended) EAP (Registration No. 2019/1026) Mr Mahori Nhlawulo is an Environmental Assessment Practitioner and has been involved in the compilation, coordination and management of Basic Assessment Reports, Environmental Impact Assessments, Environmental Management Programmes, Waste Licence Applications, Water Use License Applications, Mining Permits Application and Baseline Biodiversity Surveys for numerous clients.		
Environmental Assessment Practitioner (EAP)			
Name of EAP:	**Fortunate Ngubeni**		
Consulting Firm	**Biomental Services**		
Physical Address:	10 jenny street De Aar 7000		
Postal Code:	7000	Cell:	083 7437 012
Telephone:	053 004 0204	Fax:	N/A
Email	fortunate@biomental.co.za		
Website:	www.biomental.co.za		
Qualifications of the EAP	• BA Environmental Management (2018) • BA Geography (2011)		
Experience	Ms Fortunate Ngubeni hold a BA Degree in Geography and BA Degree in Environmental Management obtained from University of South Africa. Ms Fortunate Ngubeni is well experienced in Environmental Management and has been involved in Environmental Impact Assessment in compiling and reviewing reports.		

1. INTRODUCTION

INVEST IN PROPERTY 126 (PTY) LTD propose to apply for mining right in a small town Boshof in Free State, South Africa. The area cover is approximately 3,389 ha. The mining right application is for a proposed mining development for Diamond kimberlite (DK) and Diamond General (DG). The proposed development is located on Farm Viljoenshof 1655, located 27.9km km north east of Kimberly,120 km west of Bloemfontein and 13 km east of Boshof town.

The town Boshof is 55 km north-east of Kimberley on theR64 road. Established in march 1856 on the farm Vanwyksvlei, which had been named after a Griqua who sowed his crops on it from time to time. Named in honour of Jacobus Nicolaas Boshof (1808-1881), second president of the Orange Free State (1855-59) and founder of its Civil services.

The applicant Mr Verdi Scholtermeyer who lodged an application for mining right with the Department of Mineral Resource and Energy (DMRE) in terms of Minerals and Petroleum Resource Development Act (Act 28 of 2002).

The project area is located within the Loxtonsdal kimberlite cluster which hosts two historical diamond mines. All known kimberlites in this cluster are of the Group II variety. Prospective work programs were undertaken at the proposed development mainly to investigate, determine and confirm the presence of diamond Kimberly on Farm Viljoenshof 1655.Non-invasive methods were explored to locate minerals using geophysical survey (magnetic and electromagnetic) soil sampling, google earth satellite images and exiting geological studies previously carried out in farm Viljoenshof 1655.The geological studies undertaken at the propose development area confirms presence of a number of additional anomalies. Mineral chemistry of kimberlitic indicator minerals (pyropic garnets, Cr-spinels and clinopyroxenes) verified high diamond potential of several targets. Moreover, geochemistry of kimberlites is also indicative of high interest mantle source.

The proposed overall activity will begin and be implemented in a pilot mining phase for a duration period of one (1) year. A contractor with readily available plants and earthmoving equipment will be responsible for the implementation of pilot phase. This phase is necessary given that the prospecting work program was only limited to non-invasive approach. Additionally, invasive approach such as trenching/pitting and drilling was not conducted as a result of farm property owner restriction to access the property and proscription use of earthmoving plants, machinery and construction vehicles for related prospecting activities. The pilot stage will encapsulate further study of the diamond ore. The primary objective of the pilot mining phase is:

- Open complete area of the kimberlite body(ies) and cut first two benches into kimberlite;

- Process different kimberlite type separately and determine the grades and diamond quality variation;
- Carry out metallurgical studies of the ore for final design of the plant;
- During this stage geophysical survey and diamond core drilling will be implemented to study ore bodies morphology with depth;
- The outcome of geophysical survey and diamond core drilling will be implemented to study ore bodies morphology to be used for long term underground mining method to be used.

The open cast method for mining have been considered as a preferred method for minerals extraction. The open cast method will entail the trenching to the depth of two (2) benches (i.e.12 to 20 m) however, this is dependent on the hosting rock competence and stability. The pilot phase is envisaged to be disassociated with excessive blasting given that the hosting rock is black and grey Ecca shale, which is quite brittle. However, soft blasting will be applied where necessary in particular for cutting into kimberlites. The proposed mine property is characterised by game farming, livestock farming and related agricultural crop farming at a small scale. This necessitates the use of soft blasting to avoid and reduce impact on game farm with noise and flying rocks fragments.

Historic Mines in Boshof.

- Blaauwboch Diamond Mines

Blaauwboch Diamond mine is situated 23km East of the small town of Boshof in the Free State province - 75km east-north-east of Kimberley, Northern Cape Province in the Republic of South Africa. The Blaauwbosch Kimberlite Pipe was mined, from surface (opencast) from 1912-1922. It was re-opened and mined via underground workings from 1965 to 1967. Mining recommenced in 2003 with the working of tailings dumps and underground mining.

Historically, Blaauwbosch was the 19th largest producing kimberlite pipe and was mined to a depth of about 110m producing 967,ooot of ore, yielding 338 carats of a grade of 35 cpht. After flooding in 1967, operations were ceased. The mines re-opened in 2004 with the resumption of production. However, tailings were processed since 2003. In 2005 production was halted to undertake plant redesign, shaft deepening and underground development.

The shaft was sunk to a depth of 185m and it allowed the shaft to reach 220m underground. This was done to allow for development in a deeper block of kimberlite ore.

- New Elands Mine

A small diamond mine in a kimberlite pipe, currently owned by Dwyka Diamonds Ltd. The pipe occurs at the intersection of two older dykes and is cut by a younger internal dyke. The diamond from the Fyke are generally of higher quality than those from the pipe.

Other mines in Boshof are Rovic Mine located 40 km east of Boshof. A diamond Kimberlite mine within a kimberlite pipe.

a. Description of the property

Table 3: Property Description

Farm Name	Viljoenshof 1655
Application Area (HA)	3,389 ha
Magisterial District:	Boshof
Distance and Direction from the nearest town	located 27.9km km north east of Kimberly,120 km west of Bloemfontein and 13 km east of Boshof town
21 Digit Surveyor General Code for each Farm portion	F00400000000165500000

b. Locality map

Figure 1 below shows the topographic map and figure 2 shows the satellite map of farm Viljoenshof

Figure 1: Locality Map

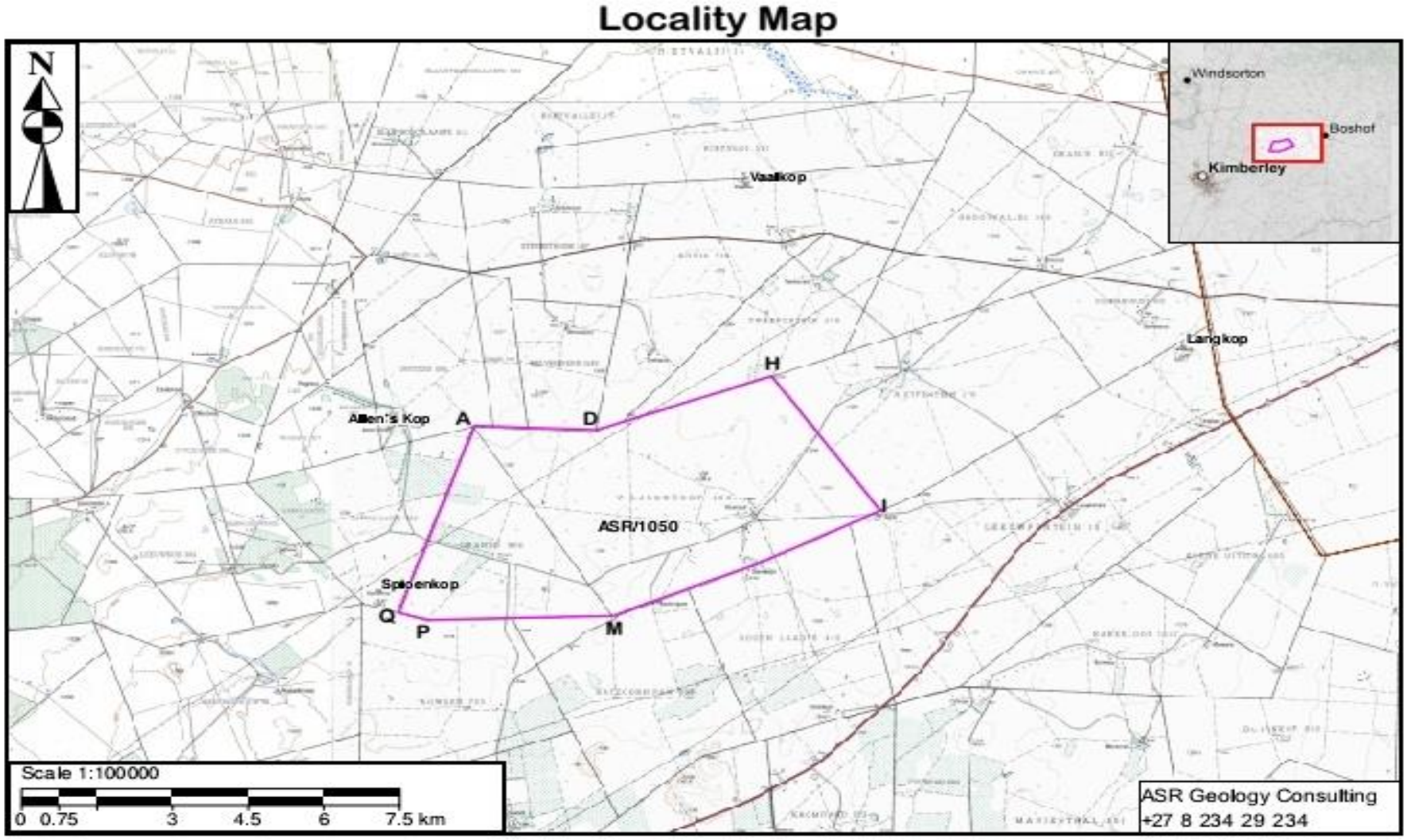
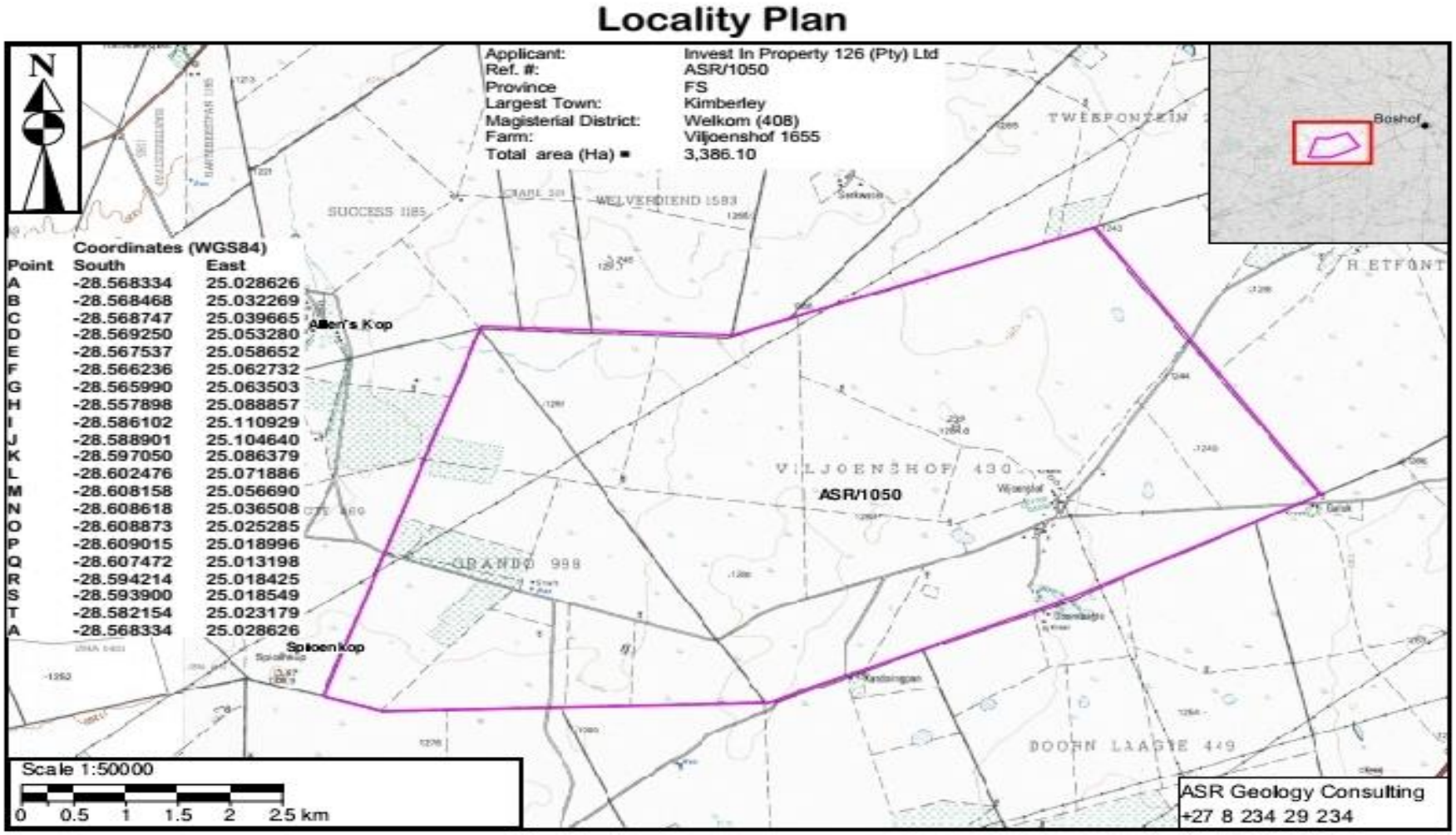


Figure 2: Locality Plan



c. Description of the scope of the proposed overall activity.

The proposed overall activity will begin and be implemented in a pilot mining phase for a duration period of one (1) year. A contractor with readily available plants and earthmoving equipment will be responsible for the implementation of pilot phase. This phase is necessary given that the prospecting work program was only limited to non-invasive approach. Additionally, invasive approach such as trenching/pitting and drilling was not conducted as a result of farm property owner restriction to access the property and proscription use of earthmoving plants, machinery and construction vehicles for related prospecting activities. The pilot stage will encapsulate further study of the diamond ore.

The open cast method for mining have been considered as a preferred method for minerals extraction. The open cast method will entail the trenching to the depth of two (2) benches (i.e.12 to 20 m) however, this is dependent on the hosting rock competence and stability. The pilot phase is envisaged to be disassociated with excessive blasting given that the hosting rock is black and grey Ecca shale, which is quite brittle. However, soft blasting will be applied where necessary in particular for cutting into kimberlites. The proposed mine property is characterized by game farming, livestock farming and related agricultural crop farming at a small scale. This necessitates the use of soft blasting to avoid and reduce impact on game farm with noise and flying rocks fragments. Please refer below on figure 3 for an illustration of an open cast mining.

figure 3: A common illustration of open cast mining

i. Listed and specified activities

Table 4: Listed Activities

Ty7v c	Aerial extent of the Activity Ha or m²	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
"The development and related operation of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres."	2500 m²	(Listing Notice 1) Listed activity 14 of GN. R 327
"The development of a road- **(i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010;** **or** **(ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding-** **(a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or** **(b) roads where the entire road falls within an urban area; or** **(c) which is 1 kilometre or shorter."**	4000 m²	(Listing Notice 1) Listed activity 24 of GN. R 327
The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre. **(i) where the existing reserve is wider than 13,5 meters; or** **(ii) where no reserve exists, where the existing road is wider than 8 meters; excluding where widening or lengthening occur inside urban areas.**	4000 m²	Activity 56(ii)Listing notice 1 GNR327
"The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding-	The development may trigger section 21 (f& g) of the national water act	Listing Notice 2) Listed activity 6 of GN. R 325

(i) activities which are identified and included in Listing Notice 1 of 2014; (ii) activities which are included in the list of waste management activities published in terms of Section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or (iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less.		
Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction,screening and washing but excluding the smelting,beneficiation,refining,calcininh in which case activity 6 in this Notice		(Listing Notice 1) Activity 21 GNR 325
"The clearance of an area of 20 hectares or more of indigenous vegetation." Excluding where such clearance of indigenous vegetation is required for— i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	A total area of at least 20 ha will be physically disturbed where the diamond will be removed and washed	(Listing Notice 2) Listed activity 15 of GN. R 325
"Any activity including the operation of that activity which requires a mining right as contemplated in Section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing."	3,389 ha	(Listing Notice 2) Listed activity 17 of GN. R 325

ii. Description of the type of the activity to be undertaken

Invest In Property 126 (Pty)Ltd propose to apply for mining right in a small town Boshof in Free State, South Africa. The area cover is approximately 3,389 ha. The mining right application is for a proposed mining development for Diamond kimberlite (DK) and Diamond General (DG). The proposed development is located over Farm Viljoenshof 1655, located 27.9km km north east of Kimberly,120 km west of Bloemfontein and 13 km east of Boshof town.

The project area is located within the Loxtonsdal kimberlite cluster which hosts two historical diamond mines. All known kimberlites in this cluster are of the Group II variety. Prospective work programs were undertaken at the proposed development mainly to investigate, determine and confirm the presence of diamond Kimberly on Farm Viljoenshof 1655.Non-invasive methods were explored to locate minerals using geophysical survey (magnetic and electromagnetic) soil sampling, google earth satellite images and exiting geological studies previously carried out in farm Viljoenshof 1655.The geological studies undertaken at the propose development area confirms presence of a number of additional anomalies. Mineral chemistry of kimberlitic indicator minerals (pyropic garnets, Cr-spinels and clinopyroxenes) verified high diamond potential of several targets. Moreover, geochemistry of kimberlites is also indicative of high interest mantle source.

d. Policy and Legislative Context

Table 5 below illustrates a summary of the legislation applicable to this proposed mining development for Diamond kimberlite (DK) and Diamond General (DG).

Table 5: Legislation and Legal Requirements

Title of applicable legislation/Acts or Policy	**Administering authority:**	**Where applied**
The Constitution of South Africa (Act No 108 of 1996) ***The operation of the Proposed mining development must comply with the Constitution of the Republic of South Africa, with special reference to Section 24 of Chpter2, i.e. Everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that—prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development***	**National & Provincial**	**Throughout the process of this proposed project**

Mineral and Petroleum Resource Development Act (Act No 28 of ***Regulations (GNR527) are required as part of the Mining Right Application(MRA). The ESMP must be supported by an ESIA, which prescribes to the requirements set out under NEMA and the NEMA EIA Regulations of 14 December 2014, amended on 07 April 2017 (GNR 982)***	**National & Provincial**	**Throughout the process of this proposed project**
National Environmental Management Act (Act No 107 of 1998) ***The National Environmental Management Act (NEMA) (Act 107 of 1998, is South Africa's overarching framework for environmental legislation. NEMA provides for operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance, and procedures for coordinating environmental functions exercised by organs of state.*** ***It sets out a number of principles that aim to implement the environmental policy of South Africa. These principles are designed, amongst other purposes, to serve as a general framework for environmental planning, as guidelines by reference to which organs of state must exercise their functions and to guide other law concerned with the protection or management of the environment.*** ***The principles include a number of internationally recognized environmental law norms and some principles specific to South Africa, i.e. the:*** • ***Preventive principle;*** • ***Precautionary principle;*** • ***Polluter pays principle; and*** • ***Equitable access for the previously disadvantaged to ensure human wellbeing.*** ***Chapter 5 of NEMA is designed to promote integrated environmental management. Environmental management must place people and their needs at the forefront of its concerns and serve their physical, psychological, developmental, cultural and social interests equitably. Development must be socially, environmentally and economically sustainable. Sustainable***	**National & Provincial**	**Throughout the process of this proposed project**

development therefore requires the consideration of all relevant factors.		
Integrated Environmental Management (IEM) ***The general approach to this study has been guided by the principles of Integrated Environmental Management (IEM). In accordance with the IEM Guidelines, an open, transparent approach, which encourages accountable decision-making, has been adopted. IEM is a procedure for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development (DEAT, 1992). The IEM guidelines intend encouraging a proactive approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels.***	**National & Provincial**	**Throughout the process of Scoping Report process**
National Environmental Management: Waste Act (Act 59 of 2008) ***The purpose of the NEMA: Waste Act (Act 59 of 2008) reads:- To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development, to provide for institutional arrangement and planning matters, to provide for national norms and standards regulating the management of waste by all spheres for government , to provide for specific waste management measures, to provide for the licensing and control of waste management activities, to provide for the remediation of contaminated land , to provide for national waste information system, to provide for compliance and enforcement to encourage reducing; re-using; recycling and recovering of waste.***	**National & Provincial**	**On all waste related matters**
National Conservation of Agricultural Resources Act (No 43 of 1983) ***The main focus of the CARA is upon agricultural resources but it has indirect implications for the control of the utilization and***	**National & Provincial**	**Specialist Studies**

protection of wetlands, soil conservation and all matters relating thereto; control and prevention of veld fires, control of weeds and invader plants, the prevention of water pollution resulting from farming practices and losses in biodiversity.		
<u>National Environmental Management: Air Quality Act (Act No 39 of 2004)</u> ***The National Environmental Management Air Quality Act 39 of 2004 provides for the setting of national norms and standards for regulating air quality monitoring, management and control and describes specific air quality measures so as to protect the environment and human health or well-being by preventing pollution and ecological degradation and promoting sustainable development through reasonable resource use. It also includes reference to the control of offensive odours whereby reasonable steps to prevent the emission of any offensive odours caused by activities on a premises are required***	**National & Provincial**	**Specialist Study**
<u>National Heritage Resources Act (No 25 of 1999)</u> ***In terms of the National Heritage Resources Act (No. 25 of 1999) (NHRA), any person who intends to undertake "any development which will change the character of a site exceeding 5000 m2 in extent", must at the very earliest stages of initiating the development notify the responsible heritage resources authority, namely the South African Heritage Resources Agency (SAHRA) or the relevant provincial heritage agency. These agencies would in turn indicate whether or not a full Heritage Impact Assessment (HIA) would need to be undertaken.***	**National & Provincial**	**Specialist Studies**
<u>National Environmental Management: Biodiversity Act (10 of 2004)</u> ***The National Environmental Management: Biodiversity Act (Act 10 of 2004) provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA. This Act allows for the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological***	**National & Provincial**	**Specialist Studies**

resources, the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources and the establishment and functions of the South African National Biodiversity Institute.		
National Forests Act (Act no 84 of 1998) ***In terms of section 15(1) of the National Forests Act, 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated***	**National & Provincial**	**Specialist Studies**
National Water Act (Act No 36 of 1998) ***In terms of Section 21 of the National Water Act (No. 36 of 1998) (NWA), the taking of water from a water resource, storing of water, impounding or diverting the flow of water in a water course, and the disposal of water which contains waste or has been heated through a power generation process are all considered water uses, which in general must be licensed, unless permitted as a Schedule 1 activity, or permissible in terms of a General Authorisation (GA) under Section 39 of the Act.***	**National & Provincial**	**On all water related matters**
Occupational Health and Safety Act (No 85 of 1973) ***The objective of this Act is to provide for the health and safety of persons at work. The considerations of the Act must be incorporated into the construction phase environmental management plan during the EIA process.*** **The Occupational Health and Safety Act intended to:** • ***"Provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery;*** • ***The protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work;***	**National & Provincial**	**Throughout the process of this proposed project**

• *To establish an advisory council for occupational health and safety; and* • *To provide for matters connected therewith"*		
Waterberg District Municipality Spatial Development Frame Work *The Waterberg District Spatial Development Frame Work has identified certain development objectives and strategies:* • *Promotion and facilitation of economic development: support and develop strategic locations that contain the right characteristics inclusive of areas as the biosphere and tourism nodes.* • *The sustainable management of the natural environmental assets and heritage: identify and isolate valuable natural assets, ensure continuous ecological and open space systems, ensure conservation and sustainable management of the biosphere and other conservation areas.* *The promotion of tourism development: identify tourism development opportunities, ensure linkages to tourism development areas, and recognise the important role the private sector and land owners play in tourism development.*	**District**	**Throughout the EIA Process**
Municipal Systems Act (No. 32 of 2000) *In terms of the Municipal Systems Act (MSA) (Act 32 of 2000) all municipalities (i.e. Metros, District Municipalities and Local Municipalities) have to undertake an Integrated Development Planning process to produce an Integrated Development Plan (IDP). The IDP is a single, inclusive and strategic plan for the development of the municipality which:* • *Links, integrates and co-ordinates plans and takes into account proposals for the development of the Municipality;* • *Aligns the resources and capacity of the municipality with the implementation of the plan; and* *Is compatible with national and provincial development plans and planning requirements binding on the municipality in terms of legislation.*	**Municipality**	**Throughout the EIA Process**

Intergraded Development Plan (IDP) 2016/17 ***The development of IDPs can facilitate environmental management throughout the planning process. IDP process (Integration) requires the preparation of an Integrated Environmental Programme. The purpose of this programme is to assist in addressing urgent environmental issues and to ensure that envisaged projects have no negative impact on the natural environment.***	**Local Municipality**	**Throughout the EIA Process**
OTHERS: Hazardous Substances Act (No 15 of 1973) 1973	**National & Provincial**	**Throughout the process of this proposed project**

All relevant Provincial Regulations and Municipal bylaws were observed during EIAR study

i. National Water Act, 1998 (Act No. 36 of 1998)

In accordance with Section 21 and 40 of the NWA a water use licence application will be submitted to the DWA. Investigations have to be undertaken in order to determine what activities will take place, as well as the impacts thereof. It is likely that a licence will be required for the following uses:

- Section 21 (b) – Storage of water for both raw and potable water use;
- Section 21 (f) – Discharging waste or water containing waste into a water resource through a pipe or canal for the disposal of sewage works effluent (if constructed);
- Section 21 (g) – Disposing waste or water containing waste in a manner which may detrimentally impact on a water resource for the pollution control dams, overburden dumps, stockpiles and discard dumps;
- Section 21 (i) – Altering the bed, banks, course or characteristics of a watercourse; and
- Section 21 (j) – Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity for the safety of the people for the dewatering of the mining pits to facilitate mining and to provide a safe mining environment.

ii. Guidelines

This EIAR process is informed by the series of national Environmental Guidelines and, the following were applicable and relevant:

a. Guideline for determining the scope of specialist involvement in EIA Processes (June 2005)
b. Guideline for involving biodiversity specialists in EIA processes (June 2005)
c. Guideline for involving heritage specialists in EIA processes (June 2005)
d. Guideline for Environmental Management Plans (June 2005)
e. Draft Guideline on Public Participation (November 2006)
f. Draft Guideline on the interpretation of the listed activities (November 2006)
g. Department of Water and Sanitation guidelines
h. Stats SA, 2011

Applications for various environmental approvals are either in progress or applied for to undertaking the relevant activities for the proposed project. These approvals include:

- Mining Right and an Environmental Management Plan (EMP) in terms of the MPRDA (as amended) to be approved by the Department of Mineral Resources and Resources (DMRE);
- Environmental authorisation in terms of NEMA and the EIA Regulations, 2014 to be granted by the DMRE;
- Waste License in terms of the National Environmental Management Act, 2008 (Act No. 59 of 2008); and
- Water Use Licence in terms of the National Water Act, 1998 (Act No. 36 of 1998) has been lodged with the Department of Water and Sanitation (DWS).

The EIAR has been conducted as per Appendix 3 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) Environmental Impact Assessment Regulations, 2017 as amended and will contain following: -

(i) an assessment of the nature, extent, duration and significance of the consequences for or impacts on the environment of the activity, including the cumulative effects;

(ii) a description of mitigation measures undertaken or to be undertaken in respect of the consequences for or impacts on the environment of the activity;

(iii) a description of the public participation process followed during the course of compiling the report, including all comments received from interested and affected parties and an indication of how issues raised have been addressed;

(iv) An environmental management programme.

An application for an Integrated Environmental Authorisation was lodged with the Department of Mineral Resources (DMRE) and an acceptance of application was received on 19/02/2021 whereby the project was assigned **REF: FS 30/5/1/2/2/10064MR**. The Scoping Environmental Impact Report was submitted to the Department of Mineral Resources and Energy for comment and the DMRE acknowledged receipt of the Scoping Report, which was made available to Interested and Affected Parties (I&APs) and stakeholders for a 30-day comment period. The comments received from stakeholders during the 30-day review were incorporated into the Scoping Report (where required). The DMRE accepted the finalised Scoping Report and Plan of Study for EIA on 21 May 2021, which enabled the commencement of the Environmental impact assessment and Environmental Management Programme phase.

The Draft EIAR & EMPr was circulated to various stakeholders for a 30-day period to make submissions, comments and review for public participation purposes as stipulated on condition 4 of the Acceptance of Scoping Report received from the Competent Authority (DMRE) on 08 June 2021. All comments have been included in the finalised EIA Report, prepared for DMRE for decision-making. Written notifications, hard copies and/or containing the document must be distributed to key stakeholders, including authorities. The results of the specialist studies and other relevant project information are summarised and integrated into this EIA Report. EIA Report includes an Environmental Management Programme (EMPr). The EMPr is based on the recommendations made by specialists for design, construction, operation and decommissioning of the proposed project.

iii. Assumptions and Limitations

- The following limitations and assumptions are implicit this report –
- The primary assumption underpinning this EIA and the individual specialist studies upon which this final EIAR is based, that all information received from the client and other stakeholders including registered I&APs was correct and valid at the time of the study.
- To ensure that the significance of impacts was not under-estimated, the specialists assessed impacts under the worst-case scenario situation.
- The Desktop studies were undertaken by specialist. This is due to access refusal at Farm Viljoenshof 1655.

iv. Environmental Impact Assessment

Environmental Impact Assessment (EIA) is defined as, "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made." The environmental impacts associated with the proposed project require investigation in compliance with the Environmental Impact Assessment Regulations (2017) as amended.

The EIA aims to ensure effective compliance and governance concerning the sustainable use of environmental resources, while simultaneously focusing on key issues such as stakeholder empowerment, and providing access to relevant and concise information to enable informed decision-making by competent authorities exercising a regulatory role in any aspect of the project proposal.

The EIA process is also used to examine alternatives and management measures to minimise negative- and optimise positive impacts resulting from a project, or activity. The ultimate objectives of the EIA process are to prevent significant detrimental impact on the environment and to ensure sustainable development into the future. An EIA should not aim to stop, hinder or obstruct development, but should rather act as a 'green-filter' to development proposals, that seeks to ensure that developments/activities proceed in an environmentally acceptable and sustainable manner (unless of course significant impact may result from an activity that truly renders the undertaking of that activity 'fatally flawed'). The EIA has to consider the different perspectives and requirements of all role players, who derive different benefits from participating in the EIA process. These include the following:

1. Decision-making Authorities:
    - Enables informed decision making;
    - Ensuring protection of environmental quality;
    - Supporting the management, monitoring and sustainable utilisation of resources; and
    - Understanding demands on bulk services, waste disposal sites, etc.
2. Project proponents:
    - Pro-actively considering environmentally sustainable design and management principles in all that they undertake;
    - Investigating natural resource opportunities and constraints;
    - Identifying the risks and opportunities associated with environmental and operational aspects;
    - Evaluating the potential for pollution and the prevention thereof; and

- Optimising energy, water and other resource use.
-

3. Interested and affected parties (IAPs):

- Providing an opportunity to be informed and give comment / express concerns;
- Protecting environmental rights;
- Utilising local and indigenous knowledge;
- Increasing knowledge and environmental awareness; and
- Informing the decision-making process.

v. Scoping Report

Scoping Report forms part of the Environmental Impact Assessment Report (EIAR) process and aims to identify those environmental issues and concerns that require investigation as well as determine feasible alternatives. This information is then used to determine the scope of work for the EIAR. During the scoping phase those persons interested or affected by the Project are informed of the Project and afforded the opportunity to provide their input in terms of issues and concerns they may have throughout the Integrated Environmental Assessment Process.

Potential positive and negative impacts that the Project may have on the environment were identified and discussed in the scoping phase and a description of further investigations required for the impact assessment studies were proposed.

A scoping report was compiled and the draft and final were submitted to the competent authorities DMRE, for the NEMA and WML applications.

The aims of the Scoping Report were to:

- Provide information to the authorities and to other I&APs/stakeholders on the Project to allow them to comment and raise issues of concern;
- Consider alternatives to the Project;
- Provide stakeholders with the opportunity to contribute to the Project, and to allow them to verify that the issues they have raised have been recorded and considered;
- Provide a brief description of the baseline receiving environment; and
- Highlight potential impacts that should be investigated further during the EIAR process.

vi. Environmental Impact Assessment Report

An EIAR is a process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects or impacts identified for a proposed development prior to major decisions being taken and commitments made.

The purpose of an EIAR is to:

- Provide information for decision-making on the environmental consequences of a Project; and
- Promote environmentally sound and sustainable development through the identification of appropriate enhancement and mitigation measures.

During the EIAR phase for the Project the following activities were carried out carried out:

- Specialist investigations;
- Compilation of a draft EIAR report;
- Compilation of this final EIAR report;
- Compilation of an Environmental Management Plan (EMP);
- Compilation and distribution of a letter announcing the availability of draft EIA report for comment and distribution of copies of the report to Interested and Affected Parties (I&APs) upon request;
- Conduct key stakeholder meetings;
- Compilation of a Proceedings Report as a Comments and Response Report (CRR);
- Distribution of copies of the Final EIA and EMP Report to relevant authorities; and
- Announcing authority decision to all registered I&APs.

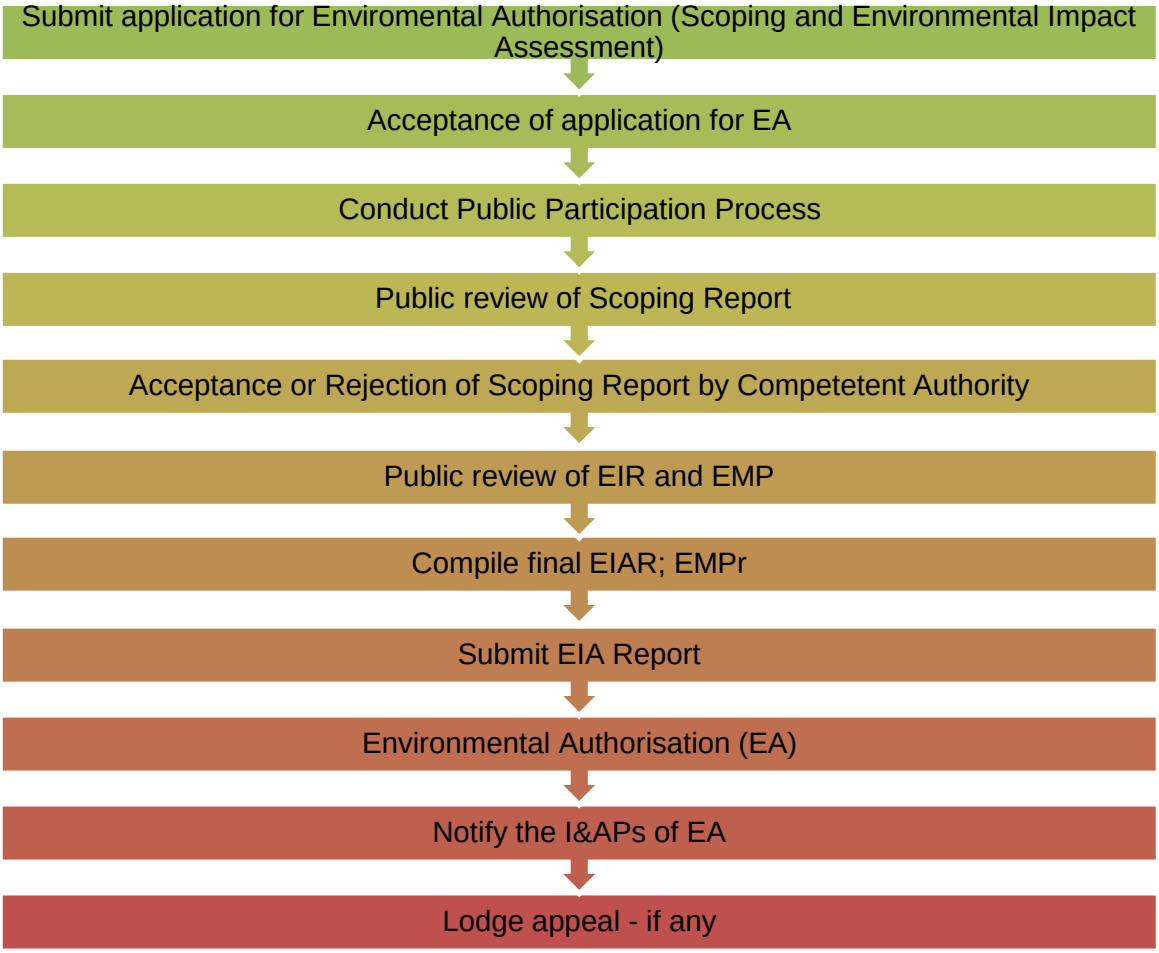


Figure 4: Environmental Impact Assessment Process followed

vii. Environmental Management Plan

An EMP can be defined as a plan or programme that seeks to achieve a required end state and describes how activities that have or could have an adverse impact on the environment, will be mitigated, controlled, and monitored. The EMP will address the environmental impacts during the design, construction and operational phases of a Project. Due regard must be given to environmental protection during the entire Project. To achieve this, a number of environmental specifications/recommendations are made. These are aimed at ensuring that the project proponent maintains adequate control over the Project in order to:

- Minimise the extent of impact during the life of the Project;
- Ensure appropriate restoration of areas affected by the Project; and
- Prevent long term environmental degradation.

An Environmental Management Plan (EMP) has been compiled for the construction and operational phases for the development. The EMP has been compiled in accordance with the EIA Regulations 2014 published under government Notice No.982 of 04 December 2014 amended on 07 April 2017 and in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) [MPRDA]. The EMPr provides the actions for the management of identified environmental impacts emanating from the project and a detailed outline of the implementation programme to minimise and/or eliminate the anticipated negative environmental impacts. The EMP provides strategies to be used to address the roles and responsibilities of environmental management personnel on site, and a framework for environmental compliance and monitoring. The EMP includes the following:

- Details of the person who prepared the EMP and the expertise of the person to prepare an EMP;
- Information on any proposed management or mitigation measures that will be taken to address the environmental impacts that have been identified in the EIAR, including environmental impacts or objectives in respect of operation or undertaking of the activities, rehabilitation of the environment and closure where relevant;
- A detailed description of the aspects of the activity that are covered by the EMP;
- An identification of the persons who will be responsible for the implementation of the measures;
- Where appropriate, time periods within which the measures contemplated in the EMP must be implemented;
- Proposed mechanisms for monitoring compliance with the EMPr and reporting thereon;
- An environmental awareness plan; and
- Procedures for managing incidents which have occurred as a result of undertaking the activity and rehabilitation measures.

viii. Decision-Making Authority

DMR and Local competent authority will have jurisdiction on the consideration of the application for environmental authorisation under NEMA. The Integrated Water Use Licence Application (IWULA) will be submitted to the Department of Water and Sanitation DWS

e. Need and desirability of the proposed activities

The Need and Desirability of the project has been assessed as per the DEA Guideline on Need and Desirability (2017) for Scoping. South Africa's gross domestic product (GDP) has fallen for the fourth consecutive quarter, putting the country in a severe recession, according to Statistics SA. The plummet has been attributed to the Covid-19 lockdown, which hit the economy the hardest during April, May and June 2020.

Data from 1960 shows that the second quarter of 2020 experienced a greater fall in GDP than the annualised decline of 6.1% in the first quarter of 2009 during the global financial crisis and was "far steeper than the annualised 8.2% decline in the fourth quarter of 1982", according to StatsSA. The GDP decline in the first quarter caused a 30.1% decline in the unemployment rate in the first quarter of 2020, and expects it will worsen in the next coming quarters.

During the lockdown in quarter two, most sectors were closed or operating at limited capacity. The majority of industries experienced a large drop in output except for the agricultural sector, which saw an increase of 15.1%. This was a result of the increase in maize exports and international demand for citrus fruits and pecan nuts. Agriculture's contribution to the economy is generally about 2.5%.

At 76.6%, construction saw the highest decline in output, the manufacturing sector came second with a contraction of 74.9%, and mining declined by 73.1%. Air travel came to a halt, contributing to a fall of 67.9% in economic activity in the transport and communication industry. The retail ban on alcohol sales and closure of accommodation facilities were notable drags on trade activity, resulting in a decline of 67.6%. Wholesalers and motor vehicle traders also reported significant declines.

The finance industry, which includes banking, insurance services, real estate and business services, fell by 28.9%. Personal services, which includes businesses such as gyms and hairdressers, closed their doors and sporting and recreation events were cancelled, and hospitals halted elective operations, resulting in a decline of 32.5%.

StatsSA also measured the demand side of the economy, which slumped by 52.3% as a result of lower exports and household spending. The country endeavours on rebuilding the economy and mining sector have for years proven to be labour observing and creation of massive job opportunity while also contributing significantly to the country GDP.

For years, mining has been the driving force behind South Africa's economy and continues to make a valuable contribution to the country's GDP. The economy of South Africa is built mostly on gold and diamond-mining, with gold-mining contributing over a third of the country's exports. Whereas, South African diamond-mining industry was listed as one of the largest mining countries in the world in the year 2009. It is predicted that mining will still play an important role to the economy, most notably

through foreign exchange earnings and employment provision. It is also one of the primary sectors that provide employment opportunities for unskilled and semi-skilled people. The South African mining industry has its origin in small-scale to medium-scale mining activities, with these operations offering much needed employment opportunities and entrepreneurship, as well as contributing to the mineral sector and local economy. Small-scale mining and medium-scale mining's impact on employment is especially observed in the rural areas and province such as the Northern Cape where there are limited opportunities; providing significant livelihood for rural communities and a means of alleviating poverty.

The proposed mining development is aimed at supporting the economy of South Africa by producing a commodity that has a potential to leverage the economy of the country. The primary beneficiaries of this project include, among others, the employees, members of surrounding communities and the country. Secondary beneficiaries include the suppliers of goods and services, and the local businesses through the buying power of employees. This is in line with the National Development Plan (NDP). The Social Labour Plan of the Proposed development is aimed at ensuring local economic development through implementation of the various projects. The applicant estimates that these small pieces of land could, if mining rights are granted, prove to be bearing commodities of high economic value

The entire application (MRA, Scoping, EIA, EMP and specialist reports) were considered to gain a holistic view of the need and desirability of the proposed project and its related activities. The national developmental policies communicate the aim to reduce poverty, achieve equity, and increase economic growth. The New Growth Path Framework (Department of Economic Development, 2010) and the National Development Plan 2030 (NDP 2030) (National Planning Commission, 2011) envisage that regions should take advantage of natural resources to achieve the aims of the Plans, but in a sustainable and equitable manner.

Part of the EIA process was to undertake a range of specialist studies which relate to the physical, biological and socio-economic aspects potentially affected by the proposed project. The findings of the studies are summarized and the reports are appended to this EIA/ EMP. The impact assessment Section quantified the expected impacts of each project activity. Mitigation measures were also identified for each of the expected impacts and are detailed in this report. A sensitivity analysis was further completed to identify the sensitive environmental aspects present on the project site.

A number of negative impacts have been identified which will cause significant damage to the natural environment which include the deterioration of soil, air quality, fauna and flora, wetlands, aquatics, heritage and the visual environment. Although it is expected that there will be significant negative impacts as a result of the project it is also expected that the proposed project will contribute to job

creation and local economic development. This is particularly beneficial in light of South Africa's development priorities of job creation and economic growth as per the (NDP, 2012). The envisaged mining activities of the proposed project are expected to have knock-on benefits in terms of local employment, local economic development and increased government revenue and taxes.

f. Motivation for the preferred development footprint

In terms of Appendix 3 of GNR 982, an environmental impact assessment report must include-

A detailed description of the proposed activity; A description of the property on which the activity is to be undertaken and the location of the activity on the property; In fulfilment of the above-mentioned legislative requirement, this Chapter of the draft EIAR describes the location and size of the site of the proposed development and provides a description of its various components and arrangements on the site.

i. Details of the Development footprint alternatives

a) The location where it is proposed to undertake the activity

The project area is located within the Loxtonsdal kimberlite cluster which hosts two historical diamond mines. All known kimberlites in this cluster are of the Group II variety. Prospective work programs were undertaken at the proposed development mainly to investigate, determine and confirm the presence of diamond Kimberly on Farm Viljoenshof 1655.Non-invasive methods were explored to locate minerals using geophysical survey (magnetic and electromagnetic) soil sampling, google earth satellite images and exiting geological studies previously carried out in farm Viljoenshof 1655. The geological studies undertaken at the propose development area confirms presence of a number of additional anomalies. Mineral chemistry of kimberlitic indicator minerals (pyropic garnets, Cr-spinels and clinopyroxenes) verified high diamond potential of several targets. Moreover, geochemistry of kimberlites is also indicative of high interest mantle source.

b) The type of activity to be undertaken

Invest In Property 126 (Pty)Ltd propose to apply for mining right in a small town Boshof in Free State, South Africa. The area cover is approximately 3,389 ha. The mining right application is for a proposed mining development for Diamond kimberlite (DK) and Diamond General (DG). The proposed development is located on Farm Viljoenshof 1655, located 27.9km km north east of Kimberly,120 km west of Bloemfontein and 13 km east of Boshof town. The applicant Mr Verdi Scholtermeyer who

applied for right mine right with the Department of Mineral Resource and Energy (DMRE) in terms of Minerals and Petroleum Resource Development Act (Act 28 of 2002).

c) The design and layout of the activity to be undertaken

The proposed overall activity will begin and be implemented in a pilot mining phase for a duration period of one (1) year. A contractor with readily available plants and earthmoving equipment will be responsible for the implementation of pilot phase. This phase is necessary given that the prospecting work program was only limited to non-invasive approach. Additionally, invasive approach such as trenching/pitting and drilling was not conducted as a result of farm property owner restriction to access the property and proscription use of earthmoving plants, machinery and construction vehicles for related prospecting activities. The pilot stage will encapsulate further study of the diamond ore. The primary objective of the pilot mining phase is:

- Open complete area of the kimberlite body(ies) and cut first two benches into kimberlite;
- Process different kimberlite type separately and determine the grades and diamond quality variation;
- Carry out metallurgical studies of the ore for final design of the plant;
- During this stage geophysical survey and diamond core drilling will be implemented to study ore bodies morphology with depth;
- The outcome of geophysical survey and diamond core drilling will be implemented to study ore bodies morphology to be used for long term underground mining method to be used.

