



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

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FILE REFERENCE NUMBER SAMRAD: REF NO: KZN 30/5/1/1/2/11141 PR

1. IMPORTANT NOTICE

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

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

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

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a 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.

2. OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage , and cultural

sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:

- (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
- (ii) the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative;
 - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
 - (iii) identify residual risks that need to be managed and monitored.

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EXECUTIVE SUMMARY

NK24 Enterprises (Pty) Ltd has lodged an application to the Department of Mineral Resources and Energy (DMRE) for a prospecting right, to prospect Concrete Sand (Silica), Silica Sand (General) and Building Sand (Silica) in terms of Section 16 and 20 of the Mineral and Petroleum Resource Development Act, 28 of 2002 (MPRDA). The application was accepted and assigned **reference number: KZN 30/5/1/1/2/11141 PR**.

NK24 Enterprises (Pty) Ltd has appointed Lushika Services (Pty) Ltd as the Environmental Assessment Practitioners (EAP) to conduct the Environmental Impact Assessment (EIA) process. In terms of the NEMA (Act 107 of 1998) and EIA regulations of 2014 (amended April 2017), the proposed prospecting activity triggers Activity 20 and Activity 22 of Listing Notice 1 GNR 327 and the applicant cannot proceed without an Environmental Authorisation.

The proposed prospecting activities will be undertaken over a period of five (5) years and the activities will be conducted in progressive phases which include Non-invasive and invasive methods. The Non-invasive method will include desktop studies and geological mapping, whereas Invasive methods will include drilling and sampling.

The potential risks and key issues identified were based on consultation with Interested and Affected Parties (IAPs), internal process based on similar projects and the current state of the environment of the site. A description of the biophysical and social environment is included in the report, to ensure that all potential risks and issues are taken into consideration in all phases of the proposed project.

This document Draft Basic Assessment Report (DBAR) and the Environmental Management Programme (EMPr) was compiled in terms of the EIA Regulations of 2014 (amended, April 2017) and will be distributed for review by interested and affected parties including the competent authority.

PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

1.1 Details of the EAP

LUSHIKA SERVICES	
Environmental Assessment Practitioner	Mr Caiphus Mukwevho
Physical Address	4343 Schaafma Street The Orchards 0182
Contact Number	082 269 4524
E-mail Address	info@lushikaservices.co.za

1.2 Expertise of the EAP

Names	Expertise
Caiphus Mukwevho	Mr Mukwevho is an Environmental Assessment Practitioner (EAP) under Lushika Services. He obtained Bachelor of Environmental Science and Honours in Ecology and Resource Management both at the University of Venda, he boasts certificate in Geographic information System (GIS) and Environmental Management System (ISO 14001:2004), and he also serves at the Limpopo Branch of IAIASA. With over 3 years' experience as an EAP, he has undertaken Environmental Impact Assessment (EIA) for various projects including; prospecting and mining rights Borrow Pit closure application, Filling station, Mining Rights, feasibility studies for township establishment, Environmental Management Plans, Landfill audit and environmental monitoring, Mine Audit and Environmental Performance Assessment, Geotechnical Investigations and he has conducted various public participation processes. Mr Mukwevho is a registered Candidate Natural Scientist (Environmental Sciences) under SACNASP, Candidate EAP under EAPASA, member of IAIASA and LRSSA. <i>C.V is attached in appendix 2(b)</i>

<p>Gregory Netshilindi</p>	<p>Mr. Gregory Netshilindi is an Environmental Assessment Practitioner for Lushika Services (Pty) Ltd with over 3 and half years of experience in the mining and consulting industry. He holds an Honours BSc degree in Geology which he completed in 2011 and BSc in Environmental & Geographical Sciences which he completed in 2013, both of his qualifications were obtained from the University of Cape Town. Mr Netshilindi is a candidate natural Scientist with the South African Council of Natural Science Profession (SACNASP), and he is also in the process of registered as a Professional Natural Scientist and an Environmental Assessment Practitioner (EAP). He has undertaken environmental compliance/permitting (including basic assessments, applications for prospecting and mining rights and mining permits, and public participation/stakeholder engagement). Mr Netshilindi has been part of multiple projects including application for prospecting rights for phosphate in the Saldanha Bay Municipality, Western Cape Province for Acutupax; Application for prospecting rights for coal in the Sasolburg area, Free State Province for Dlamini Family Trust; Application for prospecting rights for coal in the Sasolburg area, Free State Province for Dlamini Family Trust ; Application for prospecting rights for diamond in the Barkly West area, Northern Cape Province for Arcon Resources; Application for prospecting rights for coal in the Hendrina area, Mpumalanga Province for Manngwe Mining; ; Application for prospecting rights for coal in the Breyten area, Mpumalanga Province for Manngwe Mining; Water Usage License Application for a 16.5 km pipeline from La Patrie to Mauling Reservoir within the Moses Kotane Local Municipality, North West Province; proposed development of a filling station on the farm Chibase 213MT at Matatshe village within Thulamela local municipality of Vhembe district municipality in Limpopo province. Prior to Joining Lushika Services, Mr. Netshilindi worked as an Environmental Geologist for Minment Services and also undertaken a role as an Environmental Control officer for Kharifhate Consortium .Please refer to appendix 1 for Mr. Netshilindi CV which provides a detailed list of projects which illustrates Mr. Netshilindi competence in carrying out the EIA process. <i>C.V is attached in appendix 2(b)</i></p>
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1.3 Location of the Overall Activity

Table 1: Details of the Location

Farm Name:	Waai fontein 301-ES
Portions:	Portion No 21
Application area (Ha):	253.28 Hectares
Magisterial district:	Harry Gwala District
Distance and direction from nearest town	The proposed area is located about 6km south-southeast of Kokstad
21-digit Surveyor General Code for each farm portion	NOES00000000030100021

1.4 Locality map (Show nearest, town scale not smaller than 1: 250 000

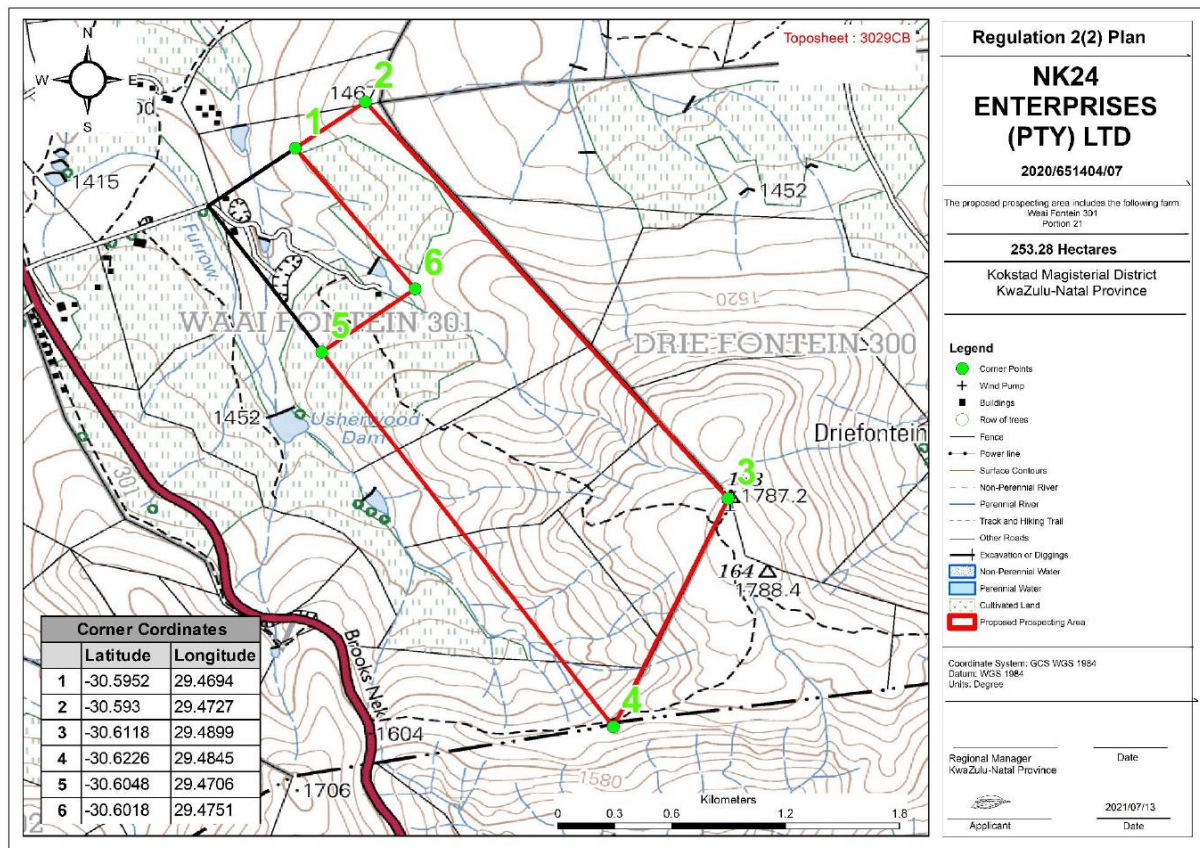


Figure 1: Locality Map

2. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

Both non-invasive and invasive prospecting activities will be undertaken as part of the proposed Prospecting Work Programme (PWP). The application will follow a phased approach, where the prospecting work program is divided into several sequential phases.

2.1 Description of Planned Non-Invasive Activities

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

Phase 1

- Desktop Study (Year 1: 6 Months)

A desktop study will be performed utilising all the historical data obtained. The desktop study will assist in identifying bedrock outcrops.

Determine possible sources of historical data

There are active mining operations in the vicinity of the proposed prospecting area. Hence, there should exist a significant amount of historical exploration data. Obtaining and analysing this historical data will allow the fast-tracking of prospecting activities.

Obtain relevant historical data

Historical data showing the position and economic potential of the Adelaide Subgroup will be identified for potential acquisition. The data anticipated to be obtained will be in the form of historical borehole information, cadastral maps, geological maps, cross sections, aerial photos, remote sensing (satellite or airborne spectral imagery) and airborne geophysical surveys and information pertaining to previous exploration or mining activities in the area will be obtained.

Phase 2

- Preliminary (Reconnaissance) field studies (Year 1:6 Months)

Field work will be conducted to determine the veracity of the desktop study and to collect new data. The geology of the potential aggregate deposit must be sufficiently known so that all critical variations in the characteristics of the bedrock and overburden are well understood.

Geological mapping and Grab sampling

During the field study, natural and synthetic outcrops will be investigated, mapped and sampled to determine variations in mineralogy, layering, fractures, weathering, and other applicable rock properties.

Geological mapping is a way of systematizing field observations and is valuable for planning boreholes and sampling locations, assessing geophysical needs, establishing background data, and identifying potential environmental impacts associated with the aggregate development.

High-level site evaluation

During this stage, a site evaluation will also be conducted to identify potential environmental factors and to prepare plans for more detailed site evaluation.

Should the reconnaissance field studies indicate a target area worth investigating further, more detailed field studies will be conducted.

Phase 3

- Detailed field studies (Year 2:9 Months)

Borehole Planning

The spacing of the boreholes will be site specific based on the predicted geologic continuity of the critical characteristics of the deposit.

Diamond drilling

Systematic sampling of outcrops will be conducted to determine the aerial extent, thickness, stratigraphic variation, and physical properties of the rock through core drilling and core sampling (after splitting) for testing. The core will be logged and the excess core after sampling will be archived. The boreholes after drilling will be measured to determine the depth to the water table.

Core sampling

The sample spacing will depend on the required level of detail and confidence of measurements and typically ranges from 30m in highly complicated areas and about 500m large areas of very simple geology. The sampling plan devised will continuously be modified during site characterization based on the knowledge obtained during the sampling process as sedimentary rocks are highly variable in quality and thickness.

Detailed site evaluation

At this stage more detailed site evaluation will be conducted focusing at economic and social factors, current land use, zoning regulations, property ownership and environmental factors.

Phase 4

- Bulk Sampling (Year 2:6 Months)

Bulk Sampling/trial mining needs to be done in order to determine the exact aggregate carrying potential of the area for feasibility of mine to be concluded and the determination to continue with Mining Right License. This will be done through separate testing of 3 Bulk Samples by means of machinery and labour.

Phase 5

- Geophysical surveys (Year 2:5 Months)

A combination of five geophysical survey method namely seismic, radar, gravity, magnetic and electrical may be used to evaluate bedrock sources of stone aggregate. However, none of these methods is particularly useful for characterizing rocks. The geologist will determine which methods should be used.

Seismic

Can be used to estimate rippability of stone, to identify weathering zones and to locate the water table. These surveys together with other ground geophysics can provide information on the thickness of overburden and can be used to locate large openings in bedrock and identify major changes in bedrock types. The surveys will be conducted in areas where rapid geological changes (e.g suspected fault zones, areas of steeply dipping bedrock and areas of other important geologic conditions) might be undetected during drilling.

Radar

Can be routinely used to detect voids

Gravity

Can be used for qualitative estimate of cavities, joints other discontinuities of highly contrasting bedrock.

Magnetic

Most rocks considered for aggregate do not contain magnetic minerals, but if they do, magnetic surveys may prove useful.

Electrical

Can be used to identify changes in water content or sometimes to identify electrical properties of some rocks.

Geophysical survey plan

The spacing of geophysical survey patterns will be site specific based on geologic characteristics and predictability of continuity of the deposit's critical characteristics. Survey plans are modified during site characterization based on knowledge obtained during the core sampling process.

Exploration Report (Year 3:6 Months)

Geologic maps associated cross-sections and geology reports of the potential deposit vary based on the rock type, but commonly show location and outline of the rock, the location of sampling points and geophysical surveys, measurements of the thickness and attitude of rock units and descriptions of rock properties at depth.

Supplementary maps and reports can also include discussions of thickness of overburden, altitude of the water table, geologic hazards etc.

A competent person will compile the report.

Phase 6

- Resources and Reserve estimation (Year 3:6 Months)

Volume calculations will be conducted using specialized software such as Computer-Aided Design (CAD) and Geographic Information System (GIS). Information from geologic mapping and sampling can be directly entered into these softwares to calculate resource volumes using various algorithms.

In situ tonnage of rock = (weight of rock) x (estimated volume)

If the weight of the rock is expressed as Specific Gravity (SG), the weight of the rock per unit volume will be: SG x weight of water per unit volume

The usable tonnage of the rock = (in situ tonnage) – (unrecoverable material from waste rock, buffer zones, quarry slopes, haul roads, facilities etc).

Phase 7

- Pre-feasibility (Year 4:12 Months)

Pre-feasibility studies will be undertaken once a mineral resource has been identified and it is at this stage that one should ensure that the project is indeed feasible and/or identify areas requiring further detailed studies.

The main features of the Pre-feasibility study will be as follows:

- Location and description of the project
- Regional and local geology
- Mineral resource estimate and model
- Reserve conversion
- Preliminary studies completed on geotechnical, environmental and infrastructure requirements
- Mine design based on a resource **model**; best alternatives selected from a range of alternatives
- Mine sections and level plans • Mining method(s) and extraction sequence
- Ore handling
- Bench scale metallurgical tests and preliminary process design completed
- Process plant
- Mill flow sheet
- Pre-production construction schedule
- Production schedule
- Capital and operating cost estimate
- Preliminary financial evaluation and risk analysis

The Pre-feasibility study will assist in determining whether to proceed with a full feasibility study.

Phase 8

- Full feasibility study and Mining Right Application (Year 5: 12 Months)

The full feasibility study will demonstrate within a reasonable confidence that the project can be constructed and operated in a technically sound and economically viable manner. The study should support the raising of finances for the project from banks or other sources, and provide a basis for detailed designs and construction

The full feasibility study should determine:

- Ore reserves as per standard definition (i.e. SAMREC, JORC, etc.)

- Scale of the project
- Construction budget and schedule for the project
- Cost estimate for operating and capital
- Contingency; there are many approaches to the inclusion of a contingency. The contingency may be an estimate of costs that will arise subsequent to the study or it may be a hedge against improper or incomplete estimates
- Market estimates; the most significant variable in a feasibility study is often commodity price and currency exchange rate
- Cash flow study; an appropriate discount rate should be agreed by all concerned and used to calculate the NPV
- Risk and sensitivity analysis; risk and sensitivity analysis are commonly used to assess the upside and downside potential of the project.

The following studies should be conducted before committing to a full feasibility study.

- Geology
- Resource estimate
- Reserve estimate
- Geotechnical
- Mine design
- New technology
- Infrastructure
- Construction
- Land and legal
- Environmental
- Capital and operational costs
- Marketing and evaluation

Should the project prove feasible in the full feasibility study, a Mining right application will be lodged.

2.2 Description of Planned Invasive Activities

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

- Diamond Drilling

The locations and depths of the boreholes to be drilled will be determined by the desktop studies, geological mapping and grab sampling. The borehole plan will be communicated to the DMRE for approval before any drilling can commence.

Diamond drilling process

All drilling to be undertaken will be diamond drilling using conventional equipment and TNW (60 mm) core size. The diamond drill is composed of industrial diamonds set into a soft metallic matrix. The diamonds are scattered throughout the matrix, and the action relies on the matrix to slowly wear during the drilling, so as to expose more diamonds. The bit is mounted onto a drill stem, which is connected to a rotary drill. Water is injected into the drill pipe, so as to wash out the rock cuttings produced by the bit. An actual diamond bit is a complex affair, usually designed for a specific rock type, with many channels for washing. The drill uses a diamond encrusted drill bit to drill through the rock. Although a larger diameter core is the most preferred it is the most expensive. Diesel power sources will be used and employees will provide their own negligible volumes of potable water. A chemical toilet will be erected on site for health and sanitation purposes. The drilling company will provide their own water for drilling. The drilling information will be integrated into the geological model to further define the orebodies, which when combined with the assay information will be utilised to define a resource.

Bulk Sampling/trial mining needs to be done in order to determine the exact aggregate carrying potential of the area for feasibility of mine to be concluded and the determination to continue with Mining Right License. This will be done through separate testing of 3 Bulk Samples by means of machinery and labour.

2.3 Pre-Feasibility Study

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

The resource estimation will be incorporated into a financial model of a potential future mine in a pre-feasibility study. At this stage, future funding for a feasibility study and possible resource exploitation will be considered.

2.4 Listing and Specified Activities

This section presents a list of activities that will be undertaken for the prospecting, the aerial covered by each activity and the listed activity triggered.

Table 2: Listing and specified activities

Name of Activity	Aerial extent of the activity	Listed Activity	Applicable Listing Notice
Activities directly related to prospecting of a mineral resource, including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks.	253.28 ha	X	GNR 327, Activity 20
Desktop Study: Literature Survey / Review / acquisition of data	N/A	N/A	N/A
Ground Geophysical Surveys and Geological Field Mapping	253.28 ha	N/A	N/A
Data Compilation	N/A	N/A	N/A
Detailed Ground Geophysical Surveys	253.28 ha	N/A	N/A
Environmental Screening by ECO	253.28 ha	N/A	N/A
Placement of site Ablutions - Chemical Toilets	5m ²	N/A	N/A
Access Route (Mostly existing roads to be utilised. Access tracks will be made where there are no existing routes.) Approximate total length: 2500 m Approximate width: 3m)	2500m	X	N/A
Temporary general waste storage (General/domestic waste - Wheelie bin)	1m ²	N/A	N/A
Temporary hazardous waste storage (Hazardous waste – Sealed Wheelie bin)	1m ²	N/A	N/A

Decommissioning of the prospecting site including rehabilitation of drill sites as per the rehabilitation plan (Drill sites + Access tracks)	2.5ha	X	GNR 327, Activity 22
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2.5 The prospecting phases to be implemented

a) These intended prospecting activities will be conducted in phases using the aforementioned methods. The intended phases in sequence are indicated in the table below.

Table 3: Planned Prospecting Phases

PHASE	ACTIVITY (What are the activities planned to achieve optimal prospecting)	SKILL (S) REQUIRED (refers to the competent personnel that will be employed to achieve the required results)	TIMEFRAME (In months for the activity)	OUTCOME (What is the expected deliverable, e.g geological report, analytical results, feasibility study etc.)	TIMEFRAME FOR OUTCOME (deadline for the expected outcome to be delivered)	WHAT TECHNICAL EXPERT WILL SIGN OFF ON THE OUTCOME? (e, g geologist, mining engineer, surveyor, economist, etc)
1	Non-Invasive Prospecting Desktop Study	Geologist	Month 1 – Month 3 (4 Months)	Desktop Study Report	Month 4	Geologist
	Non-Invasive Prospecting Remote Sensing	Geologist	Month 5 – Month 8 (4 Months)	Remote Sensing Report	Month 8	Geologist
	Non-Invasive Prospecting Geological Mapping	Geologist	Month 9 – Moth 11 (3 Months)	Geological Map	Month 11	Geologist
2	Invasive Prospecting	Geologist	Month 12 – Month 17 (6 Months)	Borehole Core Data	Month 17	Geologist

	RC Drilling and Sampling					
	Invasive Prospecting Trenching					
	Non-Invasive Prospecting Sample analysis and first-pass metallurgical recovery test	Metallurgist Laboratory analyst	Month 18 – Month 23 (6 Months)	Metallurgical recovery tests results Analytical results	Month 23	Metallurgist Laboratory analyst
3	Non-Invasive Prospecting Geological 3D Modelling	Geologist	Month 24 – Month 29 (6 Months)	Geological model and competent persons report	Month 29	Geologist
4	Invasive Prospecting Possible Bulk Sampling campaign	Geologist	Month 30 – Month 37 (8 Months)	Bulk sampling results	Month 37	Geologist
	Non-Invasive Prospecting Detailed Metallurgical Recovery Tests	Metallurgist	Month 38 – Month 40 (3 Months)	Metallurgical recovery tests results	Month 40	Metallurgist
5	Non-Invasive Prospecting Pre-feasibility Study	Mineral Economist/Geologist/Metallurgist	Month 41 – Month 52 (12 Months)	Pre-feasibility study Report	Month 52	Mineral Economist/Geologist/ coal metallurgist
6	Mining Right Application	Mineral Economist/Geologist/Metallurgist	Month 53 – Month 60 (8 Months)	Mining Works Programme	Month 60	Mineral Economist/Geologist/Metallurgist

3. POLICY AND LEGISLATIVE CONTEXT

This section provides an overview of the governing legislation relating to the proposed project (Basic Assessment report for the proposed project).

3.1 The Constitution of Republic South Africa

The Constitution of the Republic of South Africa, Act 108 of 1996 (as amended) Section 24 states that:

“Everyone has the right— (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that—

a) prevent pollution and ecological degradation;

b) Promote conservation; and

c) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

3.2 Mineral and Petroleum Resources of Development Act

The Mineral and Petroleum Resources Development Act, 2002 (MPRDA), outlines the procedural requirements an applicant must follow to obtain a mining right before proceeding with a mining project. Applicants are required to obtain Environmental Authorisation (EA) in terms of the National Environmental Management Act 107 of 1998, as amended (NEMA).

The MPRDA is administered by the Department of Mineral Resources and Energy (DMRE) and governs the sustainable utilisation of South Africa’s mineral resources. The MPRDA aims to “make provision for equitable access to, and sustainable development of, the nation’s mineral and petroleum resources”.

In the event that the proposed activities require material (e.g. sand, gravel, aggregate) for construction, the MPRDA provisions may apply. In support of the application to obtain the mining right, the applicant is required to conduct a Basic Assessment process and Interested and Affected Parties (IAPs) consultation process, all of which must be submitted to the DMRE for adjudication.

433 National Environmental Management Act

The aim of the National Environmental Management Act (Act No 107 of 1998); is to provide for co-operative governance by establishing decision-making principles on matters affecting the environment. In terms of the NEMA EIA regulations, the applicant is required to appoint an EAP to undertake the EIA, as well as conduct the public participation process (PPP). In South Africa, EIAs became a legal requirement in 1997 with the promulgation of regulations under the Environment Conservation Act (ECA). Subsequently, NEMA was passed in 1998. Section 24(2) of NEMA empowers the Minister and any MEC, with the concurrence of the Minister, to identify activities which must be considered, investigated, assessed and reported on to the competent authority responsible for granting the relevant environmental authorisation.

On 21 April 2006, the Minister of Environmental Affairs and Tourism promulgated regulations in terms of Chapter 5 of the NEMA. These regulations, in terms of the NEMA, were amended in June 2010 and December 2014. The December 2014 NEMA regulations apply to this project. Mining activities officially became governable under the NEMA EIA in December 2014. The objective of the Regulations is to establish the procedures that must be followed in the consideration, investigation, assessment and reporting of the identified activities. The purpose of these procedures is to provide the competent authority with adequate information to refuse authorisation of activities which may impact negatively on the environment to an unacceptable degree. These procedures also aim to ensure that authorised activities are undertaken in a manner that responsibly manages environmental impacts.

In accordance with the provisions of Section 24 (5) and Section 44 of the NEMA, the Minister has published regulations (GN R. 326) pertaining to the required process for conducting EIAs in order to be considered for the issuing of EA. These regulations provide a detailed description of the EIA process to be followed when applying for EA for any listed activity.

A Basic Assessment process is undertaken for activities with potentially significant impacts that have potential impacts to the receiving environment and surrounding. The BAR provides a mechanism for the assessment of activities that are likely to have significant environmental impacts.

3.4 National Environmental Management Waste Act

The National Environmental Management: Waste Act, 2008 (NEM:WA) (Act 59 of 2008) lists mining activities that must be undertaken to manage waste generated by the project and prevent environmental pollution and littering. On 2 June 2014, the NEM:WA (amended) came into force. As per the amended Act, waste is longer governed by the MPRDA,

but is subject to all the provisions of the NEM:WA). As per Section 16 of the NEM:WA, “a holder of waste must, within the holder’s power, take all reasonable measures to:

- Avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated;
- Reduce, re-use, recycle and recover waste;
- Where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner;
- Manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour, or visual impacts;
- Prevent any employee or any person under his or her supervision from contravening the Act; and
- Prevent the waste from being used for unauthorised purposes.”

These general principles of responsible waste management will be incorporated into this project’s EMPr requirements. The NEM:WA provides for specific waste management measures to be implemented and provides for the licensing and control of waste management activities. Waste management activities apply to Category A, B and C according to GN R 921 (Nov 2013) and the proposed residue stockpiles in terms of Category B, Activity 11 of GNR 921, and, therefore, form part of the application process (NEM:WA – Planning and Management of Residue Stockpiles and Residue Deposits Regulations, 2015 (GN R 632).

This regulates the planning and management of residue stockpiles and deposits from a prospecting, mining, exploration or production operation.

3.4.2 NEM:WA – National Norms and Standards for the Assessment of Waste for Landfill Disposal, 2013 (GN R 635)

These norms and standards prescribe the requirements for the assessment of waste prior to disposal to landfill. The aim of the waste assessment tests is to characterise the material to be deposited or stored in terms of the above-mentioned waste assessment guidelines set by the Department of Environmental Affairs (DEA).

3.4.2 NEM:WA – Waste Classification and Management Regulations, 2013 (GN R 634)

Chapter 9 of the NEM:WA stipulates the requirements for a motivation for and consideration of listed Waste Management Activities that do not require a Waste Management License. The motivation must:

- Demonstrate that the waste management activity can be implemented without unacceptable impacts on, or risk to, the environment or health
- Must provide a description of the waste
- Description of waste minimisation or waste management plans
- Description of potential impacts, etc.
- The transitional provisions under Chapter 6 of this Regulation prescribes timeframes in which all waste must be classified within 18 months from the date of commencement of these regulations (23 August 2013).

Waste streams generated from mine activities will, where applicable, be classified to determine their nature (i.e. general or hazardous), managed and disposed of in accordance with the relevant legislation.

3.5 National Water Act

The National Water Act, 1998 (NWA) also has a role to play in regulating mining. Mining almost always uses water and/or has an impact on water resources, like streams, wetlands or rivers. The NWA is administered by the Department of Water and Sanitation (DWS).

The NWA Section 21 defines eleven water uses that require EA:

21 (a): taking water from a water resource

21 (b): storing water

21 (c): impeding or diverting the flow of water in a watercourse

21 (d): engaging in a stream flow reduction activity contemplated in section 36

21 (e): engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1)

21 (f): discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit

21 (g): disposing of waste in a manner which may detrimentally impact on a water resource

21 (h): disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process

21 (i): altering the bed, banks, course or characteristics of a watercourse

21 (j): removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people

21 (k): using water for recreational purposes. The proposed mine is in the process of applying for an Integrated Water Use Licence (IWUL) as per the water uses indicated.

4.6 National Environmental Management: Air Quality Act

The National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004 as amended) is the main legislative tool for the management of air pollution and related activities.

The objectives of the Act are to protect the environment by providing reasonable measures for:

- The protection and enhancement of the quality of air in the republic
- The prevention of air pollution and ecological degradation
- Securing ecologically sustainable development while promoting justifiable economic and social development
- Generally, to give effect to Section 24(b) of the constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and wellbeing of people.

The NEM:AQA mandates the Minister of Environmental Affairs to publish a list of activities that result in atmospheric emissions and consequently cause detrimental effects on the environment, human health and social welfare. The Listed Activities and Minimum National Emission Standards were published on 22 November 2013 (Government Gazette No. 37054).

According to NEM:AQA, air quality management control and enforcement is the responsibility of local government, with district and metropolitan municipalities being the licensing authorities. Provincial government is primarily responsible for ambient monitoring and ensuring municipalities fulfil their legal obligations, with national government primarily as policy maker and coordinator. Each sphere of government must appoint an Air Quality Officer responsible for coordinating matters pertaining to air quality management. Under the old Act, air quality management was the sole responsibility of national government, with local authorities only being responsible for smoke and vehicle emission control. The National Pollution Prevention Plan Regulations, which came into effect on 21 July 2017, tie in with The National Greenhouse Gas Emission Reporting Regulations, which took effect on 3 April 2017.

These regulations aim to prescribe the requirements that greenhouse gas (GHG) pollution prevention plans need to comply with (in terms of priority air pollutants), as per NEM:AQA. The regulations specify who needs to comply, and by when, and prescribes the content requirements. Mines do have an obligation to report on the GHG emissions under these regulations.

3.7 National Environmental Management: Biodiversity Act

The overarching aim of the National Environmental Management: Biodiversity Act (No 10 of 2004) (NEM:BA), within the framework of NEMA, is to provide for:

- The management and conservation of biological diversity in South Africa and of the components of such diversity.
- The use of indigenous biological resources in a sustainable manner.
- The fair and equitable sharing, among stakeholders, of benefits arising from bioprospecting involving indigenous biological resources.
- The South African National Biodiversity Institute (SANBI) was established on 1 September 2004 through the signing into force of the NEM:BA, its purpose being (*inter alia*) to report on the status of the country's biodiversity and the conservation status of all listed threatened or protected species and ecosystems.
- Other objectives include the identification, control and eradication of declared weeds and alien invaders in South Africa. These are categorised according to one of the following categories, and require control or removal:
 - ❖ Category 1a Listed Invasive Species: Category 1a Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be combated or eradicated.
 - ❖ Category 1b Listed Invasive Species: Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled.
 - ❖ Category 2 Listed Invasive Species: Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be.
 - ❖ Category 3 Listed Invasive Species: Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of Act, as specified in the Notice.
 - ❖ The provisions of this Act have been considered and, where relevant, incorporated into the proposed mitigation measures and requirements of the EMP. It is also appropriate to undertake a Fauna and Flora

Impact Assessment for developments in an area that is considered ecologically sensitive which require environmental authorisation in terms of NEMA, with such Assessment taking place during the EIA phase.

3.8 The Conservation of Agricultural Resources Act

This Act informs the utilisation of the natural agricultural resources in South Africa to promote soil, water and vegetation conservation, as well as methods to combat weeds and invader plants to promote environmental resources sustainability.

3.9 National Heritage Resources Act

The National Heritage Resources Act (NHRA) (Act 25 of 1999) stipulates that cultural heritage resources may not be disturbed without authorisation from the relevant heritage authority. Section 34(1) of the NHRA states that, “no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority...”.

The NHRA informs the identification, evaluation and management of heritage resources and, in the case of Cultural Resource Management (CRM), affected by development (as stipulated in Section 38 of NHRA) and those developments administered through the NEMA, MPRDA and NEMWA legislation. In the latter cases, the feedback from the relevant heritage resources authority is required by the state and provincial departments managing these Acts before any authorizations are granted for development. The last few years have seen a significant change towards the inclusion of heritage assessments as a major component of EIAs required by NEMA and MPRDA. This change requires an evaluation of the section of these Acts relevant to heritage. The NEMA 23(2)(b) states that an integrated environmental management plan should, “...identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”.

Subsections (23)(2)(d), (29)(1)(d), (32)(2)(d) and (34)(b) require the (compulsory) inclusion of the identified cultural resources, the evaluation of the impacts of the proposed activity on these resources, the identification of alternatives and the management procedures for such cultural resources for each of the documents noted in the environmental regulations. Regulations under NEMA's regulations on the Specialist Report requirements must be considered when compiling such a report.

The MPRDA and NEMA have similar definitions of “environment”. Both acknowledge cultural resources as part of the environment. Section 39(3)(b) of this Act specifically refers to the evaluation, assessment and identification of impacts on all heritage resources as identified in Section 3(2) of the NHRA. Section 40 of the same Act requires consultation

with any state department administering any law relevant to such an application through Section 39 of the MPRDA. This implies the evaluation of Heritage Assessment Reports in Environmental Management Plans or Programmes by the relevant heritage authorities (Fourie, 2008b).

In accordance with the legislative requirements and EIA rating criteria, the regulations of the South African Heritage Resources Agency (SAHRA) and Association of Southern African Professional Archaeologists (ASAPA) have been incorporated to ensure that a comprehensive and legally compatible Heritage Impact Assessment (HIA) is compiled.

3.10 Environment Conservation Act, 1989 (Act 73 of 1989) – Noise control regulations

In terms of section 25 of the Environmental Conservation Act (ECA), the National Noise Control Regulations (NCR) (GN R154 in Government Gazette No. 13717 dated 10 January 1992) were promulgated. The NCRs were revised under GN R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations. The Gauteng Province promulgated provincial regulations: Noise Control Regulations of Gauteng 1999, (Provincial Gazette, Extraordinary no 75 of August 1999).

The noise control regulations must be considered in relation to the potential noise that may be generated during the construction and decommissioning phases of the proposed project. The two key aspects of the noise control regulations relate to disturbing noise and noise nuisance. Section 4 of the regulations prohibits a person from making, producing or causing a disturbing noise, or allowing it to be made produced or caused by any person, machine, device or apparatus or any combination thereof.

A disturbing noise is defined in the regulations as “a noise level which exceeds the zone sound level or if no zone sound level has been designated, a noise level which exceeds the ambient sound level at the same measuring point by 7 dBA or more”. Section 5 of the noise control regulations prohibits the creation of a noise nuisance. A noise nuisance is defined as “any sound which disturbs or impairs or may disturb or impair the convenience or peace of any person”. Noise nuisance is anticipated from the proposed project particularly to those residents that are situated near the project sites. South African National Standard 10103 also applies to the measurement and consideration of environmental noise and should be considered in conjunction with these regulations. A noise specialist study is proposed for the EIA.

3.11 Noise standards

The following South African Bureau of Standards (SABS) requirements relate to noise from mines, industry and roads:

- South African National Standard (SANS) 10103:2008. “The measurement and rating of environmental noise with respect to annoyance and to speech communication”.
- SANS 10210:2004. “Calculating and predicting road traffic noise”.
- SANS 10328:2008. “Methods for environmental noise impact assessments”.
- SANS 10357:2004. “The calculation of sound propagation by the Concave method”.
- SANS 10181:2003. “The Measurement of Noise Emitted by Road Vehicles when Stationary”.
- SANS 10205:2003. “The Measurement of Noise Emitted by Motor Vehicles in Motion”.

The relevant standards use the equivalent continuous rating level as a basis to determine what is acceptable. The levels may take single event noise into account, but single event noise by itself does not determine whether noise levels are acceptable for land use purposes. With regards to SANS 10103:2008, the recommendations are likely to inform decisions by authorities, but non-compliance with the standard will not necessarily render an activity unlawful. The noise assessment will take these noise standards and impacts into consideration.

3.12 Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA)

The Spatial Planning and Land Use Management Act (Act No. 16 of 2013) (SPLUMA) is a framework law, which means that the law provides broad principles for a set of provincial laws that will regulate planning for the country. The Act introduces provisions to cater for development principles; norms and standards; inter-governmental support; Spatial Development Frameworks (SDFs) across national, provincial, regional and municipal areas; Land Use Schemes (LUS); and municipal planning tribunals.

SPLUMA also provides clarity on how planning law interacts with other laws and policies. It is a uniform, recognisable and comprehensive system that addresses the past spatial and regulatory imbalances and promotes optimal exploitation of minerals and mineral resources. SPLUMA achieves this by strengthening the position of mining right holders when land needs to be rezoned for mining purposes. SPLUMA’s impact on optimal exploitation is particularly evident where conflict exists between mining right holders and landowners. Economic and policy considerations, as well as practical necessities, often motivate the state to grant mining rights to entities other than landowners. SPLUMA is a new national framework Act that provides clear principles and standards for provincial and local governments to formulate their own new spatial planning and land use policies. The new provincial legislation can regulate, among other things, land development, land use management, spatial planning and municipal planning.

4. NEED AND DESIRABILITY OF THE PROPOSED DEVELOPMENT

Assessment of the geological data available has determined that the area in question may have the proposed minerals. In order to ascertain the above and determine the nature, location and extent of the subject minerals within the proposed prospecting area, it will be necessary that prospecting be undertaken. The prospecting will also determine if there are any features that may have an impact on the economic extraction of the subject minerals. The minerals that will be prospected area; Concrete Sand (Silica), Silica Sand (General) and Building Sand (Silica).

A prospecting right will allow the NK24 Enterprises to survey or investigate the area with purpose of identifying an actual or probable mineral deposit. The data that will be obtained from the prospecting of the minerals being applied for will be necessary to determine how and where the minerals will be extracted and how much economically viable mineral reserves are available within the proposed prospecting area.

Currently South Africa is faced with an outbreak of illegal mining at a national scale which is associated with death of illegal miners as a result of conflict, thus mining prospecting activities reduces the probability of these incidents and on other hand promoting the sustainable and regulated exploration of natural resources in an environmentally friendly manner.