The open cast method for mining have been considered as a preferred method for minerals extraction. The open cast method will entail the trenching to the depth of two (2) benches (i.e.12 to 20 m) however, this is dependent on the hosting rock competence and stability. The pilot phase is envisaged to be disassociated with excessive blasting given that the hosting rock is black and grey Ecca shale, which is quite brittle. However, soft blasting will be applied where necessary in particular for cutting into kimberlites. The proposed mine property is characterised by game farming, livestock farming and related agricultural crop farming at a small scale. This necessitates the use of soft blasting to avoid and reduce impact on game farm with noise and flying rocks fragments.

Table 6: Summary details of project

ITEMS	DETAILS
Type of mineral	Diamond Kimberlite;

	Diamond General.
Mining method	Open pit
Depth of mining	12 -20 m
Life of mine	30 years

d) The technology to be used in the activity

i. Associated activities, infrastructure and services

The infrastructure area in relation to the mine area is indicated in Plan 3 below. The anticipated infrastructure for the operations includes:

Table 7: Surface Infrastructure

SURFACE INFRASTRUCTURE:	DESCRIPTION
Access and security control	• Internal haul and access roads 11 • Access will be via R64 • Security • Fencing
Mine Area	• Soil berms • Processing plant • Stockpiles • Open pits • Ablution facilities (portable toilets) • Clean and dirty water trenches, water management sumps and silt traps • Tailings storage facility • Slime dam
Infrastructure Area	• Vehicle park area • Workshop and store • Fuel storage • Site camps and offices • Ablution facilities (chemical toilets) • JoJo tanks • Waste disposal site • Slump dam • Tailings • Water recycling facility • Stockpile Yard • Wash bay • Generators • Lighting

ii. Equipment and Machinery

Table 8: Equipment and Machinery for mining

Equipment/Machinery	Fuel demand
2 x 45 t Excavators	1000 liters per 22-hour shift
2 x 3 m³ FEL	500 liters per 22-hour shift
2 x 40 t ADT's	500 liters per 22-hour shift
Utility bus	50 liters per 22-hour shift
Track Dozer	200 liters per
Axillary pumps	50 liters per 22-hour shift
Generators	50 liters per 22-hour shift

iii. Power supply

Processing plant equipment will be run using Eskom connection, offices and change rooms as well as the parameter fence will be electrified for security purposes. Electricity will be used for lightening deep pits and for pumps when draining the concentrated soil from the pits. The solar power energy and generators will be used as far as practically where it is feasible

iv. Water supply

Water requirements on site will be limited to that of potable/domestic use, plant operation and dust suppression. At this stage it is anticipated that water will be sourced from the existing borehole (windmill) located on site. Water will be pumped and stored in a JoJo tank, to be located at the infrastructure area. Washing processing plant and screening of material requires and consumes excessive volumes of water. A recycling water facility will be used to recycle water. This will reduce the amount of water usage required and will also curtail water wastage by recycling used water and be reused. Wash bay facility requires volume of water for washing of machines and equipment. Recycling water facility will be constructed for recycling and reusing of water purpose. This will reduce excessive continue demand for underground water.

v. Waste management

General and hazardous waste will be generated on site:

- General waste includes office and domestic waste; construction and building waste; scrap metal and old tires.
- Hazardous waste includes used hydrocarbons, oily rags and sewage and tailings.

Tailings will be stored for retreatment by Bourevestnik, since diamond constitutes a fraction of percent of the kimberlite by volume, most of the mined and treated material will represent tailings

and waste (including country rock removed during mine design). Kimberlite pipes are known to extend to the depth over 1 km. Current mining plan is targeting depth of 600 m. Even if mining would be stopped at that depth (or even shallower) back filling of the void would be illegal considering residual mineral resource below. It could become economical with diamond price escalation to continue mining to deeper levels. Consequently, the produced tailings and waste dumps have to be stored for uncertain period. Alternative would be finding market niche for utilizing those materials as a by-product. It is included in social and labor plan to make research of such opportunities. The country rock waste can be definitely consumed by building materials market. Kimberlite waste per se so far could not find application due to the known effect of volume increase during weathering and majority of minerals eventually been converted into serpentine and clay. A small percentage of dump material can be added to the mixture for refractory bricks production (high Mg-content). Kimberlite concentrate, which constitutes small percentage by volume, can be used in road construction, gardens decoration and souvenirs manufacturing. Waste storage facility will be used as a designated storage facility for accumulated waste. The waste facility will be designed to keep storage of general and hazardous waste separately. All waste will be separated and stored as per the relevant Norms and Standards where applicable. Waste will be recycled and sold/given to interested parties as far as possible. Waste for disposal will be collected by a reputable contractor for transit to a suitably licensed 13 facility. Waste safety disposal certificates will need to be obtained from disposal contractors and waste manifest will be maintained on site.

Sewage will be collected within conservancy tanks to be emptied by honey sucker for treatment at a suitably licensed facility.

vi. Employment requirements

Table 9: Anticipated number of jobs to be created in 5-year period of mine operation

Category	**Total no per Year 1**	**Total no per Year 2**	**Total no per Year 3**	**Total no per Year 4**	**Total no per Year 5**
Top and Senior management	2	3	3	3	3
Professionally qualified and Experienced specialists and mid-management	6	13	13	13	13

Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	13	17	17	17	17
Semi-skilled and discretionary decision making	51	52	52	52	52
Permanent general labourers	38	59	59	59	59
Total Number of Employment Per Year	110	144	144	144	144
Total Number of Employment in 5 years	686				

It is anticipated that the project will creates 686 job opportunities in 5-year period in various categories of skills employment required at the project. This ranges from top and senior management, professionals, skilled, semi-skilled and general labour work force. Some services at the project will be rendered by service providers, as and when required. Local entrepreneurs and small business will be given preference in terms of opportunities at the project. Certain skills will be required whereby employment will be sourced from Boshof, if the necessary skills are not found in Boshof the radius will be increased to find suitable skills needed.

e) The operation aspects of the activity

i. Water supply

The proposed project will require bulk water for its mining operations as well as domestic water for drinking and ablutions purposes. Bulk water is required for dust suppression and any other mining operations that may require large volumes of water. Possible water supply options will be identified and their suitability evaluated during the detailed EIA investigation. A preliminary water balance will be designed for the proposed Mine to determine bulk water requirements during peak production and a mine safety factor (to be determined) will be applied to ensure adequate water supply to the mine.

ii. Water management

Water is a valuable resource and a water management strategy will be developed during the EIA investigation.

iii. Run-Off Water

The water management strategy will be designed to address the following significant issues at the proposed Mine:

- Water use and users with a focus on water consumption rates;
- Engineering design basis for the water reticulation and distribution systems required to provide water to the mining operation;
- Engineering design basis for clean water diversion system; and
- Engineering design basis for the dirty water collection and management systems, including flood protection.

iv. Water Management Infrastructure

The following water management infrastructure is envisaged for the proposed Mine:

- Network of dirty water collection drains – concrete lined
- Cut Off drains to collect water which came into contact with contaminants on site.
- Pollution Control Dams – HDPE lined
- Collection dams to collect water which came into contact with contaminants on site.
- Network of water control berms
- Berms to prevent off-site run-off water which came into contact with contaminants on site.
- Network of clean water collection drains – concrete lined
- Cut Off drains to collect clean water and prevent contact with contaminated water.
- Pit dewatering dam – Zinc construction and HDPE lined
- Dam to collect ground and rain water collected from the pit and pumped back into the Pollution Control Dam; and
- Dirty water channels
- A network of concrete channels to contain water which came into contact with contaminants on site.

v. Electricity

Invest In Property 126 (Pty)Ltd is expected to enter into an agreement with Eskom, whereby the parastatal will supply of power by expanding the national grid that would bring an additional high voltage line near the Project area. Further agreements with Eskom must be made to provide a temporary supply of overhead power lines to support the power requirements during any future construction activities for the Project. The Electricity will be complemented by Generators.

vi. Sewerage

Invest In Property 126 (Pty)Ltd intends to use the reed bed system sewer facilities. The reed bed sewage systems under consideration have the following components: -

- Inlet structure
- Septic tank (Primary treatment)
- Reed bed (Secondary treatment)
- Outlet to stream or irrigated

To ensure proper and efficient functioning of the system one has to know the function of each component. It is briefly described as follows.

– Inlet structure

An inlet structure is required to prevent foreign matter and solids or sand (grit) to enter the septic tank. Depending on the type of effluent expected as well as the volume, a mechanical rotary screen is used to catch the foreign material. The foreign materials are then removed and stacked in a solid refuse bin which should be emptied once a week. The solids to be dumped at an approved solid waste site.

– Septic tank (Primary treatment)

The term “septic” refers to the anaerobic bacterial environment that develops in the tank which decomposes or mineralizes the water discharged into the tank. The tank has 3 chambers of which the first one is the biggest. The waste water enters the first chamber of the tank, allowing solids to settle and scum to float. The settled solids are aerobically digested reducing the volume of solids. The liquid component flows through the dividing wall into the second and third chambers where further settlement takes place. It is important to have waste water enter the first chamber via a T piece. This is to ensure the crust on the top of the liquid level is not disturbed as this is where the bacteriological action takes place.

– Reed bed (Secondary treatment)

A reed bed is essentially a channel lined with an impermeable membrane that is filled with river sand (coarse gravel) and planted with reed rushes (macrophytes) and used to treat waste water. Primary treated effluent from the source is initially filtered prior to entering the reed bed through an effluent filter fitted to the septic tank outlet pipe. After filtration of these large solids/floatable the wastewater undergoes many

Processes as it passes through the reed bed. Reed beds are generally designed to detain the water for a period of 5 to 7 days. This residence time aids with the treatment by allowing sufficient time for the settling and filtering of suspended solids, nitrification / denitrification to occur, fixation onto the substrate, breakdown of organic matter and nutrient removal via micro-organisms and plant uptake. Residence time is generally governed by the surface area and depth of the reed bed. The die-off pathogens in reed bed is due to predation by micro-organisms on the surface of the gravel and roots, unfavourable conditions provided by along residence time, and the aerobic and anaerobic zones in the reed bed. Therefore, the quality of treated effluent improves with increased residence time.

vii. Discard and Waste disposal

Locations for topsoil berms and stockpiles were be identified and evaluated during the detailed EIA investigation. As a minimum requirements topsoil berms and stockpiles will be designed and located to as to reduce compaction and outside of natural drainage patterns to prevent erosion from both water and wind. Wet soils will be identified and stockpiled separately during mining operations. Soil stockpiles will be designed and located in the same manner as topsoil. All non-carbonaceous stockpiles will be placed in predetermined areas at the Mine, all slurry deposits will be placed in predetermined area at the Mine. The following types of waste will be generated by the proposed Mine:

- Domestic waste;
- Scrap metal;
- Used oil, diesel and lubricants; and
- Building rubble.
- Tailings

The proposed Mine will utilise a temporary waste storage facility and all waste will be collected by an approved, registered waste contractor for removal and final disposal at an approved landfill site. No landfill will be established on the proposed Mine site.

Invest In Property 126 (Pty)Ltd will develop a waste management system in line with ISO14001 requirements, applicable legislation and license conditions. A waste inventory which will take into consideration take the expected types of waste into consideration under normal, abnormal and emergency conditions; the volumes generated; which contractor handles the waste; as well as the danger class in case of hazardous waste (as per SANS 10228). The proponent will ensure that waste is recycled, reused, reduced and recovered (4R's) in order to minimise adverse environmental impacts and assist in the prevention of pollution. A certified company that removes hazardous waste will be

contracted in writing and their duties specified in writing and they will be responsible for disposing the waste to a designated. Domestic waste generated from the project area shall be stored, handled and transported to the designated landfills, in a manner that will not cause any nuisance conditions or secondary pollution.

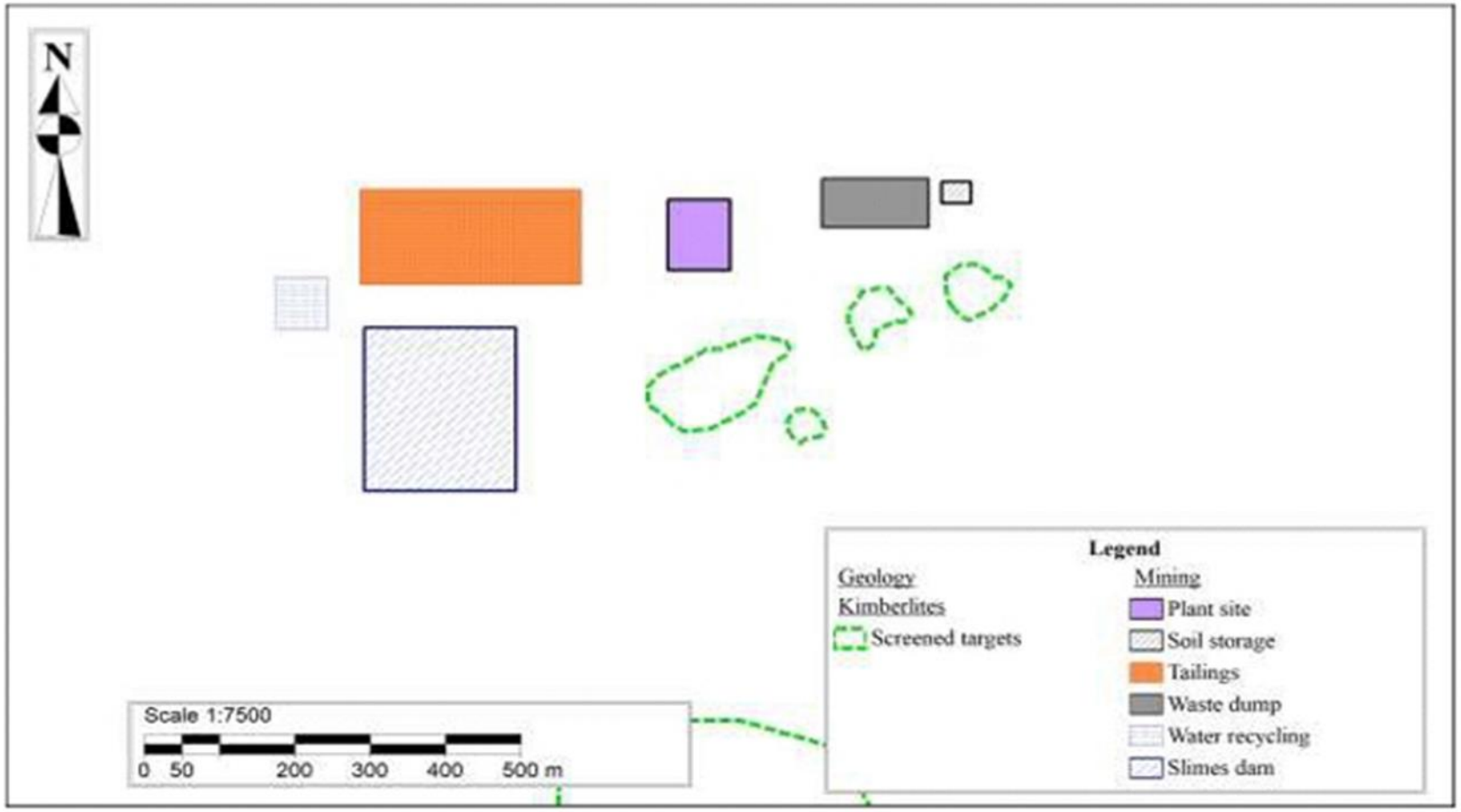
viii. Roads

The site will be accessed via R64 which connects Bloemfontein-Boshof-Kimberly, surrounding farms the road is at present not in good condition. These roads will be used as the main access road to the mine. It will be necessary to upgrade the existing dirt roads and upgrade the existing tracks. Consultation with farm owners will be initiated to identify the most convenient route as an access to the proposed development.

ix. Storm water

The terrain should be drained by storm water drainage pipes networks to the natural low points.

Figure 5: Infrastructure in relation to the Mine Area



2. Details of the Public Participation Process Followed

According to the EIA regulations, an environmental impact assessment report must include: -

i. Details of the public participation process conducted in terms of sub regulation (1), including;
ii. Steps undertaken in accordance with the plan of study;
iii. A list of persons, organizations and organs of state that were registered as interested and affected parties;
iv. A summary of comments received from, and a summary of issues raised by registered interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments; and
v. Copies of any representations, objections and comments received from registered interested and affected parties;

It is important to note that this chapter provides details of the public consultation process conducted to the point when the draft EIAR was made available for public comment upon consultation with the Competent Authority. Copies of documents relevant to this phase of the assessment will be included as Annexure on the Final EIAR.

a. Need for Public Participation

Public participation is a process that is designed to enable all I&APs to voice their opinion and/ or concerns which enables the practitioner to evaluate all aspects of the proposed development, with the objective of improving the project by maximizing its benefits while minimizing its adverse effects. I&APs include all interested stakeholders, technical specialists, and the various relevant organs of state who work together to produce better decisions.

- The primary aims of the public participation process are:
- To inform I&APs and key stakeholders of the proposed application and environmental studies;
- To initiate meaningful and timeous participation of I&APs;
- To identify issues and concerns of key stakeholders and I&APs with regards to the application for the development (i.e. focus on important issues);
- To promote transparency and an understanding of the project and its potential environmental (social and biophysical) impacts (both positive and negative);
- To provide information used for decision-making;
- To provide a structure for liaison and communication with I&APs and key stakeholders;
- To ensure inclusivity (the needs, interests and values of I&APs must be considered in the decision-making process);
- To focus on issues relevant to the project, and issues considered important by I&APs and key stakeholders; and

- To provide responses to I&AP queries

The public participation process must be in line and concur with the requirements of Regulations (GNR 982) under the NEMA. The public participation process for the development EIA process was undertaken according to the following stages.

1. Scoping Phase
    - Raise issues of concern
    - Make suggestions of project Development
    - Contribute relevant local knowledge to the EIA
2. EIA phase
    - Comment on the findings of the specialist studies and the rating of the impacts
    - Raise additional issues/concerns
3. Decision making phase
    - May appeal to the decision if wish to do so

b. Importance of I&APs in Public Participation

During the PPP phase there have been more participatory approach to these developments and the availability of services. It is also noted that engaging stakeholders even before developments are built can achieve the positive impacts. It is for this reason that the PPP that forms part of the EIA becomes the basis for stakeholder engagement process. The PPP aimed to ensure that the full range of stakeholders is informed about the proposed development throughout the entire EIA process. A number of key activities have taken place and will continue to take place in order to meet this desired objective. The activities undertaken included the following:

- The identification of stakeholders is a key deliverable at the outset, and it is noted that there are different categories of stakeholders that must be engaged, from the different levels and categories of government, to relevant structures in the NGO sector, to the communities adjacent
- The development of a living and dynamic database that captures details of stakeholders from all sectors;
- The convening of focused and general meetings with stakeholders at different times throughout the EIA process;
- The engagement of public leaders and key informants to whom the public generally turn for information, keeping such individuals well informed about process and progress to reduce bias;

- The fielding of queries from I&APs and others, and providing appropriate information;
- The convening of specific stakeholder groupings/for or as the need arises;
- The preparation of reports (both baseline and impact assessment) based on information gathered
- throughout the EIA via the PPP and feeding that into the relevant decision-makers;
- The PPP could include distribution of various types of pamphlets and other information packs; and
- Where appropriate site visits may be organized, as well as targeted coverage by the media.

The Public Participation Process has been conducted in terms Chapter 6: Regulation 41(2); 42 and 43(1) of GNR 982 (04 December 2014) of the National Environmental Management Act 107 of 1998 and Regulation 50 of the Minerals and Petroleum Development Act (MPRDA, Act 28 of 2002).

c. Competent Authority Engagement and Consultation

The competent authority which is the Department of Mineral Resources is required to provide an environmental authorization (whether positive or negative) for the project. The Competent Authority was consulted from the outset of this study, and has been engaged throughout the project process. The competent authority was engaged over the entire application process proof of correspondence from DMRE is attached as **ANNEXURE D.**

d. Approach to Public Participation

A Public Participation Process (PPR) was initiated, which is central to the investigation of environmental and social impacts, as it is important that stakeholders who are affected by the project are given an opportunity to identify concerns and to ensure that local knowledge, needs and values are understood and taken into consideration as part of the impact assessment process. The comments from the stakeholders has been included in the (PPR) (ANNEXTURE I). The draft EIA/EMP report was submitted to the public for their input and comments for a period of 30 days. The Public Participation Process has been conducted in terms Chapter 6: Regulation 41(2); 42 and 43(1) of GNR 982 (04 December 2014) of the National Environmental Management Act 107 of 1998 and National Water Act No 36 of 1998. PP is the cornerstone of the Environmental Impact Assessment process, these include the ongoing provision of sufficient information (in a transparent manner) to Interested and Affected Parties (IAPs).

The objective of Public Participation is to convey information regarding the proposed project to all parties who are likely to be affected or interested in the proposed project. Most importantly, the PP

provides stakeholders with an opportunity to register as Interested and Affected Parties (I&APs) and to raise issues and concerns regarding the proposed development of the Mine.

Biomental Services covered a wide area which included surrounding farmers, small town Boshof in Free State. In accordance with Regulation 41(2) (c), published under Government Notice No.982 of December 2014 as amended on 07 April 2017 of the National Environmental Management Act, 1998 and Regulation 50 of the Minerals and Petroleum Development Act (MPRDA, Act 28 of 2002) a newspaper advertisement was published on the 10 /02/2023 through Diamond Field Advert(DFA)**.** Site notices shall also be pasted on and around the proposed site.

The PPP that forms part of the EIA becomes the basis for stakeholder engagement process. In order to achieve this, a number of key activities have taken place and will continue to take place. These include the following:

- The identification of stakeholders is a key deliverable at the outset, and it is noted that there are different categories of stakeholders that must be engaged, from the different levels and categories of government, to relevant structures in the NGO sector, to the communities adjacent to the proposed area.
- The development of a living and dynamic database that captures details of stakeholders from all sectors;
- The convening of focused and general meetings with stakeholders at different times throughout the EIA process (and beyond);
- The engagement of public leaders to whom the public generally turn for information, keeping such individuals well informed about process and progress;
- The fielding of queries from I&APs and others, and providing appropriate information;
- The convening of specific stakeholder groupings/for or as the need arises;
- The preparation of reports (both baseline and impact assessment) based on information gathered throughout the EIA via the PPP and feeding that into the relevant decision-makers;
- The PPP could include distribution of various types of pamphlets and other information packs; and
- Where appropriate site visits may be organized, as well as targeted coverage by the media.

i. Identification of Key Stakeholders

The list below shows the identified stakeholders that were consulted as far as The Proposed Mining Development is concerned.

Table 10: Identified Stakeholders

AGENCY, ORGANISATION, PERSON	DETAILS	COPIES
Department of Minerals Resources and Energy (Welkom)	Draft for Review and Comment	1 x hard copy 1 x electronic copy uploaded via SAMRAD
Department of Agriculture and Rural Development (Bloemfontein)	Draft for Review and Comment	1x hard copy 1x electronic
Department of Economics, Small Business Development and Environmental Affairs (Bloemfontein)	Draft for Review and comment	1 x hard copy 1 x hard copy
Department of water and sanitation	Draft for Review and comment	1 x hard copy 1 x electronic
Tokologo Local Municipality	Draft for Review and comment	1 x hard copy 1 x electronic
Public Works	Draft for Review and comment	1 x hard copy 1 x electronic
Department of Police, Roads and Transport	Draft for Review and Comment	1xhard copy 1x Electronic
Department of Agriculture, Forestry and Fishery	Draft for Review and Comment	1x Electronic 1xhard copy
South Africa Heritage Resource Agency (SAHRA)	Draft for Review and comment	1 x Electronic (Portal System)
ESKOM	Draft for Review and comment	1 x hard copy 1x Electronic

e. Notifying Interested and Affected Parties of the EIA

The Draft EIAR &EMP Report was distributed to stakeholders for a 30-day review period for public participation purposes as stipulated on condition 4 of the Acceptance of Scoping Report received from the Competent Authority (DMRE). All comments received has been included in the finalised EIA Report, which is due for decision-making by DMRE. Written notifications, hard copies containing the document has been sent to key stakeholders, including authorities

i. Advertisements

A newspaper advertisement was placed at a local newspaper in terms of Regulation 41(2) (c), 2017 of the National Environmental Management Act, 1998 and Regulation 50 of the Minerals and Petroleum Development Act (MPRDA, Act 28 of 2002) of the intention to mine on the project site.

ii. Site Notices

The NEMA EIA Regulations require that a site notice be fixed at a place conspicuous to the public at the boundary or on the fence of the site where the activity to which the application relates is to be undertaken and on any alternative sites. The purpose of this is to notify the public of the project and to invite the public to register as stakeholders and inform them of the PP Process. (ANNEXURE I)

iii. Public Meetings

All registered I&Aps and the public were invited to a public meeting. Date, time and venue were communicated to them. (ANNEXURE I)

f. Authority consultation

The state departments are given an opportunity to comment on the proposed mining development. The authorities also received the Environmental Impact Assessment report and have 30 days period to make submissions and comments.

g. Registration of I&APs and Comments Database

Comments raised by the I&APs can be found attached on the Public Participating Report. They have been addressed and

h. Summary of issues raised by I&APS

See Table below

Interested and affected Parties	Date Comment Received	Issues Raised	EAP Response to issues as mandated by the applicant
AFFECTED PARTIES			
Landowners Cedric Robets Trust	15 March 2023	Appended as Annexure H (5)	Appended as Annexure (H)6
Landowners or lawful occupiers on adjacent property	NONE	NONE	NONE
Municipal Councillors	NONE	NONE	NONE
Municipality	NONE	NONE	NONE
Organs of State	NONE	NONE	NONE
Community	16/02/2023		
Community Member(s)		How will the community benefits from this project?	There are many benefits and contribution the project is bound to fulfil through the SLP.This will include community skill programs, mentorship, learnerships, business opportunities as well as employment opportunities

		How long is it going to take before mining operations starts?	It is unfortunate that we are not in a very better position to envisaged the timelines, however, the applicant has indicated that as soon as the mining right is guaranteed the mine project may commence immediately.
		How will the project uplift small businesses?	Local businesses and entrepreneurs will be preferable given opportunities in rendering services the project will outsourced. Small businesses are the backbone of our economy as they have the potential to stimulate economic growth and contributes to job creating.
		Will the projects be able to assist youth with scholarships and businesses?	The Social&Labour Plan (SLP) for the project does cover or make commitment to contribution in as far as providing scholarships for locals.
		We had past experiences whereby community are promised job opportunities but in the end people outside of these community are employed.	Invest in property 126 is bound by its commitment through the SLP to ensure that local community get 1st preference in as far as job and business opportunity are concenered.in a case where the skills or services required is not readily available, such will be acquired outside the boundaries of the community however where practically possible locals will be given preference on that regard.
		What guarantee do you have that the mining rights will be granted to the applicant.	The DMRE is the competent authority that will take a final decision on whether or not to grant rights after having made all submission pertaining to the application.

Dep.of Land affairs	NONE	NONE	NONE
Traditional Leaders	NONE	NONE	NONE
Department of Economics, Small Business Development, Tourism and Environmental Affairs	30 June 2023	SEE ANNEXURE I(PPR)	
Department of Water and Sanitations		See ANNEXURE I(PPR)	
OTHER AFFECTED PARTIES	08 March 2023 Sara Parks	See ANNEXURE I(PPR)	

4. ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH DEVELOPMENT

Baseline environment

i. Type of environment affected by the proposed activity

This part of the report is to give an overview of the type of environment affected by the proposed activity, this will cover mainly cover the biophysical aspect of the area.

a) Location

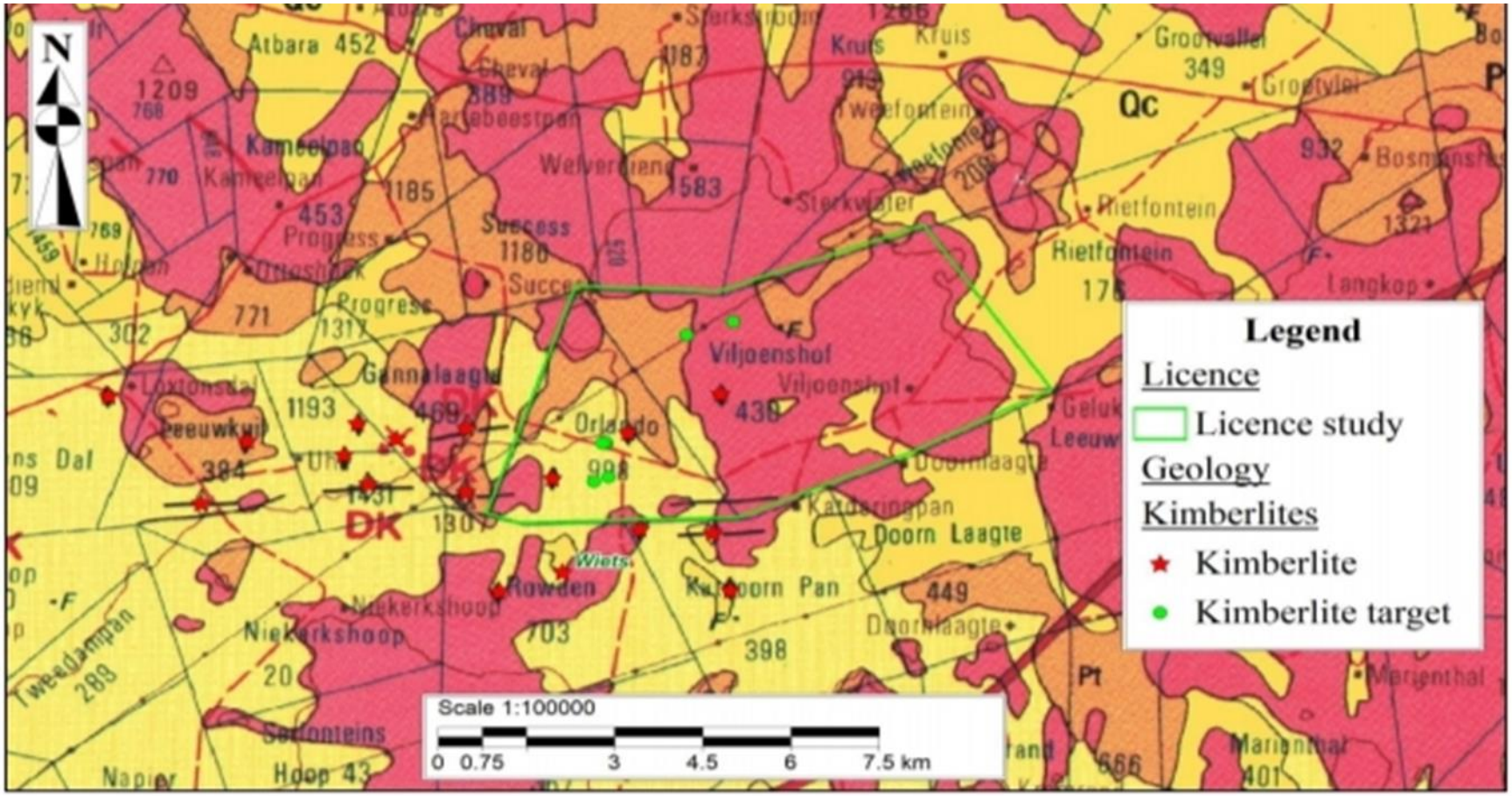
The project area is situated in Free State Province in a small town Boshof. It falls within the Tokologo Local Municipality of the Lejweleputswa District Municipality; and is situated approximately 27,9km north-east of the Kimberly and 120km west of Bloemfontein.

The town of Boshof was established on a farm bought from a local Geiqua called Dawid Danster. The farm was bought by D.S Fourie and sold to the Nederduitse Gereformeerde Kerk under the instruction of Reverend Andrew Murray. The town was named after the 2nd President of the Orange Free State, Jacobus Nicolas Boshof who was born in 1808, and died in 1881. Bishof was established as a municipality in 1872, in 1874, the Dutch Reformed church was built. It was enlarged in 1913, and renovated in 1954 (http://www.boshof.co.za). The town of Boshof boasts of a number of historical buildings such as town hall, high school and the powder magazine. The powder magazine is a provincial heritage site and the town hall, a Grade III site. There are no historical structures that were found within the footprint of the proposed development.

b) Geology and Soil

The project area is located within the Loxtonsdal kimberlite cluster which hosts two historical diamond mines. All known kimberlites in this cluster are of the Group II variety. The soil for the area is red-yellow Apedal which is a freely drained soil of approximately 300mm deep, and soil formation is contributed by tillite of the Dwyka Formation, as well as shales of the Ecca Group, red wind-blown sand and surface limestone. A second soil type in the area is another red-yellow Apedal soil which is formed from red to flesh-coloured wind-blown sand of tertiary to recent age. The geology of the area belongs to Kalahari group, with red and grey Aeolian sand. The area is well known to be underlined by dolerite dyke, shale, siltstone and sandstone in isolated areas. Thirty percent of the area has calcrete as part of the underlying geology. The area is mostly covered by Karoo and doleritic intrusions as well as younger Tertiary and Quaternary surficial deposits. Historical unnamed small scale kimberlite diamond mine, 3 formally mapped kimberlite pipes and 3 more confirmed kimberlite bodies. Kimberlites protruded Ecca shales of Karoo sequence (Permian) and Jurassic dolerites. **See Figure 6 below.**

Figure 6: Extract from geological map (1:250,000, zoomed to 1:100,000). Kimberlite target – confirmed by pits and trenches.



c) Topography

The town of Boshof and the site of the proposed development (Viljoenshof Diamond Mine) are situated in a fairly dry area with no scenic significance and without visual diversity. The general area is relatively flat with an average elevation of around 1260m above sea level.

d) Climate

This climatic zone is characterised by hot summers and cold dry winters. Rainfall In the area is unpredictable. The majority of rain (88.2%) falls between October and April in the form of thunderstorms. During this period rain can be expected every 5 days.

The winters are very dry and rainfall is rare. Any precipitation that does take place tends to be brought about by cyclones penetrating the interior of the country. The prevailing winds in this area are from a north-westerly direction. The strongest winds tend to blow from a west-south-westerly direction to a north-north westerly direction and occur from August to December. October and November are the windiest months.

The various climatic parameters such as rainfall data, temperature data, evaporation rates, wind speed and direction have been obtained from the weather station at Kimberley.

Rainfall intensity:

Most of the rainfalls occur during thunderstorms in the summer months as well as during cloud bursts where maximum rainfalls were measured of up to 88mm at a downpour of approximately 24 hours.

Average minimum and maximum temperature:

The average maximum temperature measured during the Summer is 26.57s°C and the minimum during the Winter Months Is -9.675°C

Average monthly wing direction and speed: -

The prevailing wind direction in the area is mainly from the north to north-westerly with the strongest winds from the west-southwest to north-northwest that occurs between August and December. October and November months are common for high wind speeds of up to 4.85 meter per second.

Average monthly evaporation: -

It is estimated that the average annual evaporation rate is approximately 2365mm which indicates the dry climate conditions in this area. Thus, with an annual rainfall of 380,8mm the net evaporation may be calculated to be 1984mm.

Presence of extreme climate conditions

Hail: This is a very rare occurrence in the region. Hail does however occur at an average of 1,2 days pe year in the area.

Frost: This can occur from April to October and temperatures during this period can be extremely low. The lowest recorded temperature in this area is -7. °C.

Strong winds: Occasional strong winds occur but not often.

Droughts: Temperatures during the summer months frequently exceed 30°C and can reach up to 40°C at times. These high temperatures coupled with low rainfall make the region susceptible to very dry conditions.

e) Hydrology

Drainage

The proposed site is in the Lower Vaal Management Area. The site is drained by means of run-off, with storm water collection towards the northwest and north of the site. No prominent surface drainage features are developed within the proposed site boundaries. **See below Figure 7&8**

Figure 7: Lower Vaal Management Area map of the application area

Figure 8: Quaternary catchment map of the application area

Catchment Analyses

The existing river systems in relation to the proposed site are categorized in 3 Tiers as follows:

- Tier 1- Water Management Area No: 05.
- Tier 2- Quaternary Catchment: C91D.
- Tier 3- Site Specific Catchment Areas

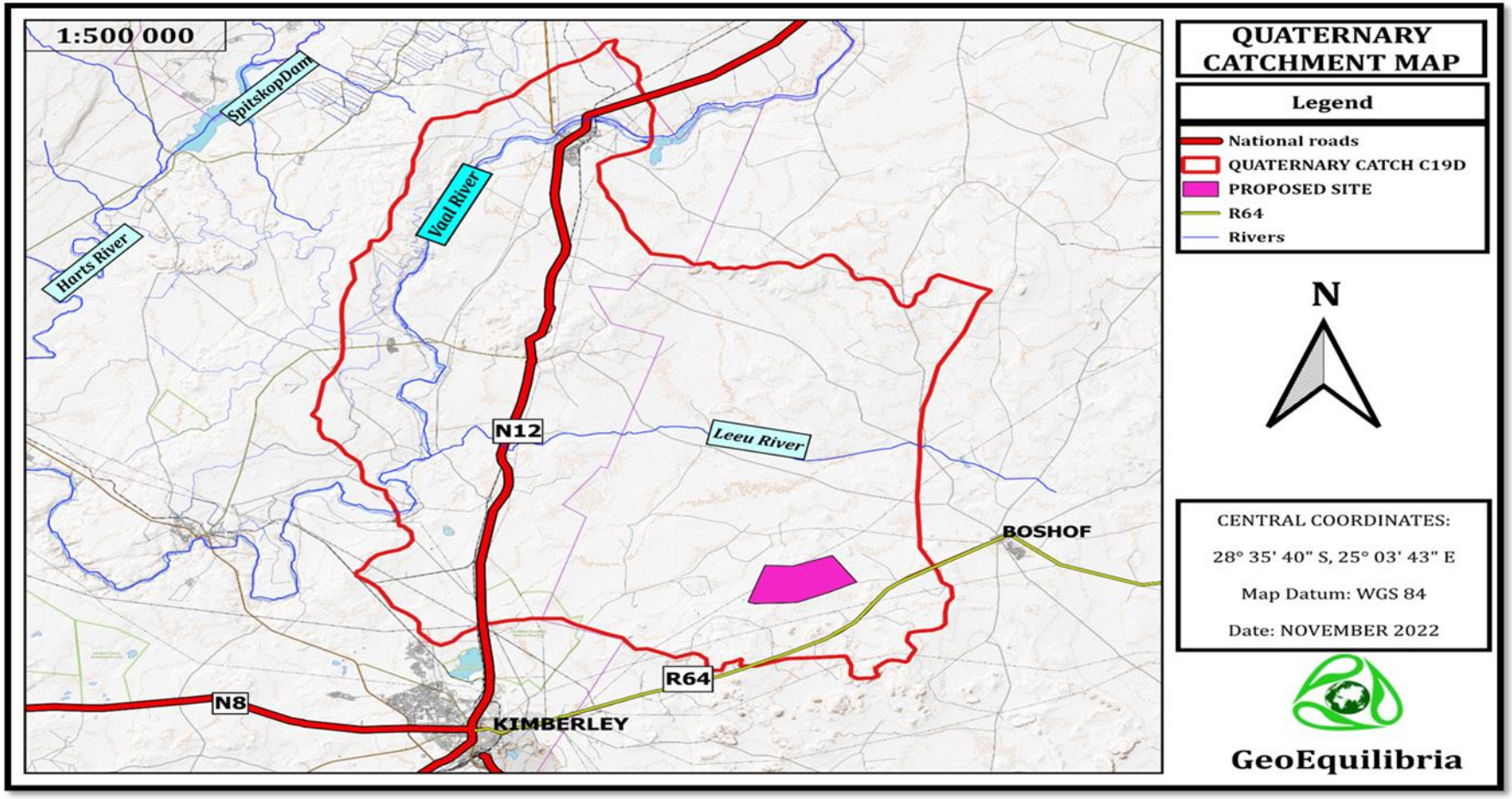
Water management area management

The study area falls within water management area number 05– Vaal. WMA 05 includes the following major rivers Wilge, Liebenbergvlei, Mooi, Renoster, Vals, Sand, Vet, Harts, Molopo, and Vaal Rivers. Water management area 05 primarily drains in region C. **Figure 7** shows water management area No. 05.

Quintenary Catchment

A catchment, in relation to a watercourse means the area from which any rainfall will drain into the watercourse or part of the water course through surface flow to a common point, or points (National Water Act, 1998, Act 36 of 1998). The study area is in Quaternary Catchment C91D (**Figure 9**) which covers an area of approximately 2693.91 km².

Figure 9: Quaternary Catchment C91D.



The aquifers systems of the study area are:

Deeper Fractured Aquifers: composed mainly of crystalline material (i.e. igneous and metamorphic rocks) characterised by an intact and relatively unweathered matrix with a complex arrangement of interconnected fracture systems.

Fractured karst aquifer: these rocks that form a fractured karst aquifer in the area and have a high degree of heterogeneity and anisotropy. The aquifers are unconfined to semi-confined, being separated by dolerite dykes being a possible effect due to the dykes acting as aquitards or barriers to groundwater flow. The contact zones between the dolomite formations and dolerite dykes are usually fractured however, and along with any other faults and fractures result in distinct dolomite dissolution and the development of groundwater flow paths in the region.

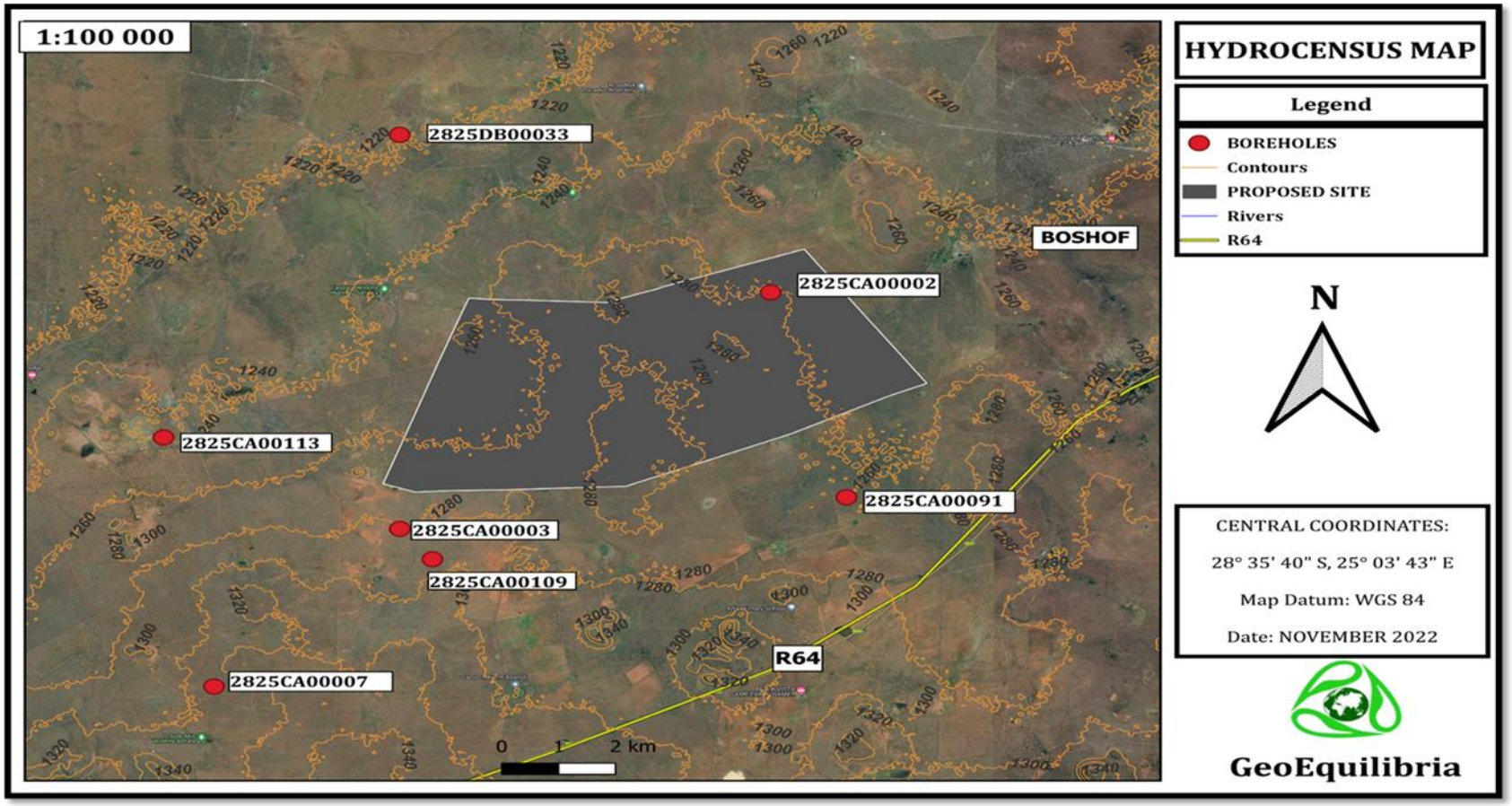
Hydro census and Boreholes information

Boreholes provide valuable information on the groundwater regime. The hydrocensus information is summarized in **Table** below, with the corresponding locations in **Figure 10**.

Table 11: Hydro-census Data

BH ID	LONGITUDE	LATITUDE	BH DEPTH (M)	WATER LEVEL [MBGL]	DISCHARGE [L/S]	WATER USE	DISPLACEMENT(M)	DATE
2825CA00002	-28.56706	25.0829	27.98	6.09	0.04	Domestic	1969.49	13-10-2022
2825CA00003	-28.61705	25.01624	31.36	15.24	0.01	Agriculture	1304.68	13-10-2022
2825CA00007	-28.53372	25.01624	91.07	2.44	2.15	Agriculture	1734.35	13-10-2022
2825DB00033	-28.65039	24.98285	75.00	40.48	0.09	Domestic	4475.78	13-10-2022
2825CA00091	-28.61038	25.09651	48.10	13.10	1.27	Agriculture	25.03	13-10-2022
2825CA00109	-28.62347	25.0221	64.92	15.24	---	Agriculture	5857.91	13-10-2022
2825CA00113	-28.597729	24.97389	56.69	25.91	---	Agriculture	4261.02	13-10-2022

Figure 10: Hydro-census Map



f) Heritage and Cultural settings

The archaeology of southern Africa is broadly divided into Stone Age, Iron Age and the Historical Age, and South Africa fits well into this periodisation.