Mining is not one of the key economic activities in the local municipalities where the proposed application area is situated, the proposed application presents an opportunity for the local municipalities to realize the potential mining activities within their jurisdiction.

5. MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE

The proposed site was selected based on extensive research and also following on information on existing Sand and Silica Mining Activities within the area. In terms of the technologies proposed, the proposed prospecting methods and technologies have been chosen based on the known successful prospecting processes within the area. The prospecting activities proposed in the Prospecting Works Programme (PWP) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

Some of the techniques employed in the non-invasive prospecting activities will include a literature survey, field reconnaissance/mapping, and geophysical survey of the geology, outcrops. Some of the invasive prospective activities include prospecting boreholes, boreholes to confirm continuity of mineralization & potential deposit size and resource definition drilling.

Consultation with affected landowners and adjacent landowners will be conducted in order to keep them informed about the proposed prospecting activities as well as to capture any comments and concerns they may have regarding the prospecting activity.

It should be noted that the exact locations of the boreholes have not been identified at this stage. The location of these boreholes will be dependent on the findings of the non-invasive prospecting activities. Once the proposed target areas for the boreholes have been identified during the phases as set out in the PWP, these areas will be investigated and will be subject to the conditions of this document.

6. FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE

This section describes the specific site area and the location of site features, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

6.1 Details of the development footprint alternatives considered

6.1.1 Location Alternative

No alternative site is being considered by the applicant due to the following reasons:

- There is an existing mining operation on the adjacent operation for same minerals applied for prospecting.
- Existing supporting infrastructure that has been placed at the current site and therefore only minor upgrades would be required to establish a fully operational mine
- No environmentally sensitive areas were identified on site therefore environmental impacts are deemed to be low.

6.1.2 Design/Layout Alternative

Since exploration is temporary in nature, no permanent structures will be constructed. Negotiations and agreements will be made with the landowners to use any existing infrastructure like access roads for the explorers, and any infrastructures that may exist on site. Temporary structures will be introduced to the proposed prospecting area in areas without infrastructures on site or near the prospecting area.

6.1.3 Technology Alternative

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

6.1.4 Activity Alternative

Due to the unavailability of extensive historical borehole datasets, invasive prospecting activities such as drilling as well as non-invasive activities will be conducted during prospecting.

6.1.5 Operational Alternative

There will be no permanent service infrastructure such as water tanks, ablution facilities site offices. Construction of access road will be limited to areas where there is no access at all.

6.2 The option of not implementing the activity (no-go option)

The 'no-go' alternative is the option of not undertaking prospecting activities on the project site. The no-go option assumes the site remains in its current state. Drilling is required in order to investigate the potential and feasibility of the minerals on site. There is no potential for any future investment in a mine without the confirmation of the mineral resources availability which can only be obtained from drilling activities. Should the prospecting right not be granted, effectively the minerals being applied for will not benefit the local community. The socio-economic benefit and most notably the future employment and potential of mine development will be lost if the prospecting activities are not implemented in order to determine the feasibility of any deposits that may occur within the area.

- The mining sector forms part of the backbone of the South African economy. The Northern Province mining sector is one of the main contributors to the national GDP and as such the option of not carrying out the prospecting activities would prevent future prospects of mining thus reducing the contribution to the GDP.

- The jobs that were to be created during prospecting phase will also be missed; these employment opportunities would be reduced, causing an economic burden on the government as people dependant on social grants would not be reduced.
- The state of the natural environment will remain the same, amongst other things the following will be beneficial:
 - There will be no geological and soil disturbance which may lead to ground water contamination
 - No excessive generation of wastes from the proposed activities
 - No compaction of pathways affecting the growth pattern of grasses and movement of micro animals
 - No disturbance of wildlife in the surrounding game farms will occur.
 - The biodiversity will not be altered as there will be no removal of plants and induced noise from prospecting activities.

7. DETAILS OF PUBLIC PARTICIPATION FOLLOWED

This section of the report provides an overview of the tasks undertaken for the Public Participation Process (PPP) to date. The PPP was conducted in terms of Chapter 6 of the NEMA and included the following:

- 1) Identification of key Interested and Affected Parties (affected and adjacent landowners) and other stakeholders (organs of state and other parties)
- 2) Placement of site notices on farms, and other accessible public areas;
- 3) Formal notification of the application to key Interested and Affected Parties and other stakeholders;
- 4) Consultation and correspondence with I&AP's and Stakeholders and the addressing of their comments;
- 5) Newspaper advert.

7.1 Identification of key Stakeholders and affected parties

Public Participation is the involvement of all parties who are either potentially interested and/or affected by the proposed development. The principal objective of public participation is to inform and enrich decision-making. This is also its key role in this Environmental Impact Assessment (EIA) process.

Landowners (affected and adjacent) were identified through the site visit. Additional relevant organisations were also identified and notified of the application. This includes municipal and State departments with jurisdiction in the project area. Interested and Affected parties (I&AP's) representing the following sectors of society were identified:

- Department of Water and Sanitation
- Department of Agriculture and Rural Development
- KwaZulu-Natal Regional Land Claims Commissioner
- South African Heritage Resources Agency
- Eskom
- Harry District Municipality
- Greater Kokstad Local Municipality

7.2 Formal notification of the application to key Interested and Affected Parties

The project was announced as follows:

- **Newspaper Advert Notice:**

The project announcement advertisement was published in the local newspaper. The newspaper advert is used to notify all interested and IAPs of the proposed project and for them register as stakeholders for the project. A newspaper advert was published on 13th January 2022 in the Kokstad Advertiser (refer to the picture below)



CLASSIFIEDS

10

THURSDAY, JANUARY 13, 2022

FOR SALE

FREQUENCY WENDY'S



Wendy houses in new pine treated timber all sizes available 3x3m R1000.00 workshop in Kokstad. Whatsapp 082 483 4007 / 063 233 6144

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Specialist Advertiser
Printing of Certificates, Stationery, Business Cards, Brochures, Booklets, Flyers, Posters, Labels, Business Cards, Stationery, etc.

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Email: info@kokstadadvertiser.co.za

SITUATIONS VACANT

VACANCY

ASSISTANT MANAGER/ADMIN MANAGER NEEDED FOR LIQUOR STORE.

The candidate is to have the following criteria:
Grade 12
Experience within the liquor industry
English speaking
Computer Literate
Hard working and honest
Experience as an Assistant Manager together with traceable references

Please forward CV to Chantelle
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PUBLIC NOTICES

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT (BASIC ASSESSMENT) PROCESS FOR THE PROPOSED PROSPECTING RIGHT
REF NUMBER: KZN26/05/11/20/11141PR

Nokwezi hereby gives notice in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), Environmental Impact Assessment Regulations, 2014 (as amended) and Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

NKWEZI Enterprises (Pty) Ltd has lodged Prospecting Right Application for Concrete Sand, General Silica and Building Sand, the proposed prospecting activities trigger EA Listed Activities and requires an Environmental Authorisation.

LOCATION: Portion 21 of the farm Waasfontein 301-ES within Magisterial District of Harry Gwala, KwaZulu-Natal Province.

APPLICATION FOR ENVIRONMENTAL AUTHORISATION: In terms of the NEMA (Act No. 107 of 1998) read with 2014 Environmental Impact Assessment Regulations (as amended 7 April 2017), the proposed Prospecting Activities requires Basic Environmental Impact Assessment Process to fulfil requirements of Environmental Authorisation application. The proposed prospecting activities trigger Activity No. 20 and 22 of Listing Notice 1 of GN R. 307 (7 April 2017).

REGISTRATION OF INTERESTED AND AFFECTED PARTIES: All interested and affected Parties (IAPs) are hereby invited to register and/or comment on the proposed application. A 30-calendar day registration period for IAPs will open from 13 January - 14 February 2022. Please submit your details and comments in writing to the contact details provided below. To register or comment please provide your name and contact details. The Draft Basic Assessment Report will be available from 31 January 2022 and can be requested via e-mail or call.

APPLICANT: NKWEZI Enterprises (Pty) Ltd
EAP: Lushika Services (Pty) Ltd

CONTACT PERSON	CONTACT NUMBER	E-MAIL ADDRESS
Caphos Makenho	082 299 4524	caphos@lushikaservices.co.za
Office Line	087 265 7518	info@lushikaservices.co.za

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PUBLIC NOTICES

NOTICE OF APPLICATION FOR A WATER USE LICENCE

Notice is hereby given in terms of Section 21 and Section 41(4) of the National Water Act (Act 36 of 1998), as amended, as well as in terms of Section 17, 18 and 19 of the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals (GN 291 of 26 March 2017) that a Water Use Licence Application will be submitted to carry out the following activities:

Project description: The proposed Ogle Farm Mixed-Use Development at Inqobo Town, KwaZulu-Natal (Residential, Institutional, Administrative, Commercial, Sport and Recreational Development).

Water uses triggered: 21(c): Impeding or diverting the flow of water in a watercourse; 21(i): Altering the bed, bank, course or characteristics of a watercourse (Development activities to take place within a 500m radius of wetlands)

Property: Portion 4 of the farm Courthill 5126 ET, Portion 1 of the farm Inqobo 3138 ET, Portion 31 of the farm Inqobo Farm 3840 ET
Proprietor: Ikhoboshe Local Municipality
Coordinates of site: 30°0'53.1" S, 30°05'06.8" E
Consultant: IWULA Integrated Water Use License Application Management (Pty) Ltd
Contact Person: S.J. Jansen van Rensburg
Tel: (072) 132 5044
Email: sj@iwula.org
Postal Address: 14 Scorgie Street, Potchefstroom, 2531

The Water Use Licence Application will be submitted to the Department of Water and Sanitation's Durban Regional Office within 60 days of this notice. In order to ensure that you are registered as an interested and/or affected party please submit your name, contact information and interest in the matter, in writing, to the contact person given above on or before the 16th of March 2022.

NOTICE TO ADVERTISERS

It is a condition of acceptance of advertisement orders that the proprietors of The Kokstad Advertiser & East Grigoland Gazette do not guarantee the insertion of a particular advertisement on a specified date, or at all, although every effort will be made to meet the wishes of advertisers; further, they do not accept liability for any loss or damage caused by an error or inaccuracy in the printing of an advertisement, they reserve the right to edit or delete any objectionable wording or reject any advertisement.

Although every advertisement is carefully checked, occasionally mistakes do occur. We therefore ask advertisers to assist us in checking their advertisements carefully and advise us immediately should an error occur.

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Figure 2: Newspaper Advert

- **Site notice placement: -**

In order to inform surrounding communities and adjacent landowners of the proposed development, A3 Sized Laminated Notices were plugged in and around the Location of the prospecting Area.



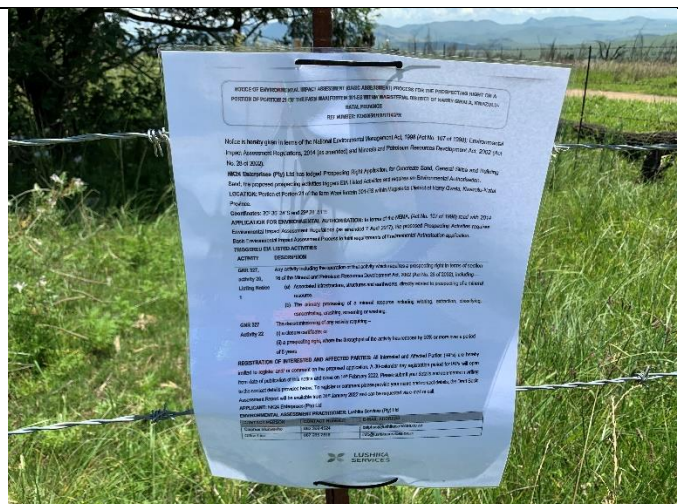
Site Notice No 1: Plugged at the entrance of Portion 21 of the farm Waai fontein 301-ES



Site Notice No 2: Plugged at the fence of HCl adjacent to the Waai fontein 301-ES



Site Notice No 3: Plugged along the N2 Road towards Boundary of Eastern Cape



Site Notice No 4: Plugged at the fence of Westlands Farms on the West of Portion 21 of the farm Waai fontein 301-ES



Site Notice No 5: Plugged along the N2 Road towards Kokstad



Site Notice No 6: Plugged along the N2 Road towards Port Shepstone

- **Written notification: -**

IAP's and other key stakeholders were sent notification letters, via e-mail. The notification letter presents a brief information about the application and further request all stakeholders to make inputs on the application including reviewing the DBAR. The notification letters outlined the date on which DBAR will be available and how stakeholders can engage Lushika Services.

- **Public Meeting: -**

Due to requirements of Covid-19 Regulations a public meeting has not been scheduled.

- **Distribution of Draft BAR and EMPr**

All registered stakeholders and IAPs were be informed of the availability of the Draft Basic Assessment Report and Environmental Management Programme including Specialist Reports for public review. The stakeholders and IAPs were also invited to submit their comments regarding the proposed project.

8. SUMMARY OF ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

The table below presents issues raised by stakeholders, during the stakeholder engagement meeting.

Table 4: Summary of issues raised by I&AP's

Interested and Affected Parties. List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.	Date comments received	Issues raised	EAPs response as mandated by the applicant	Section and paragraph reference in this report where the issues and/ or responses were incorporated	
Affected Parties					
Landowner					
Dorning Shanelle Janine	X	24/01/22	<p>Cox Yeats Attorneys wrote a letter on behalf of the Shanelle Doming they raised the following issues:</p> <ol style="list-style-type: none"> 1. Ms Doming is the owner of the said farm and Stonewell Quarry cc who leases the farm already has registered mining right on it. Stonewell Mining Right is adjacent to the prospecting area recorded on the google earth image attached to the BID. 2. The farm was acquired to secure a sustainable supply of minerals for 	<p>The letter from Attorneys was acknowledged, on the date of which e-mail from the attorneys was sent Lushika Services team was on site to meet with the landowner and adjacent landowners. The landowner was then notified through the attorneys. The prospecting area proposed by NK24 Enterprises has been accepted by the DMR without condition of existing mining right over the prospecting area.</p>	

		<p>Stonewell Quarry cc's mining operations. The continued supply is critical for the viability of Stonewell Quarry's business.</p> <p>3. In terms of section 16(4)(b) of the MPRDA, NK24 Enterprises (Pty) Ltd is required to consultant with our clients to that our clients may have a full and complete understanding of the proposed activities and must enable our clients to table their comments and objections.</p> <p>4. In order for our clients to consider to consider the application, our clients require from you at this stage the following information:</p> <ul style="list-style-type: none"> i. the proposed Environmental Management Plan; ii. the proposed Prospecting Work Programme; and 	<p>NK24 Enterprises will ensure consultation with the landowner is done.</p> <p>The Environmental Management Plan will be submitted to once it is complete, and the Prospecting Work Programme will be submitted.</p> <p>The financial and technical ability documents were submitted to the DMR and NK24 Enterprises understands that these documents are confidential.</p>	
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			<p>iii. proof of your financial and technical competence to conduct the proposed prospecting operations.</p> <p>5. Please ensure that all of the above information is provided within seven days of the above date of this letter.</p> <p>6. Please will also urgently provide us with the contact details, including a telephone number and an email addresses for NK24 Enterprises (Pty) Ltd</p>		
Lawful Occupiers					
Dorning Shanelle Janine	X	24/01/22	<p>Cox Yeats Attorneys wrote a letter on behalf of the Shanelle Doming they raised the following issues:</p> <p>1. Ms Doming is the owner of the said farm and Stonewell Quarry cc who leases the farm already has registered mining right on it. Stonewell Mining Right is adjacent to the prospecting area recorded on the google earth image attached to the BID.</p>	<p>The letter from Attorneys was acknowledged, on the date of which e-mail from the attorneys was sent Lushika Services team was on site to meet with the land owner and adjacent landowners. The landowner was then notified through the attorneys. The prospecting area proposed by NK24 Enterprises has been accepted by the</p>	

		<p>2. The farm was acquired to secure a sustainable supply of minerals for Stonewell Quarry cc's mining operations. The continued supply is critical for the viability of Stonewell Quarry's business.</p> <p>3. In terms of section 16(4)(b) of the MPRDA, NK24 Enterprises (Pty) Ltd is required to consultant with our clients to that our clients may have a full and complete understanding of the proposed activities and must enable our clients to table their comments and objections.</p> <p>4. In order for our clients to consider to consider the application, our clients require from you at this stage the following information:</p> <ul style="list-style-type: none"> i. the proposed Environmental Management Plan; ii. the proposed Prospecting Work Programme; and 	<p>DMR without condition of existing mining right over the prospecting area.</p> <p>NK24 Enterprises will ensure consultation with the landowner is done.</p> <p>The Environmental Management Plan will be submitted to once it is complete, and the Prospecting Work Programme will be submitted.</p> <p>The financial and technical ability documents were submitted to the DMR and NK24 Enterprises understands that these documents are confidential.</p>	
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			<p>iii. proof of your financial and technical competence to conduct the proposed prospecting operations.</p> <p>5. Please ensure that all of the above information is provided within seven days of the above date of this letter.</p> <p>6. Please will also urgently provide us with the contact details, including a telephone number and an email addresses for NK24 Enterprises (Pty) Ltd</p>		
Landowners or lawful occupiers on adjacent properties					
Stonewell Quarry CC	X	24/01/22	<p>Cox Yeats Attorneys wrote a letter on behalf of the Shanelle Doming they raised the following issues:</p> <p>1. Ms Doming is the owner of the said farm and Stonewell Quarry cc who leases the farm already has registered mining right on it. Stonewell Mining Right is adjacent</p>	<p>The letter from Attorneys was acknowledged, on the date of which e-mail from the attorneys was sent Lushika Services team was on site to meet with the land owner and adjacent landowners. The landowner was then notified through the attorneys.</p>	

		<p>to the prospecting area recorded on the google earth image attached to the BID.</p> <p>7. The farm was acquired to secure a sustainable supply of minerals for Stonewell Quarry cc's mining operations. The continued supply is critical for the viability of Stonewell Quarry's business.</p> <p>8. In terms of section 16(4)(b) of the MPRDA, NK24 Enterprises (Pty) Ltd is required to consultant with our clients to that our clients may have a full and complete understanding of the proposed activities and must enable our clients to table their comments and objections.</p> <p>9. In order for our clients to consider to consider the application, our clients require from you at this stage the following information:</p> <p>i. the proposed Environmental Management Plan;</p>	<p>The prospecting area proposed by NK24 Enterprises has been accepted by the DMR without condition of existing mining right over the prospecting area.</p> <p>NK24 Enterprises will ensure consultation with the landowner is done.</p> <p>The Environmental Management Plan will be submitted to once it is complete, and the Prospecting Work Programme will be submitted.</p> <p>The financial and technical ability documents were submitted to the DMR and NK24 Enterprises understands that these documents are confidential.</p>	
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			<ul style="list-style-type: none"> ii. the proposed Prospecting Work Programme; and iii. proof of your financial and technical competence to conduct the proposed prospecting operations. <p>5. Please ensure that all of the above information is provided within seven days of the above date of this letter.</p> <p>6. Please will also urgently provide us with the contact details, including a telephone number and an email addresses for NK24 Enterprises (Pty) Ltd</p>		
Municipal Councillor					
Municipality					
Environmental Officer Mr Fani Nyembezi	X				
Communities					

No community was found within the proximity of the application area.					
Dept. Land Affairs					
Traditional Leaders					
The property is privately owned, as such no traditional leader was notified.					
Dept. Environmental Affairs					
KZN DEDECT	X				
Other commenting authorities notified					
SAHRA	X				
KZN Amafa	X				
DWS	X				
Wildlife Ezemvelo	X				
Registered IAP					

Mr Louis Mostert		18/01/22	Mr Mostert, made phone indicating that he saw a newspaper advert about the prospecting application and requested a Background Information Document, including a Map of the prospecting area.	An e-mail was sent to Mr Mostert with a BID and Locality Map of the prospecting Area.	
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9. BASELINE ENVIRONMENT

This chapter provides a description of the local and receiving environment; this information is provided in order to assist the reader in understanding the potential impacts of the proposed prospecting activities on the environment of the application area. Various aspects have been investigated including the biophysical, social and economic that may be directly or indirectly affected. This information was sourced from secondary and primary data, a literature review to collect secondary data was done and a site visit was undertaken to collect primary data and to do ground-truthing.