The Stone Age is the first period in a series of cultural developments in the history of evolution. It refers to the earliest culture in which people utilised the stone to make tools (Clark 1970). In South Africa, in line with the picture in southern Africa, the Stone Age is divided into three categories namely the Early Stone (ESA), The Middle Stone Age (MSA) and the Later Stone Age (LSA). ESA dates between 2.6 million and 250 000 years ago. It is characterised by two archaeological industries, the Oldowan and the Acheulean. (Clarke; Kuman 2000; Klein 2000; Lombard *et al*., 2012). The Oldowan industry is the oldest known stone industry and dates to 2.6 million ya, it is characterised by cobbles cores, pebble choppers and percussive tools (Klein 2000; Toth & Schick 2007). Oldowan tools have not been found in any other continent outside Africa (Esterhuysen & Smith 2007). It was completely replaced by the Acheulian around 1.7 million years ago.

Homo ergaster was probably responsible for the manufacture of Acheulian tools in South Africa (Esterhuysen & Smith 2007). Acheulian tools were longer with sharper edges which suggest they could be used for a variety of activities ranging from cutting meat from large animals such as elephants, rhinoceros and hippopotamus that would have died from natural causes. Other functions include chopping of wood, digging roots and cracking bones for marrow. The most diagnostic tools of this period are the handaxes and the cleaver, and some other bifacial tools (Klein 2000). The Acheulean tool industry is known to be the longest running stone tool industry which first appeared about 1.7 million ya and survived until the period between 350 000 to 250 000 ya (Klein 2000; Phillipson 2005).

The transition from ESA to MSA took place around 250 000 years ago and it is characterised by a change in technology as handaxes and cleavers were replaced by smaller blades and flakes (Kuman *et al*., 2005). In contrast to the ESA technique of removing flakes from a core, MSA tools were flakes to start with (Mitchell 2002). There were of a predetermined size and shape and were made by preparing a core of suitable material and striking off the flake so that it was flaked according to a shape which the toolmaker desired (Esterhuysen & Smith 2007). The stone toolkit of the MSA comprise of unifacial and bifacial points, blades, flakes, scrapers and pointed tools that could have been hafted and used as spears or arrowheads (Volman 1984). The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were two important steps in cultural evolution (Deacon & Deacon 1999). Besides the occupation of caves and introduction of fire, the widespread use of red ochre, probably as body paint, also shows that MSA behaviour had

become more human (Wadley 2015). The recent finds of decorated ochre at Blombos and decorated ostrich eggshells at Diepkloof also in the Cape further cement the point.

The LSA dates to between 40 000 and 25 000 to recently, 100 years ago. It was a period when man refined small blade tools conversely abandoning the MSA prepared-core technique (Deacon 1984). The LSA is associated with the San people. Thus, the tool assemblage of this period consists of thumbnails, convex –edge scrapers, crescents, and bladelets. Other tools of the period are hammers, adzes, bores, grooved stones, hafted tools, points. These San people relied to a larger extent on bow-and-arrow hunting with poisoned tips and also snaring. Ceramics were produced and used by hunters and Khoikhoi herders towards the terminal phase of the LSA (Sadr & Sampson 2006). During the LSA, human behaviour was undoubtedly modern with unique human traits such as rock art and purposeful burials with ornaments (Villa *et al*., 2012).

No Stone Age sites were found within the footprint of the area proposed for the development. Although no Stone Age sites were found, the region has evidence to suggest that the area was inhabited by Stone Age people in the past. The wider study area has yielded a lot of tools cutting across the Stone Age period. Most ESA and MSA tools have been found in open sites. The earliest ESA industry is the Victoria West Stone industry which was first defined and recorded by Smith in 1915. These tools have been found along the Vaal River. Smith called this culture "Tortoise cores", the idea being that he made a parallel to the tortoise shell in which individuals shells can be chipped off from a single shell making tools such as handaxes. Later the "Tortoise –Cores" was regarded as a cultural marker in the transition from the ESA to the MSA (Goodwin 1935). The MSA is clearly marked by the appearance of the prepared core technique. In the Free State the Florisband is the dominant culture (Benneman *et al*. 2011). Open air sites seem to have been preferred in the eastern Free State. Rose Cottage is the only cave site that have yielded MSA tools. LSA tools have been found in many caves sites and open sites in the wider study area. There are many paintings in the study region with faded paintings at Lelihoek shelter and De Hoop, and some well executed ones at Tandjiesberg shelter. Just like in the Limpopo, the rock art of the study area indicates a lot of contact between different cultural groups. At De Hoop cave there are poorly preserved paintings depicting Europeans, horses and elands (Wadley 1995).

g) The Iron Age

Bantu-speaking people moved into eastern and southern Africa about 2000 years ago (Mitchell 2002). These people came with their cultural package. The primary technology used by the Bantu farming communities was the iron hoe, hence the advent of the 'Iron Age' to designate this period. The Iron Age of South Africa is divided into the Early Iron Age (EIA) AD200 -1000) and the Later Iron Age (LIA)

(AD1000-1840). However, Huffman (2007:361) proposed for an additional Middle Iron Age between the two phases. So according to him, the Iron Age of South Africa is divided into three phases namely, the Early Iron Age (EIA) (AD200-900), the Middle Iron Age (MIA) (AD900-1300) and the Late Iron Age (LIA) (AD1300-1840). Other researchers argue that the Middle Iron Age should only be confined to the Shashe Limpopo Basin, as it is not clear outside the Limpopo Basin.

The first settlement in southern Africa is known as the Early Iron Age (Mitchell 2002). Early Iron Age communities in eastern and southern Africa share a common culture called Chifumbaze Complex (Philipson 1994). The Chifumbaze Complex contains evidence of the first farmers who cultivated crops, domesticated cattle, used iron and made pots (Philipson 1994). Some researchers classify Early Iron Age pottery traditions into different streams or trends in pot types and decoration that emerged over time in southern Africa. These streams are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). Early Iron Age pottery display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. Inskeep (1977: 124) describes it as 'thick, pale (pink, buff or reddish) in colour and freely, boldly decorated'.

The Middle Iron Age stretches from AD900 to 1300 and it marks the origins of the Zimbabwe culture (Huffman 2007: xiii). During this period, cattle domestication appeared to play an important role in society. The period was also characterised by extensive international trade that boasted the economy resulting sweeping socio-economic changes in the landscape (Huffman 2000). A remarkable change was the development of class distinction and sacred leadership which was witnessed in the Shashe-Limpopo Basin (Huffman 2007).

The Late Iron Age roughly dates from AD1300 to 1840. The LIA was characterised by greater focus on economic growth and the increased importance of trade. Specialisation in terms of natural resources also started to play a role, as can be seen from the distribution of iron slag which tends to occur only at certain localities compared to wider distribution during the earlier times (Huffman 2000, 2007). There is also a marked increase in stonewalling (Huffman 2007).

No Iron Age sites were noted in the study area. In wider study area, the earliest Iron Age settlement is OU1, between the modern towns of Vrede and Frankfurt, and is dated to AD 505. The other EIA site is OND2.When these Iron Age people entered the region, local Khoisan people already possessed grass-tempered and grit-tempered pottery and domestic stock (Wadley 1995:578). There is no Middle Iron Age in the Free State. It is clear in the Limpopo where it is associated with the Zimbabwe culture (Huffman 2007). Other sites with well documented Iron Age artefacts include the Caledon River Valley known to have been occupied by the Fokeng group of the Sotho culture. Later this group migrated to settle in Matlaeeng, between Frankfurt and Vrede (Huffman 2007). In the study area, there is some

rock art which is linked to the Iron Age by interaction; it is not directly executed by the San people. In the south eastern Orange Free State, for example cattle paintings are found with some Sotho shields which some researchers such as Binneman *et al*. (2011) argue could be referring to the time of trouble, *mfecane.* One interesting painting is of a man walking with hunting dogs (Wadley 1995).

Historical Period

Bartholomeo Dias was the first European to sail around the southern point of Africa in 1488 (Sadr 1998), and he named it the 'Cape of Good Hope.' He was followed by Vasco da Gama who arrived 9 years later. The Portuguese seafarers were not actually interested in southern Africa; they were just explorers. The start of a significant chapter would be when Jan Van Riebeck arrived in Table Bay with his 3 ships on 6 April 1652. At first his aim was not to colonise the Cape but to establish a station at Table Bay to supply passing ships with fresh meat. The events turned when they granted mine company servants freedom in 1657 to establish private farms in Rondebosch area below the eastern slopes of Table Mountains. By settling at the Cape, the Dutch also aimed to access the herds of cattle kept by the Khoikhoi. At first it was a friendly arrangement, however, disputes erupted over land when the Free Burghers began to encroach into traditional communal lands. By the 1700s, the Dutch colonists had prevailed. These new white settlers would influence the context and content of South Africa starting with the development of Cape Town into an urban centre (Wright & Hamilton 1989).

The British took control of the Cape colony in 1795 after the battle of Muizenberg. This triggered a process of disintegration within many European locals unwilling to contribute to the British government and crown. Between 1803 and 1806, the Dutch gained control temporarily. In 1832, Dr. Andrew Smith, a Briton and William Berg, a Boer embarked on an exploring tour in KZN. When they came back they convinced the Boer leaders of the potential of the land in terms of farming, livestock and settlement. This triggered the beginning of the Great Trek. (Ross 1989; Wright & Hamilton 1989). The first wave of trekkers left the Cape in 1835, and more followed in 1836. About 12 000 people left on the trek being led by renowned figures such as Louis Trichadt, Hans Van Rensburg and Hendrik Potgieter among others. In time,these voortrekkers who were escaping the British policies started to build a unique identity, and started calling themselves Afrikaners. They also developed a hybrid language called Afrikaans which stemmed from the Dutch, but incorporated other languages such as Germany, French and Black African influences. The Afrikaans descendants of these people would later be called the 'Boere', meaning a farmer (www.sa.history.co.za//)

The early history of South cannot be complete without mentioning the Mfecane/ difaqane. This was the time of trouble when the great Zulu and Sotho tribes fought each other for space and domination throughout southern Africa, killing and displacing hundreds of thousands of people across the

subcontinent. A key figure in these wars was the great Zulu king, Shaka. In the early 1860s, many African states weakened as they lost their tradition and culture due to Christianity. During this time, Europeans further weakened African states by grabbing fertile land from them, exploited them as a source of cheap labour and made them to pay taxes (Wright & Hamilton 1989; Shillington 1989).

In time, tensions between the British and the Boers states arose with the discovery of gold and diamonds the British saw it fit to attempt to take over two states in order to protect the people living under Boer rule and also to thwart a German attempt at taking control of large parts of Africa. These tensions led to the Anglo-Boer War of 1899-1902. The war claimed the lives of probably, 50 000 Boers, as well as Blacks and some British soldiers. The Boers ceded in May 1902, and the British formed the South African Republic. Boers continued to live in the new Republic although many resisted and wished to continue fighting. The 1902 Peace Treaty in Vereeniging ended the Anglo-Boer War. This gave Black South African Peace Treaty as they hope for better opportunities after the suppression and domination by white minority. Unfortunately, this did not bring any meaningful changes as far as human rights for black people were concerned, actually the process of segregation in South Africa intensified (Wright & Hamilton 1989).

In the Free State the town of Bloemfontein, which is currently the provincial capital is one of the most significant interior towns that were established by the European settlers of the Dutch origin. This was after the Voortrekkers had trekked from the Cape colony to avoid British adminstration (Hall, 1993). Other towns within the close proximity to the study area are; Kestell, Bethlehem, Phuthaditjhaba and Harrismith.The historical archaeology of the study region is rich in monuments, statues and memorials. There are also other buildings demonstrating various architectural styles and venarcular. The footprints of the Anglo-Boer War are clearly visible in the research area. The study area is based in the small town of Boshof

ii. Description of the current land uses

a) Soils, Land Use and Capability

The soil type is Prismacutanic (->25% clay), Red-and Yellow appedal (->20% clay). The Prismacutanic and or pedocutanic diagnostic, mostly high clay content has a moderate structure and has a week drainage potential. Red and Yellow appedal, freely drained soils, red high base status, medium with good drainage potential depth normally ->300mm. The land use of the study area is grazing and game hunting.

iii. Description of specific environmental features on the site

a) Ecological Settings

Vegetation Data

South Africa is divided up into nine major Biomes. The study area and the surrounding area are found within the Savanna Biome, which is also known as the Bushveld Biome Savanna vegetation types (veldtypes) tend to have a mix of a lower grassy layer,

middle shrub layer and an upper woody layer. The mix and ratio of the three layers varies from veldtype to veldtype within the Savanna Biome. The Savanna Biome is subdivided into six bioregions, namely, Central Bushveld; Mopane; Lowveld; Sub-Escarpment Savanna; Eastern Kalahari Bushveld; and Kalahari Duneveld.

The coordinates of the proposed development area are plotted to determine the vegetation unit(s), in which the development activities will take place. The data used, is that provided by Mucina and Rutherford (2006). A vegetation unit is defined by Mucina and Rutherford (2006) as a complex of plant communities ecologically and historically occupying habitat complexes at the landscape scale. According to Mucina and Rutherford (2006) their vegetation units are the obvious vegetation complexes that share some general ecological properties such as position on major ecological gradients and nutrient levels and appear similar in vegetation structure and especially in floristic composition. **See Figure 11 below**

The proposed development area is located within the SVk 4 vegetation unit. The SVk 4 is known as the Kimberly Thornveld. The Kimberly Thornveld is a sub-bioregion of the Eastern Kalahari Bushveld which is part of the Savanna biome.

According to Mucina and Rutherford (2006:516), the Kimberly Thornveld is spread throughout North West, Free State, and Northern Cape provinces. Most of the vegetation unit is spread out in areas such as Kimberly, Hartswater, Bloemhof and Hoopstad districts as well as substantial parts of the Warrenon, Christiana, Taung, Boshof and to some extent the Barkly West Districts. Also including pediment areas in the Herbert and Jacobsdal Districts. The Kimberly Thornveld vegetation unit is located at an altitude of 1050-1400m with an average climate of 37.5 and -4.1ºc for January and July respectively. The Kimberly Thornveld is characterised plains which are slightly irregular with well-developed tree layer with *Acacia eriobla, A tortilis, A.Karoo* and *Boscia albitrunca* and well developed shrub layer with occasional dense stands of *Tarchonanthus camphoratus* and *A.mellifera,* with an open grass layer with much uncovered soil.

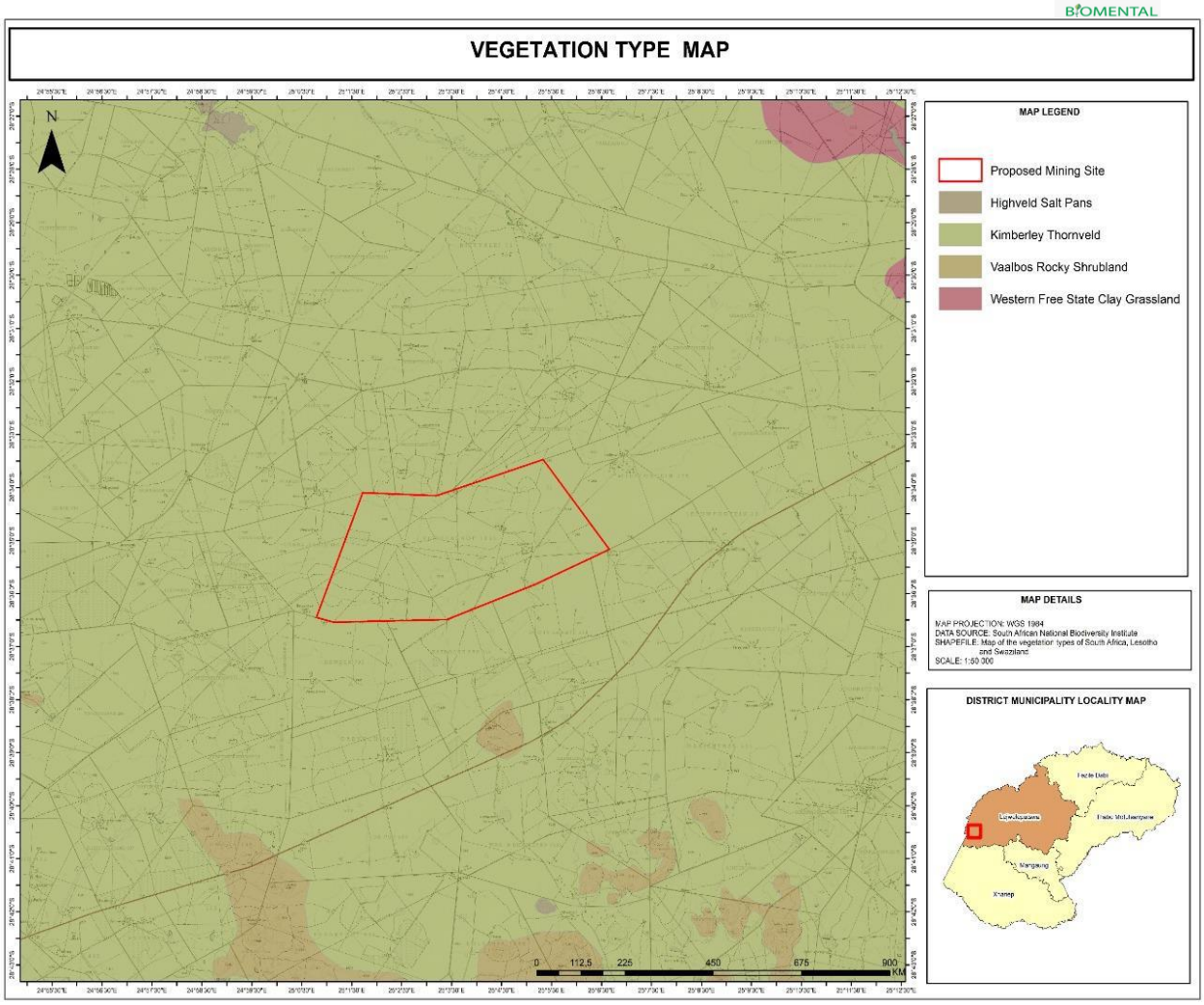


Figure 11: Vegetation Type Map

Some Important taxa found in the area

Tall Trees	*Acacia erioloba*
Small Trees	*Acacia Karoo, A tortilis subsp. Heteracantha, Rhus lancea*
Tall Shrubs	*Tarchonanthus camphorantus , Diospyros pallens, Ehretia rigida subsp.rigida, Euclea crispa subsp. Ovata, Grewia flava, Lycium arenicola, Rhus tridactyla*
Low Shrubs	*Acacia Hebeclada subsp hebeclada, Anthospermum rigidum subsp pumilum, Hermannia comosa, Lycium pilifolium, Pavonia burchellii*
Graminoids	*Eragrostis Lehmanniana, Aristida canescens, A. Congesta, Cymbopogon pospischilii, Eragrostis rigidor, Heteropogon contortus, Themeda trianda*
Herbs	*Barleria macrostegia, Dicoma schinzii, Aloe grandidentata, Piaranthus decipiens*

According to Mucina and Rutherford (2006:516) highlights that the conservation states of the Kimberly Lowveld is least threatened. With a target of 16% only 2% is conserved in Vaalbos National Park as well as Sandveld, Bloemhof dam and S.A. Lombard Nature Reserves. Erosion is very minimal and the vegetation unit is usually used for cattle farming and game ranching with an encroachment of *Acacia mellifera subsp. detinens* in overgrazed areas.

Priority Floral Species

No species found in the study area is listed in the 2009 Red Data Listing (RDL) nor has any threat status. No Orange Data species or species of conservation concern were observed based on overview desktop data investigations.

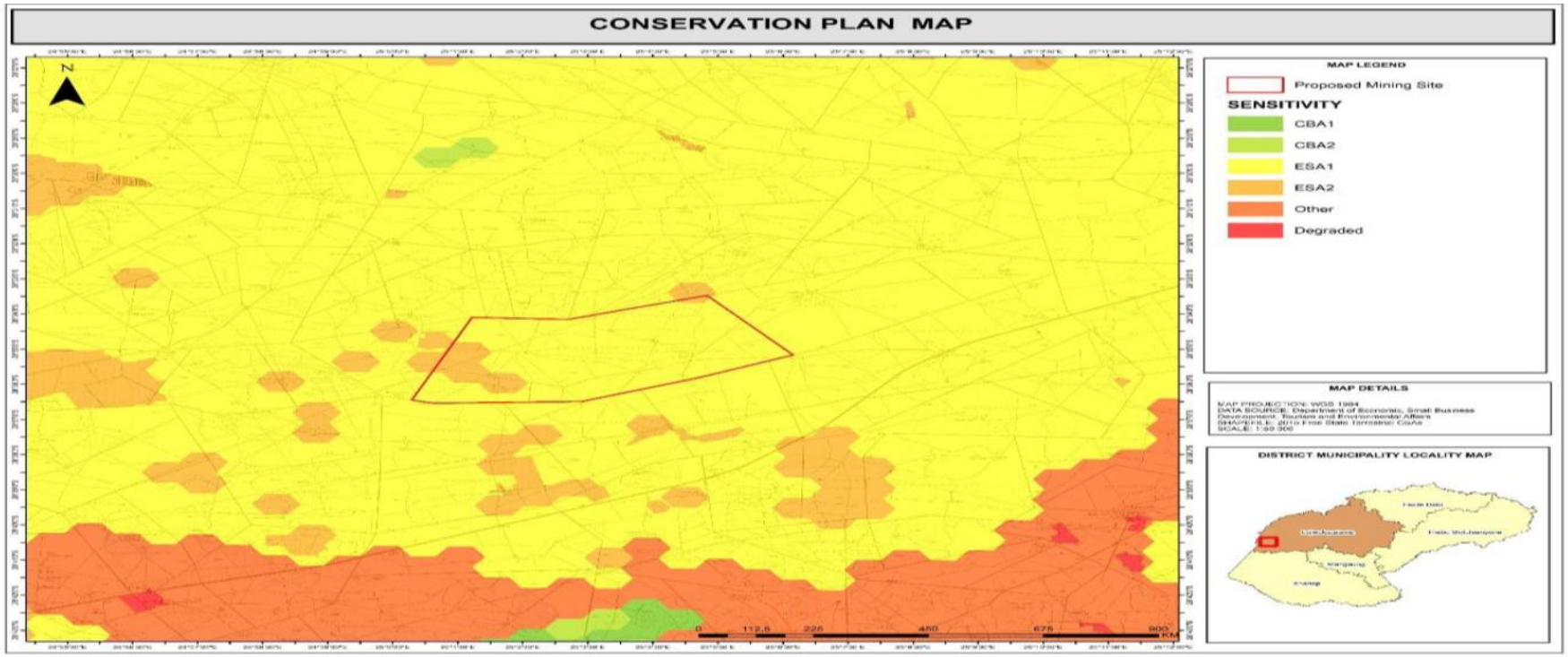
Protected Area status

According to the data for protected areas, no portions fall within a protected area.

Critical Biodiversity Areas

According to B-GIS "Critical biodiversity areas (CBAs) are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services", therefore the purpose of CBA's is simply to indicate spatially the location of critical or important areas for biodiversity in the landscape. According to the data for Critical Biodiversity Areas, the area of the proposed development site falls within an Ecological Support Area (ESA).

Figure:12 Critical Biodiversity Area Map



Sensitivity Areas

Based on a desktop data analysis, the area of the proposed development site has a LOW SENSETIVITY RATING as it is characterized by low shrublands with a bare landscape. Furthermore, the desktop analysis also confirms that the proposed development site sensitivity status is degraded due to impacts such as change in land use (Agriculture), overgrazing due to livestock farming, deforestation, uncontrolled veld fires, settlement development and desertification (See Figure 3). Furthermore, the proposed development site is located more than 500m away from any river catchment buffer zone or any natural water body or feature.

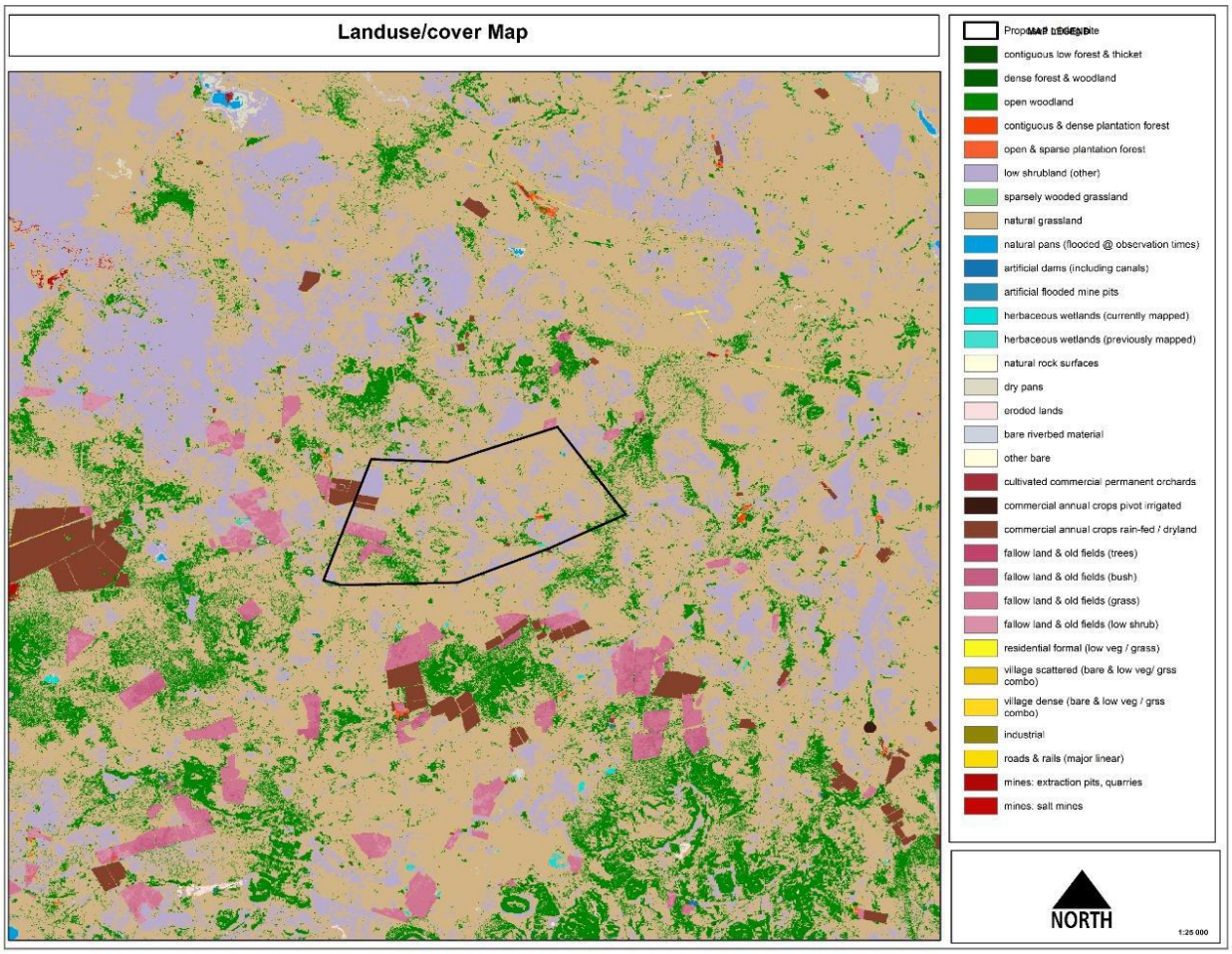


Figure 13: Sensitivity/Land cover Area Map

River Ecosystem Status

The status of the nearest river in question is largely modified (Class D) in this area. With only one NFEPA stream at the edge of the project area and a manmade dame that is being utilized for livestock purposes the figure below depicts the river ecosystem layout and river ecosystem. **See figure 14 below**

Figure 14: River Ecosystem Status

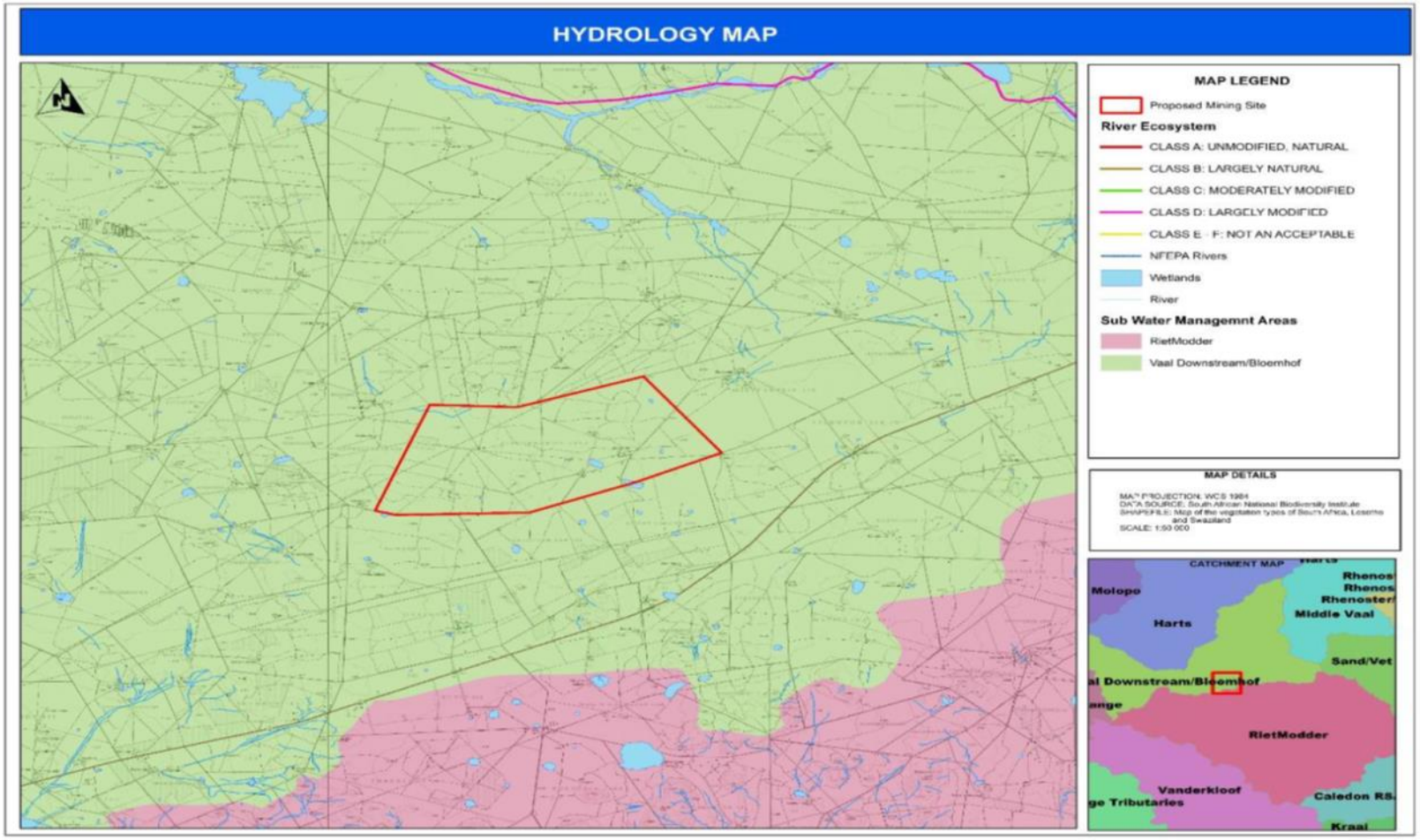
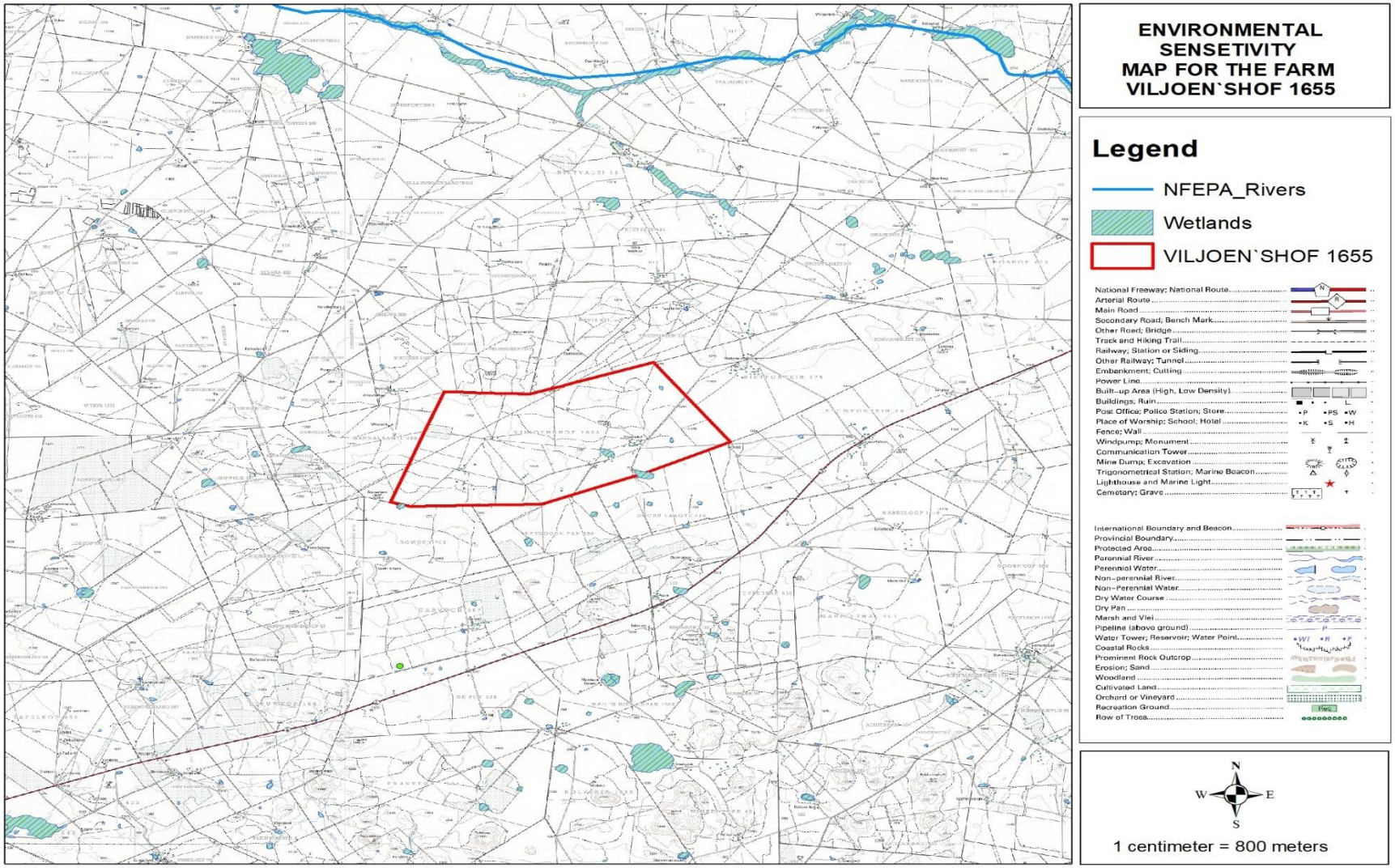


Figure 14: Environmental Sensitivity Map



5. IMPACTS AND RISKS IDENTIFIED

Table 12: Summary of Significant environmental impacts that have been identified.

Aspect	Nature of Impacts	Significance of Impacts				
		D	S	L	S	C
Topography						
Change in the Project surface area due to site clearing activities for the preparation of construction of infrastructure.	The removal of vegetation and topsoil will change the surface of the Project area and will therefore change the topography. The construction of surface infrastructure will add features to the topography thereby changing it. The development of surface infrastructure will add features to the topography while drilling and blasting will create voids thus changing the topography. Operation of the stockpiles, waste rock dumps and the TSF will add to the surface and thereby change the topography of the Project area.	Duration: Long-term (3) Spatial: Localised (1) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable(2)				
Change to topography due to construction of surface infrastructure.						
Changes to the topography due to drilling blasting and development of infrastructure for mining.						
Change in local topography due to the operation of surface infrastructure.						
Visual						
Site clearing activities influencing the visual Environment.	Removal of some vegetation will be required for earthworks. Some tall trees (mostly exotic Gums and Pines) would also be cleared for access ways and site	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2)				

Visual scarring of the landscape resulting from earthworks (cut and fill) Change in Visual Character from a Natural Landscape to a Mining landscape Visibility from R64 Route Visibility from sensitive receptors – farm dwellings adjacent to the Farm Night Lighting	infrastructure thereby increasing the visibility of the site and losing the 'wooded' visual resource. During construction, earthworks would create cut and fill of land would constitute visual scarring of the landscape The site is currently undeveloped and covered in wooded vegetation. Mining Operation and its associated activities would result in a change in visual character from a natural landscape to a mining landscape. The proposed development would be visible from the R64 route, approaching north of the property. The proposed Mining Operation would be visible from the surrounding farm dwellings The proposed Mining Operation and associated activities will require lighting which will have a visual impact at night. This will be visible to the surrounding areas and sensitive receptors in these areas.	Likelihood: May occur (3) Certainty: Probably(2)

Flora and Fauna		
Loss of Impacted vegetation due to construction activities. Loss of general biodiversity Loss of flora and fauna Species of Special Concern. Influx of alien invasive species.	Mine construction activities will lead to the loss of impacted vegetation thus impacting the biodiversity value of the areas affected. The construction and operation of the mining infrastructure will lead to the potential loss of general biodiversity within the Project Area, thus decreasing the biodiversity value of the areas affected. The construction and operation of the mining infrastructure will lead to the potential loss of flora and fauna Species of Special Concern (SCC). Construction, operation and decommissioning activities may cause the uncontrolled influx of alien invasive species within and around the Project area	: Short-term (1) Spatial: Localised (2) Significance: high (3) Likelihood: Definitely (4) Certainty: Possible(2)
Surface Water		

Surface water run-off	Oil and grease spills from construction vehicles may enter the construction site resulting in surface water contamination by a hazardous substance	Temporal: Short-term (1) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable(2)
Soil		
Soil compaction and topsoil loss due to erosion Impact of site rehabilitation on soil and land capability	Activities during early works, construction and operational phase in the Project area could lead compaction of soils and soil erosion. During the decommissioning activities, impacts to soil resources may include compaction and contamination which may be significant only in the short term.	Duration: Short-term (1) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable (2)
Underground Water		
Impacts on underground water Wetland	Refuelling of Machineries which may result in contamination of underground water when not done properly. Tailings Slime dam spills	Temporal: Mid-term (2) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable
Air Quality		
Dust emissions effect on neighbouring farm properties Blasting and Vibration	Movement of mining vehicles and its operational related plants will directly or indirectly induce dust emission • Increased noise and vibration nuisance; • Damage to structures; • Loss of productivity of farm animals due to vibration;	Duration: Short-term (1) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable (2)

	• Damage to roads; • Damage to boreholes; • Air blast; • Pollution of borehole water; • Fly rock; and • Noxious fumes.	
Culture/Heritage/Archaeology		
Grave disturbances and archaeological sites: Potential cultural, heritage or aecheological settings disturbances due to mining activities.	Impact on the archaeological items or of significance during mining Uncovering of graves or items of archaeological significance	Duration: Medium term (2) Spatial: Site (1) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible(2)
Noise		
Noise: Increased ambient noise due to activities	Movement of construction and operation vehicle onsite may potential increase noise and impact on the neighbouring farms Operation of equipments, generators and heavy earthmoving plant Processing Plant General noise	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2) Likelihood: May occur (3) Certainty: Probably(2)
Traffic and Road Safety		
Potential of traffic impact resulting from mining acitivy	Increase traffic volumes along R64	Duration: Long-term (3)

	Impact on the R64 road Road Accidents Animal Fatality or Injuries Noise Dust	Spatial: Regional (3) Significance: High (3) Likelihood: Highly probable (3) Certainty: Possible(2)
Health and Safety		
Safety concerns during construction and operation and the entire duration of the mine	Impacts on physical and psychological health: Reduced quality of life	Duration: Short-term (3) Spatial: Localised (2) Significance: high (3) Likelihood: May occur (3) Certainty: Probably
Land Capability		
Soil contamination Soil Erosion Land degradation	Changes in Soil's physical, chemical and biological properties.	Duration: Mid-term (2) Spatial: Site (1) Significance: Medium (2) Likelihood: May occur (3) Certainty: Possible(2)
Social Impacts		

Construction phase and Operational phases	Job creation during construction Multiplier effects on the local economy Economic empowerment of communities Skills transfer and development Community development induced by Local Economic Development (LED) and Corporate Social Initiatives (CSI) projects Economic displacement Disruption of movement patterns Construction-related health and safety impacts Visual/acoustic/vibration and air quality impacts Increase in spread of communicable diseases and social pathologies Conflict/competition between newcomers and incumbent population Increased pressure on local services/ resources Establishment and growth of informal settlements Opposition because of perceived negative impacts Job creation during operation Regional economic development Dependency on mine for sustaining local economy Operation-related health and safety impacts	Duration: Short-term (3) Spatial: Localised (2) Significance: high (3) Likelihood: May occur (3) Certainty: Probably (2)

6. METHODOLOGY IN DETERMINING AND RANKING POTENTIAL ENVIRONMENTAL IMPACT AND RISKS

- Methodology to be used in identifying and ranking risks

The following parameters were used to describe the impact/issues in this assessment:

i. Nature

A brief written statement of the environmental aspect being impacted upon by a particular action or activity.

ii. Extent

The area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact.

- **Site (1)** – Within the construction site.
- **Local (2)** – Within a radius of 2 km of the construction site.
- **Regional (3)** – the scale applies to impacts on a provincial level and parts of neighbouring provinces.
- **National (4)** – the scale applies to impacts that will affect the whole South Africa.

iii. Duration

Indicates what the lifetime of the impact will be.

- **Short-term (1)** – less than 5 years.
- **Medium-term (2)** – between 5 and 15 years.
- **Long-term (3)** – between 15 and 30 years.
- **Permanent (4)** – over 30 years and resulting in a permanent and lasting change that will always be there.

iv. Intensity

Describes whether an impact is destructive or benign.

- **Very High (4)** - Natural, cultural and social functions and processes are altered to extent that they permanently cease.

- **High (3)** - Natural, cultural and social functions and processes are altered to extent that they temporarily cease.
- **Moderate (2)** - Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way.
- **Low (1)** - Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.

v. Probability

Describes the likelihood of an impact actually occurring.

- **Improbable (1)** - Likelihood of the impact materialising is very low.
- **Possible (2)** - The impact may occur.
- **High Probable (3) -** Most likely that the impact will occur.
- **Definite (4) -** Impact will certainly occur.

vi. Cumulative

In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

vii. Significance

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

Low impact (4 - 6 points)	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.
Medium impact (7 - 9 points)	Mitigation is possible with additional design and construction inputs.
High impact (10 - 12 points)	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.

Very High impact (13 - 16 points)	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a "very high impact" is likely to be a fatal flaw.
Status	Denotes the perceived effect of the impact on the affected area.
Positive (+)	Beneficial impact.
Negative (-)	Deleterious or adverse impact.
Neutral (/)	Impact is neither beneficial nor adverse.

viii. Degree of confidence or certainty

It is also necessary to state the degree of certainty or confidence with which one has predicted the significance of an impact. For this reason, a 'degree of certainty' scale has been provided to enable the reader to ascertain how certain we are of our assessment of significance:

- **Definite** – More than 90% sure of a particular fact. The use this one will need to have substantial supportive data.
- **Probable** – Over 70% sure of a particular fact, or of the likelihood of that impact occurring.
- **Possible** – Only over 40% sure of a particular fact or of the likelihood of an impact occurring.
- **Unsure** – Less than 40% sure of a particular fact or the likelihood of an impact occurring.

7. POSITIVE AND NEGATIVE IMPACTS AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT

During the construction and operation of the mine, there is a possibility that equipment might leak oil, thus causing surface spillages. The hydrocarbon soil contamination will render the soil unusual unless they are decontaminated. The storage of fuels on site might have an impact on soil if the tanks that are available on site are not properly monitored and maintained to avoid leakages. There is potential that contaminated soil may be carried through runoff to contaminate water resources (underground) and soil stockpiled for rehabilitation. Soil pollution is therefore possible, but through mitigation it can be minimised. If oil and fuel spillages occur, then it will seep into the underlying aquafers and contaminate ground water. Improper handling of hazardous material will cause contamination of nearby surface water resources during runoff events. This may have direct impact on farm property borehole that are primary used for the provision of water for animals, livestock and agricultural farming. Lack of storm control structures may lead to erosion of stockpiles during heavy rains and runoff by washing away suspended solids into the downstream environment. This will potentially trigger undulation of surfaces and erosion leading to land infertility and proliferation of Alien invasive plants on the farm.

During construction and operation of the mine, there is a possibility of sterilisation of the mineral reserves and resources due to improper placement of infrastructure. The infrastructure and slimes dam will alter the topography by adding features to the landscape. Topsoil removal and tailings reclamation will unearth the natural topography. The construction of infrastructure and various facilities in the mining area can also result in loss of soil due to erosion. Vegetation where present will be stripped in preparation for placement of infrastructure and loading, and thereby areas will be left exposed and susceptible to erosion. The topsoil that is stripped and piled on surrounding areas can be eroded by wind and rain. The soil will be carried away during runoff. The declared areas will be rehabilitated, but full restoration of soil might only occur over a number of years, subsequent to the re-establishment of vegetation. Furthermore, improper stockpiling and soil compaction can result in soil sterilisation. Leaching can also occur, resulting in the loss of nutrients.

The alteration of natural habitats to mining and associated infrastructure will result in the loss of habitat affected individual species, and ecological processes. In turn this will result in the displacement of faunal species dependent upon such habitat. Increased noise and vibration due to mining activities will disturb and possibly displace birds and other wildlife. Fast moving vehicles take a heavy toll in the form of fatality and injury to small mammals, birds, reptiles, amphibians and invertebrates. The construction of the mine and associated infrastructure will result in the loss of connectivity and fragmentation of natural habitat. Fragmentation of habitat will lead to the loss of migration corridors, in turn resulting in degeneration of the affected population's genetic make-up. This results in a subsequent loss of genetic variability between meta-populations occurring within the site. Pockets of fragmental natural habitats hinder the growth and development of populations. Construction and mining activities on site will reduce the natural habitat for ecological systems to continue their operation. It is not expected that the areas of high ecological function will rehabilitate following disturbance events. Vehicle traffic generates lots of dust which can reduce the growth success and seed dispersal of many small plant species. It is anticipated that the extent of dust emissions would vary considerably from day-to-day contingent on the level of activity and the precise operations.

The mine will enhance a certain amount of noise to the existing noise in the area. However, levels of noise generated by mining activities are low. The impact of site generated trips on the traffic of the existing roads is projected to be low. Nevertheless, if road safety Is not managed it can have a high impact on the safety of road users.

The loss of land capability and land use can occur in two ways. Firstly, through topsoil removal, disturbances and loss of soil fertility; and secondly through the improper placement of infrastructure. The site has a land capability for limited grazing, agricultural farming, while general clearing of the area and mining activities destroy natural vegetation, invasive plants can increase due to their opportunistic nature in disturbed areas. If invasive plant invades in disturbed areas, it may cause impacts beyond the boundaries of the mining site. These alien invasive species are thus a threat to

surrounding natural vegetation and can result in the decrease of biodiversity and ecological value of the area. Therefore, if alien invasive species are not controlled and managed, their propagation into new areas could have a high impact on the surrounding natural vegetation in the long term. However, with proper mitigation, the impacts can be substantially reduced.

The mining operation, particularly during construction, will create a number of new employment prospects. The degree of this impacts will be contingent on the number of people that will be employed and the number of contractors sourced. An incursion of people into the area will conceivably impact on safety and security of local residents. During the decommissioning and at closure of the mine, staff will most likely be retrenched. This can potentially flood the job market, resulting in people being unable to find new employment for a long period of time. It is normally more difficult for people with highly specialised skills to find employment proximately. Those with fewer skills have more suppleness in the job market.

Economic slump of the local towns after mine closure is an associated potential impact, while small due to the small scale of the operation. Income streams from wage bills as well as goods and services contracts (at all geographical levels} will come to an end, reducing the monetary income of individuals and mine-related businesses. People who have derived income directly or indirectly from the project may be persuaded to leave the region in search of employment or business opportunities. This could result in further waning of the economy of the region as well as the desertion of infrastructure and loss of revenue on property developers. The loss of the mine workforce income will also impact upon non-mine related industries within the local and regional areas, particularly the rental property market and retail and service industries who would have received income during the life of mine from the salaried workforce.

It is probable, however that there will be residual positive economic impacts that are not fully reversed with the closure of the mine, and that the economy will not decline to its original level prior to the development of this project. This is because the mine will generate substantial income for the regional and local economy, both directly and indirectly, during its life. It is difficult to predict the actual impact of the mine closure in advance, but it is however acceptable to assume that the mine closure will have a negative impact on the local and regional economy with a high probability of occurrence, a high severity and a high significance. Positive impacts include employment and training opportunities for people in the local community and local contractors, social upliftment and community development programmes, economic benefits. The mine will contribute to economic growth through job creation and South Africa GDP. The mine will also fulfil it social responsibility as outlined in the S&LP by uplifting the community through initiative working together with Tokologo Local Municipality

8. THE POSTIVE MITIGATION MEAUSURES TO BE APPLIED TO LEVEL THE RISK

Topography

Mitigation measures

- Do controlled dumping at the new tailings dump facility.
- Stabilise the mine residue deposits.
- Employ effective rehabilitation strategies to restore surface topography of tailings dumps and plant site.
- Pick up all tailing material up to natural ground level.
- Stabilise underground workings.
- All temporary infrastructures will be demolished during closure.

Flora species

Mitigation measures

- Footprint areas of the mining activities must be scanned for Red Listed and protected plant species prior to mining.
- It is recommended that these plants species be identified and marked prior to mining.
- These plants should, where possible, be incorporated into the design layout and left in situ.
- However, if threatened of destruction by mining, these plants should be removed (with the relevant permits from the relevant Competent Authority) and relocated If possible.
- A management plan should be implemented to ensure proper establishment of ex situ Individuals, and should include a monitoring programme for at least two years after re-establishment in order to ensure successful translocation.
- Encourage the growth of natural plant species.
- Ensure measures for the adherence to the speed limit.
- Minimise the footprint of transformation.
- Encourage proper rehabilitation of mined areas.
- All employees on site must be educated about the conservation importance of the fauna and flora occurring on site.

Alien Invasive Species

Mitigation measures

- Mechanical methods(hand-pulling} of control to be implemented extensively.
- Encourage the growth of natural plant species.
- Encourage proper rehabilitation of mined areas.
- Minimise the footprint of transformation.
- Annual follow-up operations to be Implemented.

Fauna Species

Mitigation Measures

- Careful consideration is required when planning the placement for stockpiling topsoil and the creation of access routes in order to avoid the destruction of habitats and minimize the overall mining footprint.
- The appointment of a full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance. The ECO must ensure that all contractors and workers undergo Environmental induction prior to commencing with work on site.
- No poaching of animals will be allowed onsite.
- Speed limit of 40 km/hr will be enforced and be implemented.
- This is to prevent fatality or injuring of animals by construction vehicles and earthmoving plants
- Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert.
- The environmental induction must be conducted in languages understandable to the workers who may require translation from English.
- The extent of the mine should be demarcated on site layout plans, and no construction personnel or vehicles may leave the demarcated area except those authorized to do so.
- Those areas surrounding the mine site that are not part of the demarcated development area should be considered as a no-go zone for employees, machinery or even visitors.
- All personnel on site must be educated about the conservation importance of the fauna and flora occurring on site.

Habitat

Mitigation measures

- Mining activities must be planned, where possible in order to encourage faunal dispersal and should minimize dissection or fragmentation of any important faunal habitat type.
- The extent of the mining area should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance).
- No construction personnel or vehicles may leave the demarcated area except those authorized to do so.

Underground water

Mitigation measures

- Spill kits to clean up accidental spills from earthmoving machinery must be well- marked and available on site.
- Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.
- Ground water monitoring system must be put in place.
- Monitoring of ground water level on monthly bases.
- Monthly ground water test must be done.
- Water recycling facility must be established
- Water use records must be reconciled on daily and monthly bases.
- Slime dams must be desired in such that it prevent seepage and run off into underground water.
- Tailing storage facility must be desired in manner that there are no seepage and run off into underground water and other water bodies.

Surface water

Mitigation measures

- Infrastructure must be located away from water bodies.
- Fuel/diesel containers must be placed within a bund wall and far from any water course or body to prevent accident contamination.

- OII residue must be treated with oil absorbent and be disposed to an approved waste site.
- Spill kits must be easily accessible and workers must undergo induction regarding the use thereof.
- If servicing and washing of the vehicles occur on site, there must be specific areas constructed for these activities, which must have concrete foundations, bunding as well as oil traps to contain any spillages. Wash bay area must be designated and used for that purpose under norms and standards.
- At all times care should be taken not to contaminate surface water resources.
- Store all litter carefully to prevent it from washing away or blown into any of the drainage channels the area.

Soil Erosion

Mitigation measures

- Re-establishment of plant cover on disturbed areas must take place as soon as possible, once activities in the area have ceased.
- The soil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion.
- The mining operation must co-ordinate different activities in order to optimize the utilization of the tailings reclamation operations and thereby prevent repeated and unnecessary dumping.
- All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosional induced losses.
- The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers.
- Ground exposure should be minimized in terms of the surface area and duration, wherever possible.
- Stockpiles susceptible to wind erosion are to be covered during windy periods.

  Excavated and stockpiled soil material are to be stored and berms on the higher laying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate.

- At no point may plant cover be removed within the no-development zones.
- All attempts must be made to avoid exposure of dispersive soils.
- Audits must be carried out at regular intervals to identify areas where erosion Is occurring.
- Appropriate remedial action, including the rehabilitation of the eroded areas, must occur.
- Rehabilitation of the erosion channels and gullies.
- The mining operation should avoid steep slopes.

Surface contamination

Mitigation measures

- All facilities where dangerous materials are stored must be contained in a bund wall.
- Spill kits to clean up accidental spills from earthmoving machinery must be well- marked and available on site.
- Refueling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.
- Drip trays must be inserted underneath leaking construction vehicles, earthmoving plants, machineries.
- Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.
- Hydrocarbon spillages must be cleaned immediately upon occurrence.
- All spills must be stored separately in a designated waste receptacle or spill bin.
- All hydrocarbons must be disposed at a registered landfill site.
- Proof of waste disposal or disposal slips must be generated and kept onsite.
- All environmental incidents that include surface contamination will be recorded in an incident register.
- Vehicles and machinery must be regularly serviced and maintained.

Land Capability and Land Use

measures

- Surface agreement must be signed with land owners.
- Ensure that optimal use is made of the available land through consultation with land owner

and proper planning of mining activities.

- Employ effective rehabilitation strategies to restore land capability and land use potential of the farm.
- Ensure that land which is not used during construction is made available for grazing.
- All activities to be restricted within the demarcated areas.

Alien Invasive Plants

Mitigation measures

- Maintaining vegetation cover to prevent proliferation of alien species
- Avoid clearing of vegetation as much as possible
- Where possible site infrastructure must be located on already disturbed area to prevent clearing.
- Minimize the footprint of transformation.
- Encourage proper rehabilitation of mined areas.
- Encourage the growth of natural plant species.
- Mechanical methods(hand-pulling} of control must be implemented extensively.
- Annual follow-up operations must be implemented.

Air quality

Mitigation measures

- Vegetation must be removed when soil stripping is required only. These areas should be limited to include those areas required for mining only, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken.
- Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression.
- Where it is logistically possible, control methods for gravel roads should be utilized to reduce the re-suspension of particulates.
- Feasible methods include wet suppression, avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads.
- The length of time where tailing reclamation areas are exposed should be restricted.
- Mining should not be delayed after vegetation has been cleared and topsoil removed where

possible.

- Dust suppression methods should, where logistically possible, be implemented at all areas that may/are exposed for long periods of time.
- For all mining activities, management must undertake to implement health measures in terms of personal dust exposure, for all its employees.

Noise and Vibration

Mitigation measures

- Standardized noise measurements should be carried out on individual equipment at the delivery to site to establish a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in noise impact overtime and increased complaints.
- Environmental noise monitoring should be carried out at regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.
- Restrict mining activities to day time unless agreements obtained to do 24hr operations.
- Where possible material stockpiles should be placed so as to protect the boundaries from noise to individual operations.
- Systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events.

Visual Impacts

Mitigation measures

- Dust suppression procedures should be implemented especially on windy condition during earth works.
- Siting of the proposed mining operation and related activities, including support site infrastructure and equipment according to the inherent site sensitivity.
- The physical reforming of the landscape for development, such as terracing and cut – to fill for roads, pitting and trenching, must be designed in such a way to minimize the visual impact, to this end an Environmentalist must be employed at the early stages to work with the Mining Engineers developing this plan;

- Limiting heights and footprints of ore and soil stockpiles;
- Providing mining, processing and rehabilitation guidelines
- Retaining as many of the existing large Pine and Gum trees as possible;
- Extensive landscaping along access routes and between site infrastructure; and
- External lighting restrictions and guidelines
- Where practical, protect existing vegetation clumps in order to facilitate screening during the mining operation.
- Rehabilitation should aim to establish a diverse and self-sustaining surface cover that is visually and ecologically representative of naturally occurring vegetation species.
- Remove rubble and other building rubbish off site as soon as possible or place it in a container to keep the mining site free from additional unsightly elements.
- Infrastructure should be placed to optimize the natural screening capacity of the vegetation.
- Implement a management plan for the post-mining site to control the invasion of alien vegetation and to manage erosion, until the site is fully rehabilitated.

Traffic and Roads Safety

Mitigation measures

- Roads signs must be erected on or along the access road and internal roads.
- Site sign rules must be placed at the entrance and must include speed limits
- Warning signs must be placed on the road to alert traffic users to be on a look out for animal stray and crossing on the road.
- Implement measures that ensure the adherence to traffic rules.
- Maintenance of the roads must be done at all times to ensure safety for traffic users. Traffic assessment and Traffic management plan must be done in consultation with The Department of Police, Roads and Transportation.

Heritage Resource

Mitigation measures

- All stone tool artefacts should be recorded, mapped and collected before destruction.
- Should development necessitate impact on any building structures, the developer should apply

for a SAHRA Site Destruction Permit prior to commencement of construction.

- The heritage and cultural resources if any are encountered (e.g. graveyards, ruins, historic structures, etc.) must be protected and preserved by the delineation of no-go zones.
  Stone tools should be avoided where possible and fresh exposure should be recorded before destruction.

Socio-Economic Level

measures

- Local community must be prioritized in terms of job opportunities and business opportunities.
- Jobs must be allocated as advertised and in so far as is possible to local deserving residents.
- The mine must ensure that unrealistic expectations are not created regarding jobs and business opportunities.
- The mine must ensure as practically as possible to procure local goods and services from within the mine community (Boshof).
- The expectations of what benefits can accrue to the community must be managed from the initiation of the project
- A community Liaison Officer should be appointed and be responsible in dealing with the community and labor issues. Preferable the CLO should reside from the mine community.
- Commitments as set out in the SLP must be implemented.

Interested and Affected Parties

Mitigation measures

- Maintain active communications with I&APs.
- Ensure transparent communication with I&APs at all times.
- I&APs must be kept up to date on any changes in the mining operation.
- A complaints management system should be maintained by the mine to ensure that all Issues raised by community members are followed up and addressed appropriately.

9. MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED.

No property / site alternatives were considered for this project. Properties are delimited by the

properties available for prospecting and/or mining (i.e. not held by another company); and the geology of the area.

10. STATEMENT MOTIVATING PREFERRED SITE

The preferred site layout is depicted in Figure 1. The overall mine and infrastructure layout has taken into account the environmental sensitivity of the site, and infrastructure has been placed to avoid or minimize environmental impacts as far as possible. The prospective work program was confined to non-invasive prospecting works through the use of geophysical survey (electromagnetic and magnetic), soil sampling and google earth satellite image. This have limited Further prospecting combine of trenching/pitting with bulk sampling, drilling (as per approved Prospecting Work Program and EMP) and additional geophysical survey. However, the data collected through non-invasive Geophysical surveys (magnetic and electromagnetic) and kimberlite targets outlines derived from satellite image confirmed presence of a number of additional anomalies. Mineral chemistry of kimberlitic indicator minerals (pyropic garnets, Cr-spinels and clinopyroxenes) confirms high diamond potential of several targets. Geochemistry of kimberlites is also indicative of high interest mantle source. Taking into account that magnetic anomalies often do not coincide with the real body contour at surface and sometimes are completely shifted from the real body contour at surface, distinctive vegetation anomalies observed on the Google Earth satellite image have more weight in terms of target modelling

11. DESCRIPTION OF PROCESS UNDERTAKEN TO IDENTIFY IMPACTS AND RISKS

In terms of Appendix 3 (k) of GNR 982, an environmental impact assessment report must include:

- A summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final Assessment report

Specialist studies assisted with the development and understanding of the system processes and the potential impacts of the proposed development on both the biophysical and social environments. The following specialist were conducted to augment this EIAR:

- Ecological Report;

- Geo-hydrological Studies;
- Archaeological and Heritage Impact Assessment; and
- Social Labour Plan
- Wetland Study
- Surface water study
- Traffic Impact Study
- Socio-Economic Study
- Air quality Study
- Visual Impact Study

Each issue was assessed and mitigation measures proposed such that impacts will be minimised or negated. It is this assessment that allowed the EAP to make an informed analysis and provide an opinion of the proposed development.

In line with the requirements of the NEMA EIA Regulations, this EIA Report provides a detailed description of the pre-development environment, specifically in terms of the biophysical and socio-economic environment of the study area. Furthermore, the report provides a comprehensive description of the activities as well as numerous specialist studies that were undertaken for the EIA Phase and Public Participation Process (PPP), as well as the way forward in the form of conclusions, recommendations and Environmental Management Programme Report (EMPr). The Scoping and EIAR describes the activities related to the proposed development Diamond Kimberlites and Diamond General. A detailed description of the surrounding land use is provided, ensuring that all the environmental aspects are highlighted

Table: Assessment of each identified potentially significant impact and risk

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE In which impact is anticipated	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE
RATING: **D=Duration** **S=Spartial** **S=Significance** **L+Likelihood** **C=Certainity**						
Processing Plant	• Dust • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Underground water contamination	• Air quality • Fauna • Flora • Noise • Soil • Surface water • Underground water • safety	Construction Operation Decommissioning Closure	D: Long-term (3) S: Localised (2) S: High(3) L:Definitely (2) C:Possible	• Access control • maintenance of processing plant • dust control and monitoring • drip trays • Storm water run-off control • Immediately clean hydro spills • Rip disturbed areas to be allowed for re-growth of vegetation cover • noise control • well maintained equipment	D:Mid-term (2) S: Site (1) S: Medium(3) L:Improbable (1) C:Unsure

	• Surface disturbance				• selecting equipment with lower sound power levels • installing suitable mufflers on engine exhausts and compressor components • develop a mechanism to record and respond to complaints	
Ablution facilities	• Soil contamination • Possible groundwater contamination	Soil and underground contamination	Construction Operation Decommissioning Closure	D: Mid-term (2) S: Localised (2) S: Medium (2) L:Possible (2) C:Possible	• Maintenance of ablution facilities. • Weekly disposal of sanitary waste. • Waste disposal slips must be generated and recorded	D: Short-term (1) S: site (1) S: Low (1) L: Improbable (1) C: Unsure
Clean &Dirty water system:Water recycling plant	• Surface disturbance • Underground water contamination	• Soil • Underground water • Surface water	Construction Operation Decommissioning Closure	D: Long-term (2) S: Localised (2) S: High (3) L:Possible (2) C:Possible	• Regular maintenance and monitoring of the plant • Access Control • Storm water management	D: short-term (1) S: site (1) S: low (1) L: Improbable (2) C:Possible

	• Soils contamination Surface water contamination				• Erosion control measures	
Fuel Storage Facility	• underground water contamination • removal and disturbance of vegetation cover and natural habitat of fauna • soil contamination surface disturbance	• soil • underground water contamination • surface water	Construction Operation Decommissioning Closure	D: Long-term (2) S: Localised (2) S: High (3) L:High Probable (3) C:Probable	• Maintenance of diesel tanks and bund walls. • Drip trays at refuelling point • Oil traps • Immediate clean hydrocarbon spill • maintenance of diesel tanks and bund walls, • oil traps • drip tray at re-fuelling point • refuelling must take place in a well demarcated areas and over suitable drip trays to prevent soil pollution. • Spill kits to clean up accidental spills from earthmoving machinery must be well marked and available on site, • Workers must undergo induction to	D: Mid-term (2) S: Site (1) S: Mid (2) L:Possible (2) C:Possible

					ensure that they are prepared for rapid clean-up procedures • All facilities where dangerous materials are stored must be contained in a bund wall, • Vehicles and machinery should be regularly serviced and maintained	
Mining Area	Dust Noise Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance Surface water contamination	• Air quality • Fauna • Flora • Visual impact noise	Construction Operation Decommissioning Closure	D: Long-term (3) S: Localised (2) S: Very High (4) L: High Probable (3) C: Definite	• No dumping of materials prior to approval. • Proper planning of the open pit • Access control • Dust control and monitoring • Continuous rehabilitation • Stormwater run-off control • Immediate clean-up of hydrocarbon spill • Drip trays • Dump control and monitoring of erosion control • Access control • Dust control and protection of	D: Mid-term (2) S: site (1) S: Medium (2) L: Possible (2) C: Possible

					important faunal habitat • The extent of the mining area should be demarcated on the layout plans (preferable on disturbed areas or those identified with low conservation importance). • No construction personnel or vehicles may leave the demarcated area except those authorised to do so. • Those areas surrounding the mine site that are not part of the demarcated development area should be considered as no go zone for employees, machinery or even visitors. • Appointment of a full time ECO must render guidance to the stuff and contractors with respect to suitable	

					areas for all related disturbances, and must ensure that all contractors and workers undergo Environmental induction prior to commencing with work on site • All those working on site must undergo Environmental induction with regard to fauna and in particular awareness about conservation of species such as tortoise, snakes, owls which are most likely to poached as a result of cultural superstations or for spiritual or medicinal uses. • All those working on site must be educated about the conservation importance of fauna and floral occurring on site. • The Environmental induction must be	

					conducted at least using local language to be understood by workers. • Reptiles and Amphibians species that are exposed during the clearing activity or operation, should be captured for later translocation by a qualified expert. • Careful consideration is required when planning the placement for stockpile topsoil and the creation of access routes in order to avoid the destruction of habitant and minimise the overall mining footprint. • The footprint areas of the mining activity must be scanned for Red listed and protected plant species prior to mining; snare or traps removed and destroyed; and	

					maintenance of firebreaks. • The re-vegetation disturbed area is important to prevent erosion and improve the rate of infiltration. • Erosion channels that may develop before vegetation has established should be rehabilitated by filling, levelling by filling, levelling and re-vegetation where topsoil is washed away	
Salvage yard (Storage and laydown)	• Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination	• Fauna • Flora • Underground water • Soil Surface water	Construction Operation Decommissioning Closure	D: Mid-term (2) S: Site (1) S: Medium (2) L: Probable (2) C: Possible	• Access control • Maintenance of fence • Storm water run-off • Immediate clean-up of hydrocarbons	D: Short-term (1) S: Site (1) S: Low (1) L: Improbable (1) C: Possible

	• Surface water contamination • Underground water contamination					
Waste disposal site (domestic and Hazardous waste)	• Underground water contamination • Contamination of soil • Surface water contamination	• Underground water • Soil • Surface water	Construction Operation Decommissioning Closure	D: Long-term (3) S: Localised (2) S: Mid (2) L: Probable (2) C: Possible	• Storage of waste within receptacles • Storage of hazardous waste on concrete floor with bund walls • Removal of waste on regular interval • Waste separation on marked receptacles • Waste bins must be branded for different type of waste generated • Hazardous waste must be disposed and collected by licensed land fill site • storage of waste within receptacles • storage of hazardous waste on concrete floor with bund wall. • Removal of waste on regular interval • Practice waste separation at source	D: Low-term (3) S: Site (1) S: Low (1) L: Probable (2) C: Possible

Tailing Storage Facility(TSF)	• Surface water overflow • Failure of TSF • Erosion of outer face of TSF Seepage from TSF	• Topography • Flora • Fauna Land degradation	Construction Operation Decommissioning Closure	D: Long-term (3) S: Localised (2) S: Mid (2) L: Probable (2) C: Possible	• Regular updating of the water balance modelling of the site water management system, to minimise overflow risk. • Regular inspection of the decant system, to ensure efficient operation • Regular inspection of embankment integrity to be undertaken. Monthly piezometric monitoring of phreatic surface levels within embankment. • Independent annual inspections. • Regular inspection of rock face integrity to be undertaken • Ongoing monitoring of seepage rates through recovery bores and observation bores. Monthly inspection for evidence of seepage • Monitoring the performance of the	D: Mid-term (3) S: Site (1) S: Low (1) L: Probable (2) C: Possible

					TSF is an important component of demonstrating that the design assumptions and mitigation measures are effective in controlling the potential environmental impacts from the TSF, both during operations and after closure. Monitoring data must be compiled and assessed at regular intervals and reported as part of the mine's annual environmental monitoring report. • TSF will have an operation and management plan (operating manual) that is available to all personnel, local inhabitants, government inspectors and other relevant stakeholders. All documents relating	

					to planning, design and construction will be maintained in an accessible way, with records kept permanently for future reference • The contractor/mine will monitor the TSF in accordance with the operation and management plan, as approved by the competent authorities. • The Mine/contractor(s) will implement internal emergency plans and apply them on-site • whenever a tangible risk of a potential major accident that may occur has been identified, when an uncontrolled event occurs that could lead to a major accident, or when a major accident has occurred. The mine operators should review, test, revise	

					and update the internal emergency plans periodically, and always when there has been a change in the mine operation and management • The mine/ECO should notify the competent authorities in the event of emergencies that have occurred on the site. • The mine should cooperate with the competent authorities and local communities in preparing external emergency plans. • Train all personnel and reinforce and update their safety knowledge, in particular with regard to how to identify potentially harmful events and/or circumstances	

					• Implement safety audits for the facilities and promote the use of environmental management systems based on local, National or international standards • The tailings dam, for which the following parameters need to be assessed accurately; ➢ The slope stability of the dam; ➢ The strength and stability of the foundation for the dam; ➢ The stability of the tailing material (induced liquefaction); ➢ Erosion to the dam (suffusion and outside erosion);	

					➢ Water recovery systems ➢ Emergency spillways; ➢ Slope sliding; • The dam-raising method should be chosen with regard to the local conditions (e.g., seismicity, tailings composition, severe climate). Special attention has to be given to quality control and site supervision during the starter works construction phase of the TSF • Additional impoundments should be designed to contain inflow from emergency outlets. • Hazardous substances and process water should be reused as far as technically possible (recycling) and, in case it is not possible	

					to recycle hazardous substances, they should be neutralized before they are discharged into the TSF • The tailings dam, for which the following parameters need to be assessed accurately; • The slope stability of the dam; • The strength and stability of the foundation for the dam; • Regular updating of the water balance modelling of the site water management system, to minimise overflow risk. • Regular inspection of the decant system, to ensure efficient operation • Regular inspection of embankment integrity to be undertaken. Monthly piezometric monitoring of phreatic surface levels within embankment.	

					• Independent annual inspections. • Regular inspection of rock face integrity to be undertaken. • Ongoing monitoring of seepage rates through recovery bores and observation bores. Monthly inspection for evidence of seepage • Monitoring the performance of the TSF is an important component of demonstrating that the design assumptions and mitigation measures are effective in controlling the potential environmental impacts from the TSF, both during operations and after closure. Monitoring data must be compiled and assessed at regular intervals and reported as part of	

					the mine's annual environmental monitoring report. • TSF will have an operation and management plan (operating manual) that is available to all personnel, local inhabitants, government inspectors and other relevant stakeholders. All documents relating to planning, design and construction will be maintained in an accessible way, with records kept permanently for future reference • The contractor/mine will monitor the TSF in accordance with the operation and management plan, as approved by the competent authorities. • The Mine/contractor(s) will implement internal emergency	

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					authorities and local communities in preparing external emergency plans. • Train all personnel and reinforce and update their safety knowledge, in particular with regard to how to identify potentially harmful events and/or circumstances • Implement safety audits for the facilities and promote the use of environmental management systems based on local, National or international standards • The tailings dam, for which the following parameters need to be assessed accurately; • The slope stability of the dam; • The strength and stability of the	

					foundation for the dam; • The stability of the tailing material (induced liquefaction); • Erosion to the dam (suffusion and outside erosion); • Water recovery systems • Emergency spillways; • Slope sliding; • The dam-raising method should be chosen with regard to the local conditions (e.g., seismicity, tailings composition, severe climate). Special attention has to be given to quality control and site supervision during the starter works construction phase of the TSF • Additional impoundments should be designed to contain inflow from emergency outlets.	

					• Hazardous substances and process water should be reused as far as technically possible (recycling) and, in case it is not possible to recycle hazardous substances, they should be neutralized before they are discharged into the TSF • The tailings dam, for which the following parameters need to be assessed accurately; • The slope stability of the dam; • The strength and stability of the foundation for the dam; • The stability of the tailing material (induced liquefaction); • Erosion to the dam (suffusion and outside erosion); • Water recovery systems • Emergency spillways;	

					• Slope sliding; • The dam-raising method should be chosen with regard to the local conditions (e.g., seismicity, tailings composition, severe climate). Special attention has to be given to quality control and site supervision during the starter works construction phase of the TSF • Additional impoundments should be designed to contain inflow from emergency outlets. • Hazardous substances and process water should be reused as far as technically possible (recycling) and, in case it is not possible to recycle hazardous substances, they should be neutralized before	

					they are discharged into the TSF •	
Roads (Both access and haulage roads on the mine site)	• Dust • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance	• Air quality • Fauna • Flora • Noise • Soil • Surface water	Construction Operation Decommissioning Closure	D: mid-term (2) S: Site (1) S: Mid (2) L: Probable (2) C: Possible	• Maintenance of roads • Dust control and monitoring • Noise control and monitoring • Speed limits • Storm water run offs control • Erosion control • Immediate clean hydrocarbons spills • Rip disturbed areas to allow re-growth of vegetation cover • Noise control • Well maintained equipment • Selecting equipment with lower sound power levels • Installing silencers for fans	D: short-term (1) S: Site (1) S: Low (1) L: Improbable (1) C: unsure

					• Installing suitable muffers on engine exhausts and compressor components • Develop a mechanism to record and record to complaints • Linear infrastructure such as roads and pipelines will be inspected at least monthly to ensure that the infrastructure is effective in controlling erosion	
Workshop and Wash Bay	• Removal of disturbed of vegetation cover and natural habitat of fauna • Soil contamination	• Underground water • Soil • Surface water	Construction Operation Decommissioning Closure	D: mid-term (2) S: Site (1) S: Mid (2) L: Probable (2) C: Possible	• Concrete floor with oil/water separator • Storm water runoff control • Immediate clean hydrocarbon spills	D: Short-term (1) S: Site (1) S: Low (1) L: Improbable (1) C: unsure

Water distribution pipe line	• Surface disturbance due to clearing of vegetation • Water wastage due to leaks	• Flora	Construction Operation Decommissioning Closure	D: mid-term (2) S: Site (1) S: Mid (2) L: Probable (2) C: Possible	• Maintain water pipeline and structures	D: Short-term (1) S: Site (1) S: Low (1) L: Improbable (1) C: unsure
Water recycling plant	• Surface disturbance • Erosion	• Fauna • Flora • Topography	Construction Commissioning Operational Decommissioning closure	D: mid-term (2) S: Site (1) S: Mid (2) L: Probable (2) C: Possible	• maintenance and services • storm water control	D: Low-term (1) S: Site (1) S: Low (1) L: Probable (2) C: Possible

12. ENVIRONMENTAL IMPACT STATEMENT

i. Summary of the key findings of the environmental impact assessment

Key findings of the environmental impact assessment include:

- The significance of potential environmental impacts can be reduced to Mid - low significance, with the implementation of mitigation measures and monitoring;
- Impacts on the socio-economic environment and livelihoods of the surrounding farmers, and communities can be mitigated to moderate – High significance;
- Cumulative noise, visual and air quality (dust) impacts are deemed significant (low) when proper mitigation measures being implemented;
- It is expected that cumulative impacts on surface and groundwater quality as well as biodiversity will be moderate - high prior to mitigation and moderate -Low with mitigations

ii. Mitigation measures for these potential impacts include:

- Application of best-practice water management after project closure, and continuous monitoring of surface, and groundwater quality;
- The potential contaminants need to be managed and prevented through an effective Emergency Response Plan, and Storm Water Management Plan, as well as the development of an appropriate Groundwater Monitoring Plan, in order to reduce the significance of these impacts;
- Vegetation loss is unavoidable during the activities of the proposed mining project, and special care must be taken to manage any species of special concern.

iii. Summary of Potential Impacts on the Biophysical Environment

- Air pollution;
- Noise pollution;
- Soil pollution;
- Pollution due to management of waste;

- Water pollution;
- Fauna and Flora;
- Visual impacts; and
- Socio-economic impacts.

i. Final Site Map

The Final Site map has been attached as ANNEXUTURE B.

13. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES

i. Recommendations from Specialists

Appropriately qualified and experienced specialists were appointed to undertake the various assessments. The Specialists assisted in gathering baseline information relevant to this study and assessed the impacts associated with the development. Specialists made recommendations to mitigate negative impacts and enhance benefits. The resulting information was synthesised into the Environmental Impact Report (EIAR), whilst the specialist reports are attached on this EIAR as a Specialist Volume. The specialists' studies assisted with the development of an understanding of the system process and the potential positive and negative impacts of the proposed development on both the social and biophysical environments: The below mentioned specialists were appointed and assisted in identifying the possible impacts of the project and the mitigation measures thereof:

Table 13: Specialist studies conducted

Study	**Consultant (Specialist)**	**Company**
Ecological Study	Mr Kuhlula Jeff Maluleke	EnviroMax Consulting Pty Ltd
Heritage Impact Assessment Report	Mr. Alvord Nhundu	Independent specialist
Geo-hydrological Studies	Mr. Mushiana, K.B. Mr. Mufamadi M.	Geoquilibria Pty-Ltd
Social&Labour Plan	Mr Peter De Bruin	Bruin Box (Pty)Ltd
Socio-Economic Study	Mr Peter De Bruin	Bruin Box (Pty)Ltd
Traffic Impact Study	Thapelo Ratshulumela	Letsunyane Investment(Pty)Ltd
Visual impact Study	Johannes Shole	Willow Tree Capital (Pty)Ltd

Air Quality Study	Johannes Shole	Willow Tree Capital (Pty)Ltd
Wetland Study	Mboyi Divhani	Independent Specialist
Surface Water Impact Study	Mboyi Divhani	Independent specialist

i. Summary of specialist Recommendation

See Annexure E for specialist Reports

ii. Specific conditions to be included into the compilation and approval of EMPr

To ensure compliance with, and implementation of the EMPr by:

- Appointing of a suitably qualified professional expertise to oversee implementation of the EMPr during all phases of the project; and
- Appointing a suitably qualified Environmental Control Officer to undertake audits on a regular basis throughout the construction phase to ensure that all staff, contractors and sub-contractors are aware of and understand the requirements of the EMPr and environmental issues in relation to their individual areas of work by:
- Developing an induction and training program covering the EMPr, environmental awareness, dealing with environmental incidents and waste management; and
- Advising staff commissioned during pre-construction and construction, including sub-contractors, of EMPr requirements through the induction program as well as on notice boards at the contractor's camps during construction and notice boards during operation. These notice boards should cover the EMPr, environmental awareness, dealing with emergencies and waste management.
- Submission of a Water Use License Application and the undertaking of all relevant specialist studies for that purpose. A detailed water balance will need to be produced before commencement and need to include all water uses, volumes and rates.

  The undertaking of a detailed Geo-Hydrological study with special reference groundwater model predictions should be verified once time dependant groundwater monitoring data become available. Predicted flow simulation and decant rates for later years of mine development can significantly be improved by observation data from earlier years and subsequent updates of the groundwater model. Authorization should be subject to the undertaking of a ground water

monitoring programme with associated updated hydro census. The monitoring programme should cover pre and post mining conditions to evaluate and determine the effect of mining on ground water supply, and pollution.

iii. Rehabilitation Requirements

The requirements of the final rehabilitation, decommissioning and mine closure plan are stated in the NEMA Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations. The purpose is to identify a post mining land use that is feasible through the following:

- Providing the vision, objectives, targets and criteria for final rehabilitation, decommissioning and closure of the project;
- Outlining the design principles for closure
- Explaining the risk assessment approach and outcomes and link closure activities to risk rehabilitation;
- Detailing the closure actions that clearly indicate the measures that will be taken to mitigate and/or manage identified risks and describes the nature of residual risks that will need to be monitored and managed post closure;
- Committing to a schedule, budget, roles and responsibilities for final rehabilitation, decommissioning and closure of each relevant activity or item of infrastructure;
- Identifying knowledge gaps and how these will be addressed and filled;
- Detailing the full closure costs for the life of project at increasing levels of accuracy as the project develops and approaches closure in line with the final land use proposed; and
- Outlining, monitoring, auditing and reporting requirements.

iv. DESCRIPTION OF ANY ASSUMPTION, UNCERTAINITIES OR GAP IN KNOWLEDGE

The access restriction by the landowner has resulted in specialist studies being undertaken through desktop study and limited a thorough assessment which to certain extent may have created gap in knowledge especially Geohydrological study, Ecological, wetland and surface water study as well as traffic impact study.

14. Reasoned opinion as to whether the proposed activity should be approved or not

The proposed activity should be granted on the bases that the environmental assessment undertaken and specialist studied evaluated the nature of impact to be moderate-low provided

that recommendations by specialist and EMPr are implemented. No fatal flaws have been identified to date. However, several environmental and social impacts are envisaged from construction phase through to post-closure, which require careful mitigation and monitoring. It is the opinion of the EAP that all major impacts have been identified and have been assigned appropriate management measures. Most HIGH negative impacts with mitigation, are reduced to a MEDIUM or LOW significance, and can be managed accordingly. There are a few impacts that are most likely to remain at a High negative significance after mitigation and these will include Social Economic Impacts, illegal trespassing, Health and safety risk for workers and community health and safety risk.

Other positive impacts that results in a High Positive Significance after mitigation include the impact on procurement / supporting industries / local SMME's, Impacts on the local community / community projects. It is recommended by the EAP that the proposed project may be authorised, on the ground of assumption that the environmental and social management commitments included in this EIA/EMPr are adhered to, the project description remains as per the description provided in this document and considering the positive social impacts associated with the project. The negative and positive significance of impacts have to be weighed up against each other for a final decision by the Competent Authorities.

15. Period for which Authorisation is required

Upon granting the Mining Right the orders will be placed for mining and recovery plant equipment, which will take 4 months for manufacturing and delivery plant construction with tests as well as the ore handling site setup (including security) will take 2 months. Open pit benching can be started with hired equipment and first production horizon should be prepared for mining by the time of commissioning of the plant. Overall, first industrial scale tests should be started 6 months from the time of the Mining Right formal issued. Decommissioning and closure activities are estimated at one (1) year. Thus, the Environmental Authorisation (EA) and Waste Management License (WML) are being sought for a period of thirty-two (32) years

16. Description of any assumptions, uncertainties and gaps in knowledge

The following assumptions and limitations have been identified with regards to the environmental baseline, impacts and mitigation measures:

- The public participation process has been sufficiently effective in identifying the critical issues that needed to be addressed through specialist investigations and/or by the EAP. Specialist input has thus been appropriately scoped to investigate the critical issues;

- The public participation process has sought to involve key stakeholders and individual landowners. It is assumed that where participation has been sought from the organizational representative/s, that these parties have the authority to comment on behalf of their organisation;
- The public participation process provided ample opportunity for stakeholders to express any issues and concerns. It has thus been effective in identifying critical issues that the specialist investigations and/or EAP needed to address;
- It must be noted that desktop studies were undertaken by specialist as a result of site access restriction/prohibition by landowner.

A monitoring and evaluation system, including auditing, will be established, in line with this EMP, to track the implementation of this specific EMP to ensure that management measures are effective to avoid, minimize and mitigate impacts; and that corrective action is being undertaken to address shortcomings and/or non-performances;

17. Undertaking

It is therefore confirmed that the undertaking required to meet the requirements is provided at the end of the EMPr and is applicable to both the EIAR and the Environmental Management Programme report.

18. Financial Provision

Invest in property 126 (Pty) Ltd proposes to obtain environmental authorisation for the proposed Diamond Kimberlite and Diamond General, and maintenance/ aftercare of areas that would have been affected negatively by Diamond Kimberlites and Diamond General.

i. Explain how the aforesaid amount was derived

The amounts were calculated according to the guideline for the Calculation of the Quantum for rehabilitation as provided and approved by the Department of Mineral Resources ("DMR"). The proposed mining plan which includes, such as: *Construction, Operation,Commissioning,Decomissioning and Closure*. This includes infrastructure such as processing plant, ablution facility, internal and access roads,water treatment plan,slum dam,washbay,laydown area,mine area(open cast).The estimated project footprint is 3.389 ha in extent over farm Viljoenshof 1655.

ii. **Confirm that this amount can be provided for from operating expenditure.**

Mr Verdi in his capacity as the Executive Director, and Shareholder of Invest in property 126 (Pty) Ltd (being the Applicant), has confirmed that this amount can be provided for from operating expenditure.

iii. **Deviation from the approved scoping report and plan of study**

In terms of preliminary plan of study on the scoping report, full specialist studies were envisaged to be undertaken however due to access restriction or denial by the landowner, desktop studies were undertaken.

iv. **Other information required by the competent authority**

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

The positive impacts of the proposed Mining Project can be summarised as follows:

- Health and Safety: The rehabilitation, maintenance and aftercare will ultimately result in a positive impact on the sense of place of the area. It will also reduce health and safety risks, associated with open voids and mine affected water resulting in the contamination of both surface and groundwater
- Employment Opportunities: The Invest in property mine project will result in a long-term employment opportunity (in various categories: Skilled, Semi-skilled and Unskilled Personnel) for unemployed youth within Tokologo Local Municipality

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

There are no significant heritage resources present on the site, and significant impacts are thus not expected.

v. **Other Matters**

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

Note: Information on the preferred proposed alternative, as well the motivation for exclusion of other alternatives has been included in Section 11.2 Part A, kindly refer to these sections above.

Section 24(4)(b)(I) of the NEMA (as amended), provides that an investigation must be undertaken of the potential consequences or impacts of the alternatives to the activity, on the environment, and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity. The outcome of the investigation has been provided in Section 12.1 to Section 12.4 Part A of this Final EIAR.

_____END_____

ANNEXTURES

ANNEXURE A: ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT(EMPR)

FOR

THE MINING RIGHT APPLICATION FOR THE PROPOSED MINING DEVELOPMENT FOR DIAMOND KIMBERLITE (DK) AND DIAMOND GENERAL (DG)

DMRE ref no: FS 30/5/1/2/2/10064MR

APPLICANT	EAP
Invest in Property Pty-Ltd 234 Alexandra Ave, Midrand, Guateng,1685 Cell: 082 574 2684 Email: verdisc@gmail.com	Biomental Services 10 jenny street De Aar 7000 Cell: 060 5702 461/068 321 4288 Tel : 053 004 0204 Web: www.biomental.co.za Email:info@bimental.co.za tiyiselani@biomental.co.za mahori@biomental.co.za

SEPTMBER 2023

ABBREVIATIONS; ACRONYMS AND DEFINITIONS

Activity*-any action needed for the design, construction and completion of a project.*

Alien species *- a species occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal by human activities.*

Alternative- *in relation to the proposed activity means a different way of meeting the general purpose and requirements of the activity.*

CEMP *– Construction Environmental Management Plan*

Construction Activity *- any action taken by the Contractor their sub-contractors, suppliers or personnel during the construction process.*

Contaminated water *– means water contaminated by the contractors' activities, e.g. concrete water and runoff from plant / personnel wash areas.*

Department of Agriculture and Rural Development *the authority responsible for environment authorisation of proposed development and for input into and approval of the final Environmental Management Plan (EMP)*

Environment –*The surrounding in which humans exist, and which comprise:*

e) The land , water and atmosphere of the earth

f) Micro-organisms, plant and animal life

g) Any part or combination of a) and b) and the interrelationships among and between them; and

h) The physical, chemical aesthetic and cultural properties and conditions of the foregoing that can influence human health and well being

Environmental Audit *– a systematic, documented, regular and objective evaluation to see how well an organisation or facility is operating in terms of the EMP and is complying with statutory requirements and the organisation's environmental policy.*

Environmental Authorisation (EA*) -the formal written document indicating the granting or refusal of authorisation for a proposed development, issued by the relevant approving authority.*

Environmental Control Officer (ECO) *– an independent person, appointed by the Proponent/Implementing Agent during the construction phase of the project, who shall be responsible for undertaking site inspections to monitor and report on compliance with the EMP.*

Environmental Impact*- any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects*

Environmental Management Plan (EMP)-*this document is recognised as the tool that can provide the assurance that the project proponent has made suitable provision for mitigation. The EMP is the document that provides a description of the methods and procedures for mitigating and monitoring impacts. It also contains environmental objectives and targets which the proponent needs to achieve in order to reduce or eliminate negative impacts.*

Environmental Monitoring (EM*) - the person to be appointed by the Consulting Engineers to oversee the design and construction phases of Project and to ensure that all environmental specifications and EMP obligations are met during these phases. The Environmental Monitor will be responsible for the monitoring, reviewing and verifying of compliance with the EMP by the Contractor.*

Environmental Education Officer (EEO) - *Persons to be appointed by the Contractor who will be on site and be responsible for daily inspections at the construction area and camp site.*

Fauna*- All living biological creatures, usually capable of motion, including insects and predominantly of protein based consistency.*

Fence*- a physical barrier in the form of posts and barbed wire or any other concrete construction, ("palisade"- type fencing included, constructed with the purpose of keeping humans and animals within or out of defined boundaries.*

Fine *- A monetary penalty against the Contractor by the PM as per request from the ECO.*

Flood line *– The line or mark to which a flood could rise 50 (1:50 year flood line), or 100(1:100 year flood line) years.*

Flora *–All living plants, grasses, shrubs, trees, etc., usually incapable of easy motion and capable of photosynthesis.*

Groundwater *–The water that fills the natural openings present in rock or unconsolidated sands.*

Hazardous wastes*- waste that because of their chemical reactivity, toxic, explosive, corrosive radioactive or other characteristics, cause danger, or are likely to cause danger, to health or the environment.*

Heritage *– the sum total of sites of geological, zoological, botanical and historical importance, national monuments, historic building and structures, works of art literature and music, oral traditions and museum collections and their documentation which provides the basis for a shared culture and creativity in the arts.*

Heritage Resources *– there are various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources i.e. places or object of cultural significance.*

Induction training*- Training provided to all new employees prior to them being allowed on site.*

Interested and Affected Party (I&AP) *– Refers to any person, or group of persons, concerned with, or affected by, an activity and its consequences. These include the authorities, local communities, investors, work force, customers, and consumers, environmental interest groups, and the general public (after the EIA Regulations of September 1997 and Guideline Document: EIA Regulations of 2014)*

Land Use*– is characterised by the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it. Definition of land use in this way establishes a direct link between land cover and the actions of people in their environment.*

MSDSs *- Material Safety Data Sheets*

Method Statement*– A written submission by the Contractor in response to the Specification/EMP or a request by the Resident Engineer, setting out the plant, material, labour and method of the Contractor proposes using to carry out an activity, identified by the relevant specification or the Resident Engineer is enabled to assess whether the Contractor's proposal is in accordance with the EMP and associated specifications.*

Mitigate *– The implementation of practical measure to reduce adverse impacts, or to enhance beneficial impacts, of an action.*

MPRDA *– The Mineral and Petroleum Resource Development Act (Act No.28 of 2002)*

NEMA *– National Environmental Management Act (Act No.107 of 1998)*

No-Go Area *– Areas where construction activities are referred to no go Areas.*

Noncompliance*- Failure to comply with requirements of the EMP*

Non-renewable resources *– means the resources that have a finite stock and either cannot be reproduced once they are used or lost, or cannot be reproduced within a time span relevant to present or future generations.*

NWA *– National Water Act (Act no.36 of 1998)*

Pollution *– Any change to the environment caused by(i)substance; (ii) radioactive or other waves; or (iii) noise, odours, dust, or heat emitted from any activity, including the storage or treatment of waste or substance, construction and the provision of service, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future (after National Environment Management Act, No.107 of 1998).*

PPE *– Personal Protective Equipment*

Project *– the planning, design, construction, operation and maintenance, and eventual decommissioning of the development.*

RE – *Resident Engineer*

Rehabilitation*– To re-establish or restore to a healthy sustainable capacity or state.*

SAHRA*– South Africa Heritage Resource Agency*

Solid waste- *means all solid waste, including construction debtors, chemical waste, excess cement/ concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).*

Wetland *–A wetland is land which is transitional between terrestrial and aquatic system where table is usually at or near the surface, or the land is periodically covered with shallow water and which in normal circumstances supported vegetation typically adapted to life in saturated soil (National Water Act, No.36 of 1998)*

Table of Contents

1.PROJECT INFORMATION

1.1 Background

INVEST IN PROPERTY 126 (PTY)LTD propose to apply for mining right in a small town Boshof in Free State, South Africa. The area cover is approximately 3389 ha. The mining right application is for a proposed mining development for Diamond kimberlite (DK) and Diamond General (DG). The proposed development is located on Farm Viljoenshof 1655, located 27.9km km north east of Kimberly,120 km west of Bloemfontein and 13 km east of Boshof town. The applicant Mr Verdi Scholtermeyer have applied for mining right with the Department of Mineral Resource and Energy (DMRE) in terms of Minerals and Petroleum Resource Development Act (Act 28 of 2002).