9.1 Climate

Kokstad is characterised is warm and temperate climate, there is a lot of rain even in the driest month. This climate is considered to be Cfb according to the Köppen-Geiger climate classification. The average annual temperature is 13.5 °C | 56.3 °F in Kokstad. The rainfall here is around 995 mm | 39.2 inch per year. The driest month is June, with 24 mm | 0.9 inch of rainfall. The greatest amount of precipitation occurs in December, with an average of 151 mm | 5.9 inch.

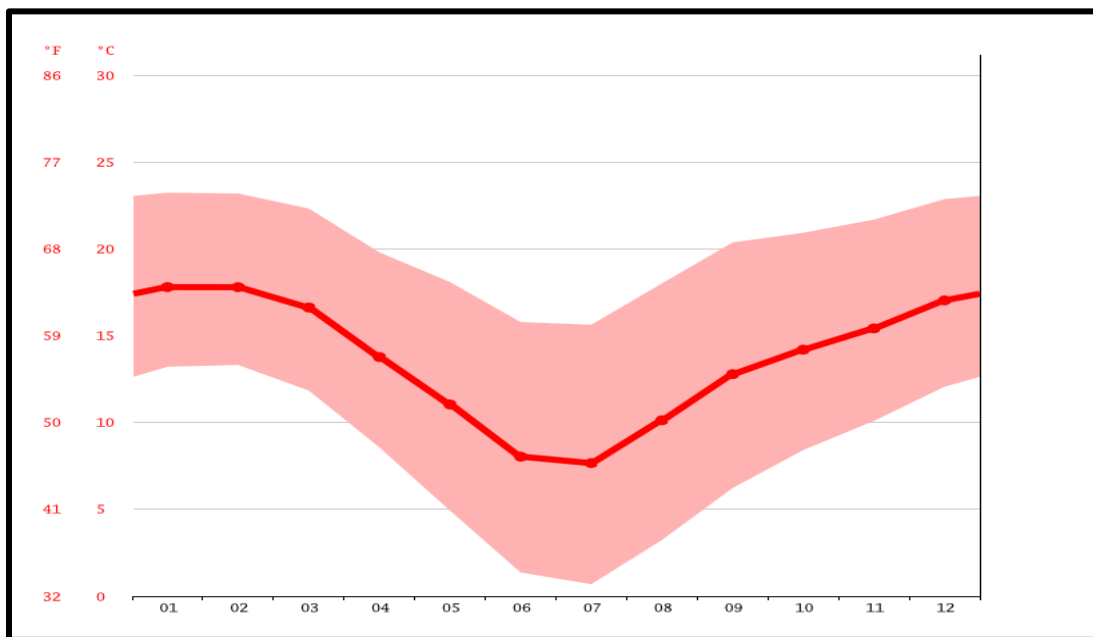


Figure 3: Average temperature by month within Kokstad area

The warmest month of the year is January, with an average temperature of 17.8 °C | 64.0 °F. The lowest average temperatures in the year occur in July, when it is around 7.7 °C | 45.8 °F. The difference in precipitation between the driest month and the wettest month is 127 mm | 5 inch. The variation in temperatures throughout the year is 10.1 °C | 18.2 °F.

Table 5: Climate/Weather Graph per month for Kokstad Area

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	17.8 °C (64) °F	17.8 °C (64) °F	16.6 °C (61.9) °F	13.8 °C (56.8) °F	11 °C (51.9) °F	8 °C (46.5) °F	7.7 °C (45.8) °F	10.1 °C (50.2) °F	12.8 °C (55) °F	14.2 °C (57.6) °F	15.4 °C (59.8) °F	17 °C (62.7) °F
Min. Temperature °C (°F)	13.2 °C (55.8) °F	13.3 °C (56) °F	11.8 °C (53.3) °F	8.6 °C (47.4) °F	4.9 °C (40.9) °F	1.4 °C (34.5) °F	0.7 °C (33.2) °F	3.2 °C (37.8) °F	6.2 °C (43.2) °F	8.4 °C (47.1) °F	10.1 °C (50.2) °F	12.1 °C (53.7) °F
Max. Temperature °C (°F)	23.2 °C (73.8) °F	23.2 °C (73.7) °F	22.3 °C (72.2) °F	19.8 °C (67.6) °F	18.1 °C (64.6) °F	15.8 °C (60.4) °F	15.6 °C (60.1) °F	18 °C (64.4) °F	20.4 °C (68.7) °F	20.9 °C (69.7) °F	21.7 °C (71) °F	22.9 °C (73.2) °F
Precipitation / Rainfall mm (in)	148 (5.8)	126 (5)	115 (4.5)	62 (2.4)	27 (1.1)	24 (0.9)	24 (0.9)	38 (1.5)	54 (2.1)	101 (4)	125 (4.9)	151 (5.9)
Humidity(%)	78%	78%	76%	71%	63%	58%	55%	54%	58%	68%	72%	75%
Rainy days (d)	15	13	12	8	4	3	3	4	7	12	13	16
avg. Sun hours (hours)	6.5	6.7	6.9	7.3	8.0	8.0	8.2	8.0	7.7	7.2	6.8	6.6

The month with the highest relative humidity is February (78.29 %). The month with the lowest relative humidity is August (54.11 %). The month with the highest number of rainy days is December (20.67 days). The month with the lowest number of rainy days is July (3.63 days).

Kokstad are in the southern hemisphere. Summer starts here at the end of January and ends in December. There are the months of summer: December, January, February, March.

In the month of July the highest number of daily hours of sunshine is measured in Kokstad on average. In July there is an average of 8.18 hours of sunshine a day and a total of 253.63 hours of sunshine throughout July. In the month of January, the lowest number of daily hours of sunshine is measured in Kokstad on average. In January there are an average of 6.56 hours of sunshine per day and a total of 203.3 hours of sunshine. Around 2674.53 hours of sunshine are counted in Kokstad throughout the year. On average there are 87.89 hours of sunshine per month (refer to).

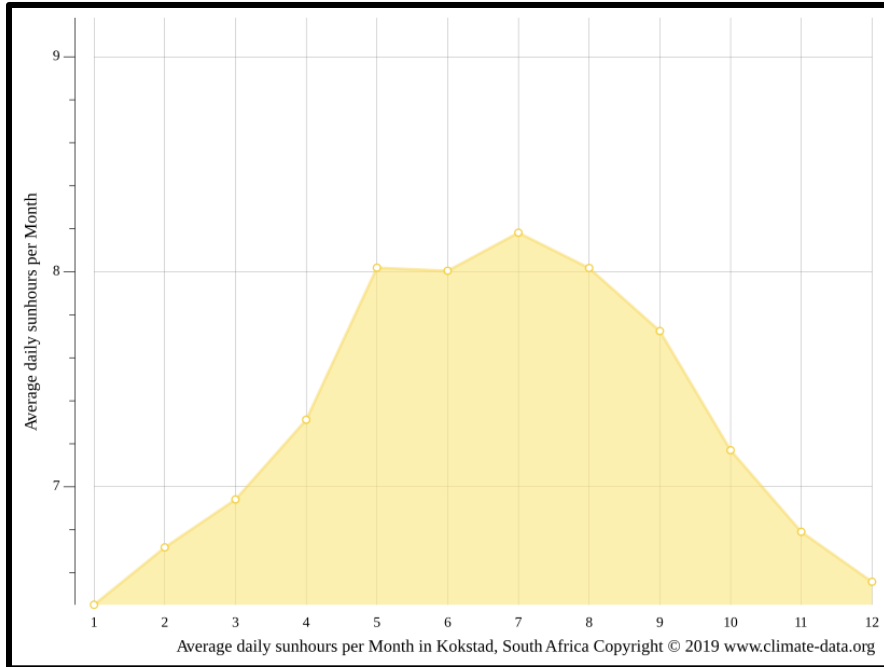


Figure 4: Average daily sun-hours per Month in Kokstad

9.2 Topography

KwaZulu-Natal has a rugged topography. It rises steeply from the coast to a hinterland at altitudes of 600 m to 900 m ASL with a more gradual incline to the western part of the Province with altitudes of 1 200 m to 1 500 m. The border along the Drakensberg Mountains is very steep, rising to an altitude of over 3 000 m above sea level.

The major rivers flow across a generally eastern-sloping terrain and, in so doing, cut through the several geological strata which are aligned approximately north/south. Deeply incised valleys and basinlands have been formed and with the steep watersheds between the rivers, the construction of roads and railway lines from north to south across the Province has been expensive and difficult.

The great variation in topography has had a profound effect on the agricultural potential and development of KZN. The wide variations in slope, soil, altitude and aspect have resulted in great ecological diversity. Large contiguous areas suitable for crop production are found only on the north-eastern coastal plain and to a certain extent on the interior basin in north-west KZN. Most of the cultivation in the Province is found in limited areas characterised by moderate slopes and soils of suitable depth and drainage.

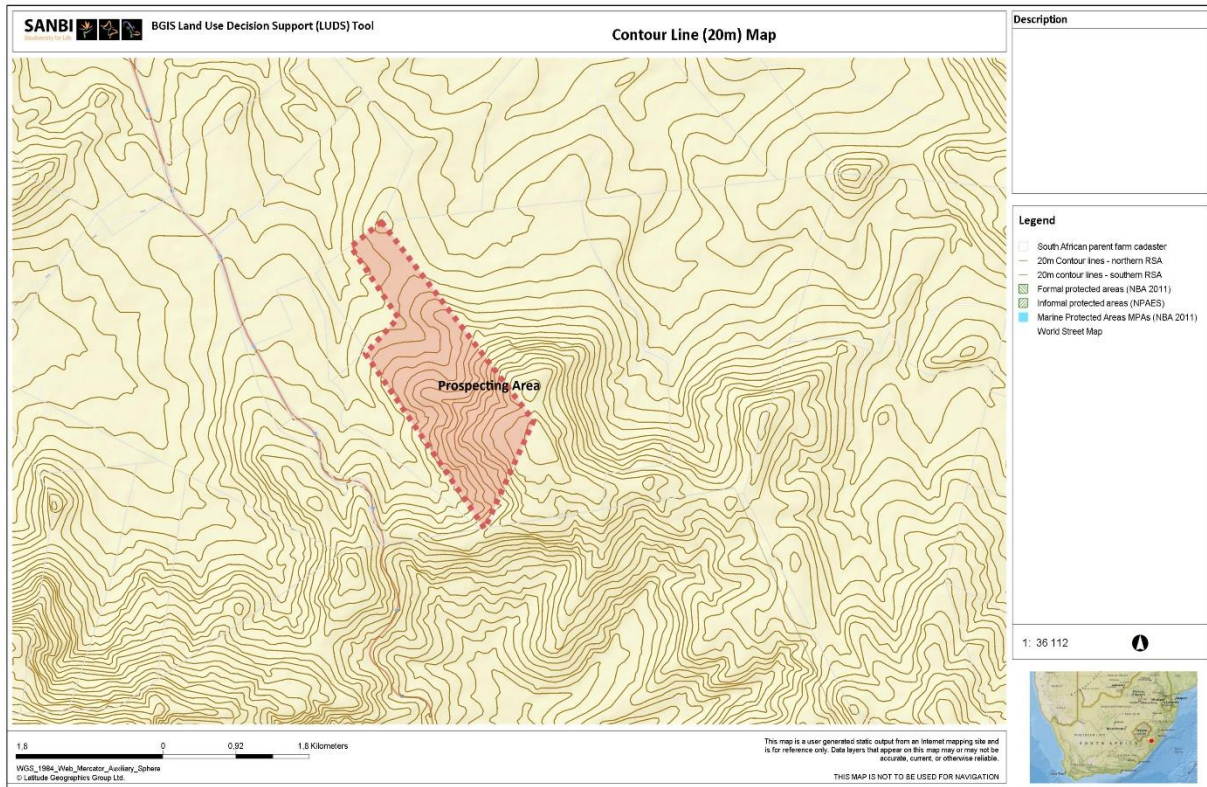


Figure 5: Contour Line Map (20m)

As shown in (figure 5 above) the study area is characterised by undulating slope varying, with steep slope on the 'eastern' part and valley formed in the centre of the site. The 'north' part of the study area is relatively flat as opposed to its 'south' which forms a small cliff.

9.3 Geology

The proposed prospecting area is located within the Karoo Supergroup, Beaufort Group, Adelaide Subgroup.

The Adelaide Subgroup consists of up to three formations (Koonap, Middleton, Balfour). Mudrock predominates with subordinate sandstone and is Upper Permian in age.. Siltstone beds are common. The Balfour Formation is distinguished from the Middleton Formation by the lack of 'red' mudstone and is ± 2150 m. thick, whereas the Middleton Formation is ± 1600 m. thick. The Abrahamskraal and Teekloof Formations also form part of the Adelaide Subgroup.

Karoo Dolerite Suite (intrusions) present in these Karoo sedimentary units have successfully been used as aggregate sources. Dolerite was formed when magma penetrated the earth crust through cracks and fissures and solidified

relatively slowly, albeit faster than granite. The intrusions were either vertical, forming dykes or horizontal, forming plates. Dolerite is quite hard and often weathers slower than the rocks into which it has intruded. This results in a landscape formation of series of ridges or the so-called “mesas”. Dolerite is especially associated with the Karoo sediments.

The good physical and chemical properties of the rock make it suitable for a wide variety of uses. Crushed rock is used as aggregate in concrete, as road sub-base and in flush seals, as facing stone in building construction, and as armour stone and rip-rap.

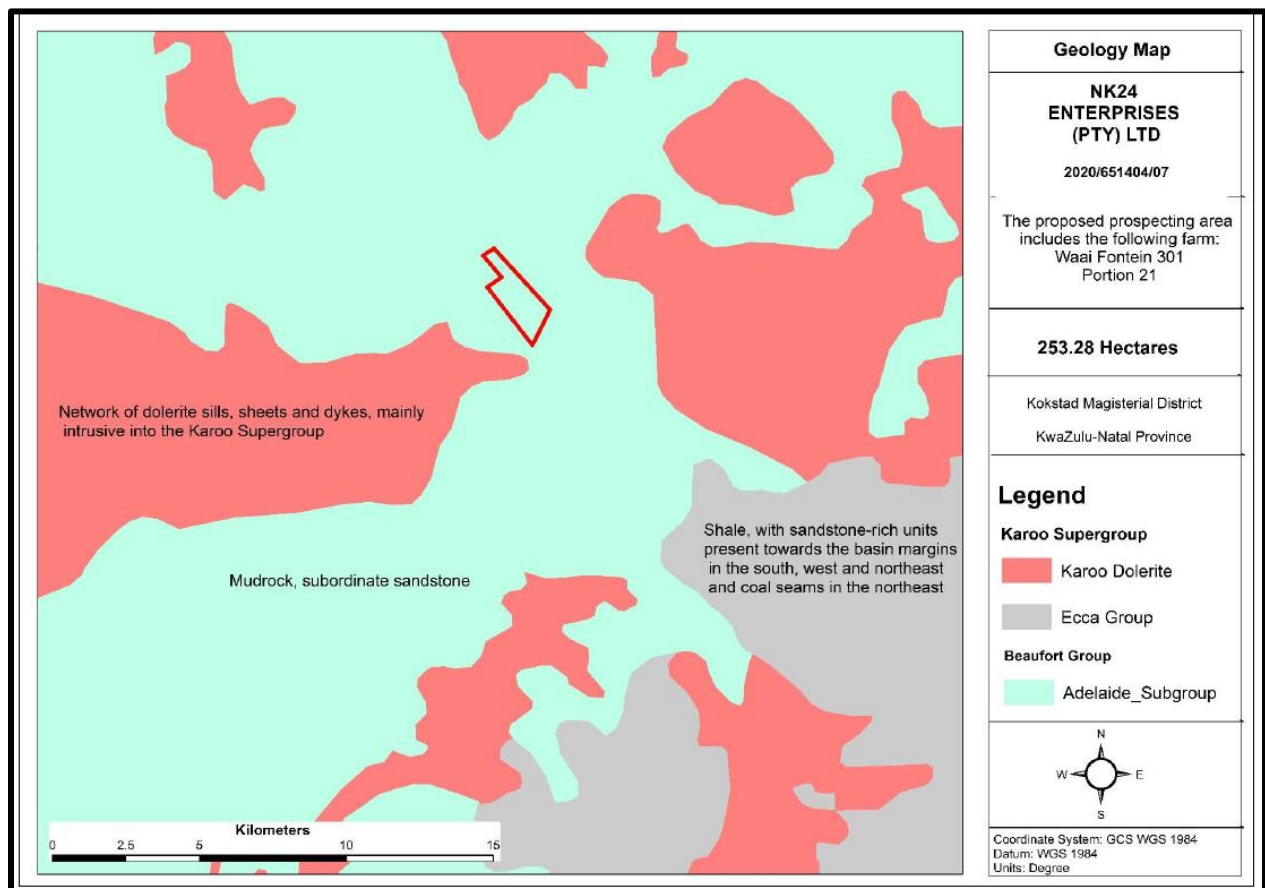


Figure 6: Map showing geology of the study area

9.4 Biodiversity

9.4.1 Biome

The proposed prospecting area is located within the Grassland biome (refer to Figure 7 below), the Grassland Biome are areas that are continuously dominated and covered by various grass species. This is usually the result of the perfect amount of precipitation that allows root plants like grasses to grow and thrive while still not being enough for larger plants like trees to dominate the area.



Figure 7: Biome Map

9.4.2 Vegetation

The proposed prospecting area occurs within the Grassland Biome and is characterised by the Sub-Escarpment Grassland vegetation type (refer to **Table 6** below). The Sub-Escarpment Grassland are made up of long-lived grasses

and forbs that are adapted to frequent above-ground disturbance mostly due to fire, after which they re-sprout using carbohydrates stored in underground storage organs.

Table 6: Vegetation types that will be traversed by the proposed prospecting area

BIOME	BIOREGION	VEGETATION TYPE	CONSERVATION STATUS
Grassland	Sub-Escarpment Grassland	<p><u>East Griqualand Grassland</u></p> <ul style="list-style-type: none"> • Are mesic grasslands occurring at mid-altitudes (760 – 1 800 masl) at the base of the escarpment of KwaZulu-Natal and the Eastern Cape. • Comprise 20 nationalvegetation types (see Chapter 9.2 for a full list). • Are made up of long-lived grasses and forbs that are adapted to frequent above-ground disturbance mostly due to fire, after which they re-sprout using carbohydrates stored in underground storage organs. • Reproduce only infrequently through seedlings and seeds are generally viable only for short periods; plants persist for many years and replacement takes place vegetatively as new tillers emerge. • Occur in areas with topography dominated by flat plains, rolling hills with gentle to steep slopes rising to the base of the escarpment, and traversed by deep river valleys; the heterogeneity of the topography influences the prevailing fire regime. • Are adapted to a climate that is characterised by warm, wet summers with high rainfall (mean annual 	<ul style="list-style-type: none"> • All of the vegetation types are inadequately protected, with two thirds of them classified as threatened. <p>Mistbelt grasslands have undergone extensive modification due to commercial forestry operations, row-cropping and urban sprawl. Only eight vegetation types have undergone relatively little modification</p>

		<p>precipitation >600 mm), and dry, temperate winters that are cool to cold with a moderate to heavy frost regime; the rising topography results in orographic precipitation and frequent formation of mist.</p> <ul style="list-style-type: none"> • Soils are depleted of nutrients as a result of leaching and generally support sourveld; they form a mosaic made up of shallow and poorly-drained soils from sedimentary rocks (shales, sandstones and mudstones) ,interspersed with deep, well-drained soils from igneous rocks (such as basalt and dolerite). 	
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9.4.3 Critical Biodiversity Area (CBAs)

The KwaZulu-Natal Biodiversity Spatial Planning (KZN BSP) defines the areas of land in the form of Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) required to ensure the persistence and conservation of biodiversity within the province (EKZNW, 2016). According to the KZN BSP, a portion of the prospecting area is identifies as CBA: Optimal which occurs along the ‘south-east’ edge of the farm. Majority of the portion of the fall is identified as ESA. This indicates that the study area is not critical for the support of conservation important biota.

i) Critical Biodiversity Areas (CBAs)

Critical Biodiversity Areas include all areas that are critical for meeting biodiversity targets and thresholds in the Province, and which are required to ensure the persistence of viable populations of species, as well as the functionality of ecosystems. CBAs are split into two levels, namely Irreplaceable CBAs and Optimal CBAs. CBAs are derived using provincial–scale conservation planning processes (i.e. the irreplaceable and optimal categories from the 2010 Minset).

ii) Ecological Support Areas (ESAs)

Ecological Support Areas include areas that support and sustain the ecological functioning of the core biodiversity areas (i.e. protected areas and CBAs) to ensure the persistence and maintenance of biodiversity patterns and ecological processes within the core areas, as well as allowing for the maintenance of Ecological Infrastructure (EI). ESAs include ecological corridors, species-specific areas, and protected area buffers such as the Trail Zone that has

been specifically defined for the uKhahlamba Drakensberg Park World Heritage Site, included Critically Endangered and Endangered ecosystems, and critical linkages from the landscape corridor dataset.

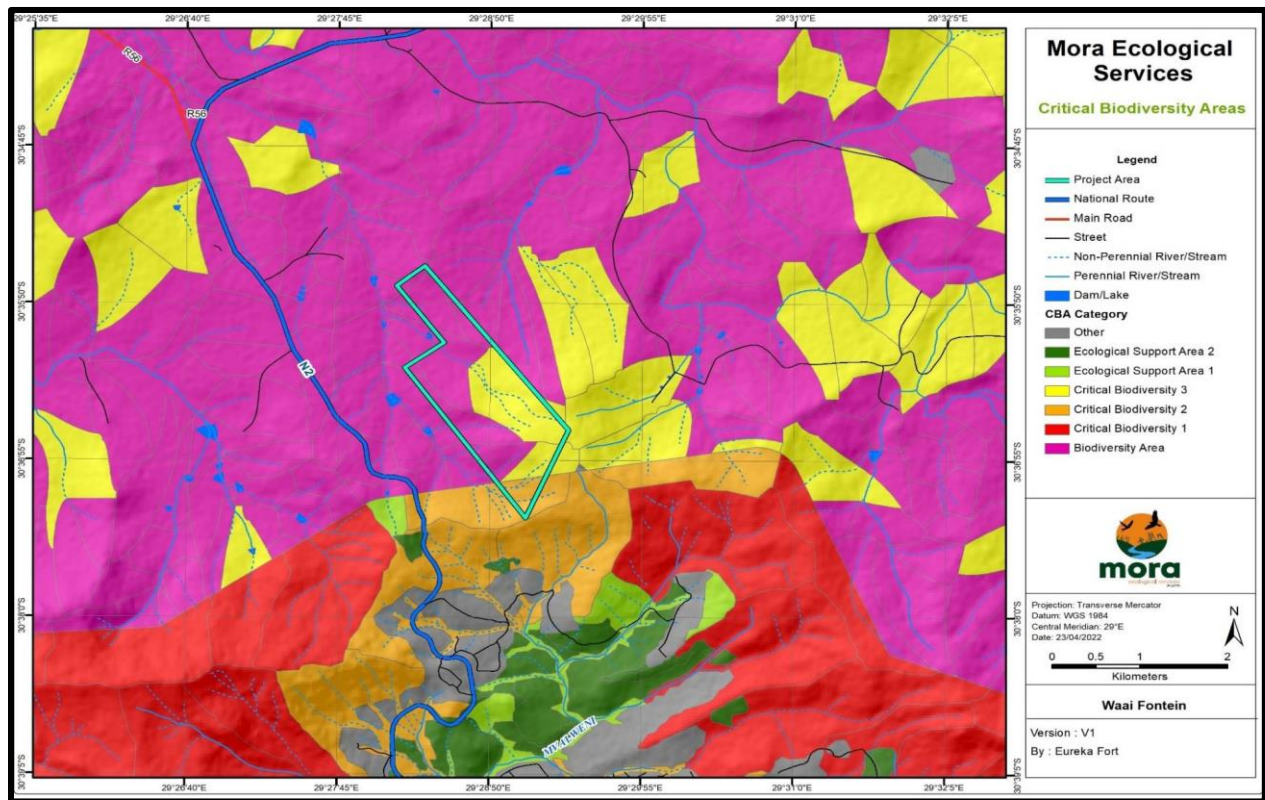


Figure 8: KwaZulu-Natal Cape CBAs Map

9.4.4 Terrestrial Biodiversity Sensitivity

According to the web based, National Screening tool provided in the National Department Environmental Affairs, the proposed prospecting area falls in both high and low sensitivity (refer to **Figure 9** below). Majority of the prospecting area is highlighted in high sensitivity, which covers largely the South past of the prospecting area. It is therefore recommended that the prospecting activities in the south of the prospecting area must be located carefully avoid prospecting within sensitive areas of the biodiversity theme.

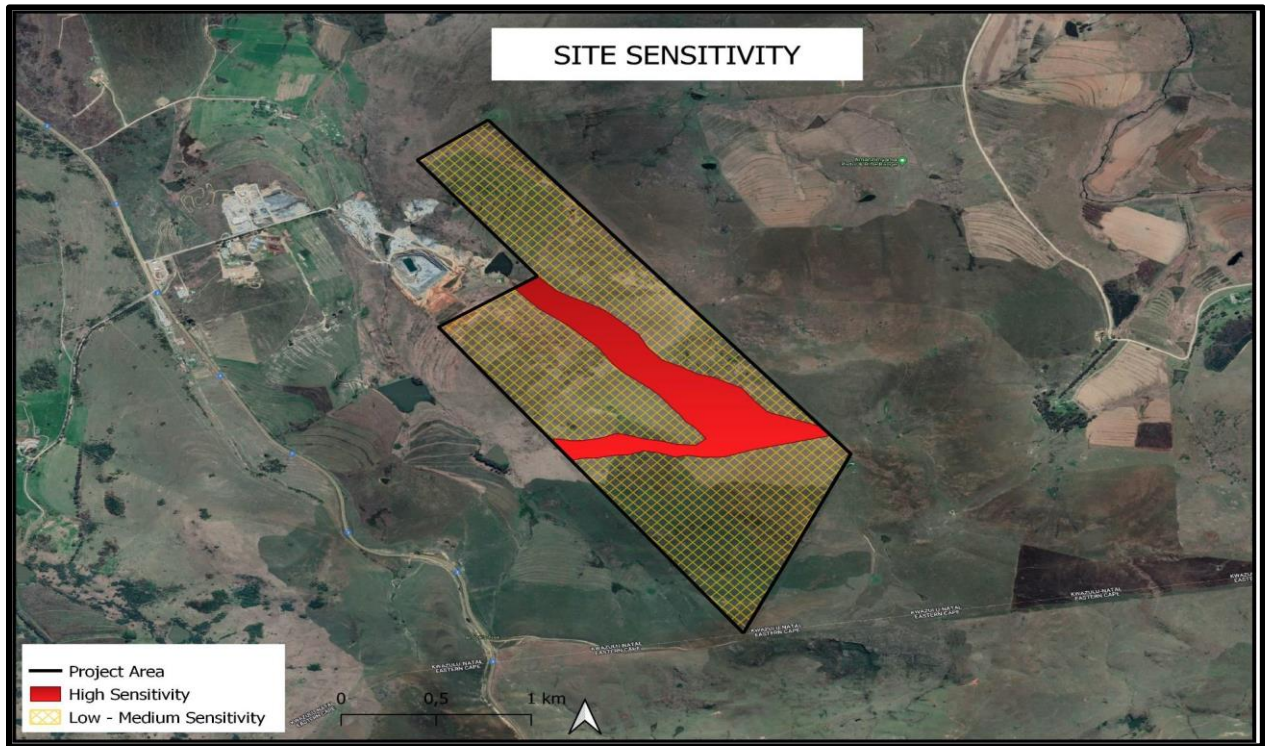


Figure 9: Terrestrial Biodiversity Sensitivity Map

9.5 Water Quality

Water quality is a major driver of aquatic ecological condition and a significant economic factor that influences both the utility value of the water as well as the cost of treating water to standards fit for purpose. It is also vital from the perspective of users who rely directly on unprotected/untreated water sources for their domestic needs.

The understanding of water quality in the GKLM is limited by the very limited water quality monitoring undertaken in the area. Water quality monitoring is a National Department of Water and Sanitation competence and budget and capacity limitations have resulted in declining monitoring in areas not associated with major water infrastructure.

9.6 Soils and Land Capability

The study area is characterised by the S2 class soil, the class is characterised by freely drained soils which are structure less. The soil occurring within the study area are known for low natural fertility and have excessive drainage and may have structured soil depth.

The majority of study area falls under the Land class VI and remainder of the area falls within class V (refer to Figure 10 below), the two classes falls under the grazing land group.

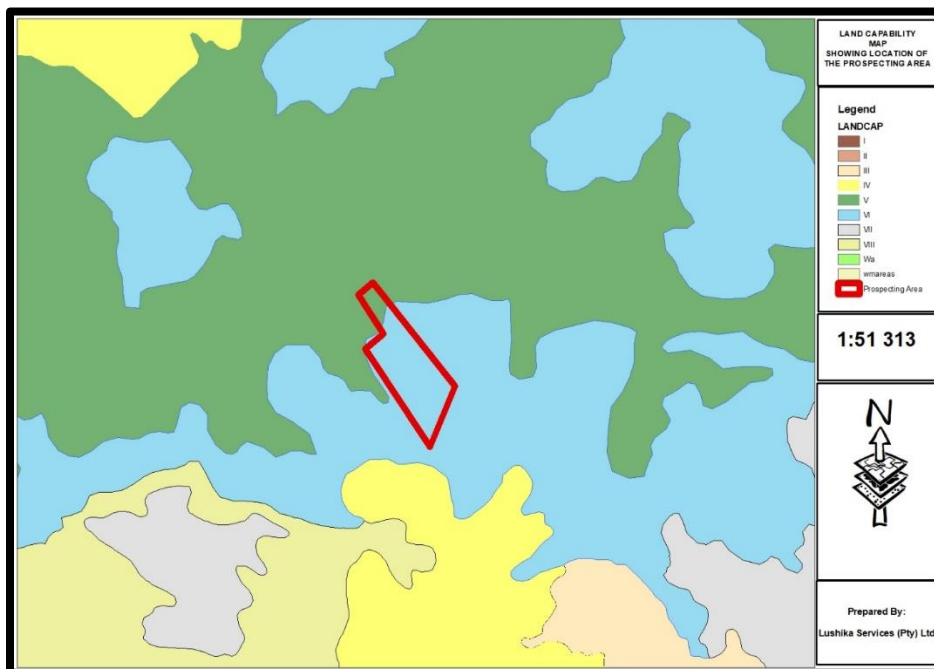


Figure 10: Land Capability Map

9.7 Socio-Economic Profile

This section presents information on demonstrating the Harry Gwala District Municipality and Greater Kokstad Local Municipality (GKM) socio-economic development status. The GKM has a population of approx. 65,980 people accounting for 14.3% of the population of the District, with approx. 20,358 households at a density of 8 households/km². Annual growth in the number of households in GKM is 0.1%, and the average household income is approximately R3 700 per month with 50.7% of the population earning low income followed by 32% of middle-income earners.

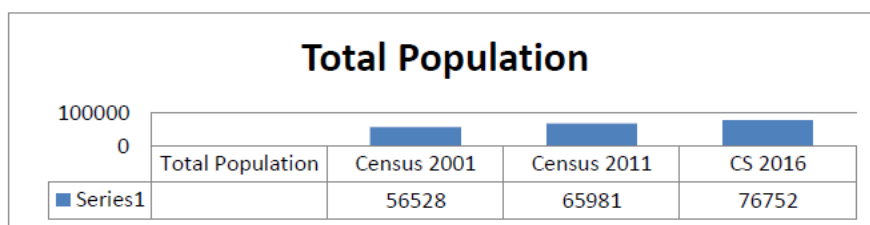
9.7.1 Demographics

The population of the Greater Kokstad forms part of the ultimate objective of the development process, as well as being a subject in the process, since the people provide labour and entrepreneurship for production and also consume the output of production. Likewise, demographic processes e.g. fertility, mortality and migration determine the demographic outcomes such as size, age-sex structure and spatial distributions of the population which affect the functioning of socio-economic processes of land use, labour absorption, consumption and expenditure which in turn define the socio-economic outcomes in terms of income, employment, education, health, housing etc. In short, this analysis will shade some light on the dynamics of the Greater Kokstad Municipal population, which can then be used to develop strategic interventions.

a) Population Size

The Greater Kokstad Municipality covers a total area of 2 680km². It is a category B Municipality situated within the Harry Gwala District of KwaZulu-Natal.

Table 7: Kokstad Population Size



Source: Stats SA: Census 2001-2011; COMMUNITY SURVEY 2016

The majority (36.4%) of residents in Greater Kokstad have some secondary level of education followed by 28.6% with grade 12 and 14.6% with primary education. Approximately 10.6% have a higher level of education and/ or training. The working-age population (66.7%) dominates the area followed by youth (30.6%). Most households (56.6%) have flush toilets connected to sewage. Pit toilets are increasing by 7.0% y/y. Approximately 69.7% of households receive

weekly refuse removal from the local authority. About 72.8% of the households within Greater Kokstad have piped water connection supplied by regional/ local water scheme and 76.1% of households have electricity (Greater Kokstad Local Municipality, 2021).

The demographic information for GKM points to a growing population with a growing need for basic services. The young population indicates a large labour pool and highlights the need for job creation and economic interventions that can absorb the labour force. There is a high dependency ratio (Greater Kokstad Local Municipality , 2020).

The main economic sectors of the municipality include (Greater Kokstad Local Municipality , 2021):-

- Agriculture;
- Trade;
- Community Services;
- Finance;
- Transport;
- Manufacturing; and
- Electricity.

9.7.2 Drivers of the Economy

With a GDP of R 13.9 billion in 2019 (up from R 7.25 billion in 2009), the Harry Gwala District Municipality contributed 1.73% to the KwaZulu-Natal Province GDP of R 805 billion in 2019. In 2019, the Harry Gwala District Municipality achieved an annual growth rate of 0.92% which is a significantly higher GDP growth than the KwaZulu-Natal Province's -0.07%, and is higher than that of South Africa, where the 2019 GDP growth rate was 0.15%.

The greatest contributor to the Harry Gwala District Municipality economy is the uMzimkhulu Local Municipality with a share of 26.63% or R 3.7 billion, increasing from R 1.9 billion in 2009. The economy with the lowest contribution is the Greater Kokstad Local Municipality with R 2.91 billion growing from R 1.55 billion in 2009.

i) Structure of the Economy

In 2019, the community services sector is the largest within Harry Gwala District Municipality accounting for R 3.89 billion or 31.0% of the total Gross Value Added (GVA) in the district municipality's economy. The sector that contributes the second most to the GVA of the Harry Gwala District Municipality is the trade sector at 21.1%, followed by the agriculture sector with 11.7%. The sector that contributes the least to the economy of Harry Gwala District Municipality is the mining sector with a contribution of R 38.1 million or 0.30% of the total GVA.

In 2019, Harry Gwala's Tress Index was estimated at 47.2 which are higher than the 42.2 of KZN province and higher than the 42.2 of the South Africa as a whole. This implies that - on average - Harry Gwala District Municipality is less diversified in terms of its economic activity spread than the national's economy.

The more diverse an economy is, the more likely it is to create employment opportunities across all skills levels (and not only - for instance - employment opportunities that cater for highly skilled labourers), and maintain a healthy balance between labour-intensive and capital-intensive industries. The Harry Gwala District Municipality has a very high concentrated agriculture sector.

In Harry Gwala District Municipality, the economic sectors that recorded the largest number of employment in 2019 were the community services sector with a total of 27 700 employed people or 27.8% of total employment in the district municipality. The trade sector with a total of 19 700 (19.8%) employs the second highest number of people relative to the rest of the sectors. The mining sector with 137 (0.1%) is the sector that employs the least number of people in Harry Gwala District Municipality, followed by the electricity sector with 217 (0.2%) people employed.

i) Primary Sector

The primary sector consists of two broad economic sectors namely the mining and the agricultural sector. The economy of Harry Gwala is largely characterised by commercial farming and commercial forestry plantations. The most important commercial enterprises in HGDM include:

- Dairy - supplies 10% of all milk consumed in South Africa, and 35% of Clover's total milk intake.
- Cash crops such as maize and potatoes, and
- Beef Farming. Poverty and poor farming methods, amongst other reasons, have led to loss of high potential agricultural areas.

Between 2009 and 2019, the agriculture sector experienced the highest positive growth in 2017 with an average growth rate of 29.0%. The mining sector reached its highest point of growth of 12.8% in 2010. The agricultural sector experienced the lowest growth for the period during 2016 at -9.3%, while the mining sector reaching its lowest point of growth in 2018 at -11.5%. Both the agriculture and mining sectors are generally characterised by volatility in growth over the period.