The project area is located within the Loxtonsdal kimberlite cluster which hosts two historical diamond mines. All known kimberlites in this cluster are of the Group II variety. Prospective work programs were undertaken at the proposed development mainly to investigate, determine and confirm the presence of diamond Kimberly on Farm Viljoenshof 1655.Non-invasive methods were explored to locate minerals using geophysical survey (magnetic and electromagnetic) soil sampling, google earth satellite images and exiting geological studies previously carried out in farm Viljoenshof 1655.The geological studies undertaken at the propose development area confirms presence of a number of additional anomalies. Mineral chemistry of kimberlitic indicator minerals (pyropic garnets, Cr-spinels and clinopyroxenes) verified high diamond potential of several targets. Moreover, geochemistry of kimberlites is also indicative of high interest mantle source.

The proposed overall activity will begin and be implemented in a pilot mining phase for a duration period of one (1) year. A contractor with readily available plants and earthmoving equipment will be responsible for the implementation of pilot phase. This phase is necessary given that the prospecting work program was only limited to non-invasive approach. Additionally, invasive approach such as trenching/pitting and drilling was not conducted as a result of farm property owner restriction to access the property and proscription use of earthmoving plants, machinery and construction vehicles for related prospecting activities. The pilot stage will encapsulate further study of the diamond ore. The primary objective of the pilot mining phase is:

- Open complete area of the kimberlite body(ies) and cut first two benches into kimberlite;
- Process different kimberlite type separately and determine the grades and diamond quality variation;
- Carry out metallurgical studies of the ore for final design of the plant;
- During this stage geophysical survey and diamond core drilling will be implemented to study ore bodies morphology with depth;
- The outcome of geophysical survey and diamond core drilling will be implemented to study ore bodies morphology to be used for long term underground mining method to be used.

The open cast method for mining have been considered as a preferred method for minerals extraction. The open cast method will entail the trenching to the depth of two (2) benches (i.e.12 to 20 m) however, this is dependent on the hosting rock competence and stability. The pilot phase is envisaged to be disassociated with excessive blasting given that the hosting rock is black and grey Ecca shale, which is

quite brittle. However, soft blasting will be applied where necessary in particular for cutting into kimberlites. The proposed mine property is characterised by game farming, livestock farming and related agricultural crop farming at a small scale. This necessitates the use of soft blasting to avoid and reduce impact on game farm with noise and flying rocks fragments.

1.2 Introduction

An EMPR can be defined as a plan or programme that seeks to achieve a required end state and describes how activities that have or could have an adverse impact on the environment, will be mitigated, controlled, and monitored. The EMPR will address the environmental impacts during the design, construction and operational phases of a Project. Due regard must be given to environmental protection during the entire Project. To achieve this, a number of environmental specifications/recommendations are made. These are aimed at ensuring that the project proponent maintains adequate control over the Project in order to:

- Minimise the extent of impact during the life of the Project;
- Ensure appropriate restoration of areas affected by the Project; and
- Prevent long term environmental degradation.

This EMPR will form part of the EIAR to be submitted for environmental authorisation. An EMPR is a stand-alone document that is used to guide and regulate environmental performance through all stages of development. The EMPR forms part of the approving authorities decision making tools and upon authorisation become legally binding on the proponent and anyone acting on the proponent's behalf during construction and operational activities. The conditions of the Environmental Authorisation relevant to the EMPR must be included in the EMPR document. It should be noted that this EMPR is a living document and may need to be updated on a regular basis, either as directed by the Environmental Control Officer or by the Environmental Authorities. The EMPr's main objective is to ensure best practices are followed with optimal environmental protection being sought. Therefore, this document seeks to bridge the gap between the assessment and the implementation of the project during phases. In doing so, this document draws the Contractor's attention to the requirements of the monitoring, auditing and corrective actions required during implementation.

The key requirements of an EMPR, according to provisions in the Act and the Regulations, are:

1. baseline information for the affected environment;
2. the environmental objectives, both for operation and closure;
3. a quantification of environmental impacts;
4. an implementation programme that includes:

- technological options;
- management systems;
- action plans with time schedules;
- emergency response plans;
- monitoring and evaluation;
- an environmental awareness plan aimed at informing employees; and
- Pollution/waste prevention, reduction and remediation.

The compilation of a detailed EMPR would be required to at least fulfil the above requirements. The EIA process required to inform the development of the EMPR, in terms of the MPRDA, can be undertaken in parallel with the EIA process required for the proposed Development project in terms of NEMA.

1.3 Project description

The proposed overall activity will begin and be implemented in a pilot mining phase for a duration period of one (1) year. A contractor with readily available plants and earthmoving equipment will be responsible for the implementation of pilot phase. This phase is necessary given that the prospecting work program was only limited to non-invasive approach. Additionally, invasive approach such as trenching/pitting and drilling was not conducted as a result of farm property owner restriction to access the property and proscription use of earthmoving plants, machinery and construction vehicles for related prospecting activities. The pilot stage will encapsulate further study of the diamond ore. The primary objective of the pilot mining phase is:

- Open complete area of the kimberlite body(ies) and cut first two benches into kimberlite;
- Process different kimberlite type separately and determine the grades and diamond quality variation;
- Carry out metallurgical studies of the ore for final design of the plant;
- During this stage geophysical survey and diamond core drilling will be implemented to study ore bodies morphology with depth;
- The outcome of geophysical survey and diamond core drilling will be implemented to study ore bodies morphology to be used for long term underground mining method to be used.

The open cast method for mining have been considered as a preferred method for minerals extraction. The open cast method will entail the trenching to the depth of two (2) benches (i.e.12 to 20 m) however, this is dependent on the hosting rock competence and stability. The pilot phase is envisaged to be disassociated with excessive blasting given that the hosting rock is black and grey Ecca shale, which is quite brittle. However, soft blasting will be applied where necessary in particular for cutting into kimberlites. The proposed mine property is characterised by game farming, livestock farming and farm stead. This necessitates the use of soft blasting to avoid and reduce impact on game farm with noise and flying rocks fragments.

1.4 Project Location

The project area is situated in Free State Province in a small town Boshof. It falls within the Tokologo Local Municipality of the Lejweleputswa District Municipality; and is situated approximately 27,9km north-east of the Kimberly and 120km west of Bloemfontein. **See Figure 1 &2 below**

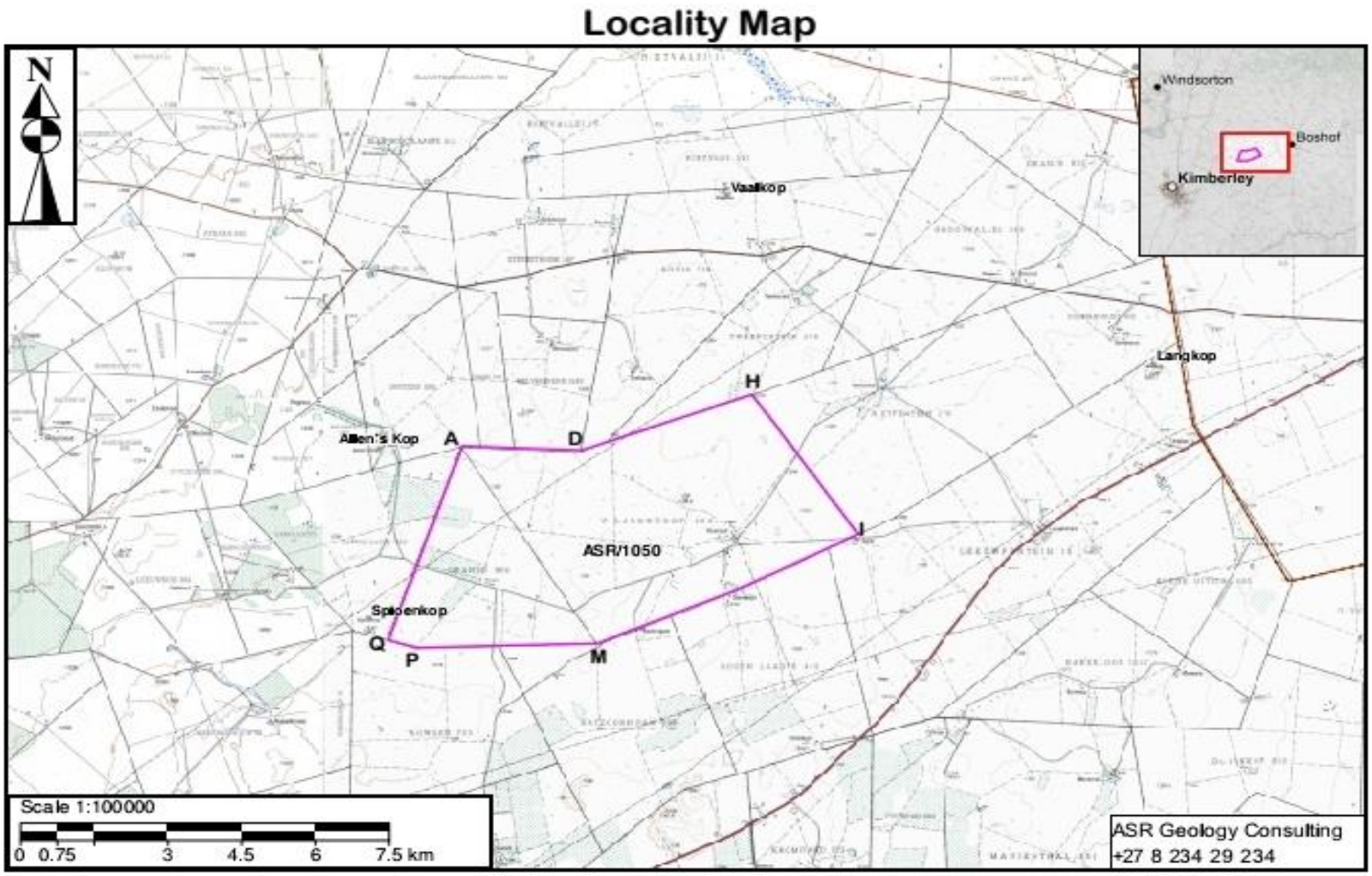


Figure 1:Locality Map

Locality Plan

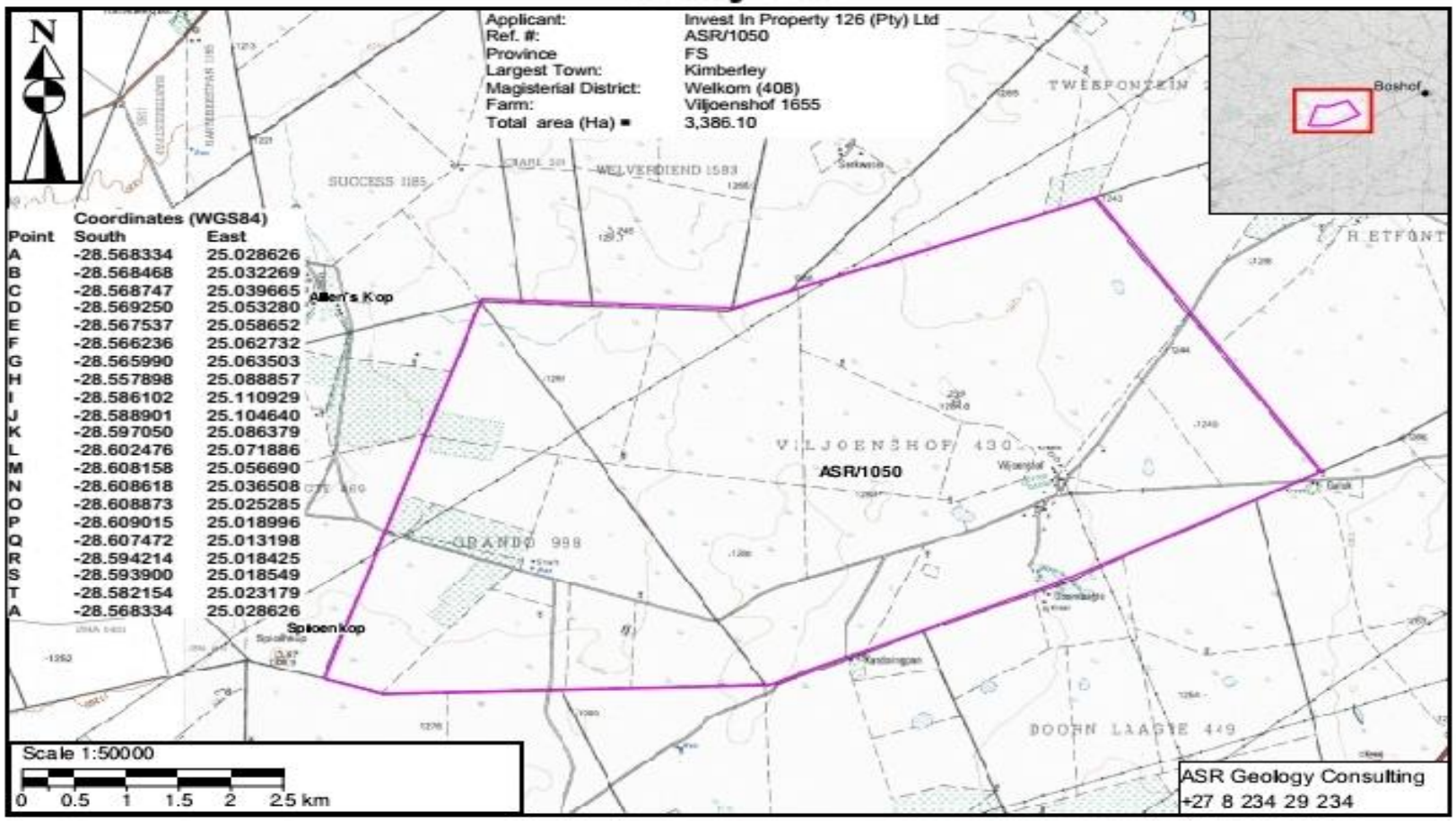


Figure 2:LocalityPlan

1.5 Details of the EAP

Table 1: Details of the EAP

Environmental Assessment Practitioner (EAP)			
Name of EAP:	Mr Macebele T		
Consulting Firm	Biomental Services		
Physical Address:	10 jenny street De Aar 7000		
Postal Code:	7000	Cell:	060 5702 461/068 321 4288
Telephone:	053 004 0204	Fax:	N/A
E-mail:	info@bimental.co.za tiyiselani@biomental.co.za mahori@biomental.co.za		
Website:	www.biomental.co.za		
Experience	The EAP, Mr. Macebele Tiyiselani have vast experience in environmental management field and have been involved in number of projects in the public and private sector such as renewable energy projects, mining and construction. Tiyiselani have experience in drafting EMPs, application for Basic assessment, permits & licensing, prospecting mining right and mining rights.		

Environmental Assessment Practitioner (EAP)			
Name of EAP:	**Mr Mahori Nhlawulo**		
Consulting Firm	Biomental Services		
Physical Address:	10 jenny street De Aar 7000		
Postal Code:	7000	Cell:	073 140 43 22
Telephone:	053 004 0204	Fax:	N/A
E-mail:	mahori@biomental.co.za		
Website:	www.biomental.co.za		

Experience	**Mr Mahori Nhlawulo** has completed his professional registration in terms of section 20(3) (b) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003) in the field of practice Environmental Sciences (Registration number 125490). He is registered in accordance with the prescribed criteria of Regulation 15(1) of the section 24H Registration Authority Regulations (regulation No.849, Gazette No. 40154 of the National Environmental Management Act (NEMA) Act No. 107 of 1998) as amended) EAP (Registration No. 2019/1026) He obtained his Bachelor of Environmental Sciences in 2016 and Bachelor of Environmental Sciences Honours Degree in 2017 at the University of Venda. Mr Mahori Nhlawulo is an Environmental Assessment Practitioner and has been involved in the compilation, coordination and management of Basic Assessment Reports, Environmental Impact Assessments, Environmental Management Programmes, Waste Licence Applications, Water Use Licence Applications, Mining Permits Application and Baseline Biodiversity Surveys for numerous clients.

1.6 Objectives of EMPR

This EMP is based on the principles of the NEMA and this includes the following:

- To avoid, minimise or correct the disturbance of the ecosystem and loss of biodiversity;
- To avoid, minimise or correct pollution and degradation of the environment;
- To avoid or minimise waste and to re-use or re-cycle waste where possible and to dispose of waste in a responsible manner;
- To apply a risk adverse and cautious approach; and
- To anticipate and to prevent negative impacts on the environment and on people's environmental rights. Where impacts cannot be prevented, such impacts must be minimised and remedied.
- To integrate plan for monitoring; assessing and controlling potential impacts

- To be a “cradle to grave” document. That is, the document is considered to be a live document that can be reviewed and updated over time to ensure optimal environmental management across the life of the development.

This document serves to outline how the project will be managed through its life cycle and in doing so, designed to improve positive and mitigate environmental impacts associated with this project. The scope of this EMP therefore sets conditions for the implementation of the environmental management component of the project for all contractor(s) executing the project. The EMP also provides an institutional structure for the roles, responsibilities and reporting lines, impact identification and mitigation of potential negative environmental impacts.

The EMP provides detailed strategies to be implemented to ensure management of key performance areas are achieved, namely: Water Management, Waste Usage and Disposal, Storm Water Management, Noise Management, Dust Management, Pollution Prevention, Recycling and Waste Management, Bio-diversity, Transport/ Traffic, Community Awareness and Safety; Environmental Management and others.

2. ROLES AND RESPONSIBILITIES

The implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during all the phases of the project.

Chart 1. Implementing structure and project management team

2.1. DEPARTMENT OF MINERAL RESOURCES AND ENERGY

- The Department of Mineral Resources and Energy (DMRE)) IS the designated authorities responsible for authorizing this EMP. The Competent Authority overall responsibility for ensuring that Invest In Property 126 (Pty) Ltd adheres to and implement the conditions of its environmental authorization as well as this EMP. The competent authority shall also be responsible for approving any amendments that may be required to the EMP and it may also perform random site inspections to check compliance with the EMP.

2.2. INVEST IN PROPERTY 126 (PTY)LTD

The proponent is responsible for the implementation of the EMP and the financial cost of all environmental control measures. Invest In Property 126 (Pty) Ltd must ensure that any person acting on their behalf complies with the conditions/specifications contained in this EMP. Invest In Property 126 (Pty) Ltd is also responsible for the appointment of the Engineer, Contractor and Environmental Control Officer (ECO) and shall address any site problems pertaining to the environment at the request of the Engineer and/or the ECO.

2.3. MINE MANAGER

The mine manager shall oversee the planning, design, and construction, operational, commissioning, decommissioning and closure phase of the project. The Manager shall designate a Mining Engineer or Engineer's Representative (referred to as the ME) to act as the implementing agents. The Engineers shall work in conjunction with ECO and SHE Officer to address any site problems pertaining to the environment.

2.4. CONTRACTOR

The Contractor shall have the following responsibilities:

- To implement all provisions of the EMP. If the Contractor encounters difficulties with specifications, he/she must discuss alternative approaches with the RE and/or the ECO and Health and Safety Officer prior to proceeding.
- To ensure that all staff are familiar with the EMP.
- To monitor and verify that the environmental impacts are kept to a minimum.
- To make personnel aware of environmental problems and ensure they show adequate consideration of the environmental aspects of the project.

- To prepare the required Method Statements
- To report any incidents of non-compliance with the EMP to the ME and the ECO.
- To rehabilitate any sensitive environments damaged due to the Contractor's negligence. This shall be done in accordance with the RE's and ECO's specifications.

Failure to comply with the EMP may result in fines and reported no-compliance may lead to the suspension of work or termination of the contract by the RE.

2.5. MINING ENGINEER (ME)

The Mining Engineer would act as an on-site implementing agent and has the responsibility to ensure that Invest In Property 126 (Pty) Ltd responsibilities are executed in compliance with the EMP. Any on-site decisions regarding environmental management are ultimately the responsibility of the ME. The ME shall assist the ECO where necessary and shall have the following responsibilities in terms of the implementation of this EMP:

Reviewing and approving the Contractor's Method Statements with input from the ECO where necessary.

- Monitoring and verifying that the EMP and Method Statements are adhered to at all times and taking action if specifications are not followed.
- Keeping a photographic record of construction activities on site.
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the ECO where necessary.
- Ordering the removal of person(s) and/or equipment not complying with the EMP specifications.
- Issuing fines for transgressions of site rules and penalties for contravention of the EMP.
- Delaying any construction activity if he/she believes the integrity of the environment has been or is likely to be seriously jeopardized.
- Providing input into the ECO's ongoing internal review of the EMP.
- The ME shall communicate environmental issues to the Environmental Officer.

2.6. ENVIRONMENTAL CONTROL OFFICER (ECO)

The Environmental Control Officer's (ECO) duties shall include, *inter alia*, the following:

- Ensuring the necessary environmental authorizations and permits/license, if any, has been obtained.

- Advising the Contractor and/or the ME on environmental issues within defined construction and operation areas.
- Undertaking regular site visits to ensure compliance with the EMP and verifying that environmental impacts are kept to a minimum throughout the contract.
- Completing environmental checklists and or environmental audits during site visits.
- Keeping a photographic record of progress on site from an environmental perspective.
- Assisting the Contractor and/or the ME in finding environmentally acceptable solutions to construction problems.
- Recommending additional environmental protection measures should be necessary.
- Keeping a register of complaints and recording and dealing with any community issues or comments.
- Giving a report back on the environmental issues at site meetings.
- Ensuring that Invest In Property 126 (Pty) Ltd is informed of work progress on site.
- Reporting any incidents that may have caused damage to the environment or breaches of the EMP to the Competent Authority
- Preparing an environmental audit report upon conclusion of each mining phase.

The ECO shall communicate directly with the ME. Should problems arise on site that cannot be resolved between the ECO and the ME, the ECO shall take the matter up with the Engineer. If the Engineer does not respond the ECO shall report the none-conformance to the relevant Authority.

2.7. ENVIRONMENTAL OFFICER (EO)

The Contractor (s) shall appoint, at own cost, an Environmental Officer (EO) to ensure that the EMP is implemented and ensure that all environmental specifications and EMP requirements are met at all times. The EO shall be responsible for monitoring, reviewing and verifying the Contractor's compliance with the EMP. The EO's duties in this regard shall include, *inter alia*, the following:

- Monitoring and verifying that the EMP and conditions of Environmental Authorization are adhered to at all times and taking action if specifications are not followed.
- Monitoring and verifying that environmental impacts are kept to a minimum.
- Arrangement and maintenance of all traffic accommodation measures required for the duration of the contract.
- Assisting the ME and ECO in finding environmentally responsible solutions to problems.

- Inspecting the site and surrounding areas on a regular basis with regard to compliance with the EMP.
- Keeping accurate and detailed records of these inspections.
- Reporting any incidents of non-compliance to the ME and/or the ECO.
- Keeping a register of complaints on site and recording community comments and issues, and the actions taken in response to these complaints.

3.COMPOSITE MAP

The broad placement of the surface infrastructure was informed by mapping the environmental sensitivities which considered the location of all known sensitive physical, social and environmental features within the mining rights. The environmental sensitivities that were taken into account have been included.

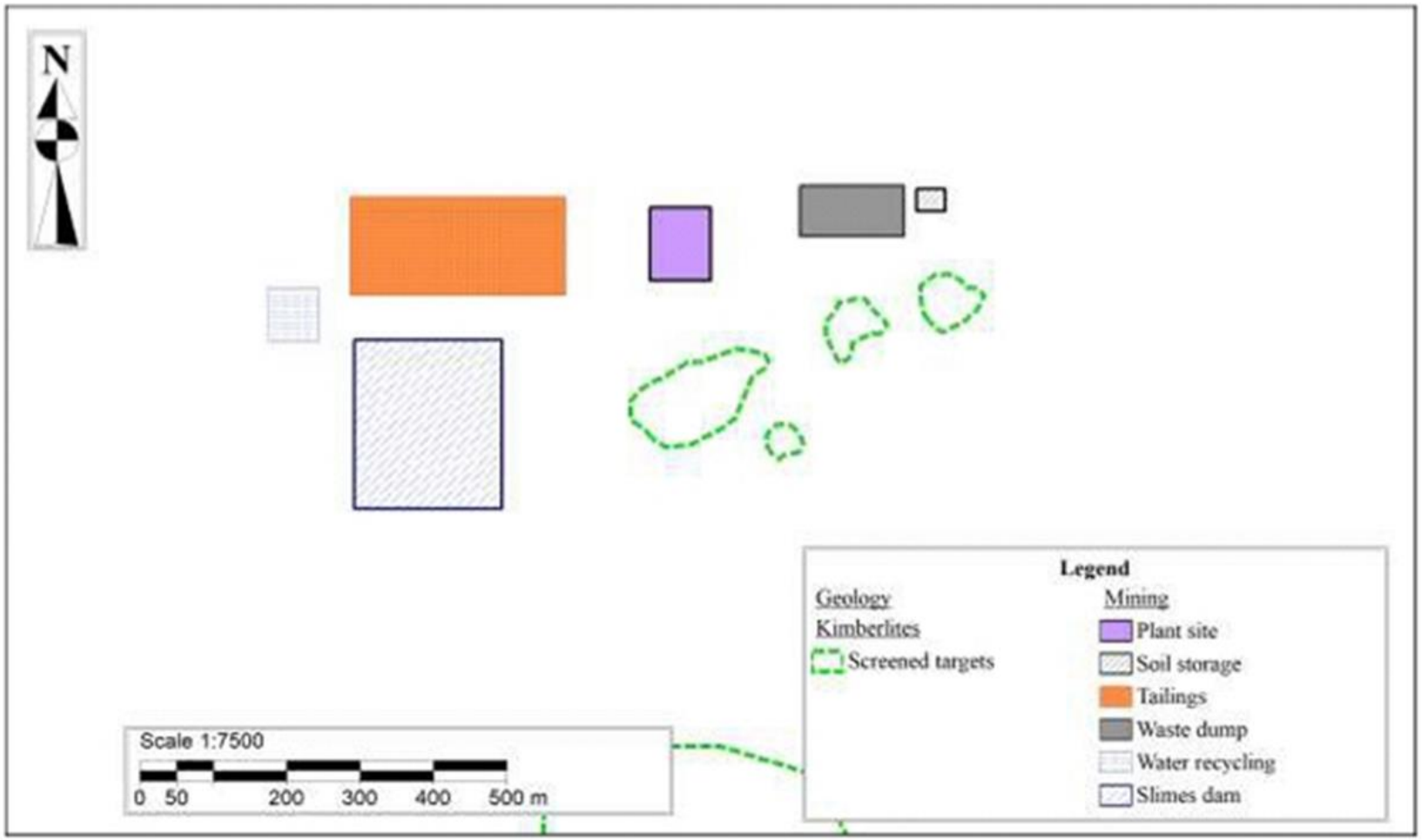


Figure 3: Mine infrastructure Plan

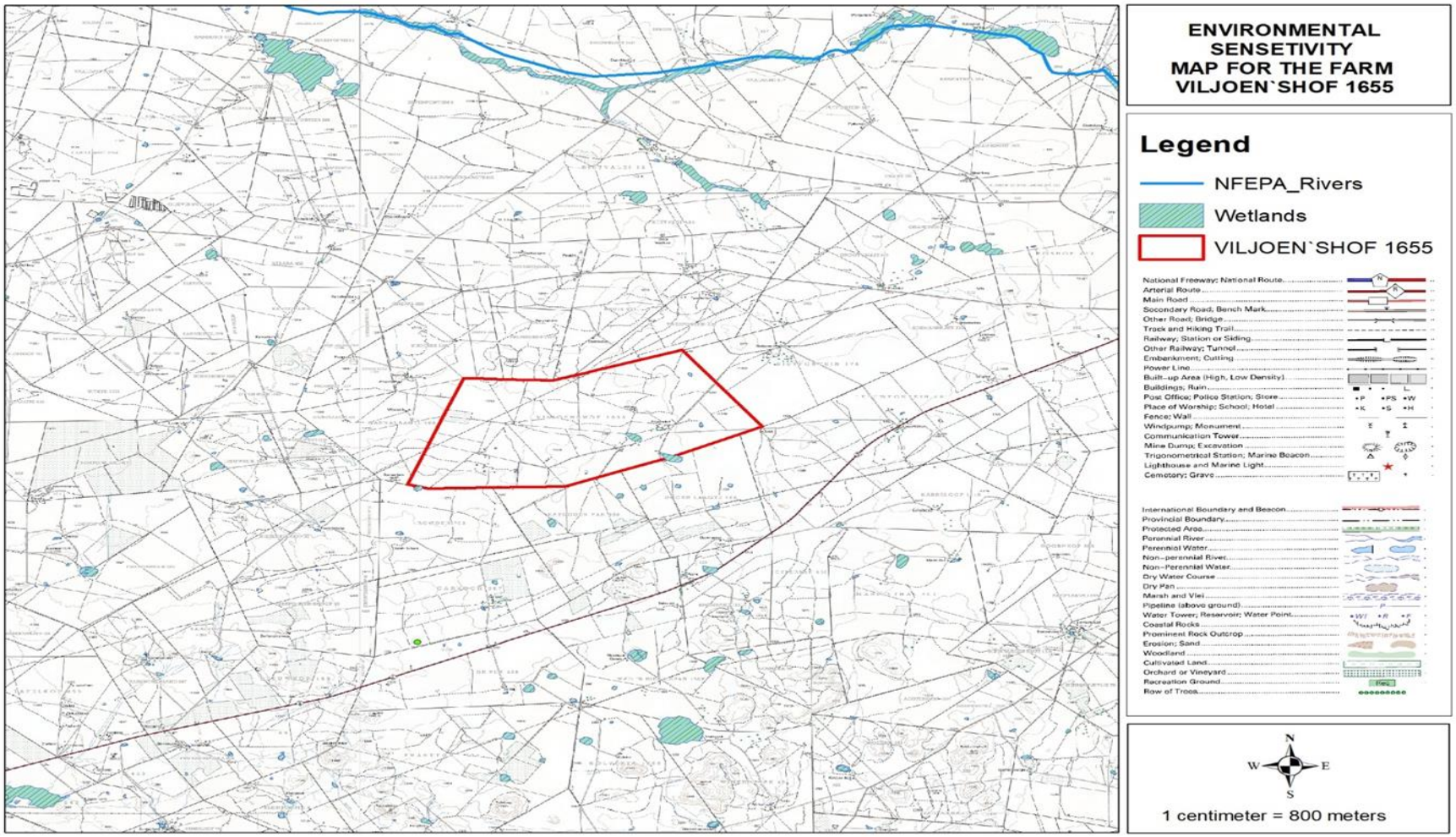


Figure 4: Environmental Sensitivity Map

4.DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES

4.1 Determination of Closure Objectives

- To restore the site to its current land capability in a sustainable manner;
- To prevent the sterilization of any diamond reserves;
- To prevent the establishment of any permanent structure features;
- To manage and limit any impact of the surface and groundwater aquifer in such a way that an acceptable water quality and yield can still be obtained when closure certificate is issued;
- To establish a stable and self-sustainable vegetation cover;
- To limit and rehabilitate any erosion features and prevent any permanent impact to the soil capability;
- To limit and manage the visual impact of the mining activities;
- To safeguard the safety and health of humas and animals on the site; and
- To close the mining operation efficiently, cost. effectively and in accordance with Government Policy.

The key aim of decommissioning and closure is to ensure that all the significant impacts are ameliorated. All rehabilitated areas should be left in a stable, self-sustainable state. Proof of this should be submitted at closure. Specific objectives include:

Rehabilitation of Infrastructure areas

The objective for the removal of infrastructure and the subsequent rehabilitation of the areas they occupied include:

- To ensure that infrastructure identified for removal is successfully demolished and removed;
- To ensure that infrastructure identify to remain after mine closure is maintained until the mine closure;
- The removal, decommissioning and disposal of all mining infrastructure, will comply will all conditions contained in the MPRDA. To this end, decommissioning and rehabilitation of all infrastructure area will follow the following principles:

    - The plant and associated disused infrastructure will be dismantled or demolished. Any building foundation will be removed and land exposed due to demolishing and dismantling will be rehabilitated.

- Rubbles will be disposed at a suitable site or reused where practically possible;
- Any surface water management infrastructure will be maintained to ensure they are stable and functional;
- Prior to closure, when disturbed land has been rehabilitated and erosion is controlled through vegetation cover, all disused surface water management facilities will be decommissioned.

Open Pit and Mine Residue Deposits

The objectives pertaining to the effective management and rehabilitation of the open pit and residue deposits entails:

- Ensuring that the open pit and residue deposits are stable and there are acceptable low risk of failure of the pit or deposits during the decommissioning phase and mine closure; to establish self-sustainable vegetation cover on the benches that are not backfilled or sloped to ensure that the visual impact associated with open pit and deposits is improved and effective in preventing erosion.

Management principle pertaining to open pit and mine residue deposits entails:

- The open pit and deposits will continuously be inspected by a suitable qualified professional engineer to ensure their stability, if they are unstable, the appropriate remedial measures will be implemented;
- Inspection and monitoring should continue until a suitable qualified engineer has confirmed the long-term stability of the open pit and mine residue deposits
- Any infrastructure or facility on the open pit or mine residue deposits will be maintained to ensure that they are both stable and functional.

Maintenance

The necessary agreements and arrangement will be made by the Invest in property 126 to ensure that all natural physical, chemical and biological processes as per closure condition specified are monitored until a steady state is achieved after closure.

- Such process includes erosion of open pit, mine residue deposits, rehabilitated surfaces, surface water drainage, air quality, surface water quality, ground water quality, vegetative re-growth, weed encroachment;
- The closure plan will be reviewed annually;

- Rehabilitation of the land will be maintained until a closure certificate is granted or until the land use is regarded as sustainable;
- All rehabilitated areas will be monitored and maintained until it deemed necessary to apply for closure.

Performance assessments

As per the MPRDA and associated Regulations, as well as NEMA and associated Regulation, this Environmental Management Programme will be continually assessed in terms of its appropriate and adequacy in order to achieve this, Invest in Property 126 Mine will undertake the following:

- Implement the necessary monitoring programmes, as discussed as part of this EMPR;
- Conduct and submit the afore-mentioned performance assessments report to DMRE.the frequency of the performance assessments will be annually while an independent and competent Environmental auditor will undertake all Environmental Audits quarterly.

Decommissioning and closure objectives

The key aim of decommissioning and closure is to ensure that all the significant impacts are ameliorated. All rehabilitated areas should be restored to a stable and sustainable state. Proof of this deliverable should be submitted at closure stage. Specific objectives entail;

- Identifying potential post-closure land uses in consultation with the surrounding land owners and land users, this should be done during the operational phase of the mine;
- Rehabilitation of disturbed land to a state suitable for its post-closure uses;
- Rehabilitation pf disturbed land, mine residue deposit and the open pit to a state that compliant with relevant applicable environmental quality objectives;
- Limit the impact on personnel whose positions becomes redundant at the time of mine closure.
- Keep relevant authorities informed about the progress regarding decommissioning phase;
- Submit monitoring data to the relevant authorities;
- Maintain required data to the relevant authorities;
- Maintain required pollution control facilities and rehabilitated land until closure.

Negative economic impacts

The objective is to alleviate the negative socio-economic impacts that may result from mine closure. Management principles to achieve this includes:

- Invest in property 126 will undertake a careful step wise decommissioning process;
- Closure planning will form an integral part of mine planning;
- Strategies for sustainable development will continue to be developed in collaboration with the district and local authorities, local businesses and other stakeholders. Early warning of impending closure will be communicated to I&APs, stakeholders, state organs, forums and NGOs.
- In conjunction with long term closure planning, the mine will actively participate in regional and local planning to enhance the economic benefits of the project through development of alternative forms of income generation.
- Invest in property 126 will initiate and participate in regional planning exercise that will mitigate the impacts of closure of the mine, the local and regional economies and associated abandonment of community infrastructure surrounding mine.
- The mine must fulfil the requirements for closure.

4.2 The process of managing any potential environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking listed activity

Through the implementation of the management measures by the relevant responsible persons, any potential environmental impact associated with undertaking listed activities associated with the proposed project will be managed accordingly**.**

4.3 Potential risk of Acid Drainage

There is no potential risk of acid drainage as the drainage is situated north east of the property. The mining infrastructure including Tailing Storage Facility and Slimes dam will be located far away from sensitive environmental features such as drainage and wetland.

4.4 Steps taken to investigate, assess, and evaluate the impact of acid mine drainage

This was done using the environmental sensitivity map to identify where sensitivity environmental features are situated within the study area.

4.5 Engineering or mine design solution to be implemented to avoid or remedy acid mine drainage

There is no residual or cumulative impact that may result from acid mine drainage as highlighted above on section 4.3 and 4.4.

4.6 Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage

There is no residual or cumulative impact that may result from acid mine drainage as highlighted above on section 4.3 and 4.4.

4.7 Volumes and rate of water use required for the mining, trenching or bulk sampling operation

The estimate volume of water required for operation is projected at 500 cubic meters. This include water for operational purpose at the processing plant,consumption,washbay,dust suppression, water recycling plant.

4.8 Has water use license been applied for?

An application for water use license has been loaded onto the E-WULA system and the application is in process. The proof of submission has been included into the public participation documents.

5. Impacts to be mitigated in their respective phases

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

ACTIVITY	PHASE	MITIGATION MEASURES	TIME PERIOD FOR IMPLEMENTATION
Processing Plant	Construction Operation Decommissioning Closure	• Access control • maintenance of processing plant • dust control and monitoring • drip trays • Storm water run-off control • Immediately clean hydro spills • Rip disturbed areas to be allowed for re-growth of vegetation cover	Removal of processing plant upon closure of mining right
Ablution and Office facilities	Construction Operation Decommissioning Closure	• Maintenance of ablution facilities. • Weekly disposal of sanitary waste. • Waste disposal slips must be generated and recorded	Removal of ablution facilities upon closure of the mining right
Clean &Dirty water system: Water recycling plant	Construction Operation Decommissioning Closure	• Regular maintenance and monitoring of the plant • Access Control	Upon cessation of the activity (Continuous rehabilitation)
Fuel Storage Facility	Construction Operation Decommissioning Closure	• Maintenance of diesel tanks and bund walls. • Drip trays at refuelling point • Oil traps • Immediate clean hydrocarbon spill	Removal of fuel tanks upon closure of mining right
Mining Area	Construction Operation Decommissioning Closure	• No dumping of materials prior to approval. • Proper planning of the open pit • Access control • Dust control and monitoring • Continuous rehabilitation	Upon cessation of the individual activity (Continuous rehabilitation)

		• Stormwater run-off control • Immediate clean-up of hydrocarbon spill • Drip trays • Dump control and monitoring of erosion control	
Salvage yard(Storage and laydown)	Construction Operation Decommissioning Closure	• Access control • Maintenance of fence • Storm water run-off • Immediate clean-up of hydrocarbons	Removal of fence around salvage yard and ripping of salvage yard area upon closure of the mining right
Waste disposal site (domestic and Hazardous waste)	Construction Operation Decommissioning Closure	• Storage of waste within receptacles • Storage of hazardous waste on concrete floor with bund walls • Removal of waste on regular interval • Waste separation on marked receptacles	• Removal of waste receptacles • Breaking and removal of rubbles from the concrete floors and bund walls upon closure of the mining right
Tailing Storage Facility(TSF) Slime Dam	Construction Operation Decommissioning Closure	• Regular updating of the water balance modelling of the site water management system, to minimise overflow risk. • Regular inspection of the decant system, to ensure efficient operation • Regular inspection of embankment integrity to be undertaken. Monthly piezometric monitoring of phreatic surface levels within embankment. • Independent annual inspections. • Regular inspection of rock face integrity to be undertaken.	Rehabilitation of the TSF will occur progressively as cells reach their planned tailings storage capacity. This approach allows regular review and reassessment of the TSF rehabilitation plans that can be applied to subsequently decommissioned cells

		• Ongoing monitoring of seepage rates through recovery bores and observation bores. Monthly inspection for evidence of seepage • Monitoring the performance of the TSF is an important component of demonstrating that the design assumptions and mitigation measures are effective in controlling the potential environmental impacts from the TSF, both during operations and after closure. Monitoring data must be compiled and assessed at regular intervals and reported as part of the mine's annual environmental monitoring report. • TSF will have an operation and management plan (operating manual) that is available to all personnel, local inhabitants, government inspectors and other relevant stakeholders. All documents relating to planning, design and construction will be maintained in an accessible way, with records kept permanently for future reference • The contractor/mine will monitor the TSF in accordance with the operation and management plan, as approved by the competent authorities. • The Mine/contractor(s) will implement internal emergency plans and apply them on-site	

		whenever a tangible risk of a potential major accident that may occur has been identified, when an uncontrolled event occurs that could lead to a major accident, or when a major accident has occurred. The mine operators should review, test, revise and update the internal emergency plans periodically, and always when there has been a change in the mine operation and management • The mine/ECO should notify the competent authorities in the event of emergencies that have occurred on the site. • The mine should cooperate with the competent authorities and local communities in preparing external emergency plans. • Train all personnel and reinforce and update their safety knowledge, in particular with regard to how to identify potentially harmful events and/or circumstances • Implement safety audits for the facilities and promote the use of environmental management systems based on local, National or international standards • The tailings dam, for which the following parameters need to be assessed accurately; ➢ The slope stability of the dam;	

		➢ The strength and stability of the foundation for the dam; ➢ The stability of the tailing material (induced liquefaction); ➢ Erosion to the dam (suffusion and outside erosion); ➢ Water recovery systems ➢ Emergency spillways; ➢ Slope sliding; • The dam-raising method should be chosen with regard to the local conditions (e.g., seismicity, tailings composition, severe climate). Special attention has to be given to quality control and site supervision during the starter works construction phase of the TSF • Additional impoundments should be designed to contain inflow from emergency outlets. • Hazardous substances and process water should be reused as far as technically possible (recycling) and, in case it is not possible to recycle hazardous substances, they should be neutralized before they are discharged into the TSF • The tailings dam, for which the following parameters need to be assessed accurately; • The slope stability of the dam;	

		• The strength and stability of the foundation for the dam; • The stability of the tailing material (induced liquefaction); • Erosion to the dam (suffusion and outside erosion); • Water recovery systems • Emergency spillways; • Slope sliding; • The dam-raising method should be chosen with regard to the local conditions (e.g., seismicity, tailings composition, severe climate). Special attention has to be given to quality control and site supervision during the starter works construction phase of the TSF • Additional impoundments should be designed to contain inflow from emergency outlets. • Hazardous substances and process water should be reused as far as technically possible (recycling) and, in case it is not possible to recycle hazardous substances, they should be neutralized before they are discharged into the TSF	
Roads (Both access and haulage roads on the mine site)	Construction Operation Decommissioning Closure	• Maintenance of roads • Dust control and monitoring • Noise control and monitoring • Speed limits • Storm water run offs control • Erosion control • Immediate clean hydrocarbons spills	• Upon cessation of the individual activity (Continuous rehabilitation • Ripping of roads upon closure of the mining right

		• Rip disturbed areas to allow re-growth of vegetation cover	
Workshop and Wash Bay	Construction Operation Decommissioning Closure	• Concrete floor with oil/water separator • Storm water runoff control • Immediate clean hydrocarbon spills	Removal of wash bay equipment, breaking and removal of rubble from the concrete floor and bund walls upon closure of mining right
Water distribution pipe line	Construction Operation Decommissioning Closure	• Maintain water pipeline and structures	Removal of pipeline upon closure of the mining right

6.Impacts management outcomes

ACTIVITY	POTENTIAL IMPACT	AFFECTED	PHASE IN WHICH IMPACTS IS ANTICIPATED	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Processing Plant	• Dust • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination	• Air quality • Fauna • Flora • Noise • Soil • Surface water • Underground water • safety	• Construction • Operation • Commissioning • Decommissioning • closure	• access control • maintenance of processing plant • dust control and monitoring • drip trays • storm water run-off control • immediate clean-up of hydrocarbon spills	• safety ensured • dust levels minimised • minimize potential for hydrocarbon spill to infiltrate into underground water • noise level minimized • rehabilitation standards and

	• Underground water contamination • Surface disturbance			• rip disturbed areas to allow re-growth of vegetation cover • noise control • well maintained equipment • selecting equipment with lower sound power levels • installing suitable mufflers on engine exhausts and compressor components • develop a mechanism to record and respond to complaints	closure objectives to be met • erosion potential minimized
Ablution facilities	• Soil contamination • Possible groundwater contamination	Soil and underground contamination	• Construction • Operation • Commissioning • Decommissioning closure	Maintenance of sewage facilities on a regular basis	Minimize the potential for a chemical spill on soil which may infiltrate into the groundwater.
Clean & Dirty water system	• Surface disturbance	• Soil • Underground water	• Construction • Operation • Commissioning	• The re-vegetation of disturbed areas is important to prevent	• safety ensured • dust levels minimised

	• Underground water contamination • Soils contamination • Surface water contamination	• Surface water	• Decommissioning closure	erosion and improve the rate of infiltration. • Erosion channels that may develop before vegetation has established should be rehabilitated by filling, levelling and re-vegetation where topsoil is washed away. • Monitoring and maintenance of soil traps in relevant areas. • Drip trays used • Immediate clean-up of hydrocarbon spills • Linear infrastructure such as roads, pipelines will be inspected at least monthly to ensure that the associated water management infrastructure is	• minimize potential for hydrocarbon spill to infiltrate into underground water • noise level minimized • rehabilitation standards and closure objectives to be met erosion potential minimized

				effective in controlling erosion	
Fuel storage	• underground water contamination • removal and disturbance of vegetation cover and natural habitat of fauna • soil contamination • surface disturbance	• soil • underground water contamination • surface water	• Construction • Operation • Commissioning • Decommissioning • closure	• maintenance of diesel tanks and bund walls, • oil traps • drip tray at re-fuelling point • refuelling must take place in a well demarcated areas and over suitable drip trays to prevent soil pollution. • Spill kits to clean up accidental spills from earthmoving machinery must be well marked and available on site, • Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures	• Minimize potential for hydrocarbon spills to infiltrate into underground water • Rehabilitation standards and closure objective to be met

				• All facilities where dangerous materials are stored must be contained in a bund wall, • Vehicles and machinery should be regularly serviced and maintained	
Mining Area	Dust Noise Removal and disturbance of vegetation cover and natural habitat of fauna Soil contamination Surface disturbance Surface water contamination	• Air quality • Fauna • Flora • Visual impact • noise	• Construction • Operation • Commissioning • Decommissioning • closure	• Access control • Dust control and protection of important faunal habitat • The extent of the mining area should be demarcated on the layout plans (preferable on disturbed areas or those identified with low conservation importance). • No construction personnel or vehicles	Safety ensured. Dust levels minimized Minimize potential for hydrocarbon spills to infiltrate into groundwater Noise levels minimized Rehabilitation standards and closure objectives to be met. Erosion potential minimized.

				may leave the demarcated area except those authorised to do so. • Those areas surrounding the mine site that are not part of the demarcated development area should be considered as no go zone for employees, machinery or even visitors. • Appointment of a full time ECO must render guidance to the stuff and contractors with respect to suitable areas for all related disturbances, and must ensure that all contractors and workers undergo Environmental induction prior to	

				commencing with work on site • All those working on site must undergo Environmental induction with regard to fauna and in particular awareness about conservation of species such as tortoise, snakes, owls which are most likely to poached as a result of cultural superstations or for spiritual or medicinal uses. • All those working on site must be educated about the conservation importance of fauna and floral occurring on site. • The Environmental induction must be	

				conducted at least using local language to be understood by workers. • Reptiles and Amphibians species that are exposed during the clearing activity or operation, should be captured for later translocation by a qualified expert. • Careful consideration is required when planning the placement for stockpile topsoil and the creation of access routes in order to avoid the destruction of habitant and minimise the overall mining footprint. • The footprint areas of the mining activity	

				must be scanned for Red listed and protected plant species prior to mining; snare or traps removed and destroyed; and maintenance of firebreaks. • The re-vegetation disturbed area is important to prevent erosion and improve the rate of infiltration. • Erosion channels that may develop before vegetation has established should be rehabilitated by filling, levelling by filling, levelling and re-vegetation where topsoil is washed away	
Salvage yard (Storage and laydown area)	• Removal and disturbance of vegetation	• Fauna • Flora	• Construction • Operation • Commissioning	• access control • maintenance of fence	• minimize potential for hydrocarbon spills to infiltrate

	cover and natural habitat of fauna • Soil contamination • Surface contamination • Surface water contamination • Underground water contamination	• Underground water • Soil • Surface water	• Decommissioning • closure	• storm water runoff control • immediate clean-up of hydrocarbon spill	into underground water • rehabilitation standards and closure objectives to be met. • Erosion potential minimised.
Product stockpile area	• Dust • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Surface disturbance	• Air quality • Fauna • Flora • Noise • Soil • Surface water	• Commissioning • Operation • Decommissioning • closure	• dust control and monitoring • noise control and monitoring • drip trays • storm water run-off control • immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover • Noise control	Rehabilitation standards and closure objectives to be met. Minimize potential for hydrocarbon spills to infiltrate into underground water.