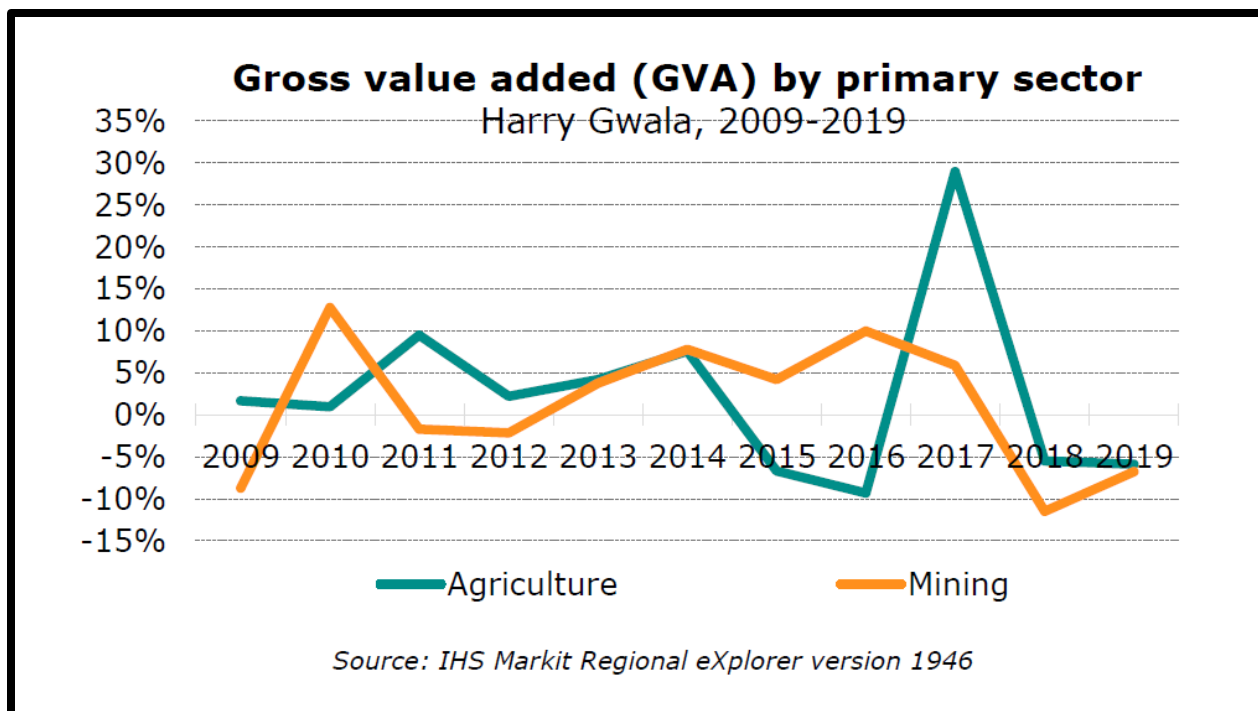


Figure 11: Gross Value Added by Primary Sector Harry Gwala District Municipality (2009 – 2019)

The district also enjoys suitable conditions for a wide array of agricultural products including field crops (maize, soybean) and vegetables, livestock (beef and milk) as well as sugarcane around the Ixopo/Highflats area. The soil and climatic conditions in Harry Gwala are suitable for potato farming making 44% of gross value of vegetable production. There is an opportunity in making flour from sweet potatoes. Some of the key issues relating to agricultural assessment are highlighted below:

- Recently, there has been a slight decline in the agricultural output within the district.
- This may have been caused by uncertainties surrounding land reform.
- There is also an issue of lack of skills from the land reform beneficiaries; and
- Poor infrastructure and underdevelopment of Traditional Authority areas has also played a role in the decline of agricultural output.

ii) Secondary Sector

The secondary sector consists of three broad economic sectors namely the manufacturing, electricity and the construction sector. The following chart represents the average growth rates in the GVA for these sectors in Harry Gwala District Municipality from 2009 to 2019.

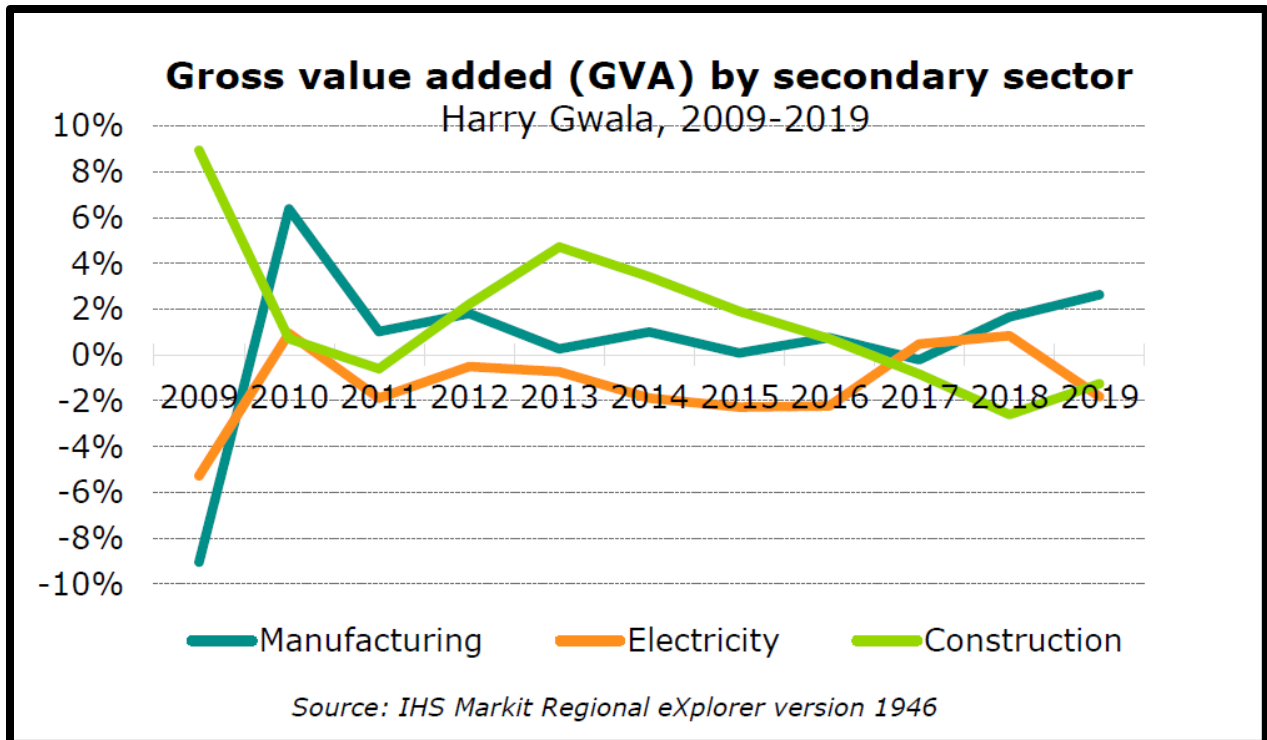


Figure 12: GVA by secondary sector (2009 - 2019)

Growing demand for timber with most of the land that is arable for forestry provides an economic growth opportunity and business incubator programs for SMMEs in timber production. The Durban harbour provides access to local maize farmers in terms of exportation of produce. Adequate investment in infrastructure, business networks and viable transport access will ensure a boom in agro-processing and an increase in job creation.

iii) Tertiary Sector

The tertiary sector consists of four broad economic sectors namely the trade, transport, finance and the community services sector. The following chart represents the average growth rates in the GVA for these sectors in Harry Gwala District Municipality from 2009 to 2019.

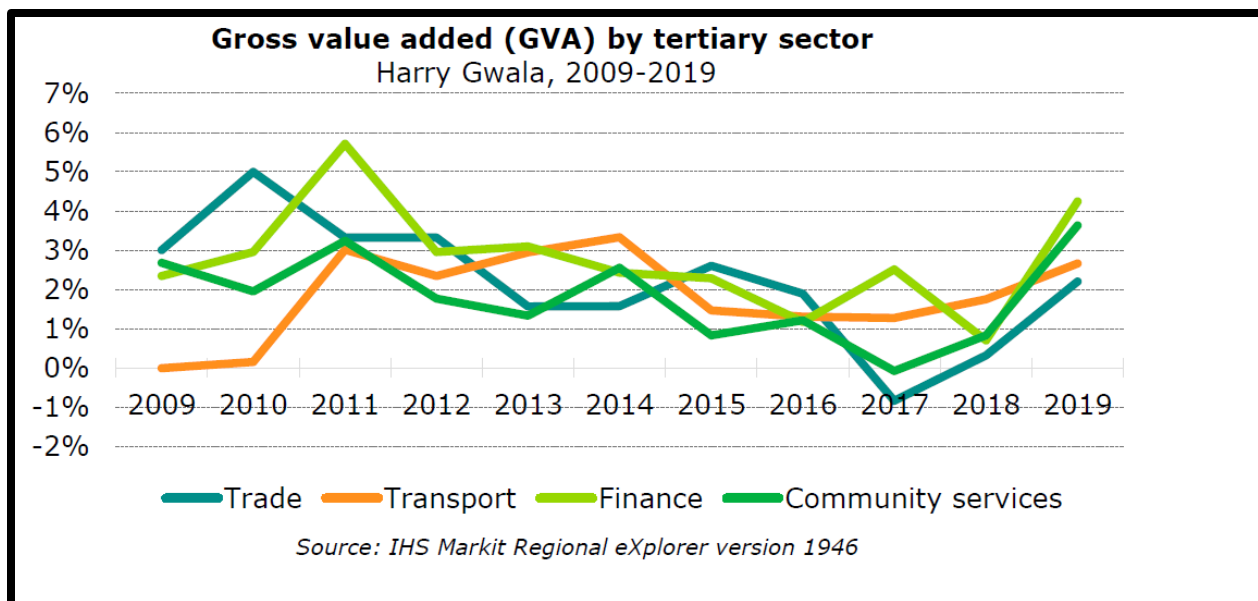


Figure 13: GVA by tertiary sector (2009 - 2019)

The trade sector experienced the highest positive growth in 2010 with a growth rate of 5.0%. The transport sector reached its highest point of growth in 2014 at 3.3%. The finance sector experienced the highest growth rate in 2011 when it grew by 5.7% and recorded the lowest growth rate in 2018 at 0.7%.

iv) Informal Sector

Informal employment in Harry Gwala increased from 21 000 in 2009 to an estimated 21 700 in 2019. In 2019 the Trade sector recorded the highest number of informally employed, with a total of 7 980 employees or 36.77% of the total informal employment. This can be expected as the barriers to enter the Trade sector in terms of capital and skills required is less than with most sectors. The Finance sector has the lowest informal employment with 1 200 and only contributes 5.50% to total informal employment.

The informal economy in Harry Gwala municipal area is heterogenic, ranging from street traders and shebeen owners to child carers and domestic workers. Informal traders provide a variety of merchandises to their clients that cut across many economic activities. Some of them include barbershops, bead sellers, cardboard collectors, muthi traders, live chicken seller, tailor, dressmaker and hatters, fruit seller, hairdresser, Mr Phone dealer, mealie cookers, newspapers vendors, second hand clothes, shoe repairer, spaza shop with variety of goods, street foods, tavern and shebeen.

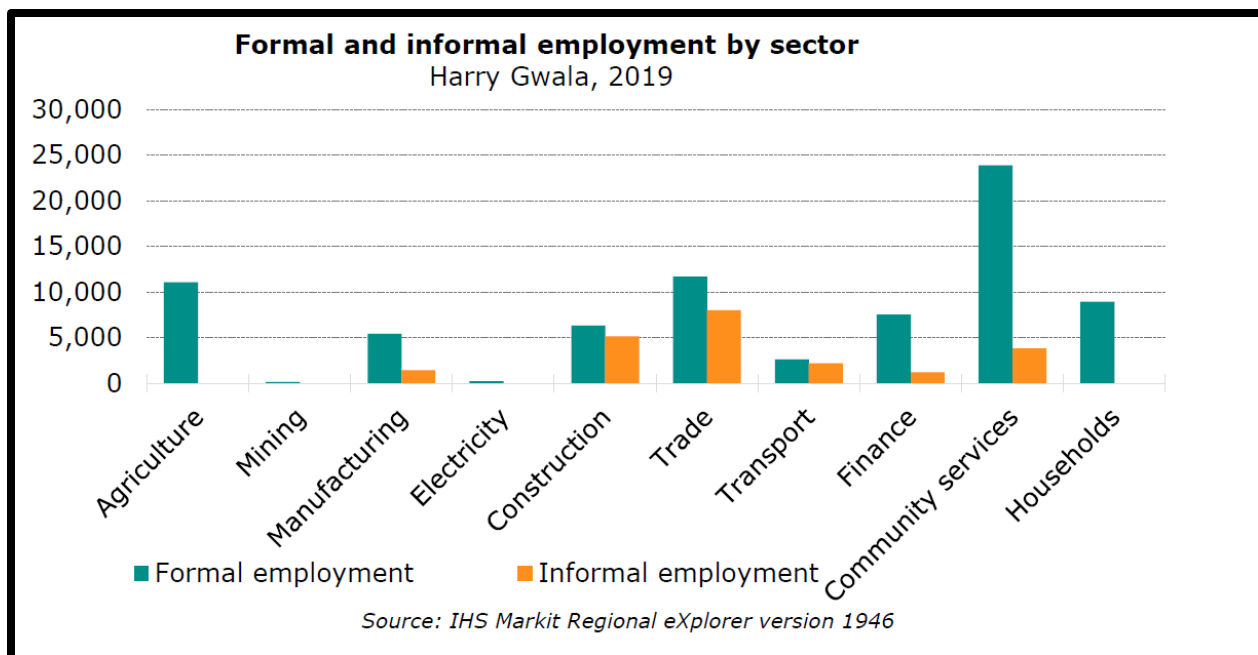


Figure 14: Formal and informal employment by sector (2019)

The custodians of the informal economy are local municipalities. They have developed informal economy policies with some of them not yet adopted by council. The local municipalities with adopted policies are giving out permits to street vendors. There are designated and zoned areas for street vending. Trainings are conducted with the Department of Small Business Development and SEDA for street traders in local municipalities focusing on basic business and financial management. The District will embark on the process of developing comprehensive Regional Informal Economy Policy by June 2020.

10. IMPACTS AND RISKS IDENTIFIED INCLUDING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF THE IMPACTS, INCLUDING THE DEGREE TO WHICH THESE IMPACTS

Table 8: Impacts Identified, phases and description

IMPACTS	PHASE	DESCRIPTION
Policy requirements	Planning	Identification of legislative requirements
Flora	Site establishment and	Destruction / loss of indigenous natural vegetation due to site preparation activities.
Fauna	Site establishment and Operational	Disturbance of species habitats (i.e. snake holes, spiders, reptiles, etc.)
Ground and Surface water	Site establishment and Operational	Spillage of fuels, lubricants and other chemicals

Geology	Operational	Removal of rocks and debris for analysis, disturbance of local geological formation.
Soils	Site establishment and operational	Disturbance of soils during site clearance and during drilling operations
Air Quality	Site establishment and Operational	Dust stemming from drilling and vehicles going to site
Traffic	Site establishment and decommissioning	Increase of traffic in the area as vehicles access and exit the site
Noise nuisance	Site establishment and Operational	Noise caused by moving vehicles and drill rigs
Economic	Operational	Project expenditure (incl. direct capital investment)
Socio-economic	Planning Phase	Potential friction with I&APs and Landowners, part time employment opportunities
Visual	Site establishment, Operational and Decommissioning	Visual disturbances with all the vehicles, signs and drilling rigs.
Cultural/Heritage - historical	Site establishment and Operational	Disturbance of artefacts of cultural and heritage importance (i.e. unidentified grave sites).
Waste	Site establishment and Operational Phase	Generation of solid waste on site.

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

The potential environmental impacts associated with the project will be evaluated according to its nature, extent, duration, intensity, probability and significance of the impacts, whereby:

- **Nature:** A brief written statement of the environmental aspect being impacted upon by particular action or activity.
- **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. For example, high at a local scale, but low at a regional scale;
- **Duration:** Indicates what the lifetime of the impact will be;
- **Intensity:** Describes whether an impact is destructive or benign;
- **Probability:** Describes the likelihood of an impact actually occurring; and

- **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

Table 9: Criteria for evaluating potential environmental impacts

CRITERIA	DESCRIPTION			
Extent	National (4) The whole of South Africa	Regional (3) Provincial and parts of neighbouring provinces	Local (2) Within a radius of 2 km of the site	Site (1) Within the site
Duration	Permanent (4) Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	Long-term (3) The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory	Medium-term (2) The impact will last for the period of the site establishment phase, where after it will be entirely negated	Short-term (1) The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the site establishment phase
Intensity	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
Probability of Occurrence	Definite (4) Impact will certainly occur	Highly Probable (3) Most likely that the impact will occur	Possible (2) The impact may occur	Improbable (1) Likelihood of the impact materialising is very low
Impact Reversal	Highly Impossible (4) Impact reversal will certainly be impossible	Moderate (3) Impact can be reversed to some extent with loss of natural resources	Possible (2) High possibility of impact reversal	Definite (1) Impact can be totally reversed

Loss of irreplaceable resources	Definite (4) Resources definitely be lost	Highly Probable (3) Most likely that resources will be lost	Possible (2) Resources may be lost	Improbable (1) Loss of resources is highly unlikely
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Significance is determined through a synthesis of impact characteristics. Significance is also 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.

Significance=Extent+ Duration +Intensity x Probability

Table 10: Criteria for classifying impacts

Ranks/Level	Description
Low impact/ Minor (3 -10 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/ Moderate (11 -20 points)	Mitigation is possible with additional design and construction inputs.
High impact (21 -30 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/ Major (31 - 48 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.
It is important to note that the status of an impact is assigned based on the status quo – i.e. should the project not proceed. Therefore not all negative impacts are equally significant.	

The suitability and feasibility of all proposed mitigation measures is included in the assessment of significant impacts. This was achieved through the comparison of the significance of the impact before and after the proposed mitigation measure is implemented.

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

At this moment there is no alternative layout, should the comments from IAPs and other relevant stakeholders warrants that we change the layout or have alternative, those comments will be addressed accordingly. The impacts associated with drilling can be mitigated and after drilling has been completed; the drill pads will be rehabilitated to predrilling status.

Table 11: Positive and negative impacts

Impacted Environment	Impact	Status of impact
SITE ESTABLISHMENT AND OPERATIONAL PHASE		
Fauna and Flora	Destruction / loss of indigenous natural vegetation and plant species during site preparation	Negative
	Impact on animal species	Negative
	Establishment and spread of declared weeds and alien invader plants	Negative
Water resource	Damage to surface water and groundwater resulting in hydrological impacts	Negative
Air Quality	Dust emissions	Negative
Soils	Physical disturbance of soils during land clearing	Negative
Socio Economic	Direct employment and skills development	Positive
Visual aspect	Visual Disturbance (vegetation clearance and temporary infrastructures including equipment on site)	Negative
Cultural/Heritage-historical resources	Potential impact on heritage and archaeological resources	Undetermined at this stage
Waste generation	Generation of solid waste (e.g. littering)	Negative
DECOMMISSIONING PHASE		
Air quality	Dust emissions	Negative
Soil	Soil degradation	Negative

10.3 Motivation where no alternative sites were considered

The nature of the proposed activity dictates the proposed site location. The applicant has done preliminary studies that indicated that the minerals applied for prospecting can only be found within the proposed area.

10.4 Statement motivating the alternative development location within the overall site

Since prospecting is temporary in nature no permanent structures will be constructed, negotiations and agreements will be made with the farm owner to use any existing infrastructure like accommodation for the workers, access roads and other things. In addition to the information provided, each of the phases is dependent on the results and success of the preceding phase. The location and extent of soil sampling and possible drilling will be determined based on information derived from the geophysics surveys. Sampling and drill sites will be selected to avoid water courses where practicable.

11. ENVIRONMENTAL IMPACT ASSESSMENT

Table 12: Environmental Impact Assessment

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Potential measures mitigation	After Mitigation				Ranking of impact/risk
			E	D	I	P				E	D	I	P	
Compliance with legislative requirements	Non commencement/ delayed commencement of proposed project	Planning	3	4	3	2	(20 -ve)	Yes	Comply with all legislative requirements as stipulated in the EIA 2017 regulations	1	1	1	2	(6 -ve)
Geological Field Mapping and Environmental Screening	Interference with existing land uses and Deterioration and damage to existing access roads and tracks	Planning	2	3	3	3	(18-)	Yes	Site access control, heritage impact assessment; consultation with Landowners and Site access control; Demarcation of access tracks to be used	1	2	2	2	(10 -ve)
Destruction loss of indigenous	Habitat and loss of species	Site establishment and Operational	2	2	3	3	(21-ve)	Yes	Appoint an Environmental Control Officer (ECO) prior to commencement of site	1	1	2	2	(8 -ve)

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Potential measures mitigation	After Mitigation				Ranking of impact/risk
			E	D	I	P				E	D	I	P	
natural vegetation	Alien plant invasions in disturbed areas	Site establishment and Operational	1	1	2	2	(8 -ve)	Yes	establishment phase. Responsibilities should include, but not necessarily be limited to, ensuring adherence to EMPr guidelines, guidance of activities, planning, reporting to authorities. Conduct a search and rescue operation for all conservation important plants on the site. This operation should be conducted during the austral summer period when vegetative and reproductive	1	1	1	2	(6 -ve)
Disturbance of soils	Exposed soils susceptible to erosion	Site establishment and Operational	1	1	2	2	(8 -ve)	Yes		1	1	1	2	(6 -ve)
Impacts on indigenous plant species	Plant species are especially vulnerable to infrastructure development due to the fact that they cannot move out of the path of the operational activities, but are also affected by overall loss of habitat.	Site establishment and Operational	1	2	2	2	(10 -ve)	Yes		1	2	1	1	(4 -ve)
Fauna	Faunal mortality and displacement on site.	Site establishment and Operational	1	2	3	3	(18 -ve)	Yes		2	1	1	2	(8 -ve)

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Potential measures mitigation	After Mitigation				Ranking of impact/risk
			E	D	I	P				E	D	I	P	
Geology	Permanent removal of rocks and geological formations	Operational	1	4	3	4	(32 -ve)	No	Cap off and cement drill hole	1	3	1	3	(15 -ve)
Groundwater quality	The prospecting operations will require the drilling of boreholes. The boreholes may result in the drawdown, which may affect the yield to the surrounding groundwater users. Material used for backfilling may leach pollutants that will result in the pollution of the surrounding groundwater regime.	Operational	2	3	3	4	(32 -ve)	Yes	Groundwater monitoring network (both quality and quantity) should be established. Any spillage should be cleaned using spillage kit Ensure that the land owners' borehole yield is observed during the drilling operation. Should it be proven that the operation is indeed affecting the quantity and quality of groundwater available to users and surrounding water resources, the affected parties must be compensated	2	1	2	3	(21 -ve)

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Potential measures mitigation	After Mitigation				Ranking of impact/risk
			E	D	I	P				E	D	I	P	
Air quality	Increase in traffic on unpaved roads and drilling activities will increase levels of dust generated on site. Greenhouse gases emitted from drilling machinery and vehicles used on site, could contribute to reduced levels of air quality.	Site establishment, Operational and Decommissioning	2	1	2	3	(15 -ve)	No	Use of water for dust spraying and wetting, proper grading of roads and keeping traffic to a reasonable level All equipment and vehicles must be serviced and be in good condition to reduce emissions.	2	1	2	2	(10 -ve)
Project expenditure (incl. direct capital investment)	Investment and growth in local economy	Operational Phase and decommissioning	2	1	2	4	(20)	No	None	2	1	2	4	(20)
Noise disturbance	Noise generated from prospecting operations activities may add to the current noise levels. This may have impacts on surrounding property owners and wildlife.	Operational	2	3	2	2	(14 -ve)	No	Engine silencers must be installed on all equipment and vehicles used on site Working must be restricted to 8 hours during daytime, to minimise the ecological and social disturbance.	1	2	2	2	(10 -ve)

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Potential mitigation measures	After Mitigation				Ranking of impact/risk
			E	D	I	P				E	D	I	P	
Visual Disturbance	The activities undertaken during the site establishment or and associated infrastructure will be visible from the nearby roads and properties. However, due to the undulating topography, visibility for the most part will most probably be restricted to short distances.	Site establishment, Operational and Decommissioning	1	2	2	2	(10 -ve)	Yes	Inform the land owner on the type of machinery and equipment to be used at the prospecting site. Ensure that lighting is conducted in manner that will reduce the impacts on visual aspects at night times.	1	1	2	2	(8 -ve)
Socio-economic	Potential friction with local business individuals who are running tourist attractions and breeding game life.	Planning, Site establishment, Operational, decommissioning	3	3	2	3	(24 -ve)	Yes	Extensive public consultations which will increase public awareness record and address comments, concerns and questions.	1	2	1	2	(8 -ve)
	Temporary employment opportunities	Operational and Decommissioning	2	1	2	3	(15 +ve)	Yes	None	2	1	2	3	(15 +ve)

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Potential measures mitigation	After Mitigation				Ranking of impact/risk
			E	D	I	P				E	D	I	P	
	Potential decline in local business due to prospecting activities.	Site establishment, Operational and Decommissioning	3	2	3	2	(16 -ve)	Yes	Prospecting should be conducted following best practices is to minimise negative economic impacts on local business	3	2	2	1	(7 -ve)
Cultural/ Heritage historical impacts	Discovery of gravesites and historical artefacts in the proposed area	Site establishment and Operational	1	2	2	3	(15 -ve)	Yes	Should any paleontological or cultural artefacts be discovered work at the point of discovery must stop, the location be clearly demarcated and SAHRA contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA.	1	1	1	2	(6 -ve)
Traffic	Increase of traffic in the area as vehicles access the sites	Site establishment, Operational and Decommissioning	2	3	2	3	(28 -ve)	No	Abnormal Vehicles must move in and out of the site during off peak hours, to avoid congestion that may occur on the main road.	2	2	1	2	(10 -ve)

12. ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

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

Table 13: Potential Impacts and Risk

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Desktop Study	None Identified	N/A	Planning Phase	N/A	No mitigation proposed	N/A
Identification of legislative requirements	Commencement of activities without all the required licenses and permits	Policy and legal Requirements	Planning Phase	High	The applicant must ensure that all relevant legislations and regulations have been adhered to before commencement of the project.	Low
Set-up of drilling Equipment	Clearing of Vegetation	Flora and Fauna	Operational Phase	Low	Already cleared areas should be preferred over heavily dense areas	Low
Set-up of drilling Equipment	Theft	Socio-Economic	Operational Phase	Low	The site camp must be secured and entrance into the site must be controlled	Low
Preparation of drilling sites and access roads	Loss of Vegetation	Flora and Fauna	Operational Phase	Medium	Where possible existing access roads must be used	Low
Drilling Activities	Ground & Surface Water contamination	Hydrology	Operational Phase	Medium	The drill bits must be maintained in good condition to prevent leakages of oil when in the underground.	Low
					Aquifer detection methods should be applied before drilling can be undertaken.	Low
					Streams must be diverted where alluvial activities are taking place.	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	Mortality and displacement of fauna	Fauna	Operational Phase	Medium	Search and rescue mission should be undertaken for species on drilling site	Low
	Waste Generation	Waste Management	Operational Phase	High	The mud generated from the drilling activities must be contained, and contaminated mud must be handled separately, treated or disposed of at an appropriate landfill. Skips and marked bins must be provided at the site for waste separation.	Medium
Drilling Activities	Spillages of hazardous chemicals	Soil & geology; Hydrology	Operational Phase	Medium	All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of / removed from the site. All drill holes must be capped off and closed off with cement.	Low
				Medium	Hazardous substances / materials are to be transported in sealed containers or bags.	Low
				Medium	Spillages must be attended to as soon as they occur. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site.	Low
	Destruction of Heritage Resources	Cultural and Heritage Social	Operational Phase	Medium	Should any paleontological or cultural artefacts be discovered work at the point of discovery must stop, the location be	Low

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
					clearly demarcated and SAHRA contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA.	
Decommissioning of Site Camp	Waste generation	Waste management	Decommissioning Phase	Medium	The uncontaminated stockpiled materials must be used for backfilling	Low
Decommissioning of Site Camp	Contamination of the Soil and Water	Soil and Hydrology	Decommissioning Phase	Medium	The hazardous substances onsite must be stored in marked containers. All the equipment must be shipped out of the site The compacted soils must be loosened and the topsoil must be spread above it. The seed spreading of indigenous species must take place to ensure regrowth.	Low

13. SUMMARY OF SPECIALIST

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

13.1 Heritage and Archaeological Study

The investigation of the proposed prospecting area did not find any sensitive heritage and archaeological sites, the pictures below show drone-view of the proposed prospecting area. Although no archaeological remains were found, it is possible that some significant features may be buried beneath the ground. Should buried archaeological materials and burials be encountered during the process of development the prospecting activities must be stopped.

The study reached the following recommendations and conclusion:

- The proposed development is scheduled to take place on already existing stand within a built up area.
- Ground trothing of the area found no important cultural heritage resource, archaeological materials or graves
- Although no archaeological remains were found, it is possible that some significant features may be buried beneath the ground. Should buried archaeological materials and burials be encountered during the process of development, the following must apply:
 - Work must stop immediately
 - A professional archaeologist or nearest heritage authority must be contacted.

13.2 Biodiversity Study

There are several habitats within the proposed site that have been exposed to some levels of disturbance resulting from crop farming and prospecting activities. There are also areas that still have intact vegetation, such areas are grasslands in high lying areas. As a result, the ecological integrity of the site is in fair condition, and it can maintain the ecological processes.

In terms of fauna, no animals were observed during the field surveys.

The following are recommended:

- Watercourses must be avoided at all times.

- All temporary stockpile areas including litter and dumped material and rubble must be removed on completion of exploration.
- No painting or marking of vegetation shall be allowed. Marking shall be done by steel stakes with tags, if required.
- Avoid translocating topsoil stockpiles from one place to another or importing topsoil from other sources that may contain alien plant propagules.
- Only necessary damage must be caused: for example, unnecessary driving around in the site should not take place.

The impacts associated with the proposed prospecting activities are likely to be from Medium to Low after implementation of mitigation measures. As a result, it is the opinion of the specialist that this proposed prospecting application be considered provided that the recommendations stipulated in this study are adhered to.

14. ENVIRONMENTAL IMPACT STATEMENT

14.1 Summary of key findings of environmental assessment:

In nature impacts associated with prospecting have very low impacts on the environment or socially. Usually the impacts caused during the prospecting activity can be reversed or rehabilitated.

The following actions are subject to the proposed mitigation measures and require monitoring:

- The clearing of vegetation
- The storage of hydrocarbon-based materials on site
- On-site waste management
- The creation of roads/tracks
- The removal of storage and soil
- The traversing of vehicles through populated areas within the prospecting area
- Groundwater: Monitor the water quality of the boreholes
- Noise generation

Monitoring of the required mitigation measures is to take place on site daily by the site geologist. Annual monitoring audits are to take place by an appointed independent environmental assessment practitioner.

14.2 Final Site Map

The exact locations of the drilling holes are indicated within the map provided although the map will be subjected to changes depending on the results of the preliminary drilling and assaying. The prospecting activities are conducted in phases, and each phase depends on the success of the previous phase.

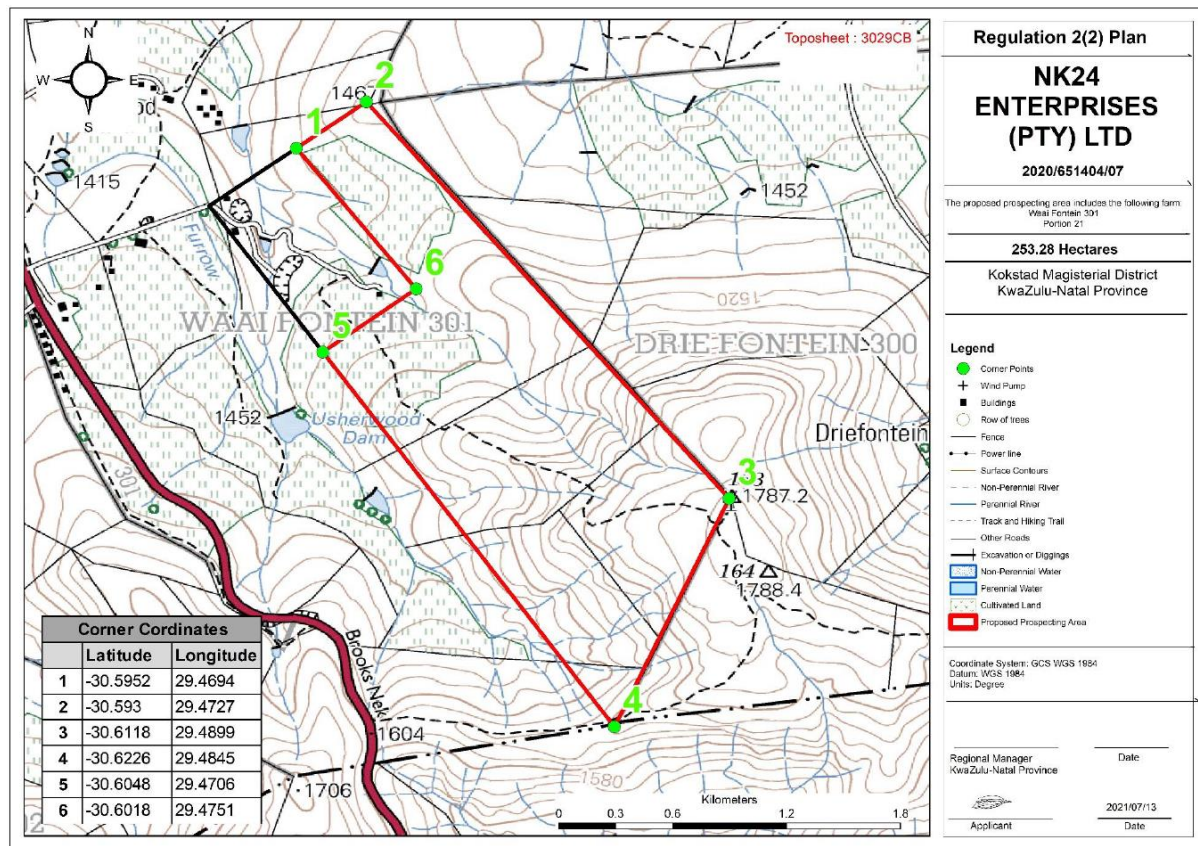


Figure 15: Map showing all drilling points

14.3 Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

a) Positive and negative impacts associated with the proposed prospecting activities include:

- Destruction / loss of indigenous natural vegetation during site preparation
- Impacts on plant species of concern during site preparation

- Impacts on fauna
- Establishment and spread of declared weeds and alien invader plants
- Physical disturbance of soils during land clearing
- Dust emissions
- Disturbance of the geological formation due to removal of rock material.
- Direct employment and skills development
- Impact on groundwater system during invasive phase of the proposed development.
- Impact on surface water
- Visual Disturbance
- Physical disturbance of soils during land clearing
- Disturbance of surrounding landowners activities and/or livelihoods
- Direct employment and skills development
- Potential impacts on heritage resources and archaeological resources

The proposed activities have low significance since these are short term activities, however socio-economic impacts such as employment has a medium significance. The probability of occurrence of an impact was determined and most of these activities can be controlled and impacts can be reduced or avoided. Generally prospecting activities have low impact on the environment. The planned activities negative impacts can be controlled and avoided or minimised therefore the layout does not require revision. Mitigation measures will be utilised to control, avoid and/or minimise all identified potential impacts.

15. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR;

The EMPr will seek to achieve a required end state and describe how activities could have an adverse impact on the environment will be mitigated, controlled and monitored. The EMPr will address the environmental impacts during the Site establishment, Operational, and Decommissioning Phases of the proposed project. Due regard will be given to environmental protection during the entire project. A number of environmental recommendations will therefore be made to achieve environmental protection. The environmental and social objectives will be set to allow prospecting in an environmental and socially responsible manner while ensuring that sustainable closure can be achieved. To achieve closure, the correct decisions need to be taken during the planning phase of the project.

The overall goal for environmental management for the proposed is to construct and operate the project in a manner that:

- Minimises the ecological footprint of the project on the local environment;
- Facilitates harmonious co-existence between the project and other land uses in the area;
- Contributes to the environmental baseline and understanding of environmental impacts of Prospecting activities in a South African context.

The following environmental management objectives are recommended for the proposed mineral prospecting development and associated infrastructure:

- Monitor soils so as to avoid unnecessary erosion, and implement erosion control measures to preserve the quality of the soil for rehabilitation.
- Development planning must restrict the area of impact to minimum and designated areas only.
- Monitor and prevent contamination, and undertake appropriate remedial actions.
- Limit the visual and noise impact on receptors.
- Avoid impact on possible heritage and archaeological resources.
- Promote health and safety of workers.

- Limit dust and other emissions to within allowable limits

16. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION

NK24 Enterprises (Pty) Ltd must comply with all Environmental legislations. Specific environmental legislation to be adhered to include; National Environmental Management Act, Act 107 of 1998 (NEMA) and Minerals and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA);

- Notice must be given to landowners and surrounding landowners 1 month prior to any prospecting activities.
- Maintain a minimum 500m buffer from any infrastructure or dwelling (schools, churches, homes);
- Landowners and land occupiers should be engaged (re-consulted) at least 1 month prior to any site activities being undertaken once drill sites are known;
- A map detailing the drilling locations should be provided to the landowners as well as the DMR prior to commencement of prospecting activities.
- Record must be kept of the implementation of the EMPr measures and monitoring of the efficiency of the implemented measures; and
- A buffer of 50m from wetlands and water courses should be established during the site establishment and operational phase.

17. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

The following assumptions, uncertainties, and gaps in knowledge are applicable to this BAR:

- The baseline environment was compiled through desktop studies only. The possibility exists that the desktop data is outdated or incomplete. A limited duration site visit was undertaken in order to verify the desktop data utilised. Furthermore, the description of the baseline environment will be further informed by the results of the public participation process.
- The potential impacts of any drilling activity on the groundwater regime will vary from site to site, even over short distances due to changes in geology and receptors. As no recent hydrocensus across the entire exploration area has been conducted, the EAP did not have access to, for example, positions of existing boreholes, dependency on groundwater, specific water quality, depth to groundwater levels and borehole depths. The sensitivity map and groundwater management plan, as presented in this report, must be seen as working documents that must be improved as more information becomes available.