				• Well maintained equipment • Selecting equipment with lower sound power levels • Installing silencers for fans • Installing suitable mufflers on engine exhaust and compressor components; • Installing acoustic • Develop a mechanism to record and respond to complaints	
Waste disposal site (domestic and hazardous /industrial waste)	• Underground water contamination • Contamination of soil • Surface water contamination	• Underground water • Soil • Surface water	• Construction • Commissioning • Operational • Decommissioning • closure	• storage of waste within receptacles • storage of hazardous waste on concrete floor with bund wall. • Removal of waste on regular interval • Practice waste separation at source	• Minimize potential for hydrocarbon spills to infiltrate into underground water. • Noise level minimized • Rehabilitation standards and

				• Waste bins must be branded for different type of waste generated • Hazardous waste must be disposed and collected by licensed land fill site	closure objectives to be met.
Roads (both access and haulage road on the mine site)	• Dust • Noise • Removal and disturbance of vegetation cover and natural habitat of fauna • Soil contamination • Surface disturbance	• Air quality • Fauna • Flora • Noise • Soil • Surface water	• Construction • Commissioning • Operational • Decommissioning • closure	• maintenance of roads • dust control and monitoring • noise control and monitoring • speed limits • storm water runoff control • erosion control • immediately clean hydrocarbon spills • Rip disturbed areas to allow re-growth of vegetation cover • Noise control • Well maintained equipment	• Dust levels minimized • Minimize potential for hydrocarbon spills to infiltrate into underground water • Noise levels minimised • Rehabilitation standards and closure objectives met • Erosion potential minimized

				• Selecting equipment with lower sound power levels • Installing silencers for fans • Installing suitable muffers on engine exhausts and compressor components • Develop a mechanism to record and record to complaints • Linear infrastructure such as roads and pipelines will be inspected at least monthly to ensure that the infrastructure is effective in controlling erosion	
Workshop and wash bay	• Removal of disturbed of vegetation cover and	• Underground water • Soil • Surface water	• Construction • Commissioning • Operational • Decommissioning	• concrete floor with oils/water separator • storm water runoff control	• Minimize potential for hydrocarbon spills to infiltrate

	natural habitat of fauna • Soil contamination		• closure	• immediate clean-up of hydrocarbon spills	into underground water • Noise levels minimised • Rehabilitation standards and closure objectives to be met • Erosion potential minimised
Water distribution Pipeline	• Surface disturbance	• Fauna • Flora • Surface water	• Construction • Commissioning • Operational • Decommissioning • closure	• monitor pipeline for water leaks • maintenance of pipeline • linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.	Rehabilitation standards and closure objectives to be met. Erosion potential minimized.

Water tanks	• Surface disturbance	• Fauna • Flora • Surface water	• Construction • Commissioning • Operational • Decommissioning • closure	• maintain water tanks and structure	• safety ensured. • Rehabilitation standards and closure objectives to be met
Water recycling plant	• Surface disturbance • Erosion	• Fauna • Flora • Topography	• Construction • Commissioning • Operational • Decommissioning • closure	• maintenance and services • storm water control	• safety ensured. • Rehabilitation standards and closure objectives to be met.
Tailing Storage Facility (TSF) Slimes Dam	• Surface water overflow • Failure of TSF • Erosion of outer face of TSF • Seepage from TSF	• Topography • Flora • Fauna • Land degradation	• Construction • Commissioning • Operational • Decommissioning • closure	• Runoff and decant water to flow to Water Management Dam. The Dam designed to be above the 1 in 500-year flood level • Maintain a suitable freeboard before each wet season. All runoff and decant water in the slime dam to be reused in the processing plant.	• improved tailings placement techniques • provide stable landform • no excessive or uncontrolled emissions to the environment • minimise the area of the disturbance footprint • storage efficiency

				• Only hard durable rock that is resistant to erosion is to be used on outer face • Replace any rocks showing signs of erosion with more competent material • Regular inspection of embankment integrity to be undertaken. Monthly piezometric monitoring of phreatic surface levels within embankment. Independent annual inspections • Ongoing monitoring of seepage rates through recovery bores and observation bores. Monthly inspection of embankment for evidence of seepage.	• Rehabilitation standards and closure objectives to be met.

				• Ongoing monitoring of seepage rates through recovery bores and observation bores. Monthly inspection of embankment for evidence of seepage • The topsoil surface of the cover may be susceptible to erosion from wind and rain immediately after construction and during the vegetation establishment period. Erosion protection must be provided to minimise erosion and the loss of seed and fertiliser from the surface of the cover. • ensure that the TSF remains stable in the long-term and will not pose an ongoing threat	

				to the surrounding environment • The most likely scenario for an emergency situation at the TSF is due to an excessive rainfall event. In this situation the following plan is to be put in place; during these major rainfall events 3 hourly monitoring of the TSF will be required; stop water pumping from the mine to the TSF • The tailings dam, for which the following parameters need to be assessed accurately; • The slope stability of the dam; • The strength and stability of the foundation for the dam;	

				• The stability of the tailing material (induced liquefaction); • Erosion to the dam (suffusion and outside erosion); • Water recovery systems • Emergency spillways; • Slope sliding; • The dam-raising method should be chosen with regard to the local conditions (e.g., seismicity, tailings composition, severe climate). Special attention has to be given to quality control and site supervision during the starter works construction phase of the TSF	

				• Additional impoundments should be designed to contain inflow from emergency outlets. • Hazardous substances and process water should be reused as far as technically possible (recycling) and, in case it is not possible to recycle hazardous substances, they should be neutralized before they are discharged into the TSF	

7. Impacts Management Actions

Project activities	Receiving environment	Objectives	Management and mitigation measures	Frequency	Legal requirements	Recommended action plan	Duration	Responsible person
Construction								
1.Site Clearing Removal of Topsoil and vegetation	**Topography**	1.To minimise topographical change and disruption of surface water flow 2.To minimise soil erosion and topsoil loss	1. Do controlled dumping at the tailings dump facility. 2. Stabilise the mine residue deposits. 3. Employ effective rehabilitation strategies to restore surface topography of tailings dumps and plant site. 4. Pick up all tailing material up to natural ground level. 5. Stabilise underground workings.	Weekly	N/A	1. Mine Plan		Environmental Manager/Environmental Control Officer/Mine Manager

			6. All temporary infrastructures will be demolished during closure					
	Aesthetic and Visual Impact	To minimise the negative visual impact caused by the removal of topsoil and vegetation	1. Topsoil and vegetation should only be removed when and where necessary 2. Topsoil stockpiles should be vegetated and positioned to reduce visual disturbance where possible 3. During the construction of the mine infrastructure, consideration to the natural hues can be achieved by painting infrastructure with matt tones	Weekly	N/A	1.Mining Plan 2.Fire Control Plan	MLS (Mine Life Span)	Environmental Manager/Environmental Control Officer /Mine manager

			to help camouflage the infrastructure 4. Construction activities and associated infrastructure to be shielded/concealed as far as possible. 5. Construction activities are to be limited to day light working hours 6. No construction crews are to be accommodated onsite after hours, except for a night watchman 7. Low level and frequency lighting are to be utilized wherever possible 8. Dust from Stockpile areas, roads and other activities must be managed by					

			means of dust suppression to prevent excessive dust. 9. Stockpiles should not exceed 15m in height. 10. Rehabilitation of the area must be done as the mining is completed. 11. The visual impact can be minimized by the creation of a visual barrier. 12. The retention of as much existing vegetation as possible, specifically the existing mature trees in the area to conceal the mining activity as much as possible. 13. During the construction of the mine infrastructure, consideration					

			to the natural hues can be achieved by painting infrastructure with matt tones to help camouflage the infrastructure. 14. Down-lighting should also be implemented to minimise light pollution at night.					
	Soil	Prevent or minimise soil degradation	1. As far possible try to limit construction activities to the dry season (May – Oct) Prevent hydrocarbon spillages 2. Restrict the extent of disturbance within the Project area	Daily	MPRDA Regulation 56 (1) to (8); soil pollution and erosion control; 2.CARA Section 4(1) and regulation 6(1)	1.Mine Plan 2. Soil Management Plan.	MLS	Environmental Manager/Environmental Control Officer/Mine Manager

			and minimise activity within designated areas of disturbance 3. Stripping operations should only be executed when soil moisture content will minimise the risk of compaction (during dry season) 4. During stockpiling, preferably use the 'end-tipping' method to keep the stockpiled soils lose 5. Ensure stockpiles are placed on a free					

			draining location to limit waterlogging Physical demarcation of the working area ahead of construction must be undertaken to ensure that construction remains within the area to be disturbed 6. Access routes to / from / around the site will be designated prior to actual construction. 7. Should any evidence of soil contaminatio n be discovered,					

			appropriate measures should be taken to remediate the soil. (See hydrocarbons in surface water above). 8. The temporary by-pass road must be rehabilitated as per the methodology outlined in the EMP after construction. 9. Compacted soil must rip and suitably ameliorated to ensure the successful establishment of vegetation.					
	Flora	Limit footprint of disturbed areas		Daily / Monthly	1.National Environmental Management Act (Act No. 107 of 1998)	1.Biodiversity Management Plan	MLS	Environmental Manager/Environmental Control Officer

			1. Highly sensitive areas should be avoided. These include all Ridges, Bushveld and Impacted Ridge Bushveld areas with the exception of the Ridge Bushveld that will be impacted on by the tailing facilities 2.Areas that are not directly affected by mining activities should be conserved 3.Where SSC are encountered, permits for the removal of these species must be obtained		2. National Water Act (Act No. 36 of 1998) 3.Conservation of Agricultural Resources Act (Act No. 43 of 1983) 4.The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or protected species a legal status and protection	2.Alien Invasive Control Management Plan 3.Rehabilitation Plan		

			4.A nursery is recommended which will serve to propagate indigenous species in order that they can restore disturbed areas, immediately after an activity has ceased					
	Fauna	Limit footprint of disturbed areas	1.Do not develop near or on the areas of Very High Sensitivity (e.g. wetlands and riparian edges) 2.Where SSC encountered, permits for the removal of these	Daily/ Weekly /Monthly	1.National Environmental Management Act (Act No. 107 of 1998) 2. National Water Act (Act No. 36 OF 1998) 3. Conservation of Agricultural Resources Act (Act No. 43 of 1983 4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or	1. Biodiversity Management Plan 2.Rehabilitation Plan	MLS	Environmental Manager/Environmental Control Officer

			species must be obtained.		protected species a legal status and protection			
	Noise	To prevent the noise emanating from the construction machinery having an impact on the sensitive receptors	1. As far as possible keep constructions activities to daylight hours 2. Mining-related machine and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g. installed exhaust mufflers 3. Switching off equipment when not in use	1. Vehicles to be serviced according to service plan 2. Machinery to be switched off when not in use 3. Construction activities must be limited to day time hours	1. National Environmental Management Air Quality Act (Act 39 of 2004) 2.Environmental Conservation Act (Act 73 of 1989	1. Noise Monitoring Programme 2. Regular vehicle inspections	Construction Phase	Environmental Manager/ Environmental Control Officer

			4. Fixed noise producing sources such as generators, pump stations to be either housed in enclosures or barriers put up around the noise source					
	Air Quality	To minimise/ prevent fugitive dust from being released	1. The area of disturbance must be kept to a minimum and no unnecessary clearing of vegetation must occur 2. Topsoil should be re-vegetated to reduce the exposed areas. 3. During the loading of topsoil onto trucks or stockpiles, the dropping heights	Daily / Weekly	National Environment Management: Air Quality Act (Act No. 39 of 2004	Air Quality Monitoring Plan	Construction phase	Environmental Manager/ Environmental Control Office

			should be minimised. 4. Dust suppression must occur on the mining site and in areas where significant dust may be generated.					
2. Construction of surface infrastructure e.g. access roads, pipes, storm water diversion berms, change houses, admin blocks etc.	**Topography**	To minimise topography, change and disruption of surface water flow	1. Limit the surface area of infrastructure where possible 2. Store construction materials away from surface water and drainage lines 3. Numerous roads should not be constructed alongside each other	Weekly	N/A	1. Mine Plan 2. Surface water Monitoring Plan	MLS	Environmental Manager/Environmental Control Officer/ Mine Manager

	Visual	To minimise the negative visual impact caused by the construction of surface infrastructure	1. The area of the surface infrastructure should be limited where possible 2. Surface infrastructure should be painted with natural hues so as to blend into the surrounding landscape where possible 3. Down lighting should be implemented to minimise light pollution at night 4. Pylons and metal structures should be galvanised so as to weather to a	Weekly	N/A	Mine Plan	MLS	Environmental Manager /Environmental Control Officer Mine manager

			matt grey finish rather than be painted silver. If pylons and metal structures are to be painted it is recommended that a neutral matt finish be used 5. Construction of vegetation berms should be implemented close to infrastructure so that vegetation can be established 6. Numerous haul roads should not be created alongside each other 7. Roads should be wetted					

			frequently by means of a water bowser to suppress dust					
	Soil	1. Prevent or minimise soil degradation 2. Minimise soil compaction	1. Refer to the mitigations measures for soil in the Site Clearing activity section above 2. Vehicles need must stay on designated routes and roads	Daily	MPRDA Regulation 56 (1) to (8); soil pollution and erosion control; CARA Section 4(1) and regulation 6(1)	1. Mine Plan 2. Soil Management Plan	MLS	Environmental Manager /Environmental Control Officer /Mine Manager
	Flora	Limit footprint of disturbed areas	Refer to the mitigation measures for flora in the Site Clearing activity section above	Daily/Monthly	1. National Environmental Management Act (Act No. 107 of 1998) 2. National Water Act (Act No. 36 of 1998) 3. Conservation of Agricultural Resources Act (Act No. 43 of 1983 4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or protected species a	1. Biodiversity Management Plan 2. Weed Control and Alien Invasive Control Plan 3. Rehabilitation Plan	MLS	Environmental Manager/Environmental Control Officer

					legal status and protection			
	Fauna	Limit footprint of disturbed areas	Refer to the mitigation measures for fauna in the Site Clearing activity section above	Monthly	1. National Environmental Management Act (Act No. 107 of 1998) 2. National Water Act (Act No. 36 OF 1998) 3. Conservation of Agricultural Resources Act (Act No. 43 of 1983 4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or protected species a legal status and protection	1. Biodiversity Management Plan 2. Weed Control and Alien Invasive Control Plan 3. Rehabilitation Plan	MLS	Environmental Manager/ Environmental Control Officer
	Noise	To prevent the noise emanating from the construction machinery from impacting on the sensitive receptors	Refer to the mitigation measures for noise in the Site Clearing activity section above	Refer to the frequency for noise in the Site Clearing activity section above	1. National Environmental Management Air Quality Act (Act 39 of 2004) 2. Environmental Conservation Act (Act 73 of 1989)	1. Noise Monitoring Programme 2. Regular vehicle inspections	Construction phase	Environmental Manager/ Environmental Control Officer
	Air Quality	To minimise/prevent	Refer to the mitigation measures for air quality in the	Daily/Weekly	National Environment Management: Air Quality Act (Act No. 39 of 2004	1. Air Quality Monitoring Plan	Construction phase	Environmental Manager/Environmental Control Officer

		fugitive dust from occurring	construction of surface infrastructure section above					
	Surface Water Quality	To prevent water quality deterioration through siltation	1. Containment of all stormwater runoff according to the storm water management programme 2. No storage of hydro-carbon permitted at the construction site, with the exception of a diesel bowser for generators used for lighting purposes. 3. Frequent inspections of vehicles and machinery must be undertaken to	Daily	National Water Act (Act 36 of 1998)	1. Surface water Monitoring Plan 2. Stormwater Management Programme	MLS	Environmental Manage/Environmental Control Officer /Mine Engine

			identify oil leaks / spills. Leaking machinery must be removed off site for maintenance purposes. No maintenance of vehicles or machinery must be undertaken onsite. 4. In the event of fuel or hydrocarbon spillage, soil will be removed to a designated area for bioremediation with suitably recognized product designed for this purpose.					

	Surface Water Quantity	Increase the water reporting to the catchment	The dirty water area isolated from the catchment must be minimized to reduce the volume of runoff prevented from reporting to the catchment	Daily/Weekly	National Water Act (Act 36 of 1998)	1. Stormwater Management Programme	MLS	Environmental Manager /Environmental Control Officer Mine Manager
3. Transportation of materials and workers on site .	**Topography**	1. To minimise topography, change and disruption of surface water flow 2. To minimise soil erosion and topsoil loss	1. Numerous roads should not be constructed alongside each other 2. Ensure that drainage off roads does not result in soil erosion	Weekly	N/A	1. Surface Water Monitoring Plan 2. Soil Management Plan	MLS	Environmental Manager /Environmental Control Officer Mine Manager
	Visual	To mitigate the negative visual impact caused by the drilling, blasting and development of	1. The area of the surface infrastructure should be limited where possible 2. Surface infrastructure should be	Weekly	N/A	Mine Plan	MLS	Environmental Manag/ Environmental Control Officer Mine manager

		infrastructure for mining	painted with natural hues so as to blend into the surrounding landscape where possible 3. Down lighting should be implemented to minimise light pollution at night 4. Pylons and metal structures should be galvanised so as to weather a matt grey finish rather than be painted silver. If pylons and metal structures are to be painted it is recommended that a neutral matt finish be used 5. Construction of vegetation berms should be					

			implemented close to infrastructure so that vegetation can be established					
	Air Quality	Minimise the generation of dust and fugitive emissions	1. Speed limits need to be observed and erecting speed humps 2. Application of wetting agents or application of dust suppressant to bind soil surfaces to avoid soil erosion 3. During the loading of topsoil onto trucks or stockpiles, the dropping heights should be minimised 4. Roads must be sealed as for as possible using a	Daily/Weekly	1. National Environment Management: Air Quality Act (Act No. 39 of 2004)	1. Air Quality Monitoring Plan	Construction Phase	• Environmental Manager] • Environmental Control Officer • Mine manager

			bitumen coating					
4. Excavation, blasting and development of infrastructure for mining	**Topography**	To minimise topography change and disruption of surface water flow	Limit the surface areas of infrastructure where possible	Weekly	N/A	Mine Plan	MLS	• Environmental Manager • Environmental Control Officer • Mine manager
	Visual	To mitigate the negative visual impact caused by the drilling, blasting and development of infrastructure for mining	Refer to the mitigation measures for visual in the Transportation of materials and workers on site section above	Weekly	N/A	Mine Plan	MLS	• Environmental Manager • Environmental Control Officer • Mine Manager
	Noise	To prevent the noise emanating from blasting / drilling activities from impacting on the sensitive receptors	Refer to the mitigation measures for noise in the Site Clearing activity section above	Refer to the frequency for noise in the Site Clearing activity section above	1. National Environmental Management Air Quality Act (Act 39 of 2004)	1. Noise Monitoring Programme 2. Regular vehicle inspection 3. Blasting Program	Construction phase	• Environmental Manager • Environmental Control Officer

					■ Environmental Conservation Act (Act 73 of 1989)			
	Air Quality	To minimise/prevent fugitive dust from occurring	Refer to the mitigation measures for air quality in the construction of surface infrastructure section above	Daily/ Weekly	National Environment Management: Air Quality Act (Act No. 39 of 2004)	1. Air Quality Monitoring Plan	Construction phase	• Environmental Manager • Environmental Control Officer
	Surface Water Quality	Minimise the introduction of nutrients into surface water bodies	1. Control stormwater run-off according to the management plan 2. Cut-off trenches should be constructed around the explosives area 3. Explosives to be stored in an	Daily /Weekly	National Water Act (Act 36 of 1998)	1. Stormwater Management Programme	MLS	• Environmental Manager • Environmental Control Officer • Mine manager

			enclosed area with an impermeable surface					
	Ground Water Quality	Prevent Seepage from the TSF	1. Monitor water groundwater quality in the potentially affected areas 2. Toe drains should be installed on the downslope sides of the TSF to capture any shallow seepage within the unsaturated zone	Daily/Weekly	National Water Act (Act 36 of 1998)	1. Groundwater Monitoring Plan	MLS	• Environmental Manager • Environmental Control Officer • Mine manager
5. Temporary storage of hazardous chemicals and fuels	**Soil**	Prevent and minimise soil contamination	1. Construction vehicles and equipment should be serviced regularly, in a designated area 2. Service areas must be paved	Daily /Weekly	MPRDA Regulation 56 (1) to (8); soil pollution and erosion control	1. Soil Management Plan 2. Equipment Maintenance Plan 3. Incident register and action plan	MLS	• Environmental Manager • Environmental Control Officer

			with concrete paving 3. Construction vehicles should remain on designated and prepared compacted gravel roads 4. Areas that are used to store hydrocarbons must be bunded and be able to contain the hydrocarbons in the event of a spillage occurring 5. Drip trays must be used when machinery and/or vehicles are serviced 6. Spill containment			4. Emergency Response Plan		

			and clean up kits should be available onsite and clean-up from any spill must be in place and executed at the time of a spillage with appropriate disposal as necessary					
	Surface water quality	Prevent/contain spillages of hazardous material	1. Refer to the mitigation measures for aquatics in the Temporary storage of hazardous chemicals and fuels above	Continuously	National Water Act (Act 36 of 1998)	1. Material Safety Data Sheets 2. Surface water monitoring plan	Construction phase	• Environmental Manager • Environmental Control officer
	Ground Water	Prevent/contain spillages of hazardous material	1. All spillages of hazardous materials should be cleaned up immediately 2. Clean-up spill kits must be placed at all hazardous	Continuously	National Water Act (Act 36 of 1998)	1. Material Safety Data Sheets 2. Surface water monitoring plan	Construction phase	• Environmental Manager • Environmental Control officer

			material storage areas 3. Store hazardous material according to manufacturing specifications 4. Store hazardous material on cemented/concrete floor in a bunded area					
Operation Phase								
6. Removal of PGM's (underground mining process)	**Topography**	To minimise subsidence resulting in topography change and disruption of surface water flow	Underground mining areas	Ensure that sufficient pillars are left to support	Weekly	N/A	1.Surface Water Monitoring Plan	• Environmental Manager • Environmental Control Officer • Mine manager • Mine Engineer
	Visual		1. Store waste rock, tailings and stockpiled		Weekly	N/A	Mine Plan	• Environmental Manager

		1. To reduce the negative visual impact caused by the mine and the associated infrastructure	ore away from surface water and drainage lines 2. Limit the footprint area of the waste rock dumps, TSF and ore stockpile if possible 3. Limit the quantity and time of ore stockpiled on site 4. Ensure ore stockpiles, waste rock dumps and the TSF are contoured 5. Ensure all dirty water is channelled towards					Environmental Control Officer • Mine Manager Mine Engineer

			pollution control dam 6. Ensure berms are well maintained and contour					
	Air Quality	To minimise the generation of fugitive dust generation and fugitive emissions	1. Install, filtration systems to remove the pollutants from the air prior to surface release via the vent shaft 2. Use of efficient diesel fuel (low sulphur ppm value) for heavy underground machinery		Daily/Weekly	1. National Environment Management: Air Quality Act (Act No. 39 of 2004)	Air Quality Monitoring Plan	• Environmental Manager • Environmental Control Officer
	Ground Water Quantities	Minimise the impact on the groundwater table as a result of the underground works	Monitor the groundwater levels of the affected areas		Daily/Weekly	2. National Water Act (Act 36 of 1998)	Ground Water Monitoring Plan	• Environmental Manager • Environmental Control Officer • Mine Engineer

7. Operation of surface infrastructure such as the operation of the mining shaft, crusher, pipelines, the TSF and processing plant (includes water use and storage on site, including pollution control dams)	**Visual**	1. To minimise the negative visual impact caused by the operation of the ore stockpile, waste rock dumps and TSF 2. To minimise the negative visual impact caused by the dust from operation of the crusher	1. The ore stockpile, waste rock dumps and TSF should be positioned to reduce visual disturbance where possible 2. The quantity and time of ore stored on site should be limited where possible 3. The height of the waste rock dumps and TSF should be limited where possible 4. The waste rock dumps and TSF should be	Weekly	N/A	1. Mine Plan 2. Erosion Control Plan	MLS	• Environmental Manager • Environmental Control Officer • Mine manager • Mine Engineer

			top soiled and vegetated where possible 5. Dust suppression should be used during operation of surface crushing					
	Soil	Prevent or minimise soil degradation	1. Re-vegetate cleared areas and stockpiles to avoid water erosion losses 2. Preserve looseness of stockpiled soil by executing fertilisation and seeding operations by hand 3. Soil stockpiles should be monitored for fertility via	Weekly	MPRDA Regulation 56 (1) to (8); soil pollution and erosion control	1. Mine Plan 2. Erosion Control Plan	Operational Phase	• Environmental Manager • Environmental Control Officer • Mine manager • Mine Engineer

			sampling and testing					
	Flora	Limit footprint of disturbed areas	1. Areas of contiguous natural Bushveld must be managed on site and in adjacent sites where mining is proposed, as part of a Biodiversity Action Management Plan 2. Cleared areas should be monitored for colonisation by alien species and a proactive approach should be undertaken to control alien species as soon as they are established	Monthly	1. National Environmental Management Act (Act No. 107 of 1998) 2. National Water Act (Act No. 36 OF 1998) 3. Conservation of Agricultural Resources Act (Act No. 43 of 1983) 4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or protected species a	Weed Control and Alien Invasive Control Plan	MLS	Environmental Manage/Environmental Control Officer

			3. Where possible use pesticides or techniques to control pests that will not harm the environment		legal status and protection			

	Fauna	Eliminate impact of pest control activities on the current fauna	Pesticides or techniques to control pests that will not harm the environment should be explored and used	Daily	1. National Environmental Management Act (Act No. 107 of 1998) 2. National Water Act (Act No. 36 OF 1998) 3. Conservation of Agricultural Resources Act (Act No. 43 of 1983 4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or protected species a legal status and protection		MLS	Environmental Manager/Environmental Control Officer
	Noise	To prevent the noise emanating from the operation of machinery and equipment from impacting on the sensitive receptors	1. Mining-related machine and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective	1. Vehicles to be service according to service plan 2. Machinery to be switched	1. National Environmental Management Air Quality Act (Act 39 of 2004)	1. Noise monitoring programme 2. Regular vehicle inspections	Operational Phase	Environmental Manager/Environmental Control Officer Mine Manager/Main

			e.g. installed exhaust mufflers 2. Switching off equipment when not in use 3. Fixed noise producing sources such as generators, pump stations to be either housed in enclosures or barriers put up around the noise source	off when not in us 3. Constructi on activities must be limited to day time hours	2. Environmental Conservation Act (Act 73 of 1989			tenance Workshop Manager / Supervisor
	Air Quality	To minimise the generation of fugitive dust generation and fugitive emissions	1. Install water sprays around the crushing area 2. Ensure the crusher is enclosed 3. The TSF should undergo routine maintenance throughout the lifespan of the mine – with on-going re-vegetation	Daily/Weekly	National Environment Management: Air Quality Act (Act No. 39 of 2004	Air Quality Monitoring Plan	Operatio nal Phase	Environmental Manager/Envir onmental Control Officer

			to avoid exposed surface amenable to wind erosion					
	Surface Water Quality	Minimise surface water run-off	1. Only dirty water should be managed in the storm water management plan 2. No clean water should be stored 3. Runoff should be managed in such a manner that channel straightening and erosion does not result in habitat loss	Daily/Weekly	National Water Act (Act 36 of 1998)	Surface water Monitoring Plan /Storm Water Management Programme	MLS	Environmental Manager/Environmental Control Officer/Mine Manager /Mine Engineer
	Ground Water Quality	Prevent seepage from the TSF	1. Please refer to the mitigation measures for Groundwater quality in the blasting and development of infrastructure	Daily/Weekly	National Water Act (Act 36 of 1998)	Groundwater Monitoring Plan	MLS	Environmental Manager/Environmental Control Officer/Mine Manager /Mine Engineer

			for mining section above					
8. Storage, handling and treatment of hazardous products (fuel, explosives, and oil) and waste activities (waste, sewage, discards, PCD)	**Soil**	Prevent or minimise soil contamination	1. Refer to the mitigation measures for soil in the temporary storage of hazardous chemicals and fuels above	Weekly	MPRDA Regulation 56 (1) to (8); soil pollution and erosion control	1. Mine Plan 2. Soil Management Plan	MLS	Environmental Manager/Environmental Control officer
	Surface Water Quality	Prevent/contain spillages of hazardous material	1. Refer to the mitigation measures for aquatics in the temporary storage of hazardous chemicals and fuels above	Continuously	National Water Act (Act 36 of 1998)	1. Material Safety Data Sheets 2. Groundwater Monitoring Plan	Operational phase	Environmental Manager/Environmental Control officer

	Ground Water Quality	Prevent/contain spillages of hazardous material	1. Refer to the mitigation measures for aquatics in the temporary storage of hazardous chemicals and fuels above	Continuously	National Water Act (Act 36 of 1998)	1. Material Safety Data Sheets 2. Groundwater Monitoring Plan	Operational phase	Environmental Manager/Environmental Control officer
Decommissioning Phase								
9. Demolition and removal of all infrastructure (including transportation off site)	**Topography**	To rehabilitate the topography	1. Ensure, as far possible, that all infrastructure is removed	Weekly	N/A	1. Rehabilitation Plan	1.Decommissioning Phase	Environmental Manage/Environmental Control Office/Mine Manager
	Visual	To increase the positive visual impact caused by the removal of all infrastructure	1. Ensure all unnecessary infrastructure is removed 2. Ensure all concrete	Weekly	N/A	1. Rehabilitation Plan	2.Decommissioning Phase	Environmental Manager/Environmental Control Officer/Mine Manager

			foundations are removed					
	Soil	To prevent or minimise soil degradation.	1. Re-vegetate cleared areas and stockpiles to avoid water erosion losses 2. Monitoring of the condition of all unpaved roads is necessary due to the seasonal rainfall and potential water runoff and erosion	Weekly	1. MPRDA Regulation 56 (1) to (8); soil pollution and erosion control; CARA Section 4(1) and regulation 6(1)	1. Mine Plan 2. Soil Management Plan	MLS	Environmental Manager/Environmental Control Officer Mine Manager
	Flora	Prevent the spread of alien species	1. Cleared areas should be monitored for colonisation by alien species and a proactive approach should be undertaken to control alien species as soon as they are established	Monthly	1. National Environmental Management Act (Act No. 107 of 1998) 2. National Water Act (Act No. 36 OF 1998) 3. Conservation of Agricultural Resources Act (Act No. 43 of 1983	1. Biodiversity Management Plan 2. Rehabilitation Plan 3. Weed Control and Alien	Decommissioning Phase	Environmental Manager/Environmental Control Officer

			2. Re-vegetate areas where infrastructure has been demolished		4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or protected species a legal status and protection	Invasive Control Plan		
	Surfcae(Water Quantity)	Minimise surface water run-off	Only dirty water should be managed in the storm water management plan	Daily/weekly	National Water Act (Act 36 of 1998	Stormwater Management Program	MLS	Environmental Manager/Environmental Control Officer
	Noise	To prevent the noise emanating from the demolition activities from impacting on the sensitive receptors	1. As far as possible keep operational activities to daylight hours 2. Mining-related machine and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g. installed	1. Vehicles to be service according to service plan 2. Machinery to be switched off when not in use.	1. National Environmental Management Air Quality Act (Act 39 of 2004) 2. Environmental Conservation Act (Act 73 of 1989	1. Noise monitoring programme 2. Regular vehicle inspections	Decommissioning Phase	Environmental Manage/Environmental Control Officer/Mine Manager/Maintenance/Workshop Manager / Supervisor

			exhaust mufflers 3. Switching off equipment when not in use 4. Fixed noise producing sources such as generators, pump stations to be either housed in enclosures or barriers put up around the noise source	3. Construction activities must be limited to day time hours				
	Air Quality	To minimise/prevent fugitive dust from occurring	1. The area of disturbance must be kept to a minimum 2. Dust suppression must be applied to areas where possible dust could generate from	Daily/weekly	National Environmental Management Air Quality Act (Act 39 of 2004)	Air Quality Monitoring Plan	Decommissioning Phase	Environmental Manager/Environmental Control Officer
	Ground water Quality	Prevent/contain possible hydrocarbon spillages	1. Maintain vehicles on a regular basis	Continuously	National Water Act (Act 36 of 1998)	Implement vehicle maintenance schedule	1. Decommissioning Phase	Environmental Manager/Environmental Control Officer/Mine Manager

			2. Make use of oil pans in/under vehicles					
10. Rehabilitation (spreading of soil, re-vegetation and profiling/contouring) (ventilation shaft entrances)	**Topography**		1. Shaft voids must be plugged and closed 2. Ensure that the rehabilitated area is re-contoured and profiled to topography similar to the pre-development topography 3. Spread soil over the rehabilitated area 4. Ensure that surface water and drainage lines are rehabilitated to pre-development condition 5. Re-vegetate rehabilitated areas	Weekly	N/A	1. Rehabilitation Plan 2. Surface 3. Water Monitoring Plan 4. Erosion Control Plan	Decommissioning Phase	Environmental Manager/Environmental Control Officer /Mine Manage

	Soil		1. Re-vegetate cleared areas and stockpiles to avoid water erosion losses 2. Preserve looseness of stockpiled soil by executing fertilisation and seeding operations by hand 3. Soil stockpiles should be monitored for fertility via sampling and testing	Weekly	1. MPRDA Regulation 56 (1) to (8); soil pollution and erosion control; CARA Section 4(1) and regulation 6(1)	1. Mine Plan/Soil Management Plan	Decommissioning Phase	Environmental Manager/Environmental Control Office/Mine Manager
	Flora		1. Cleared areas should be monitored for colonisation by alien species and a proactive approach should be undertaken to	Monthly	1. National Environmental Management Act (Act No. 107 of 1998 2. National Water Act (Act No. 36 OF 1998)	1. Biodiversity management plan 2. Rehabilitation plan	Decommissioning Phase	Environmental Manager/Environmental Control Officer /Mine Manage

			control alien species as soon as they are established		3. Conservation of Agricultural Resources Act (Act No. 43 of 1983 4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords threatened or protected species a legal status and protection			
11. Storage, handling and treatment of hazardous products (fuel, explosives, oil) and waste activities (waste, sewage)	**Soil**	Prevent and minimise soil contamination	1. Refer to the mitigation measures for soil in the temporary storage of hazardous chemicals and fuels above	Daily	1. MPRDA Regulation 56 (1) to (8); soil pollution and erosion control	1. Soil Management Plan 2. Mine Maintenance Plan 3. Incident register and action plan 4. Emergency Response Plan	MLS	Environmental Manager/Environmental Control Officer Mine Manager/Maintenance workshop manager / supervisor

	Surface Water Quality	Prevent/contain spillages of hazardous material	1. Refer to the mitigation measures for soil in the temporary storage of hazardous chemicals and fuels above	Continuously	1. National Water Act (Act 36 of 1998)	1. Material Safety Data Sheets 2. Groundwater Monitoring Plan	Decommissioning phase	Environmental Manager/Environmental Control officer
	Ground Water Quality	Prevent/contain spillages of hazardous material	1. Refer to the mitigation measures for soil in the temporary storage of hazardous chemicals and fuels above	Weekly	1. National Water Act (Act 36 of 1998)	1. Material Safety Data Sheets 2. Groundwater Monitoring Plan	Decommissioning phase	Environmental Manager/Environmental Control Office/Mine Manage
Post- Closure Phase								
Post-closure monitoring and rehabilitation	Topography	1. To rehabilitate the topography 2. To minimise soil erosion	1. Ensure that the post-development topography is as close as possible to the pre-	Weekly	N/A	1. Rehabilitation plan 2. Erosion Control Plan	Post-closure phase	Environmental Manager/Environmental Control

			development topography byre-contouring and profiling the study area 2. Ensure that surface water and drainage lines are rehabilitated to pre-development condition 3. Carefully monitor rehabilitated areas to ensure that soil erosion is prevented					Office/Mine Manage
	Visual	To increase the neutral visual impacts of post-closure rehabilitation	Ensure that all disturbed areas are rehabilitated to a state as close as possible to the pre-development state	Weekly	N/AWeekly	1. Rehabilitation Plan	B Post-closure phase	Environmental Manager/Environmental Control Officer/Mine Manage

	Soil	Monitor the sustainability of the current soil rehabilitation.	1. Post mine soil survey to be conducted (annually) 2. Soil fertility testing to be conducted annually	Weekly /Month /Annually	1. MPRDA Regulation 56 (1) to (8); soil pollution and erosion control	1. Soil management plan 2. Mine Maintenance plan 3. Incident register and action plan 4. Emergency response plan	MLS	Environmental Manager/ Environmental Control Officer Mine Manager/Maintenance workshop manager / supervisor
	Flora	1. Prevent the spread of alien species 2. Successful re-vegetation of areas	1. Cleared areas should be monitored for colonisation by alien species and a proactive approach should be undertaken to control alien species as soon as they are established 2. Re-vegetate cleared areas of the infrastructure footprint	Monthly	1. National Environmental Management Act (Act No. 107 of 1998 2. National Water Act (Act No. 36 OF 1998) 3. Conservation of Agricultural Resources Act (Act No. 43 of 1983 4. The National Environmental Management: Biodiversity Act (NEMBA) (Act No. 10 of 2004) affords	1. Biodiversity management plan 2. Rehabilitation plan	Post-closure phase	Environmental Manage/Environmental Control Office

					threatened or protected species a legal status and protection			
	Air quality	To minimise/prevent fugitive dust from occurring	1. Demolition should not be performed during windy periods (August, September and October) 2. The area of disturbance must be kept to a minimum	Daily /Weekly	1. National Environment Management: Air Quality Act (Act No. 39 of 2004	1. Air quality monitoring plan	Post-closure phase	Environmental Manager/Environmental Control Office
	Aquatics	To monitor the state of the aquatic ecosystem through the measurement of physical and biological properties	1. Bi-annual aquatic biomonitoring	Bi-annually	1.National Water Act (Act 36 of 1998)	1.Material Safety Data Sheets 2. Groundwater monitoring plan	Decommissioning phase	Environmental Manager/Environmental Control Office

8.SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATIONS

PLANNING& CONSTRUCTION PHASE			
Potential impacts: Construction Phase	**Significant rating of impacts**	**Proposed Mitigation Measures**	**Significant rating of impacts after mitigation**
1. Topography			
Permanent structures: Slimes Dams, Tailings dumps, open pits Temporary structures: storage dam, stockpiles Altering of the drainage	Duration: Long-term (3) Spatial: Localised (1) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable	• Ensure that drainage patterns in the high areas are: Free draining and do not create pools; • Employ effective rehabilitation strategies to restore surface topography of tailings dumps and plant site. • Dispersed into adjacent grasslands regularly so as to avoid concentration of water in such a manner that it may contribute to erosion. Tie into the adjacent terrain.	Duration: Medium-term (2) Spatial: Localised (1) Significance: Low (1) Likelihood: May occur (3) Certainty: Possible
Rating	**Collective Rating= 12**	**Rating**	**Collective Rating= 7**
2. Soils Erosion			
During construction vegetation will be cleared, and soils excavated. The movement, handling, and exposure of soils will result in an increased risk of soil erosion. The movement of vehicle traffic onsite will result in the compaction of soils. Soil compaction prevents the successful re-establishment of vegetation.	Duration: Short-term (1) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable	Physical demarcation of the working area ahead of construction must be undertaken to ensure that construction remains within the area to be disturbed. Access routes to / from / around the site will be designated prior to actual construction. Should any evidence of soil contamination be discovered, appropriate measures should be	Duration: Short-term (1) Spatial: site (1) Significance: Low (1) Likelihood: May occur (3) Certainty: Possible

During the construction phase inadequate waste management may result in soil pollution. During excavation the mixing of soil substrates, and soil type will result in a reduction of soil fertility.		taken to remediate the soil. (See hydrocarbons in surface water above). The temporary by-pass road must be rehabilitated as per the methodology outlined in the EMP after construction. Compacted soil must rip and suitably ameliorated to ensure the successful establishment of vegetation. Care must be taken during excavation and vegetation clearing to ensure that clay soils and sandy / silty soils are stockpiled separately, and returned to their former position during rehabilitation. The location of soil stockpiles must be identified prior to construction, and will not be located at a position where they are likely to be washed away.	
Ratings	**Rating=10**	**Ratings**	**Rating =6**
3. Geology			
During construction, concrete slabs/footings will be excavated to support the buildings infrastructure. The maximum depth of the excavations is unlikely to exceed 1.5m. Consequently, these excavations will not extend to the bedrock underlying the surface soils and thus no impact will be created.	Temporal: Short-term (1) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable	The excavation will not exceed 1.5m underground because the area is underground lying rock.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (1) Likelihood: May occur (3) Certainty: Possible
Ratings	**=7**	**Rating**	**=6**
4. Culture/Heritage/Archaeology			

No archaeological, paleontological site, artefacts or feature exist on the existing site. No historical/cultural site, artefacts or feature exist on the existing site.	Temporal: Short-term (1) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable	If during construction, any archaeological finds are made (e.g. stone tools, skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Archaeological artefacts generally occur below surface, the possibility exists that culturally significant material and skeletal remains may be exposed during the development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). Should the need arise to expand the development beyond the current scope demarcated area, the following applies: a qualified archaeologist must conduct a full Phase assessment on the sections beyond the demarcated areas which will be affected by the expansion, in order to determine the occurrence and extent of any archaeological sites and the impact development might have on these sites.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (1) Likelihood: May occur (3) Certainty: Possible
Ratings	**=10**	**Rating**	**=7**
5. Fauna and Flora			
During the construction phase the primary impacts to terrestrial ecology will be experienced as a result of vegetation clearing and habitat destruction. Removal of vegetation during construction.	Temporal: Short-term (1) Spatial: Localised (2) Significance: high (3) Likelihood: Definitely (4)	A management plan for control of invasive plant species needs to be implemented on all areas of the mining areas. This will be most viable with the implementation of a buffer zone.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2)

The game which occurs naturally on site will be disturbed and might move away from the site. Areas disturbed by construction may be expected to geminate alien invasive species. Impacts on the plant species: Increased traffic, Construction vehicles and destruction of natural habitat.	Certainty: Possible	During the removal of the soil, the topsoil or A-zone should be stored separately from the other zones. A soil scientist should be employed during this phase of the mine. The scientist should test the soil during this phase of the mine. A buffer zone should be implemented surrounding the watercourse areas. The watercourses are extremely important in providing valuable ecosystem services and it is essential that no mining occurs there. Buffer zones should be clearly demarcated as a no-go zone. Any species that are either endemic or vulnerable should be relocated to favourable sites with the help of a specialist prior to vegetation removal for the construction of the mine. This should be done or assessed before the construction of the mine commences to ensure that these species are relocated. To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees. Activities on site must comply with the regulations of the Animal Protection Act 1962 (Act No. 71 of 1962). Workers should also be advised on the penalties associated with the needless destruction of wildlife, as set out in this act.	Likelihood: May occur (3) Certainty: Possible

		Activities should not commence near the surface water areas or wetlands on the specific Portion of the specific mining areas. The construction area should be well demarcated and construction workers should not enter into adjacent areas. Mixing of concrete or collection of building material must be restricted to designated sites to minimize the impact. Plant removal may result in soil erosion; thus, storm water management procedures need to be put into place. Continuous rehabilitation of the area should occur during construction.	
Ratings	**=10**	**Ratings**	**=7**
6. Ground Water			
No impacts to ground water are expected from the construction phase.	Temporal: Short-term (2) Spatial: Localised (0) Significance: high (1) Likelihood: May occur (0) Certainty:	No impacts to ground water are expected during construction phase.	Temporal: Short-term (1) Spatial: Localised (0) Significance: high (0) Likelihood: May occur (0) Certainty:
Ratings	**= 3**	**Ratings**	**= 1**
7. Surface Water			
Oil and grease spills from construction vehicles may enter the construction site resulting in surface water contamination by a hazardous substance.	Temporal: Short-term (1) Spatial: Localised (2) Significance: High (3)	**Hydro-carbons** No storage of hydro-carbon permitted at the construction site, with the exception of a diesel bowser for generators used for lighting purposes.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (1)

Accidental spillage of sewage and chemicals from temporary ablution facilities may enter the construction site and result in surface water contamination. Incorrectly managed storm water may carry loose soils and gravels from exposed areas into the construction site. This may result in an increase in turbidity and sediment deposition downstream of the river crossing site. Uncontrolled extraction of surface water from the construction site during the construction phase may result in reduced water quantity downstream of the abstraction point. Downstream water users include stock watering, which may be negatively impacted. The insufficient management of waste may result in pollution of surface water resources.	Likelihood: Definitely (4) Certainty: Probable	A temporary "bund" area constructed of soil / inert construction waste must be constructed and lined with a suitable liner. Frequent inspections of vehicles and machinery must be undertaken to identify oil leaks / spills. Leaking machinery must be removed off site for maintenance purposes. No maintenance of vehicles or machinery must be undertaken onsite. In the event of fuel or hydrocarbon spillage, soil will be removed to a designated area for bioremediation with suitably recognized product designed for this purpose. **Sanitation / Ablution Facilities** Proper sanitation facilities must be made available for contractors. The contractor, in consultation with the ECO, shall compile a surface water drainage plan prior to commencement with construction. At least 1 toilet per 15 workers will be provided. A licensed contractor will be utilized to provide and service temporary ablution facilities. **Water abstraction** All water pumped from the construction site should be measured and recorded. The general authorization volume of water abstraction may	Likelihood: May occur (3) Certainty: Possible

		not be exceeded on a monthly basis as per the Water use License. **Waste Management Measures** Ensure that all waste generated on site is sorted into appropriate containers. Waste bins should be emptied regularly and should never overflow. Waste must be removed by a suitably licensed contractor and disposed of at a licensed facility. Building rubble utilized in the construction of the concrete supports must be comprised of inert material. No burning / incineration of waste is to take place on the site. Use of drip trays Hazardous waste should be store and disposed appropriate at a licensed landfill site Records of Waste manifest must be maintained	
Rating	**=10**	**Rating**	**=7**
8. Air Quality			
The source of air quality impacts is: • Gases and fumes from construction vehicles; and • Fugitive dust emissions from vehicle traffic traversing gravel roads.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2)	Low or in-pit dumping of overburden during high wind use of a global positioning system as a tool to track the locations of mining and dust suppression equipment (e.g. water carts) and cross-referencing	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (1)

Neither pose significant health impacts, however fugitive dust emissions will pose a significant nuisance dust factor on neighbouring farmers in close proximity to the proposed construction site.	Likelihood: Unlikely (2) Certainty: Possible	this information with real-time weather monitoring to assist with dust control Use of water sprays at each contact or transfer point along the conveyance system which has adjustable rates of application (low, medium and high) depending on dust levels Automatic water sprays installed at the ROM hopper bin that produce a fine mist to suppress dust generated with the triggering of sensors when a truck enters the dump zone and automatic sprays activated until a set time following the departure of the truck Use of a reclaim tunnel at the product ore stockpile and an enclosed conveyor to transfer ore to the loader, both of which minimise dust generation Use of a retractable telescopic chute with curtains to load ore into carriages/trucks and conditions. All construction vehicles should be regularly serviced and maintained to ensure minimal exhaust fume pollution. No fire should be permitted on site. Exposed soils (i.e. soil stockpiles, gravel access roads, material laydown area) will be regularly watered to reduce wind-blown dust.	Likelihood: Unlikely (1) Certainty: Possible
Ratings	**=7**	**Ratings**	**=5**
9. Noise			

The noise generated during the construction phase will predominantly result from vehicle activity on site, as well as the operation of heavy machinery and other associated noises. The noise of vehicles and machinery may affect the farm dwellers and neighbouring farmers in the area. The impact of noise will most definitely impact on neighbouring farmers.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2) Likelihood: Definite (4) Certainty: Probably	Contractors will be required to wear the appropriate Personal Protective Equipment (PPE) during the construction phase such as masks, protection glasses, ear plugs, gloves, safety boots, and overalls. Ensure that all contractors have appropriate induction and safety training, and understand the dangers to which they will be exposed. Contractors should be appropriately trained as to safe working procedures prior to commencing with work. Construction activities are to be limited to day light working hours. No construction crews are to be accommodated onsite after hours, except for a night watchman. Activities generating noise to be carried out between 6 am – 6 pm (Monday to Saturday) only. Local visitors/tourist to be informed/notified that excessive noise levels are expected.	Temporal: Short-term (1) Spatial: Localised (1) Significance: Low (1) Likelihood: May occur (3) Certainty: Possible
Ratings	**=9**	**Rating**	**=6**
10. Aesthetic and Visual Impact			
The aesthetic characteristics associated with the proposed construction at the proposed site will continue during the construction phase. External lighting from camp site will affect the night time character of the area for local communities.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2) Likelihood: May occur (3) Certainty: Probably	During the construction of the mine infrastructure, consideration to the natural hues can be achieved by painting infrastructure with matt tones to help camouflage the infrastructure. Construction activities and associated infrastructure to be shielded/concealed as far as possible.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (1) Likelihood: May occur (1) Certainty: Possible

		Construction activities are to be limited to day light working hours. No construction crews are to be accommodated onsite after hours, except for a night watchman. Low level and frequency lighting are to be utilized wherever possible . Dust from Stockpile areas, roads and other activities must be managed by means of dust suppression to prevent excessive dust. Stockpiles should not exceed 15m in height. Rehabilitation of the area must be done as the mining is completed. The visual impact can be minimized by the creation of a visual barrier. The retention of as much existing vegetation as possible, specifically the existing mature trees in the area to conceal the mining activity as much as possible. During the construction of the mine infrastructure, consideration to the natural hues can be achieved by painting infrastructure with matt tones to help camouflage the infrastructure. Down-lighting should also be implemented to minimise light pollution at night.	
Ratings	**=8**	**Rating**	**=5**

11. Traffic			
The construction is located far from the public; however, the most significant impacts will be as a result of construction vehicles and heavy machinery on site.	Duration: Short-term (1) Spatial: Localised (2) Significance: high (3) Likelihood: May occur (3) Certainty: Probably	Ensure that adequate path/road diversions for visitors/tourist/pedestrians are installed during the construction phase. Road Traffic regulations must be observed Regular maintenance of the road should be done. Speed restriction of 40h/r must be adhered to when driving onsite.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible
Ratings	**=9**	**Rating**	**=7**
12. Socio-Economic			
Due to the size of the project only a marginal positive economic impact is anticipated during the construction phase. There would be no marginal short-term increase in employment in the area due to the socio-economic profile of the area.	Temporal: Short-term (1) Spatial: Localised (2) Significance: high (3) Likelihood: Definitely (4) Certainty: Possible	It is recommended that Invest In Property 126 (Pty)Ltd and the appointed contractor liaise with the Neighbours and affected residents to resolve the encroachment issue.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2) Likelihood: May occur (3) Certainty: Possible
Ratings	**=10**	**Rating**	**=8**
13. Health and Safety			
During the construction phase numerous people will have access to the site and this creates a potential safety and security risk. Explosion and fire risks.	Temporal: Short-term (1) Spatial: Localised (2) Significance: high (3)	Health and Safety Officer will be placed on the site to make sure there is compliance in terms Construction Regulations 2014 (as mended)	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (1)

Except for fuel and oil used in construction equipment, no combustible materials will be used; therefore, increased risk of fire and explosion would be unlikely. Significant risks to public health and safety are not anticipated.	Likelihood: May occur (3) Certainty: Probably		Likelihood: Unlikely (1) Certainty: Possible
Ratings	**=9**	**Ratings**	**=5**

OPERATIONAL PHASE			
Potential impacts: **Operational Phase**	**Significant rating of impacts**	**Proposed Mitigation Measures**	**Significant rating of impacts after mitigation**
1. Topography			
Permanent structures: Slimes Dams, Tailings dumps, open pits Temporary structures: storage dam, stockpiles Visual impact Changes to drainage	Duration: Long-term (3) Spatial: site (1) Significance: High (3) Likelihood: Definitely (4) Certainty: Definite	• Do controlled dumping at the tailings dump facility. • Stabilise the mine residue deposits. • Employ effective rehabilitation strategies to restore surface topography of tailings dumps and plant site. • Pick up all tailing material up to natural ground level. • Stabilise underground workings. • All temporary infrastructures will be demolished during closure.	Duration: Long-term (3) Spatial: Site (1) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible
Rating	**Collective Rating= 11**	**Rating**	**Collective Rating= 8**

2. Soil Erosion			
Site clearing for the required footprint for mining may expose the surface layer.	Duration: Medium (2) Spatial: Site (1) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible	Re-establishment of plant cover on disturbed areas must take place as soon as possible, once activities in the area have ceased. • The soil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion. • All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosional induced losses. • The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers. • Ground exposure should be minimised in terms of the surface area and duration, wherever possible. • Stockpiles susceptible to wind erosion are to be covered during windy periods. • Excavated and stockpiled soil material are to be stored and berms on the higher laying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate.	Duration: Low (1) Spatial: Site (1) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible

		• At no point may plant cover be removed within the no-development zones. • All attempts must be made to avoid exposure of dispersive soils. • Audits must be carried out at regular intervals to identify areas where erosion Is occurring. • Appropriate remedial action, including the rehabilitation of the eroded areas, must occur. • Rehabilitation of the erosion channels and gullies. • The mining operation should avoid steep slope	
Ratings	**Rating=7**	**Ratings**	**Rating =6**
3. Culture/Heritage/Archaeology			
Grave disturbances and archaeological sites: Potential grave disturbances due to mining activities.	Duration: Medium term (2) Spatial: Site (1) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible	All stone tool artefacts should be recorded, mapped and collected before destruction. • Should development necessitate impact on any building structures, the developer should apply for a SAHRA Site Destruction Permit prior to commencement of construction. • The heritage and cultural resources if any are encountered (e.g. graveyards, ruins, historic structures, etc.) must be protected	Duration: short term (1) Spatial: Site (1) Significance: Low (1) Likelihood: May occur (2) Certainty: Possible

		and preserved by the delineation of no-go zones. Stone tools should be avoided where possible and fresh exposure should be recorded before destruction. If during construction, any archaeological finds are made (e.g. stone tools, skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material and skeletal remains may be exposed during the development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). Should the need arise to expand the development beyond the current scope demarcated area, the following applies: a qualified archaeologist must conduct a full Phase 1 assessment on the sections beyond the demarcated areas which will be affected by the expansion, in order to determine the occurrence and extent of any archaeological sites and the impact development might have on these sites.	

Ratings	=7	Rating	=5
4. Fauna and Flora			
Destruction of the natural habited Noise and vibration disturbance on game animals Alien invasion Game Poaching Fauna Fatality/Injuries caused operation vehicles/earthmoving plants Impacts on Animal species: Habitat destruction and sensitive species disturbance	Duration: Medium (2) Spatial: Site (1) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible	Footprint areas of the mining activities must be scanned for Red Listed and protected plant species prior to mining. It is recommended that these plants species be identified and marked prior to mining. Mining activities must be planned, where possible in order to encourage faunal dispersal and should minimise dissection or fragmentation of any important faunal habitat type. These plants should, where possible, be incorporated into the design layout and left in situ. However, if threatened of destruction by mining, these plants should be removed (with the relevant permits from the relevant Competent Authority) and relocated If possible. A management plan should be implemented to ensure proper establishment of ex situ Individuals, and should include a monitoring programme for at least two years after re-establishment in order to ensure successful translocation.	Duration: Short (1) Spatial: Site (1) Significance: Moderate (2) Likelihood: May occur (2) Certainty: Possible

		Encourage the growth of natural plant species. Ensure measures for the adherence to the speed limit. Minimise the footprint of transformation. Encourage proper rehabilitation of mined areas. All employees on site must be educated about the conservation importance of the fauna and flora occurring on site. 24 hours security services should monitor and ensure safety within the farm property and also prevent poaching and killing of game animals. Regular maintenance of equipment, plants and mining vehicles is required to negate noise disturbance on game animal. Observe the breeding and hunting season and implement measures to mitigate disturbances. Mining operations must be suspended during hunting seasons or alternatively in consultation and agreement with the surface owner, operations must be scheduled for night shifts All hunting zone must be marked and marked with minimum mining operations.	

		Mining stakeholders must keep hunting schedules and must be communicated to the mine management. A channel of communication must be enabled between the surface owners and the mine. Grievance platform must be established and be open to the landowners and the community at large. Careful consideration is required when planning the placement for stockpiling topsoil and the creation of access routes in order to avoid the destruction of habitats and minimise the overall mining footprint. The appointment of a full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance. The ECO must ensure that all contractors and workers undergo Environmental induction prior to commencing with work on site. Speed limit of 40 km/hr will be enforced and be implemented. This is to prevent fatality or injuring of animals by construction vehicles and earthmoving plants	

		Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert. The environmental induction must be conducted in languages understandable to the workers who may require translation from English. The extent of the mine should be demarcated on site layout plans, and no construction personnel or vehicles may leave the demarcated area except those authorised to do so. Those areas surrounding the mine site that are not part of the demarcated development area should be considered as a no-go zone for employees, machinery or even visitors. All personnel on site must be educated about the conservation importance of the fauna and flora occurring on site. To minimize potential impacts to animal species, animals (wildlife and domestic animals) may under no circumstances be handled, removed, killed or interfered with by the Contractor, his employees, his Sub-Contractors or his Sub-Contractors' employees.	
Ratings	**=7**	**Ratings**	**=6**

5. Ground Water			
Refuelling of Machineries which may result in contamination of underground water when not done properly. Tailings Slime dam spills	Temporal: Mid-term (2) Spatial: Localised (2) Significance: High (3) Likelihood: Definitely (4) Certainty: Probable	Spill kits to clean up accidental spills from earthmoving machinery must be well marked and available on site. Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution. Ground water monitoring system must be put in place. Monitoring of ground water level on monthly bases. Monthly ground water test must be done. Water recycling facility must be established. Water use records must be reconciled on daily and monthly bases. Slime dams must be desired in a manner that it prevent seepage and run off into underground water. Tailing storage facility must be desired in manner that there are no seepage and run off into underground water and other water bodies.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Medium (2) Likelihood: May occur (2) Certainty: Probable
Ratings	**= 11**	**Ratings**	**= 7**
6. Surface Water			

There is no permanent surface water course such as river or stream.	Temporal: Short-term (1) Spatial: Site (1) Significance: Low (1) Likelihood: Improbable (1) Certainty: unsure	Infrastructure must be located away from water bodies. • Fuel/diesel containers must be placed within a bund wall and far from any water course or body to prevent accident contamination. • OII residue must be treated with oil absorbent and be disposed to an approved waste site. • Spill kits must be easily accessible and workers must undergo induction regarding the use thereof. • If servicing and washing of the vehicles occur on site, there must be specific areas constructed for these activities, which must have concrete foundations, bunding as well as oil traps to contain any spillages. Wash bay area must be designated and used for that purpose under norms and standards. • At all times care should be taken not to contaminate surface water resources. • Store all litter carefully to prevent it from washing away or blown into any of the drainage channels the area.	Temporal: Short-term (1) Spatial: site (1) Significance: Low (1) Likelihood: Improbable (1) Certainty: unsure
Rating	**=4**	**Rating**	**=4**
7. Air Quality			

The source of air quality impacts are: • Gases and fumes from vehicles; and • Fugitive dust emissions from vehicle traffic traversing gravel roads. • Soft Blasting Neither pose significant health impacts, however fugitive dust emissions will pose a significant nuisance dust factor for the community living in close proximity to the proposed construction site	Temporal: Short-term (1) Spatial: Localised (2) Significance: Moderate (2) Likelihood: Unlikely (2) Certainty: Possible	Use of pre-blast environmental checklists, real-time weather monitoring data and stringent controls on blasts carried out in sensitive areas A no-blast arc is automatically calculated for the nearest private residence based on the latest relevant weather conditions, including wind speed and direction, temperature inversions and amount of atmospheric turbulence (i.e. stability category) before the blast can be fired All operational vehicles should be regularly serviced and maintained to ensure minimal exhaust fume pollution. Exposed soils (i.e. soil stockpiles, gravel access roads, material laydown area) will be regularly watered to reduce wind-blown dust. Vegetation must be removed when soil stripping is required only. These areas should be limited to include those areas required for mining only, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken. Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression.	Temporal: Short-term (1) Spatial: Localised (2) Significance: Low (1) Likelihood: Unlikely (1) Certainty: Possible

		Where it is logistically possible, control methods for gravel roads should be utilised to reduce the re-suspension of particulates. Feasible methods include wet suppression, avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads. The length of time where tailing reclamation areas are exposed should be restricted. Mining should not be delayed after vegetation has been cleared and topsoil removed where possible. Dust suppression methods should, where logistically possible, be implemented at all areas that may/are exposed for long periods of time. For all mining activities, management must undertake to implement health measures in terms of personal dust exposure, for all its employees.	
Ratings	**=7**	**Ratings**	**=7**
8. Noise			
Noise: Increased ambient noise due to activities	Temporal: Short-term (1) Spatial: Localised (2)	A noise barrier in the form of a berm should be constructed on the boundary of the proposed opencast area as soon as possible, Barrier must be situated between the main	Temporal: Short-term (1) Spatial: Localised (2)

	Significance: Moderate (2) Likelihood: May occur (3) Certainty: Probably	noise source sensitive receivers which is mainly the nearby town. The berm will help with the attenuation of noise produced by the mining activities. A basic rule of thumb for barrier height is: Any noise barrier should be at least as tall as the line-of-sight between the noise source and the receiver, plus 30%. So if the line-of-sight is 10m high, then the barrier should be at least 13m tall for best performance. Mining-related machine and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g. installed exhaust mufflers. Switching off equipment when not in use. Fixed noise producing sources such as generators, pump stations and crushers to be either housed in enclosures or barriers put up around the noise source. Barriers should be installed between the noise source and sensitive noise receptor, as close to the noise source as possible. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the Mine entrance or driving through or in the vicinity.	Significance: Low (1) Likelihood: May occur (3) Certainty: Possible

		All access roads will be signposted and speed limited to minimise transport noise. Equipment with lower sound power levels would be used in preference to noisier equipment. All equipment used onsite will be regularly serviced to ensure the sound power levels remain at or below the levels used in the modelling to assess generated noise levels and compliance with the criteria. The on-site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. All the workers will be required to wear the appropriate Personal Protective Equipment (PPE) during the operational phase such as masks, protection glasses, ear plugs, gloves, safety boots, and overalls. Ensure that all workers have appropriate induction and safety training, and understand the dangers to which they will be exposed. Contractors should be appropriately trained as to safe working procedures prior to commencing with work.	
Ratings	**=8**	**Rating**	**=7**

9. Aesthetic and Visual Impacts			
	Duration: Short-term (1) Spatial: site (1) Significance: Low (1) Likelihood: Possible (2) Certainty: Possible	Dust from Stockpile areas, roads and other activities must be managed by means of dust suppression to prevent excessive dust. . Stockpiles should not exceed 15m in height. Rehabilitation of the area must be done as the mining is completed. The visual impact can be minimized by the creation of a visual barrier. The retention of as much existing vegetation as possible, specifically the existing mature trees in the area to conceal the mining activity as much as possible. Down-lighting should also be implemented to minimise light pollution at night.	Duration: Short-term (1) Spatial: Site (1) Significance: Low (1) Likelihood: Improbable (1) Certainty: Probable Improbable
Ratings	**=5**	**Rating**	**=4**
10. Traffic and Road Safety			
Increase traffic volumes along R64 Impact on the R64 road Road Accidents Animal Fatality or Injuries	Duration: Long-term (3) Spatial: Regional (3) Significance: High (3)	• Roads signs must be erected on or along the access road and internal roads. • Site sign rules must be placed at the entrance and must include speed limits	Duration: Mid-term (2) Spatial: Localised (2) Significance: Moderate (2)

Noise Dust	Likelihood: Highly probable (3) Certainty: Possible	• Warning signs must be placed on the road to alert traffic users to be on a look out for animal stray and crossing on the road. • Implement measures that ensure the adherence to traffic rules. • Maintenance of the roads must be done at all times to ensure safety for traffic users. • Traffic assessment and Traffic management plan must be implemented in consultation with The Department of Police, Roads and Transportation.	Likelihood: May occur (3) Certainty: Possible
Ratings	**=12**	**Rating**	**=9**
11. Socio-Economic			
Impacts on Socio-Economic Environment: Creation of more employment opportunities. Impacts on the physical economic Environment: Damage to infrastructure on surrounding properties. Impacts on Socio-Economic Environment: Disruption of existing family system and negative impacts	Duration: Long-term (3) Spatial: Localised (2) Significance: Very High (4) Likelihood: Definite (4) Certainty: Definite	Local community must be prioritised in terms of job opportunities and business opportunities. • Jobs must be allocated as advertised and in so far as is possible to local deserving residents. • The mine must ensure that unrealistic expectations are not created regarding jobs and business opportunities.	Duration: Long-term (3) Spatial: Localised (2) Significance: Very High (4) Likelihood: Definite (4) Certainty: Definite

due to social interaction of mine workers with local community. Impacts on Socio-Economic Environment: Creation of more employment opportunities.		• The mine must ensure as practically as possible to procure local goods and services from within the mine community (Boshof). • The expectations of what benefits can accrue to the community must be managed from the initiation of the project • A community Liaison Officer should be appointed and be responsible in dealing with the community and labour issues. Preferable the CLO should reside from the mine community. • Commitments as set out in the SLP must be implemented. Surrounding land owners need to be notified well in advance of planned developments so that they are able to secure their property. An agreement needs to be deliberated on, accepted and signed by all parties on what action to take in the event of damage to property. An incidents report needs to be opened and maintained by the Environmental Control Officer at the site. This report will be used to record any complaints or incidences of damage to property. A code of conduct for the construction workers should be compiled and the information provided to and signed by all	

		relevant stakeholders in order to provide guidance on what behaviour is or is not permitted and the consequences of disobedience. The development site must be fenced off to prevent trespassing. Open fires for whatever purpose be it cooking or heating must be strictly prohibited at the construction/operation site and camp. Construction activities such as welding should be confined to designated areas and should be conducted during weather conditions that are not risky e.g. calm winds. Adequate and easily accessible firefighting equipment and a well-stocked tool shed must be maintained to enable repairs on damage property to be done without delay. In addition, a few workers should be trained on the proper use of the equipment. Labour (particularly semi-skilled and low skilled) and contractors should be sourced locally where possible and reasonable. This is because those from the local community already form a part of that society and there will be no added pressure on available local amenities such as housing. A monitoring forum should be formed consisting of community members so that the community can be briefed from time to	

		time on the risks to the society's fabric as a result of the project. A code of conduct for the construction workers should be compiled, and the information provided to and signed by all relevant stakeholders in order to provide guidance on what behaviour is or is not permitted or acceptable. A HIV/AIDs, STDs awareness programme should be designed and the members of the community together with the workers should be regularly trained and road shows conducted on risky behaviour that could expose them to these diseases. The contractor / developer should plan and provide for transport, housing, weekend breaks of any workers who are brought in from outside the town. The development site must be fenced off to prevent trespassing. Labour (particularly semi-skilled and low skilled) and contractors should be sourced locally where possible and reasonable. Local construction personnel and contractors must be trained so that their skills may be developed for use in the future beyond the jobs at the mine. Local community members, authorities and organizations should be informed of job	

		opportunities available and the procedures (if applicable) to be followed in order to secure the jobs. Women should be considered in the provision of jobs to ensure that the entire community benefits. The developer must compile a database of goods and services providers from the local community who comply with their procurement requirements before commencement of the tender process for acquiring various services and goods.	
Ratings	**=13**	**Rating**	**=13**
12. Health and Safety			
Impacts on physical and psychological health: Reduced quality of life	Duration: Short-term (3) Spatial: Localised (2) Significance: high (3) Likelihood: May occur (3) Certainty: Probably	Health and Safety Officer is to ensure compliance in terms Construction Regulations 2014 (as mended) Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. All safety incidents must be reported to the appointed safety officer. Proper signage must be erected on the site and adjacent properties so that people are made aware of the activities and its dangers.	Duration: Short-term (3) Spatial: Localised (2) Significance: high (3) Likelihood: May occur (3) Certainty: Probably

		Ablution facilities must be provided on site and should be regularly emptied by a licensed service provider. Workers should be informed that relieving of oneself in surrounding bushes is strictly prohibited. Speed limits that have been set at the site and surrounding areas must be strictly adhered to and harsh punishments set for offenders. The appointed contractor must ensure that any road damage caused by mine trucks is swiftly repaired to ensure safety of all road users. Dust suppression measures must be implemented to reduce the amount of dust released into the air. Such measures include using water bowsers to periodically spray the site especially during dry weather conditions. In addition, trucks transporting spoil material or top soil from the site must be covered to prevent loss of material while in transit. Equipment and trucks that produce loud noise must be fitted with appropriate silencers where possible. Workers on site must be trained on the correct handling of spillages and precautionary measures that need to be implemented to minimize potential spillages.	

		Workers must be provided with spill kits and spills must be cleaned up immediately. General and hazardous waste disposal bins must be provided at various strategic locations on the site. An Environmental Control Officer (ECO) must be appointed to monitor that measures prescribed for noise, dust, and water resources protection are adhered to. A system needs to be put in place at the local health centres to monitor any changes in diseases particularly respiratory or those associated with Contaminated water such as dysentery, typhoid etc. Ground water, surface water, air quality, and noise monitoring system must be implemented to ensure that levels prescribed are compiled and if not, urgent measures are taken to correct the situation.	
Ratings	**=11**	**Ratings**	**=11**
13. Land Capability			
Soil contamination: Changes in Soil's physical, chemical and biological properties.	Duration: Mid-term (2) Spatial: Site (1) Significance: Medium (2)	The soil map compiled should be considered and mitigation measures on soil management implemented. The excavator should only operate on the topsoil layer.	Duration: Short-term (1) Spatial: Site (1) Significance: Low (1) Likelihood: Possible (2)

	Likelihood: May occur (3) Certainty: Possible	Implementation of a bed/strip system avoids the need for trucks to travel on the soil layers. Machines are to only work when ground conditions enable their maximum operating efficiency. If compaction is caused, then measures are required to treat (consult an experienced specialist). it is recommended that the topsoil be stripped and stockpiled in advance of construction activities that might contaminate the soil. The stripped soils should be stockpiled upslope of areas of disturbance to prevent contamination of stockpiled soils by dirty runoff or seepage.	Certainty: Possible
Rating	**=8**	**Rating**	**=5**

9. Financial Provision

a) Determination of the amount of Financial Provision

i) Describe the closure objective and the extent to which they have been aligned to the baseline environment described under Regulation 22(2)(d) as described in 2.4 herein.

The key aim of decommissioning and closure is to ensure that all the significant impacts are ameliorated and that environment is returned to its original state, based on the baseline information, as far as is practically possible. Therefore, all rehabilitated areas should be left in a stable, self-sustainable state and proof of this should be submitted at closure

The baseline environmental information is usually determined by reviewing all applicable information available for the site and the overall region. This information is gathered through a combination of onsite observation, spatial information and specialist baseline studies. Information regarding current land uses and existing biophysical environment gathered from different I&APs during the public consultation process area also taken into consideration when describing the baseline environment.

General closure objective includes the following:

- Adhere to all statutory and other legal requirements;
- Identify potential post-closure land uses in consultation with the future landowner, surrounding landowner and land users; well in advance. Before closure and preferable during the operational phase of the mine.
- Remove, decommission and dispose all infrastructure, and ensure that these processes comply will all conditions the MPRDA
- Rehabilitate disturbed land and open pit to state that facilitates compliance with applicable environmental quality objectives
- Physically stabilise remaining structure to minimise residual risks;
- Ensure that health and safety of all stakeholders during closure and post closure and that future land users are not exposed to unacceptable risks
- To alleviate the negative socio-economic impacts that will results from closure
- Promote biodiversity and ecological sustainability as practically possible
- Keep relevant authority informed of the progress of the decommissioning phase

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

Confirmed

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

The rehabilitation of the land during the life span of the mining right will be accompanied by ongoing monitoring of the environment until a stable state is reached. The main objectives are to have an uncontaminated, rehabilitated and safe environment, and to restore the area and habitant to a condition acceptable for obtaining a closure certificate.

Final rehabilitation of the site will be implemented systematically and will consist of the elements and procedure as listed below. More realistic closure elements will be fully determined by a professional mine surveyor once operation is active

Dismantling of processing plant and related structures

- This will include related infrastructures. equipment, machinery, screening plant, and other items used during the processing activity, such as conveyor belt, pipelines and powerlines
- The topography should then be restored to its natural contours, and any compacted area should be ripped to a depth no deeper than 300mm
- The prepared surface should then be covered with 300mm of topsoil or suitable growth medium, which will include a viable seed bank in order to encourage restoration of natural vegetation

Demolition of steel building and structures

- Steel building and structures will include mobile stores, workshops, offices, ablutions, water tanks, etc. Those in disuse and which cannot be sold, donated, or used for future purpose should be dismantled and removed or demolished.
- Any associated foundation with dismantling steel buildings and structures should also be demolished to 1 m below ground level
- The topography should be restored to its natural contour, and any compacted area should be ripped to a depth no deeper than 300m
- The prepared surface should then be covered with 300 mm of topsoil or suitable growth medium which includes a viable seed bank in order to promote restoration of natural vegetation
- All infrastructure for which there is no approved third-party post closure use will be decommissioned and the footprints reclaimed for the establishment of grasslands. Infrastructure where there is a third-party use will be legally transferred to the relevant third parties

Demolition of reinforced concrete buildings and structures

- These includes drains, wash bay, refuelling depots and concrete floors. Those in disuse and which cannot be donated or used for future purposes should be demolished
- The foundations of these buildings should also be demolished and to a depth of 1 m below ground level
- The topography should then be restored to its natural contours, and any compacted area should be ripped to a depth no deeper than 300mm
- The prepared surface should then be covered with 300mm of topsoil or suitable growth medium, which will include a viable seed bank in order to encourage restoration of natural vegetation

Rehabilitation of access roads

- post general rehabilitation completion, all redundant roads should be ripped or ploughed
- the prepared surface should they be covered with 300 mm of topsoil or suitable growth medium which includes a viable seed bank in order to encourage restoration of natural vegetation

Opencast rehabilitation including voids and ramps

- in filling of the pits should take place concurrently and by obtaining material from the closest adjacent excess material heaps.
- The topography should then be shaped to the natural contours
- The prepared surface should then be covered with 300mm of topsoil or suitable growth medium, which will include a viable seed bank in order to encourage restoration of natural vegetation

Rehabilitation of overburden and spoils

- Pre planning should be conducted in order to decide the fate of these features. For example, if the material from these features will be used for in-filling, or will remain after closure.
- The slopes of those features selected to remain after closure should be downgraded to such an extent that they are not visually intrusive to the skyline after closure, and/or at least have an average outer slope of 1:3; or as predetermined by a specialist, depending on the type of material
- The prepared surface should be covered with 300 mm of topsoil or suitable growth medium which will include a viable seed bank in order to encourage restoration of natural vegetation

Rehabilitation of processing waste deposits and evaporation ponds

- Slum dams will be rehabilitated
- pre planning should be conducted in order to decide the fate of these features. For example, if the material from these features will be used for in-filling, or will remain after closure.
- The processing waste deposits would remain as an open pit will not be allowed to filled back as it will pose a huge threat to underground water
- The slopes of those features selected to remain after closure should be downgraded to such an extent that they are not visually intrusive to the skyline after closure, and/or at least have an average outer slope of 1:3; or as predetermined by a specialist, depending on the type of material;
- For backfilled trenches the topography should be shaped to be in line with the natural contours, but where compaction occurred, the areas should be ripped to a depth not deeper than 300mm
- The prepared surface should then be covered with 300mm of topsoil or suitable growth medium, which will include a viable seed bank in order to encourage restoration of natural vegetation
- storm water run-off arising from the upper and outer slops of the rehabilitated residues deposits should be managed to
  - prevent uncontrolled runoff from the residue deposits which in turn creates surface erosion and resultant to the cover material and could also expose deposited material;
  - route the runoff arising from rehabilitated residues deposits into the surrounding surface water drainage regime in a manner that would limits the creation of secondary erosion in the receiving surface water environment and/or possible damage to downstream surface infrastructure and;
  - allow for the control routing of the runoff collected on the rehabilitated residue deposits across cut-off, seepage or solution trenches provided to handle excess contaminated seepage from the residue deposits.

TSF Rehabilitation Strategy

- stable and sustainable

- compatible with the surrounding landform
- consistent with the post-mine land use of minimum long term environmental impact (i.e., non-polluting)
- cessation of tailings deposition
- profiling of the final tailings surface to prevent ponding and facilitate surface runoff
- construction of a low-permeability cap across the TSF to limit infiltration and prevent oxidation of Potential Acid Forming (PAF) material
- collect clean rainwater that falls within the TSF and discharge it to the environment without erosion of the TSF
- monitor and maintain seepage recovery pumping post-closure until the potentiometric head of the TSF is sufficiently reduced to prevent seepage into the environment
- further monitor groundwater levels for five years after the seepage recovery systems have been decommissioned to confirm the mitigation of seepage from the TSF
- Re-profiling the surface to ensure incident rainfall runs off the TSF rather than seeps into the tailings
- Placement of a capillary layer over the re-profiled surface to limit the capillary rise of salts into the cover layer
- placement of a low permeability cover over the capillary layer to prevent the oxidation of tailings, minimise the potential for seepage into the tailings, to stabilise the surface, and to provide a medium for vegetation growth
- The effect of this rehabilitation strategy will be to eliminate as far as possible additional water input into the tailings. In this way the head of water available to influence the seepage will be limited to what is in the tailings and will reduce over time as the seepage water is removed by the recovery through the recycling water plant.
- The TSF will be revegetated with native grasses and shallow-rooted shrubs that will stabilise the surface against erosion and reduce water stored within the cover. Water management systems will be reassessed following the establishment of vegetation. The TSF will remain fenced post-mining to prevent ingress of livestock/game should the surrounding land be returned to grazing use. Permanent fire breaks will be constructed around the perimeter.

Roads, laydown and parking areas

Mine roads that are not needed for closure and post closure uses at the site will be closed. Where possible the larger roads that are retained will be resized for post closure use by regrading and ripping to a width that is appropriate for anticipated post closure traffic.

- Removal of all signage, fencing, shade structures, traffic barriers, etc.
- All ‘hard top’ surfaces to be ripped and bitumen removed along with any culverts and concrete structures.
- Where possible preserve existing vegetation – native trees and plants that may currently be incorporated in parking areas.
- All concrete lined drainage channels and sumps to be broken up and removed.

- All excavations or vertical walls resulting from removal of foundations or structures are to have sides slopes and are to be made safe pending final reclamation work.
- All potentially contaminated soils are to be identified and demarcated for later remediation.
- All haul routes that have been treated with dust suppression water need to be sampled to determine whether they need to be treated as “sealed” roads with the upper surface ripped and removed and disposed.

Waste management

Waste will be classified as necessary and then depending on the classification handled according to the mines Waste Management Plan. Likely activities are:

- Designated temporary salvage yards will be developed for the storage of mobile equipment, structural steel and mechanical equipment or other equipment with a potential resale or scrap value. The location of these yards will be dictated by existing permitted land clearance. Material will be stored in these salvage yards until opportunities for resale/reuse are exhausted. Residual material will be disposed of according to the Mine Waste Management Plan;
- It may be necessary for security reasons to fence temporary salvage yards. Once material is removed from the yards (either through sale or disposal), temporary infrastructure will be demolished, compaction loosed by ripping and the footprint revegetated

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

The rehabilitation plan was primarily designed with the closure objectives in mind and therefore it relates to all various objectives as set out in this EMPr.Generally, the main objectives to have uncontaminated, rehabilitated and safe environment, and to restore the mining area to a condition acceptable for obtaining a closure certificate. Each and every element in the rehabilitation plan was designed in order to meet these closure objectives.

The ultimate rehabilitation of the site that involves sloping, levelling, replacement of topsoil and seeding of grass seed mix in areas that does not recover acceptable as agreed to by the land owner, will ensure that the site could be regarded as safe for human and animals and will ensure that the site is stable and erosion is controlled or prevented.

iv) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guidelines

The calculated financial provision required for rehabilitation is **R4 584 465.66.** See Annexture G of the EAIR &EMPR.

Confirm that the financial provision will be provided as determined

it is hereby confirmed that the applicant has the financial capability to meet this obligation.

10. Indicate the frequency of the submission of the performance assessment report

Auditing of the compliance with environmental authorisation, the environmental management programme and closure plan should be undertaken quarterly by an independent EAP. The environmental audit report should comply with the requirement in terms of Regulation 34 of the National Environmental Management Act 107 of 1998): Environmental Impact Assessment Regulations. Performance assessment report will be undertaken annually and report submitted to the competent authority.

The rehabilitation plan should also be reviewed quarterly in order to fulfil the requirement of section 41(3) of the MPRDA and should be conducted by an Independent EAP.subsequantly, an annual rehabilitation plan should be developed to meet the various requirements set out in the National Environmental Management Act (No.107 of 1998) (NEMA)Regulations pertaining to the financial provision. This report must be submitted annually to the Free State DMRE in Welkom.

11.ENVIRONMENTAL MONITORING

11.1 Site inspection

Environmental monitoring and evaluation will be undertaken during the construction phase and operation phases to ensure the effectiveness of mitigation measures, to determine the accuracy of impacts predicted and to respond to unanticipated environmental concerns at an early stage in order to adopt appropriate remedial measures.

The purposes of the environmental monitoring plan are: To evaluate the effectiveness of mitigation measures; respond in timely manner to anticipated environmental impact when the project is under construction and provide supporting information for formulating regulations and improving environmental management and environmental control based on monitoring data. To conduct environmental audits and report to the client; contractor and engineer and attend the site meetings.

a. Environmental awareness and training

The environmental manager will be required to ensure that awareness posters and relevant contact details are visibly displayed on the site. Regular toolbox talks and training must take place to ensure that environmental awareness is raised amongst all staff members. Other environmental awareness methods may also be implemented, e.g. presentations, demonstrations, etc.

b. Record keeping

It is important that certain documentation is kept by the environmental office on the site premises. These documents include the following:

- Method statements; and General environmental documentation.

c. Method statements

Method statements will be required to be prepared by the contractor and approved, in consultation with the ECO, by the environmental manager for the following work, prior to the commencement of the specific activity: Camp establishment; Access roads; Cement and concrete batching; Dust control; Bunding; Fuels and fuel spills; Fire, hazardous and poisonous substances; Solid and liquid waste management; Storm water controls; Source of materials; Emergency response; Vegetation clearing; Erosion control; Wash areas; Exposed aggregate finishes; Impeding or diverting the flow of water in a watercourse; Altering the bed, banks, course or characteristics of a watercourse.

The method statements should be stored on file at the construction site and they should be updated as and when required. Each of the method statements must contain information basic aspects.

12.UNDERTAKING

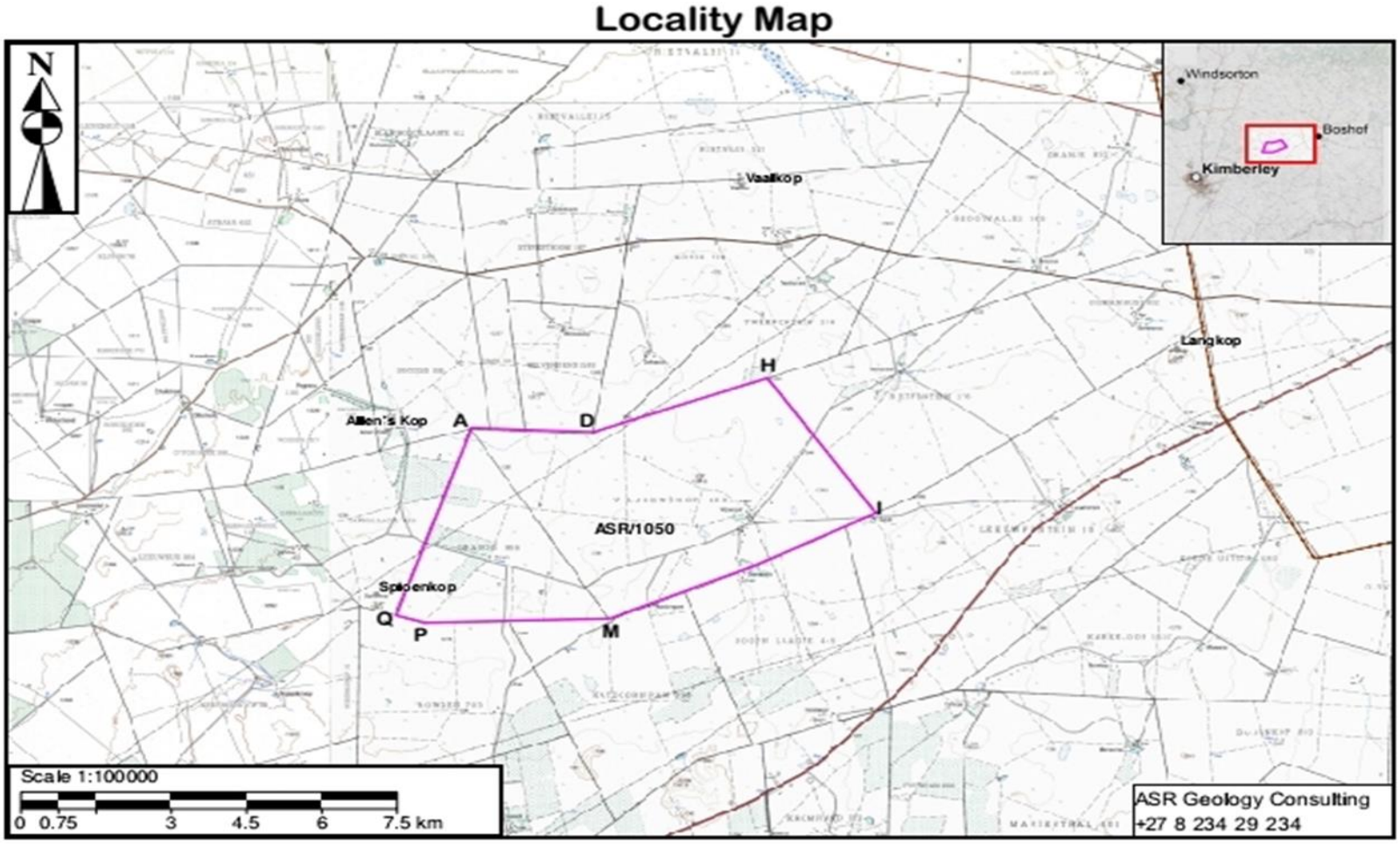
- The EAP herewith confirms
- The correctness of the information in the report
- The inclusion of comments and inputs from stakeholders and I&APS;
- The inclusion of inputs and recommendations from the specialist report where relevant; and
- The acceptability of the project in relation to the finding of the assessment and level mitigation proposed

Signature of the Environmental Assessment Practitioner Date:09/09/2023

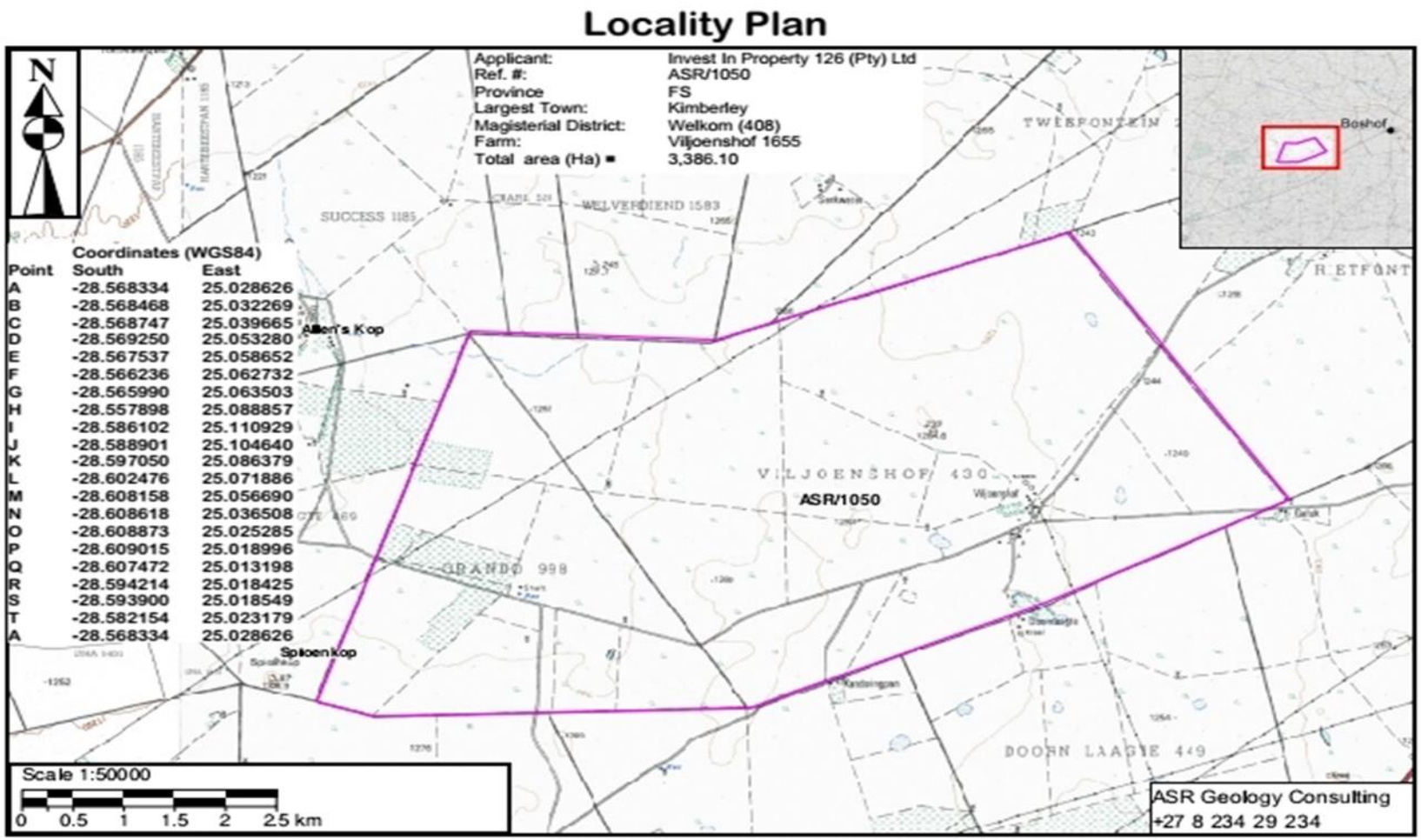
Name of the company
Biomental Services

ANNEXURE B: MAPS

ANNEXURE B (1): Locality MAP



ANNEXURE B (2): Locality Plan



ANNEXURE C: CURRICULUM VITAE OF EAP

Personal Information

Surname	: Macebele
Name	: Tiyiselani
ID Number	: 8607105425080
Passport Number	: A06635279
Gender	: Male
Nationality	: South Africa
Home language	: Xitsonga
Marital status	: Single
Disability	: None
Area of Residence	: De Aar, Northern Cape
Driver License	: Code C1
Availability	: Month notice

Profile

I have a bachelor degree in Environmental Science conferred by the University of Venda on the 19th September 2008.My core modules are: pollution and environmental quality; environmental impact assessment &modelling; rural geography & development; geography of south Africa and biogeography. I am well experienced and skilled having being involved in construction project for renewable energy and mining sector as well as public sector on environmental management. I have 11 years working experience on environmental management in various environmental field categories such as waste management, environmental compliance, environmental education awareness and environmental impact assessment since 2010 till to date. My journey as an environmentalist begun in 2010 at Kruger national park where I undertook a 12-months internship program under the division of Environmental, Interpretating and education section. After four(4) months in the internship was fortunate to get an opportunity at the Greater Giyani Municipality for a two and half years contract as an environmental officer for Indalo yethu greening project from June 2010 to December 2021.I then furthered my career at a renewable energy project namely Ilanga Lethemba solar energy project employed as Environmental Compliance Officer(ECO) by ECO-Compliance Pty-Ltd for a duration period 4 years(2013- 2017).In June 2019 I was employed by Pioneers Skills Development Institute(PSDI) as an Environmental Facilitator for a duration of

Core competency

- Sound knowledge and competence in implementing integrated waste management plan (IWMP)
- Extensive knowledge of Environmental impact assessment and risk assessment
- Ability to compile and review specialist reports and draft Environmental impact assessment reports
- Experience in drafting environmental policy and standards
- Ability to review and compile Environmental Management Programs (EMPr)
- Knowledge about Air quality act and Ambient Air quality standards
- Extensive knowledge of environmental legislations and acts: NEMA, Biodiversity act, Water act, Waste act, Air quality act and other environmental related acts
- Sound knowledge and experience in waste management system: waste control, waste minimization strategies
- Sound knowledge and experience in implementation of Environmental Management Programs (EMPR): Rehabilitation management plan, Storm water management plan, Alien invasive management plan, Avifauna management plan, Heritage management plan and IWMP
- Good knowledge and experience in conducting environmental investigations and incidences
- Knowledge and experience on environmental auditing, inspection methodology
- Ability to write environmental audit reports and projects close out reports
- Ability to present findings and conclusions effectively in an appropriate tabular, graphic and written format
- Ability to conduct research, gather and analyze information and draft documents
- Ability to work as a team and to lead a team
- Good interpersonal relations and well-developed communication.
- Undertaking Full Scoping and EIA process
- Public Participation Process.
- Stakeholders engagement process.
- Environmental Licenses and Permit applications.
- Environmental inspections and compliance.

Educational qualifications

Name of school	Highest grade passed	Year of achievement
EPP Mhinga high school	Matric	2004
Name of Institution	Qualification	Year achieved

University of Venda	Bachelor of environmental science	2008

Workshops and Trainings

Name of Course/training attended	Year attended and duration
Basic computer literacy • MS Word • MS Excel • MS PowerPoint • Publisher • Internet • Outlook	2008 for a duration of one (1) month (University of Venda)
Environmental Management • Climate change • Environmental impact assessment • PED • SEA • Sustainable development • SIA EMS • ISO14001; SHEQ	2011 for one week duration
Environmental education & awareness	2011 for one week duration

Work Experience

Current Employer : De Aar Quarry

Position : Environmental Manager

Duration : March 2021 till to date

Key functions and duties

- Conduct and undertake scoping & Environmental impacts Assessment duties for mining application process.
- Stakeholders engagement with the interested and affected parties
- Draft Environmental management programs.
- Apply mining permits and licenses
- Ensure environmental compliance for mining operations
- Provide environmental advices and consultancy.
- Work hand in hand with competent authority during mining application process.
- Inspect and monitor environmental compliance.
- Write environmental reports (weekly, monthly and annual)
- Compile close out report
- Conduct environmental auditing and financial provision of the mine.
- Monitor ongoing rehabilitation of the mine in line with financial provision.

Achievements

- When I resumed my responsibilities as an Environmental Manager, the mine was in non-compliant and operations were suspended by the Department of minerals and energy due to failure to submit annual audit reports and reviewed financial provisions in keeping with MPRD act 2002.
- I conducted an audit and revied the financial provision in terms of rehabilitation as required by the competent authority. The department was satisfied and notified that the mining operation may again resume.
- I have undertaken and compiled Basic assessment & prospective right for the company proposed development in De Aar and Prieska.
- At this stage am currently undertaking mining right application with the scoping& EIA process underway.

Reason for leaving

My reason for leaving is motivated by my quest for Career growth and also be exposed to new work environment and challenges that will help me grow and experience

---

Previous Employer : Pioneers skills development Institutions

Position : Facilitator

Duration : 9 months (June 2019-February 20202)

Key functions and duties

- Plan and prepare for learning events
- Conduct research to improve subjects matters expertise and presentations
- Evaluate leaning programs and provide result to learning program designers
- Assist in development of learning programs
- Support learners before, after and during presentations of learning programs
- Evaluate the quality of the training programs
- Evaluate the quality of policy and procedure
- Complete course related administrations
- Make learners evidence
- Prepare leaners training rooms, training area and equipment
- Prepare the learners for assessment
- Provide feedback to the leaner's performance
- Keeping of prescribed records
- Brief and advice learners

Achievements

- I facilitated an environmental practice course (SETA) for Collins Chobani Municipality and Makhuduthamaga local municipality. This was a 12 months learnership program.
- All the learners successfully completed the course and graduated in 2020.

Previous Employer: Eco-compliance Pty(Ltd)

Position: Environmental compliance officer

Centre: Ilanga Lethemba PV solar project (Northern cape, De Aar)

Duration: 4 years(June 2020-Decmember 2017)

Key functions and duties

- Ensures compliance always with environmental authorization issued by the department of Environmental Affairs
- Oversee and facilitate the plant rehabilitation program is undertaken successfully;
- Keep all copies of all reports and documents submitted to the department of environmental affairs;
- Keep schedules of all activities and how they were managed;
- Liaise with the independent environmental auditor to compile and submit environmental audits reports upon the completion of construction phase;
- Ensures compliance of all environmental permits; water use license, heritage permit, botanical permit; • Investigate and write incident report;
- Conduct daily site inspections;
- Ensures that all environmental management programs are implemented and adhered to;
- Update the National department of environmental affairs on matters related to the project and compliance;
- Identify training need where necessary and capacitate personnel with environmental education;
- Conduct environmental audits and compile audit reports;
- Compile project closure reports;
- Keep a daily site dairy;
- Keep records of all environmental grievances and incidences detailing how steps were undertaken to address them.

Achievements

- I successfully ensured that the project reached it construction completion with less environmental impacts for both project phase in 2014 & 2016
- Both projects were visited by department of environmental affairs for inspection and no non-compliances and red flags were highlighted or raised as concern
- I achieved clean audits conducted by coastal& environmental services undertaken annually from 2014 to 2017.
- I achieved a clean audit conducted by Magalela&Association for water use license which is undertaken annually from 2014 to 2017
- I have successfully overseer the implementation of EMP after project completion. This includes Inta Alia; Rehabilitation management plan, storm water management plan, Avifauna management plan, Alien invasive management plan.

Reason for leaving

The company embarked on a restructuring process which resulted in retrenchment.

Previous Employer	: Greater Giyani municipality (Indalo yethu greening project)
Position	: Environmental Education & awareness officer
Centre	: Giyani Limpopo province
Division	: Environment & waste
Duration	: June 2010 to December 2012

Key functions Environment

<u>waste management and compliance</u>

- Write notices for illegal dumping
- Identify illegal dumping spots and initiate remedial action;
- Ensures that policies, by-laws related to solid waste are adhered to;
- Provide leadership and management for street cleaning, sweeping and collection of waste in the CBD and town;
- Ensure that all transfer stations are affective and meet environmental standards;
- Issue notices to transgression related to waste illegal dumping;

<u>Environmental education & awareness</u>

- conduct environmental awareness and campaigns in the CBD areas and community areas where there are environmental challenges;
- conduct presentation in town, communities and establish eco-school;

<u>Horticulture (Parks & cemeteries)</u>

- promote tree planting at schools and community;
- ensure that grass cutting and control is done on regular bases;
- ensures the maintenance of parks and cemeteries yard;
- identify open spaces and implement greening programs;
- ensures that beatifications programs are implemented;
- ensures that all tools are available and are in good condition;

<u>Achievement</u>

- because of my hard work and working ethnic I was promoted to supervising level where I managed a team designated to me
- I initiated open spaces management whereby areas that were used for illegal dumping were converted into parks.

- During my tenure, the municipality was accorded position number 3 as part of cleanest municipality competition under the Mopani district municipality. This was first time for the municipality to achieve such position since inception of the competition.
- I supervised a team that installed 12000 waste bins in Giyani town.
- Street benches have been installed in different locations and points
- More than 50 transfer stations were established in Giyani during my tenure

Reason for leaving

This was a 2-year contract for a greening project. The project elapsed in December 2012 after achieving its objectives and deliverables.

Previous Employer : Kruger National Park

Division : People and conservation (Environmental education)

Centre : Berg-en dal

Duration : 4 months (2010

Key functions

- Assist in environmental awareness and education programs
- Assist in planning and conducting eco-school
- Familiarize guest with the Rhino Hall and rhino trail
- Ensures that weather station activities are conducted and all measurement are done and all records are taken at regular prescribed time interval
- Office administration

Achievement

- through this internship program have been able to improve my communication skills;
- improved my presentation skills
- learned how t
- conduct environmental education and engagement with various stake holders

Reason for leaving

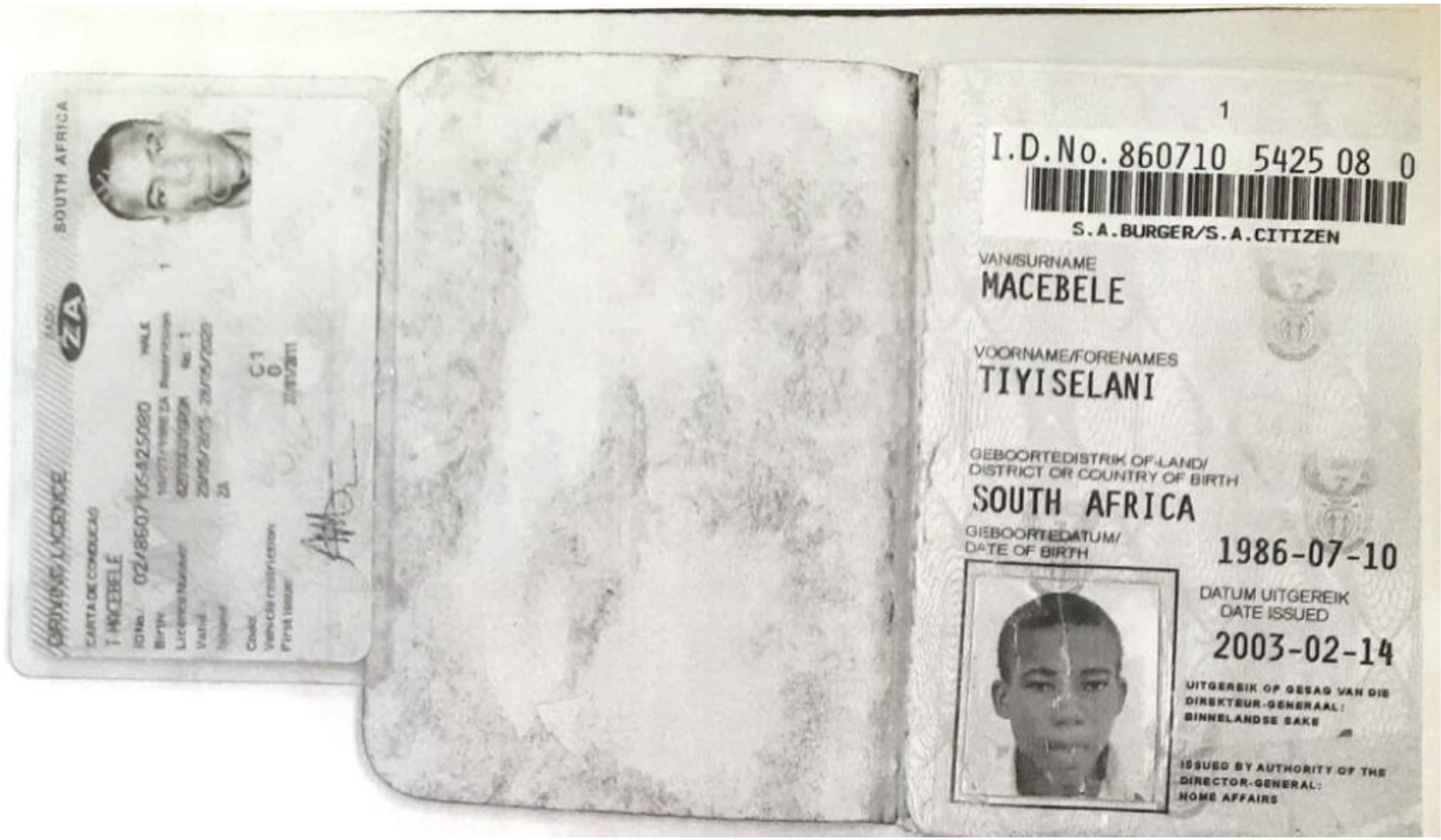
career growth

Reference

Name	institution	contacts
Mr. Percy Ngidi	Eco-compliance(Manager)	082 802 3728

Mr. Rhulani Mabasa	Kruger national park	071 062 4404
Mr. Patrick Lebiya	Greater Giyani municipality (Project coordinator)	073 720 2001
Mr Percy Ngidi	Environmental Manager	082 8023 3728
Mr Chalse Mabunda	Co-ordinator(PSDI)	073 102 7297
Mr Thaboso Mosia	Director (De Aar Quarry	082 623 0221

END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1
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S.A.BURGER/S.A.CITIZEN
VAN/SURNAME
MACEBELE
VOORNAME/FORENAMES
TIYISELANI
GEBOORTEDISTRIK OF-LAND/
DISTRICT OR COUNTRY OF BIRTH
SOUTH AFRICA
GEBOORTEDATUM/
DATE OF BIRTH
1986-07-10
DATUM UITGEREIK
DATE ISSUED
2003-02-14
UITGEREIK OP GESAG VAN DIE
DIREKTEUR-GENERAAL:
BINNELANDSE SAKE
ISSUED BY AUTHORITY OF THE
DIRECTOR-GENERAL:
HOME AFFAIRS

University of Venda

This is to Certify that the Degree of

Bachelor of Environmental Sciences

was Awarded to

MACEBELE TIYISELANI

at a Ceremony held on the

19-SEP-2008

in Accordance with the Provisions of the Act and Statute

Vice Chancellor

University Registrar

Dean

ANNEXUTE C (2): ELECTION NHLAMULO MAHORI CV AND QUALIFICATIONS

CURRICULUM VITAE
OF
MAHORI NHLAWULO ELECTION

PERSONAL DETAILS

Surname	Mahori
First Names	Nhlawulo Election
Date of birth	08 May 1994
Identity number	9405085668087
Drivers Licence	Code C1

CONTACT DETAILS

Address	108 anysberg street, kirkney village, Pretoria, 0182
Contact Numbers	0731404322
Email Address	nemahori@gmail.com

PROFESSIONAL REGISTRATIONS

- South African Council of Natural Science Practitioners (SACNASP) – (Cand.Sci.Nat - 125490)
- Environmental Assessment Practitioners Association of South Africa) – (EAP Reg.No 2019/1026)

EDUCATION & TRAINING

- Bachelor of Environmental Science honours in Geography (2017).
- Bachelor of Environmental Science degree (2016)

CAREER SUMMARY / PROFESSIONAL SKILLS

- 5 years in environmental management within construction sites, bulk water services and consulting sectors.
- Experience and sound implementation of environmental laws and regulations (NEMA and SEMAs).
- Working knowledge of monitoring environmental compliance in different aspects such as air, soil and water pollution during construction and rehabilitation phases.
- Compiling Environmental Management Programmes for construction projects as well as for operational projects.
- Appointing various Specialists, reviewing and commenting their reports to incorporate their inputs in the Environmental Impact Assessment Report for the attainment of Environmental authorization.

- Undertaking Water Use Licence Applications and General Authorisations for various projects triggering water use activities (Section 21 of the National Water Act).
- Undertaking Scoping and Environmental Impact Assessments for projects that trigger listed activities as per the 2014 Environmental Impact Assessment Regulations and the National Environmental Management Act.
- Public participation process which include landowners, various stakeholders and government departments during EIA and WULA activities.
- Environmental awareness training to contractors in various projects and ensuring that environmental induction is implemented as specified.
- Conducting Environmental Audits for various projects, ensuring and maintaining compliance with various Environmental Authorization, Water Use Licences, Waste Permits, and Environmental Management Programmes.
- Monitoring and enforcing compliance with EA, EMPr, WUL and other permits and taking action against non-compliance.

KEY SKILLS

Environmental Consulting

- Environmental Impact Assessment
- Data collection and compiling scientific report
- Public Participation (Capacity Building)
- Environmental Education and Awareness
- Project Management principles in various projects including scheduling, budgeting and ensure expected deliverables to clients.
- Microsoft Office Applications (Ms Word, Ms PowerPoint, Ms Excel, Ms Outlook, Ms Projects).
- Good team player with leadership skills.
- Ability to write informative reports with a keen eye in scientific detail.
- Good interpersonal, communication and presentation skills.

ESRI ArcGIS Package

- ArcMap

EMPLOYMENT RECORD AND REFERENCE

Biomental Services
Position: Environmental Assessment Pactitioner
Ref: Macebele T
Info@biomental.co.za
Telephone :053 004 0204

Responsibilities:

- Ensure the implementation by the contractor of the project Environmental Authorisation, Environmental Management Program, Water Use General Authorisation, Threatened or Protected Species removal permit and landowners' conditions

- Review the Environmental Management Programme and Environmental Authorisation and compile of site-specific checklists and registers
- Conducting on-site environmental audits and the preparation of written reports on the results of the audits
- Preparing and conducting environmental inductions for contractor management
- Generation of weekly and monthly reports to various authorities
- Attend and report back findings at monthly site progress meetings
- Writing project environmental Close-out Reports.
- Ensure Compliance obligation registers are available on site for reference
- Attend and participate in Environmental review meetings.
- Investigate environmental incidents

PROJECT EXPERIENCE

- Refurbishment of Two (2) sludge lagoon, Completion of Two (2) sludge lagoon and supernatant return works at Olifantspoort plant.
- Upgrading of roads from Gravel to Tar: Road D3767 Mafarana to Sedan.
- Appointment for Environmental Consultants Services: RAL/E653/2014: Upgrading of (Gravel to surface standard) of road D3423 from Moletji (Road D3332) Ga- Komape to Ga- Ramphele to Ga – Legodi to Mankweng Road P94/1 in the Capricorn District of Limpopo Province.
- Proposed erection of 29.28m2 billboard of Ivy Park (nirvana) under the jurisdiction of Polokwane Local Municipality within Capricorn district in Limpopo province.
- Consultation report for the proposed development of a residential area with a golf course on remainder of portion 4 of the farm Roodepoort 744 LS and remainder of portion 1 of the farm Langgenoed 754 LS, Polokwane municipality, Capricorn district, Limpopo province (Langdale golf estate in short).
- Application for Environmental Authorisation for the proposed Sekgosese Groundwater Regional Scheme.
- Application to rectify unlawful commencement or continuation of listed activities in terms of section 24G of the National Environmental Management Act (Act No.107 of 1998).
- Application for Environmental Authorisation for the proposed development of a fuel depot and filling station in Musina area.
- Doorndraai WTW: Design, Manufacturing, Supply, installation and commissioning of a 5ml/day package plant.
- Compilation of an Environmental Management Programme (EMPr) for the construction of Charlottedale community hall in ward 29, Kwadukuza.
- Compilation of an Environmental Management Programme (EMPr) for the rehabilitation of Bruntville internal roads, Mooi River.
- Application for a Water Use License for Burgersfort & Marblehall Regional Water Scheme.
- Application for a Water Use License for Ga-Kuranta and Sekhiming Villages.
- Application for a Water Use License for Win-a-Way Investments 15 (Pty) Ltd in Musina town.
- Application for an Environmental Authorisation and a Water Use License for the proposed Blaaupan sewer Pipeline upgrade, which is located within a pan, adjacent to Marignane Avenue in Bonaero Park, within the City of Ekurhuleni, Gauteng Province.
- Conducting Environmental Audits for the Fuel and hazardous waste and Wastewater treatment plant Licenses for Modikwa platinum mine.
- Conducting Weekly Water monitoring, Sampling for the sewer and BTEX water sampling and present Laboratory Report for Modikwa platinum mine.
- ECO for the construction of Albert's Farm dam wall and spillway.
- ECO for the construction of gabion walls, Reno mattresses and pedestrian bridge associated with at Sandton Gate.

University of Venda

This is to Certify that the Degree of

BACHELOR OF ENVIRONMENTAL SCIENCES HONOURS

was Awarded to

MAHORI NHLAWULO ELECTION

9405085668087

at a Ceremony held on the

21-Sep-2018

in Accordance with the Provisions of the Act and Statute

Vice Chancellor

University Registrar

Dean

1809210468

University of Venda

This is to Certify that the Degree of

BACHELOR OF ENVIRONMENTAL SCIENCES HONOURS

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MAHORI NHLAWULO ELECTION

9405085668087

at a Ceremony held on the

21-Sep-2018

in Accordance with the Provisions of the Act and Statute

Vice Chancellor

University Registrar

Dean

1809210468

Environmental Assessment Practitioners Association of South Africa

Registration No. 2019/1026

Herewith certifies that

Nhlawulo Election Mahori

is registered as an

Candidate Environmental Assessment Practitioner

Registered in accordance with the prescribed criteria of Regulation 15. (1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Effective:01 March 2022

Expires: 28 February 2023

Chairperson

Registrar

SAQA

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Nhlawulo Election Mahori

Registration Number: 125490

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following fields(s) of practice (Schedule 1 of the Act)

Environmental Science (Candidate Natural Scientist)

Effective **11 September 2019** Expires **31 March 2023**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

ANNEXURE C (3): FORTUNATE NGUBENI CV AND QUALIFICATIONS

FORTUNATE NGUBENI

Occupation	**Administrator**
Gender	Female
Nationality	South African
Ethnic Group	African
Language	Zulu, English, Sotho, Xhosa
Drivers Licence	Code C1
Desired job location	Anywhere in South Africa
Availability	Immediately

Contact Details

Cell phone	+27 83 7437 012
Identity Number	900713 0287 085
Email	fortunate@biomental.co.za jfngubeni@gmail.com
Residential Location	3318 Emerald Point Street Boitumelo Sebokeng 1983

Profile

A passionate and driven graduate, who is currently in possession of a BA Geography degree from the University of Johannesburg as well as a BA Environmental Management degree from the University of South Africa, seeking to gain exposure in different fields of Geography, particularly Environmental Management, in order to advance and grow in this career path.

I have an enthusiasm to learn more about our environment and to be more environmentally responsible with my actions; I have an interest in raising environmental awareness and finding solutions to environmental problems.

Education

2014- 2017
University of South Africa
BA Environmental Management

Courses: Health and the Environment; Know Your World- Introduction to Geography; Community, Society and Inequality in a Globalised World- Introduction to Sociology; Understanding South Africa- Families, Education, Identities and Inequality; Fundamentals of Communication; Environmental Economics; Environmental Education- Concepts and Principles; World Issues- A Geographic Perspective; Our Living Earth; Environmental Affairs; Research in Social Sciences; Basic Statistics; The African Challenge- People and Environment; The Geography of Service Provision; The Interpretation of Maps; People and the Natural Environment- Use and Impact; Environmental Politics; Introduction to GIS; Legal Aspects of Environmental Management; Theoretical and Applied Ethics; Public Management Skills; Political Economy of Africa; State of the Environment in Southern Africa; Spatial Economic Development; Development of Urban Space; Assessing Environmental Impact; Ecotourism; Environmental Awareness and Responsibility; Communication Research; Information and Knowledge Management.

2011
University of Johannesburg
BA Geography

Courses: Development Studies 1A; Introduction to Human Geography; Information Management 1A; Tourism Development 1A; Practical Tourism 1A; Development Studies 1B; Climatology and Geomorphology;

1

Information Management 1B; Tourism Development 1B; Practical Tourism 1B; Sociology 1A; Sociology 1B; Anthropology 1A; Development Studies 2A; Geography 2A; Sociology 2A; Anthropology 1B; Development Studies 2B; Geography 2B; Sociology 2B; Geography 3A; Sociology 3A; Geography 3B; Sociology 3B

- **Final year project**: A research project for Geography on the possibilities of water wastage by Evaton residents, a survey was conducted to obtain information on Evaton residents on their water usage and to find out if they do waste water, or experience any waters wastages around their community through leakages.

A research project for Sociology, examining the reason behind the increase in alcohol usage by university students all around the world. This was done through reviewing studies by other social researchers on the subject at hand and conducting a survey on the University of Johannesburg students concerning alcohol usage.

- **Achievements**: Social Science Research Certificate.

2006
Rutasetjhaba Secondary School
Grade 12

- Subjects: Geography, Physic Science, Mathematics, Biology, IsiZulu, English, Afrikaans

- Achievements: Distinctions: IsiZulu

Computer Skills

- Microsoft Office (Word, Excel, PowerPoint)
- Internet and E-mail

- QGIS

Career History

I.	**MAY 2018- 2020**

Mangaliso Transportation and Projects (PTY) LTD Sebokeng, South Africa

Administrator

Responsibilities

- Compiling statements and load confirmation documents
- Auditing diesel usage
- Responding to clients inquiries and requests

II.	**NOVEMBER 2020- 2022**

Autonomy (PTY) LTD Johannesburg, South Africa

Personal Assistant to Director

Responsibilities

- Assist with compiling tenders for new work
- Following up on payments
- Re-application for annual subscriptions for the business i.e NHBRC, CIDB, CIPC and SARS

III.	**JULY 2022- PRESENT**

Biomental (PTY) LTD De Aar , South Africa

Environmentalist

Responsibilities

- Environmental consultancy
- Assist with basic assessment reports
- Engaging with Stakeholders, Interested and Affected parties
- Site environmental audits

Key Strengths

- Self-motivated
- Leadership and teamwork skills
- Time management
- Research and analytical skills
- Able to work under pressure
- Always eager to learn and a fast leaner
- Good communication skills (verbal and written)

References

Mangaliso Lala Director Mangliso Transportation and Projects 073 449 5949	Mandla Dyodo Senior Civil Engineer Rand Water 078 7656 421
Tiyiselani Macebele Director Biomental 068 321 4288	

UNIVERSITY
OF
JOHANNESBURG

The Council and the Senate of the
UNIVERSITY OF JOHANNESBURG
hereby certify that the degree

BACCALAUREUS ARTIUM

with field of study

Geography

with all its associated rights and privileges
in accordance with the Statute of the
University has been conferred upon

JABHILE FORTUNATE NGUBENI

at a congregation of the University

Vice-Chancellor

Registrar

28 FEBRUARY 2011
Johannesburg
ID 9007130287085

52427

UNISA

UNIVERSITY OF SOUTH AFRICA

We certify that

JABHILE FORTUNATE NGUBENI

having complied with the requirements of the Higher Education Act and the Institutional Statute, was admitted to the degree of

BACHELOR OF ARTS

in Environmental Management

at a congregation of the University on 19 March 2018

Vice Chancellor

Executive Dean

University Registrar

19805555189210C05451

U·J Sociology

Certificate

It is hereby certified that

JF NGUBENI

successfully completed a practical course in social research. In doing so, he/she conceptualised and executed the research project, and in this process, covered the following elements:

- Research design
- Questionnaire construction
- Drafting an interview schedule
- Transcription of recorded data
- Coding and capturing of data
- Data analysis
- Reporting data

Prof Tina Uys
Chairperson
Department of Sociology

21 October 2010
Date

ANNEXURE D: CORRESPONDENCE FROM DMRE

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

DMRE 11

Private Bag X03, Welkom, 9460, Tel: 057 391 1315, Fax: 057 357 6003
The Strip Building, 314 Stateway Street, Welkom, 9459

Enquiries: Ms T.J. Makhokha
Sub-Directorate: Mine Environmental Management
E-Mail: Tshifhiwa.Makhokha@dmre.gov.za
Ref No.: FS 30/5/1/2/3/2/1 (10064) EM

The Directors

Invest In Property 126 (Pty) Ltd

234 Alexander Ave

Midrand

Gauteng

1685

Attention: Mr. V. Scholtemeyer
Cc. Mr. T. Macebele (EAP: Tiyiselani Enviro-solutions (Pty) Ltd)
e-mail: Verdisc@gmail.com and EAP: tiyiselani@environmentalsolutions.co.za

APPLICATION FOR AN ENVIRONMENTAL AUTHORISATION FOR MINING RIGHT LODGED IN TERMS OF REGULATION 16 OF THE ENVIRONMENTAL IMPACT ASSESMENT REGULATIONS, 2014 (HEREIN REFERRED TO AS THE EIA REGULATIONS) IN RESPECT OF THE FARM VILJOENSHOF 1655; SITUATED IN THE MAGISTERIAL DISTRICT OF BOSHOF IN THE FREE STATE PROVINCE. APPLICANT: INVEST IN PROPERTY 126 (PTY) LTD.

The Final Scoping Report (SR) and Plan of Study for Environmental Impact Assessment uploaded on the **09th of April 2021** and received by the Department on the **21st of May 2021** has reference.

1. The Department has evaluated the submitted SR and Plan of Study for Environmental Impact Assessment dated **21st of May 2021** and is satisfied that the documents comply with the minimum requirements of Appendix 2(2) of the National Environmental Management Act, 1998 (as amended) (NEMA) Environmental Impact Assessment

(EIA) Regulations, 2014. **The SR is hereby accepted by the Department in terms of regulation 22(a) of the NEMA EIA Regulations, 2014.**

2. You may proceed with the environmental impact assessment process in accordance with the tasks contemplated in the Plan of Study for Environmental Impact Assessment as required in terms of the NEMA EIA Regulations, 2014.

3. Please ensure that comments from all relevant stakeholders are submitted to the Department with the Environmental Impact Assessment Report (EIAR). This includes but is not limited to the Provincial Heritage Resources Authority, Provincial Environmental Department, Department of Agriculture, Forestry and Fisheries (DAFF), Department of Water and Sanitation (DWS) and the local municipality. Should you be unable to obtain comments, proof of the attempts that were made to obtain comments should be submitted to the Department.

4. In addition, the following amendments and additional information are required for the EIAR and EMPr:
   a) The locality map and site layout plan on the scoping report are not clear, page 87 of the scoping report submitted. Please also make sure all the maps to be attached on the EIAR & EMPR are visible and clear so that it can give the clear indication of the area applied for.
   b) Please note that your newspaper advertisement together with the notices must be visible so that the wording indicated can be readable to the person who is dealing with the document.
   c) Should a Water Use License be required, proof of application for a license must be submitted.
   d) Disclosure of vested interest and confirmation of the correctness of information by the EAP has not been provided under oath or affirmation on the scoping report.
   e) Page 7 of the scoping report, widening of the road by more than 6 metres column the listing notice is not indicated only the GNR Number is indicated.
   f) It is indicated on page 10 of the scoping report that there is a court case between the applicant and the landowner, it was further indicated that the matter would be heard by the 19th of June 2021. May you please attach the result of the court case on the EIAR and EMPr document to be submitted.
   g) Plan of the application area map should to be in colour so that all the activities can be visible.

Acceptance of receipt of an application for an environmental authorisation [illegible]

h) Page 82 of the scoping report, there is a concern concerning access road to the mining area, may you please consult Department of Police, Road and Transport. Please include their comments on the EIAR and EMPr to be submitted.

i) Please note there is an objection raised by F.J. Senekal Attorneys, please check the attached letter. You need to address their objections and include the agreement or your response on the EIAR to be submitted.

j) Information on services required on the site, e.g. sewage, refuse removal, water and electricity. Who will supply these services and has an agreement and confirmation of capacity been obtained?

k) Please note that all the relevant specialist studies must be conducted and attached to the EIAR and EMPr document to be submitted. It is EAP's responsibility to identity the specialist studies required for this environmental authorization in order to avoid delay in processing and finalisation of the application.

5. Further, it must be reiterated that, should an application for Environmental Authorisation be subjected to any permits or authorisations in terms of the provisions of any Specific Environmental Management Acts (SEMAs), proof of such application will be required.

6. The applicant is hereby reminded to comply with the requirements of regulation 3 of the EIA Regulations, 2014 with regards to the time period allowed for complying with the requirements of the Regulations.

7. You are hereby requested in terms of regulation 23(1)(a) of the EIA Regulations, 2014 to submit by the **23rd of September 2021**, three (3) copies manually and one (1) electronic copy through SAMRAD, of an Environmental Impact Assessment Report, inclusive of any specialist reports and an EMPr which have been subjected to the public participation process of at least 30 days incorporating the comments received, including all comments from the competent authority. Kindly refer to section 24N(2) of NEMA and Appendix 3, 4 and 6 of the EIA Regulations for the minimum requirements set for the aforementioned reports. The public participation process should be conducted as stipulated in chapter 6 of the EIA Regulations and taking into considerations any guideline applicable for public participation.

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application will be processed further and a recommendation on granting or refusal of an environmental authorisation will be forwarded to the Minister or his delegate for consideration, and the decision will be communicated as stipulated in regulation 4(1) of the EIA Regulations, 2014.

9. You should also note that commencement with a listed activity without an environmental authorisation being granted by the competent authority contravenes the provisions of section 24F (1) of NEMA and constitutes an offence in terms of section 49A (1) (a) of said Act.

10. Further note that in terms of regulation 45 of the EIA Regulations; your failure to submit the documents or meet any timeframes prescribed in terms of the said Regulations will result in your application deemed to have lapsed.

Yours faithfully

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K.C. MPHAPHULI
ACTING REGIONAL MANAGER: MINERAL REGULATION
FREE STATE REGION
DATE 08/06/2021

Please quote this office file number as reference for any correspondence regarding this application.

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

Private Bag X33, Welkom, 9460, Tel: 057 391 1356, Fax: 057 357 6003
The Strip Building, 314 Stateway Street, Welkom, 9459

Enquiries: Ms. T.J. Makhokha **E-Mail:** Tshifhiwa.Makhokha@dmre.gov.za
Sub-Directorate: Mine Environmental Management **Ref No.:** FS 30/5/1/2/3/2/1 (10064) EM

The Directors

Invest In Property 126 (Pty) Ltd

234 Alexander Ave

Midrand

Gauteng

1685

Attention: Mr. V. Scholtemeyer cc Mr. T. Macebele
e-mail: Verdisc@gmail.com cc tiyiselani@environmentalsolutions.co.za

REMINDER: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND THE ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) SUBMITTED REGARDING A MINING RIGHT APPLICATION IN RESPECT OF THE FARM VILJOENSHOF 1655, SITUATED IN THE MAGISTERIAL DISTRICT OF BOSHOF, IN THE FREE STATE PROVINCE. APPLICANT: INVEST IN PROPERTY 126 (PTY) LTD.

1. The Environmental Impact Assessment Report and Environmental Management Programme (EMPr) submitted to this Department on the **01st of March 2023** has references.
2. Your letter dated 25th of May 2023 received by email on the 12th of June 2023 also have reference.

3. The Environmental Impact Assessment Report and an EMPr have been evaluated to determine compliance with section 24N(2) & (3) of the National Environmental

Management Act, 1998 (Act 107 of 1998) as amended, as well as the Environmental Impact Assessment Regulations, 19(3) and (4) of 2014.

4. The following matters which need to be addressed by the **11th of September 2023** have been identified:

    a. Try to compile the document following the NEMA templates on compiling Environmental Impact Assessment and EMPr document.
    b. Page 10 and 84 of the document check the reference number 10084 MR as is wrong reference number.
    c. Please attach newspaper advertisement on the revised document as it was indicated that has been secured on the 09th of February 2023.
    d. It was indicated on page 22 that appropriate visit may be organized, how did public participation process was conducted, remove the statement from the revised document to be submitted.
    e. Consult Department of Water and Sanitation as your application is Integrated Environmental Authorization to obtain an ROD from them. Also apply for Water Use Licence from DWS.
    f. Page 44 please rectify the statement as Mr. Verdi Scholtemeyer has prospecting right application with DMRE not Mining permit.
    g. It was indicated that there are two historical diamonds mines in the area, may you please include the names and the history of those mines on the revised document.
    h. Page 63, please rectify the statement as Vaal River is in Free State and also the application is in Free State as it was indicated that is in Breyton Mpumalanga.
    i. Annexure "B" please attach a visible map with legends to show environmental features found on site.
    j. Please conduct proper public participation process as per chapter 6 of EIA Regulations and proof of consultations together with the response from consulted parties to be included on the revised document to be submitted.
    k. Please address all the concerns raised by the objector on the attached letter whereby lots of concerns were raised.
    l. The objector indicated that the property is declared protected area, verify with Department of Environmental Affairs if is indeed protected or what.

    m. Please calculate your financial provision using the recent master rate as the ones used are old master rate. Remember master rate they escalate by 6% each year.
    n. Your application also does not have an undertaking under oath or affirmation as required. As a result, the application does not comply with the provision of regulation 15 (1)(b)(iv) of the EIA Regulations.

5. All the requirements of section 24N (2) & (3) of NEMA as well as regulations 19(3) & (4) of the EIA Regulations, 2014 must be adequately addressed. The requested information must be completely addressed and incorporated in the revised basic assessment report and EMPr and two (2) copies of such revised documents must be submitted as response to this office. Also upload the same revised basic assessment

Management Act, 1998 (Act 107 of 1998) as amended, as well as the Environmental Impact Assessment Regulations, 19(3) and (4) of 2014.

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6. Please note that should you fail to submit the requested information by the due date, this office will process the application further based on the aforementioned basic assessment report and EMPr.

Yours faithfully

pp.....

REGIONAL MANAGER: MINERAL AND PETROLEUM REGULATION

FREE STATE REGION

DATE.....24/08/2023.....

Please quote this office file number as reference for any correspondence regarding this application.

Regional Manager
Department of Mineral Resources and Energy
Private Bag X33
Welkom 9480
Tel:057 391 1391
Fax 057 357 6003

REF: FS 30/5/1/2/2/10064MR

Attention: Ms TJ Makhoka Email: Tshifiwa.Makhokha@dmre.gov.za

CC:mahori@biomental.co.za;fortunate@biomental.co.za;rito@biomental.co.za;info@biomental.co.za;culansky@metalexventures.ca;verdisc@gmail.co.za;asr.geology.consulting@gmail.com

NOTICE OF ACKNOWLWDGEMENT OF RECEIPT FROM DEPARTMENT ECONOMICS, SMALL BISNESS DEVELOPMENT, TOURISM AND ENVIRONMENTAL AFFAIRS IN RELATION TO QUERY THE CONFIRMATION OF THE EXCLUSION OF THE DEVELOPMENT FOOTPRINT FROM THE PROTECTED AREA BASED ON THE NEM:PA NO 57 OF 2003 FOR THE MINING APPLICATION AT THE FARM VILJOENSHOF 1655 BOSHOF FREE STATE

1. This letter seeks to give notice that the department of economic, small business development, tourism and environmental affairs have acknowledged receiving query with regard to clarification on whether Viljoenhof 1655 was declared as protected area or not as per the directive on the latter dated 02/05/2023 from DMRE.
2. The department of Environmental Affairs made commitment to consult with the affected party in this case being the surface owner of Viljoenhof 1655 within 2 weeks and revert back to us.
3. This will entail that the final EIA report may only be submitted upon getting clarity from the department in reference.
4. Attached herewith is acknowledgement letter from the department of economic, small bisness development, tourism and environmental affairs.

Regards

Tiyiselani Macebele

EAP

Date:12/06/2023 Signature: 

ANNEXURE E: SPECIALIST REPORTS

ANNEXURE E (1): GEOHYDROLOGICAL IMPACT ASSESSMENT

ANNEXURE E (2): ECOLOGICAL IMPACT ASSESSMENT

ANNEXURE E (3): CULTURAL AND ARCHEOLOGICAL IMPACT ASSESSMENT REPORT

ANNECURE E (4): SOCIAL AND LABOUR PLAN

ANNEXURE E (5): SOCIO-ECONOMIC STUDY

ANNEXURE E (6): WETLAND STUDY

ANNEXURE E (7): SURFACE WATER STUDY

ANNEXURE E (8): AIR QUALITY STUDY

ANNEXURE E (9): VISUAL IMPACT ASSESSMENT

ANNEXURE F: EAP DECLARATION

DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I,**Tiyiselani Macebele** of ID NO **8607105425080** declares that I,

(a) act as the independent environmental practitioner in this application;

(b) do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;

(c) do not have and will not have a vested interest in the proposed activity proceeding;

(d) have no, and will not engage in, conflicting interests in the undertaking of the activity;

(e) undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2014;

(f) will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;

(g) will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the Department in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the Department may be attached to the report without further amendment to the report;

(h) will keep a register of all interested and affected parties that participated in a public participation process; and

(i) will provide the Department with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.

Signature of the Environmental Assessment Practitioner: 

Name of company: **Biomental Services**

Date:09/09/2023

_____END_____

ANNEXTURE G: CALCULATION OF QUANTUM OF REHABILITATION

CALCULATION OF THE QUANTUM

Applicant: **INVEST IN PROPERTY 126 (PTY) LTD** **Ref No.:**
Evaluators: **TIYISELANI MACEBELE** **Date:** **Sep-23**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	1200	14,05	1	1	R16 860,00
2 (A)	Demolition of steel buildings and structures	m2	90	195,76	1	1	R17 618,40
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	288,49	1	1	R0,00
3	Rehabilitation of access roads	m2	100	35,03	2	2	R14 012,00
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	340,01	1	1	R0,00
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	185,46	1	1	R0,00
5	Demolition of housing and/or administration facilities	m2	0	391,53	1	1	R0,00
6	Opencast rehabilitation including final voids and ramps	ha	0	205242,16	1	1	R0,00
7	Sealing of shafts adits and inclines	m3	0	105,09	1	1	R0,00
8 (A)	Rehabilitation of overburden and spoils	ha	15	136828,1	1	1	R2 052 421,50
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	170416,93	1	1	R0,00
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	494971,55	1	1	R0,00
9	Rehabilitation of subsided areas	ha	0,1	114572,93	1	1	R11 457,29
10	General surface rehabilitation	ha	10	108390,94	1	1	R1 083 909,40
11	River diversions	ha	0	108390,94	1	1	R0,00
12	Fencing	m	1000	50	2	1	R100 000,00
13	Water management	ha	0	41213,28	1	1	R0,00
14	2 to 3 years of maintenance and aftercare	ha	0,5	14424,65	1	1	R1,00
15 (A)	Specialist study	Sum	0			1	R0,00
15 (B)	Specialist study	Sum				1	R0,00
					Sub Total 1		R3 296 279,59

1	Preliminary and General	395553,5512	**weighting factor 2** 1	R395 553,55
2	Contingencies	329627,9593		R329 627,96
			Subtotal 2	R4 021 461,10
			VAT (14%)	R563 004,55
			Grand Total	**R4 584 465,66**

ANNEXURE H (1): OBJECTIONS AND EAP RESPONSE

ANNEXURE H (2): SURFACE OWNER REPLIES

ANNEXURE H (3): ACCESS REQUEST FOR SPECIALIST STUDIES

ANNEXURE H (4): LANDOWNER RESPONSE TO ACCESS REQUEST

ANNEXURE I: PUBLIC PARTICIPATION REPORT

ANNEXURE J: SCREENING TOOL REPORT

ANNEXURE K: ACCEPTANCE LETTER

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

Private Bag X33, Welkom, 9460, Tel: 057 391 1318, Fax: 057 357 6003
The Strip Building, 314 Stateway Street, Welkom, 9459

Enquiries: Ms T.J. Makhokha **E-Mail:** Tshifhiwa.Makhokha@dmre.gov.za
Sub-Directorate: Mine Environmental Management **Ref No.:** FS 30/5/1/2/3/2/1 (10064) EM

The Directors
Invest In Property 126 (Pty) Ltd
234 Alexander Ave
Midrand
Gauteng
1685

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APPLICATION FOR AN ENVIRONMENTAL AUTHORISATION FOR MINING RIGHT LODGED IN TERMS OF REGULATION 16 OF THE ENVIRONMENTAL IMPACT ASSESMENT REGULATIONS, 2014 (HEREIN REFERRED TO AS THE EIA REGULATIONS) IN RESPECT OF THE FARM VILJOENSHOF 1655; SITUATED IN THE MAGISTERIAL DISTRICT OF BOSHOF IN THE FREE STATE PROVINCE. APPLICANT: INVEST IN PROPERTY 126 (PTY) LTD.

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