- This report only provides a high-level desktop / strategic screening of potential heritage risk areas. The recommendations and conclusions regarding the assessment of the potential impacts will require confirmation by a detailed field-based survey before physical prospecting is to commence. Specifically, it should be noted that some of the heritage sites that are depicted on the historical topographic maps may no longer exist due to past disturbance and that there may be grave and burial ground sites that are not depicted on the historic maps which will be identified only by the subsequent field study.

18. REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

Based on the site investigations and analysis of the EAP it is suggested that the proposed activity should be authorised due to the following:

- Monitoring of the required mitigation measures is to take place on site daily by the site Geologist, Annual monitoring audits are to take place by an appointed independent Environmental Assessment Practitioner (EAP) to compile the required annual environmental compliance report required by the DMR
- The environmental impacts associated with the limited drilling activities are minimal provided that the proposed mitigation measures are implemented
- The desktop studies have proven that the site is located on a mineralized zone, prospecting activities must be undertaken to confirm the ore reserves
- The option of not approving the activities will result in a significant loss to valuable information regarding the status of the ore bodies present on these properties.
- In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost as well.
- The spatial extent of the physical impact is 1.89 ha over a prospecting right license area of 63 drill sites and 100m² of an access road which will be established in total throughout the duration of the drilling programme, Therefore the actual footprint to be permanently disturbed is minimal in comparison to the total site area of the total farm area will be impacted.

- With appropriate care and consideration the impacts resulting from drilling can be suitably avoided, minimised or mitigated
- It has also been noted that mining sector is the pillar of South African economy and also provides employment opportunities for many.
- A buffer of 50 m from wetlands and water courses should be established during the operational phase

18.1 Conditions that must be included in the authorisation

- Maintain a minimum 500m buffer from any infrastructure or dwelling (schools, churches, homes);
- Landowners and land occupiers should be engaged (re-consulted) at least 1 month prior to any site activities being undertaken once drill sites are known;
- A map detailing the drilling locations should be provided to the landowners as well as the DMR prior to commencement of prospecting activities.
- Record must be kept of the implementation of the EMPr measures and monitoring of the efficiency of the implemented measures; and
- A buffer of 50m from wetlands and water courses should be established during the operational phase.
- A suitable closure plan must be submitted to show sufficiently providence for the avoidance, management and mitigation of environmental impacts associated with the decommissioning of the proposed activities.

19. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

The Prospecting Right has been applied for a period of five (5) years. The Environmental Authorisation should therefore allow for the five years of prospecting and one year for decommissioning and rehabilitation

20. UNDERTAKING

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report. The undertaking provided at the end of the EMPr is applicable to both, this Basic Assessment Report and the EMPr in Part B, below

21. FINANCIAL PROVISION

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

A total of R 326 159.00 is required to both manage and rehabilitate the environment in respect of rehabilitation.

21.1 Explain how the aforesaid amount was derived

The aforesaid amount was derived using the Department of Mineral Resource guideline document for the evaluation of the quantum of closure-related financial provision provided by the applicant.

21.2 Confirm that this amount can be provided for from operating expenditure

Should a Prospecting Right be granted to the **NK24 Enterprises (Pty) Ltd** will make provision for the estimated closure cost by means of a Bank Guarantee or any other means available and accepted by the Competent Authority.

22. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

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

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

Current land uses on the prospecting area, such as grazing, may be temporarily impacted through the presence of closed off areas that drill rigs will operate within. These are however, small areas. These areas will be rehabilitated post drilling activities and the areas will once again become available for grazing and other agricultural activities.

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

Mitigation measures proposed in this report include that no drill site will be located within 100 m of any identified heritage site (which may occur during the prospecting programme) based on the desktop work undertaken. Should any paleontological or cultural artefacts be discovered work at the point of discovery must stop, the location be clearly demarcated and SAHRA contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA.

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

This BAR and EMPr has been compiled in accordance with the NEMA (1998), EIA Regulations (2014, amended April 2017) and MPRDA (2002). The EAP managing the application confirms that this BAR and EMPr is being submitted for Environmental Authorisation in terms of the National Environmental Management Act, 1998 in respect of listed activities that have been triggered by application in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (as amended). Should the DMR require any additional information, this will be provided upon request. No reasonable or feasible alternatives exist for this Prospecting Right Application and as such, motivation for no alternatives has been provided in the relevant sections above.

PART B ENVIRONMENTAL MANAGEMENT PROGRAMME

1. DETAILS OF EAP

The details of the EAP are provided in section 1.1 of part A of this document

2. DESCRIPTION OF ASPECTS OF THE ACTIVITY

The requirement to describe the aspects of the activity that are covered by the final environmental management programme is already included in PART A.

3. COMPOSITE MAP

No composite map can be presented at this stage

4. DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS

4.1 Determination of closure objectives.

- Rehabilitation of areas disturbed as a consequence of prospecting to a land capability that will support and sustain a predetermined post-closure land uses;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned final land use;
- Removal of existing contaminated material from affected areas;
- Establishment of final landforms that are stable and safe in the long run;
- Establishment and implementation of measures that meet specific closure related performance objectives;

Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

4.1.1 Volumes and rate of water use required for the operation

The proposed prospecting activities will require water supply for the drilling activities, the water will be sourced from water service providers and will be carted onto the site in a tanker. A 2000 l water cart will be adequate for the size of this

operation. The water will be used for dust suppression of access roads. Dust suppression will be conducted as and when necessary.

4.1.2 Has a water use licence has been applied for?

No water use license application has been lodged as there are no water resources that will be affected by the proposed prospecting activities. No groundwater will be used or abstracted during the prospecting operations. Moreover, a buffer of 50m from wetlands and water courses shall be established during the prospecting activities.

4.1.3 Impacts to be mitigated in their respective phases, Impact Management Outcomes and Impact Management Actions

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

Table 14: Impacts to be mitigated

POTENTIAL IMPACT	ASPECTS AFFECTED	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION	MITIGATION TYPE	STANDARD TO BE ACHIEVED
SITE ESTABLISHMENT PHASE						
Site Establishment- access roads, to prospecting sites, establishment of the campsite, physical surveying of the site and pegging of drilling boreholes						
Loss of top soils and soil erosion	Soils, Land Use and Land Capability	Topsoil must be stockpiled immediately after clearing vegetation to prevent erosion of soil through surface runoff and wind. No topsoil or fertile soil (dark soil) may be stored within 32 m of a drainage line, watercourse or wetland Where applicable, construct berms in order to prevent rill erosion and donga formation. All cleared areas and sumps are to be monitored for erosion daily, any erosion forming is to be remediated with immediate effect.	Rehabilitation in terms of MPRDA and NEMA principles. Applicable guidelines from NEM:BA and Department of Agriculture, Forestry and Fisheries (DAFF) and Conservation of Agricultural Resources Act (CARA) regarding removal of species General implementation of activities taking Mining and Biodiversity Guidelines into account	During Site establishment	Control	Return as close as possible to pre-prospecting environment
Loss of natural vegetation in the affected areas.	Flora.	Site clearance will be limited to only areas where invasive prospecting	Rehabilitation in terms of MPRDA and NEMA principles.	During Site establishment	Control through visual	Adhere to rehabilitation standards and

		<p>activities will be undertaken</p> <p>Ensure minimal disturbance of vegetation when conducting geophysical surveys and geological mapping.</p> <p>No vegetation clearance or tree removal should take place prior to a suitable qualified specialist have identified the species and the necessary permits and licenses have been obtained for removal of protected or endangered species.</p> <p>No crops may be harvested from the farms where work is being undertaken by any member of NK24 Enterprises or contractors of NK24 Enterprises.</p>	<p>Permits to (DAFF) and CARA for removal of species in terms of NEM:BA General implementation of activities taking Mining and Biodiversity Guidelines into account</p>		<p>monitoring and inspection</p>	<p>Biodiversity Guidelines</p>
<p>Migration of animal life due to disturbance caused proposed project</p>	<p>Fauna</p>	<p>Use sites with most degraded environment for the site development.</p> <p>Trapping and killing of fauna will be prohibited at the prospecting site.</p>	<p>General implementation of activities taking Biodiversity Act and its guidelines into account.</p>	<p>During Site establishment</p>	<p>Control through visual monitoring and inspection</p>	<p>Minimise impact on fauna</p>
<p>Deterioration of water quality in the nearby</p>	<p>Surface and Ground Water.</p>	<p>Site establishment should not be undertaken within sensitive landscapes, these areas will be avoided.</p>	<p>Water management measures in compliance with NWA,</p>	<p>During Site establishment</p>	<p>Avoid</p>	<p>Minimise the impacts on sensitive areas</p>

Water courses and within the groundwater regime.		A distance of 32 meters should be kept between stockpiles and water courses Avoid stripping of areas within the operational site. Rehabilitate areas that may have been mistakenly stripped. Storm water upslope of the campsite and drill sites should be diverted around these areas.	1998 and DWS guidelines			such as wetlands and streams.
Air pollution through emissions from the vehicles and equipment used on the operational site.	Air quality.	Dust suppression will be conducted in areas with excessive dust emissions. Traffic will be restricted to demarcated areas. Traffic volumes and speeds within the operational site will be controlled. The prospecting will be undertaken such that the ambient air quality does not exceed the National Air Quality Standards	National Environmental Management Air Quality Act.	Throughout Site establishment	Minimise impact	The dust emissions are not to exceed the ambient air quality standards for rural areas
Increased noise levels.	Noise aspects	Limit the maximum speed to 30 km/h or less, subject to risk assessment. Less noisy equipment will be used, the equipment will be kept in good working order and	National Noise Control Regulations, SANS10103:2008 guidelines.	Throughout the Site establishment	Minimise impacts	The noise levels from the operational sites will be managed and levels will be within the regulated noise

		the equipment will be fitted with correct and appropriate noise abatement measures.				levels as set by the regulations
Visual impacts on the surrounding communities and road users from the site establishment.	Visual aspects. Neighbouring occupants	Temporary stockpiling of excavated material shall take place in demarcated areas. Stockpiles shall be positioned and sloped to create the least visual impact The prospecting area shall be enclosed to minimise visual disruption from machinery and equipment to be used Lighting will be conducted in a way that will decrease the impacts on visual aspects at night times.	Measures will be undertaken to ensure that the visual aspects from the site comply with the relevant visual standards and objectives including Municipal By Laws.	Throughout the duration of the Site establishment	Minimise impact	Ensure that all operations during the site establishment phase do not result in detrimental visual impacts on surrounding properties, communities and road
Impact from the influx of job seekers and employment of farm labourers.	Socio-Economic Aspect	Recruitment will not be undertaken on site. Farm labourers will not employed unless agreed to with the farm owners. Ensure that all labourers are trained and adhere to all health and safety standards	Measures taken will be in line with the company's recruitment policies. Occupational Health and Safety Act	Throughout Site establishment	Control	Comply with all national health and safety standards as well as adhere to the company's recruitment policies.
Excessive Waste generation	Soil and Visual impacts	Minimise littering on site and ensure that all labourers are trained in environmental awareness.	Waste Management Act	Throughout the Site establishment	Avoid	Avoid the excessive generation of general waste during this phase

		<p>Bins (sufficient number and capacity) to store general and hazardous produced on a daily basis shall be provided at each drilling site.</p> <p>The waste bins must be sealed to avoid, leakage of leachate material and must be waterproof so that rain water cannot enter into them.</p> <p>Bins shall be emptied on a weekly basis or if there is a nauseous smell coming from them or vectors are breeding within them.</p> <p>An integrated waste management approach shall be used, based on the principles of waste minimisation, reduction, re-use and recycling of materials.</p>				
OPERATION PHASE						
Exploration : Sampling, stockpiling, use of campsite and rehabilitation of the disturbed area						
Soils contamination, disruption of the Soil profile Disturbance of ecological	Soils, Land Use, Land Capability and natural vegetation	Ensure that drilling machinery construction vehicles should be are well maintain to avoid spillage of hydrocarbons, to avoid soil and ground water contamination	Rehabilitation in terms of MPRDA and NEMA principles. Operational control procedures (e.g. spill / leak handling).	Throughout operational phase	Control	Return as close as possible to pre-prospecting environment

systems through destruction of natural vegetation. Loss of Land use		<p>All oil spills will be remedied using approved methodologies</p> <p>Sumps and boreholes should be returned to pre-drilling conditions.</p> <p>All waste generated during drilling ties should be collected and disposed of at a suitable registered waste facility</p> <p>Retain all vegetation cover around drilling sites; the grass is to be mowed as part of site establishment.</p> <p>No waste material or litter shall be burnt or buried on site.</p> <p>Post operational phase, the land will be returned to its previous state in as much as possible.</p>	<p>Incident Reporting System;</p> <p>Environmental Inspections;</p> <p>Planned Maintenance System; water quantity (abstraction) monitoring; continued communication with surrounding landowners.</p>			
Establishment of campsite and drilling operation may result in contamination of surface water run-off by hydrocarbon fluids and sedimentation	Surface and water	<p>A buffer of 50m from watercourse and wetlands should be maintained during the all prospecting activities</p> <p>Excess water and mud from drilling sites should be stored in sumps that are sizeable enough to contain them</p> <p>Storm water generated around drilling sites should be diverted</p>	<p>Water management measures in compliance with NWA,(National Water Act) 1998 and GN 704, 1999.</p>	Throughout operational phase	Minimise	Maintain groundwater quality

		<p>away from natural water courses</p> <p>Ensure that prospecting activities do not impact negatively on the quality and quantity of groundwater used by surrounding occupants</p>				
Air pollution caused by vehicle emissions and dust	Air Quality	<p>Dust suppression should be practiced during the operational phase</p> <p>Construction vehicles should be regularly maintained in order to minimize greenhouse gas emission</p>	National Environmental Management Act Air Quality Act	Throughout the operational phase	Control and minimise	Maintain air quality
Wetland--destruction and loss of aquatic habitat	Aquatic and terrestrial components	<p>A buffer of 50m from wetlands and watercourses should be established during the operational phase.</p> <p>Remove or eradicate all alien invasive vegetation growing on stockpiles or in any area of the drilling site footprint.</p>	National Environmental Management Act National Environmental Management Waste Act National Water Act (NWA) National Environmental Management: Biodiversity Act (NEMBA)	Throughout the operational phase	Avoid	Protect aquatic and terrestrial ecosystems in as far as possible.

Noise impacts	Fauna and Adjacent landowners/ occupants	Provide employees with ear plugs Use equipment that produces minimal noise as far as possible Avoid working outside normal working hours (i.e. 08:00 to 17:00) and during weekends All machinery and equipment must be maintained in good working order, and fitted with approved and specified muffler systems. Compliance with local by-laws and regulations regarding the noise and hours of operation	National Noise Control Regulations SANS 10103:2008	Throughout the operational phase	Minimise	Minimal noise
Visual impacts	Neighbouring occupants	Visual screening methods could be used on site to reduce visual impacts. Lighting will be conducted in a manner that will reduce the visual impact at night times.	National Road Traffic Act	Throughout the operational phase	Control	Minimise visual impacts
Impacts on heritage features	Heritage features on-site	No heritage features must be destroyed or removed without a permit in terms of SAHRA. Should any heritage features or remains be discovered, work is to stop, the area is to be demarcated and a qualified Archaeologist is to be contacted	South African Heritage Resources Agency	Throughout the operational phase	Stop and avoid	Protect heritage features

		and contracted to evaluate the site and apply for the appropriate permit if needed. Once the permit has been obtained from SAHRA the archaeologist is then to supervise the removal or destruction of the item. Once it has been moved or destroyed works can continue.				
Health and safety impacts	Socio economic Employees and land occupants	Neighbouring occupants should be warned about any disruptions prior the commencement of the activity Ensure that health and safety measures are put in place to protect employees and neighbouring occupants Provide employees with personal protective Equipment (PPE)	Occupational Health and Safety Act	Throughout the operational phase	Avoid	Avoid health risks and injury incidents
Traffic impacts	Traffic movement	Vehicles that are moving to the site should only move during the day when the is less traffic in the road.	National Traffic Act	Throughout the operational phase	Avoid	Avoid traffic congestion
Introduction of weeds and alien invasive plants	Flora	All sites disturbed by site establishment activities must be monitored for exotic or invasive plant species and weeds.	NEM:BA CARA	Throughout the operational phase	Control and avoid	Control in order to avoid alien plants invasion

		<p>Site clearance will encourage the introduction of alien invasive plant species; The NK24 Enterprises Contractor should train the labourers on the removal and disposal of alien vegetation (Mechanical and Chemical).</p> <p>Chemical (herbicides) or mechanical removal may be used. If chemical methods are used the method of use is to be undertaken in accordance with manufacturer's specification for the weeds and this method and management is to be approved by the ECO</p> <p>Any eradicated exotic/invasive plant or weed vegetation must be removed from site and disposed of at an approved waste disposal facility or an alternative eradication method approved by the competent authority</p>				
Soil erosion	Soil	Erosion protection measures are to be undertaken. Daily erosion protection monitoring is to take place at each drilling site	Rehabilitation in terms of MPRDA and NEMA principles.	Throughout the operational phase	Control and Remedy	Ensure that soil erosion is minimised

		<p>prior to commencement of the daily works. If any erosion is identified it is to be remediated prior to the commencement of works.</p> <p>Daily erosion checks are to be undertaken on the sump area. If cracks or erosion is identified the side walls are to be battered back to ensure a safe environment for all.</p> <p>Drainage channels must be kept free draining at all times.</p> <p>No pooling of water will be allowed, drainage diversions must be provided to prevent scour of the site, and this is also to direct water away from the impacted area to prevent erosion.</p>	<p>General implementation of activities taking Biodiversity Act and its guidelines into account</p>			
Waste generation	Soil and Visual impacts	<p>Minimise littering on site and ensure that all labourers are trained in environmental awareness.</p> <p>Bins (sufficient number and capacity) to store general and hazardous produced on a daily basis shall be provided at each drilling site.</p>	<p>National Environmental Management: Waste Management Act</p>	Throughout the operational phase	Avoid	Avoid the excessive generation of general waste during this phase

		<p>The bins are to be vandal proof, sealed bins that cannot leak leachate material and waterproof that rain water cannot enter into them.</p> <p>Bins shall be emptied on a weekly basis or if there is a nauseous smell coming from them or vectors are breeding within them.</p> <p>An integrated waste management approach shall be used, based on the principles of waste minimisation, reduction, re-use and recycling of materials.</p>				
DECOMMISSIONING PHASE						
Removal of temporary infrastructure and final rehabilitation of disturbed areas						
Compaction and contamination of soils within the rehabilitation site.	Soil	<p>All vehicles and machinery used at the rehabilitation site must be kept in good working order.</p> <p>No repairs of vehicles or machinery will be conducted at the rehabilitation site unless it is emergency repairs, which will be conducted on protected ground.</p>	<p>Rehabilitation in terms of MPRDA and NEMA principles.</p> <p>General implementation of activities taking Biodiversity Act and its guidelines into account.</p>	Throughout the Decommissioning Phase	Avoid	<p>Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in consultation with landowners.</p>

		Movement of vehicles and machinery should be limited to demarcated routes, which will be rehabilitated when no longer in use				
Re-instatement of soil productivity, land capability, land use and topographical patterns.	Soil	Ensure that the soil in the vicinity of the rehabilitation site is not detrimentally impacted. All the waste from demolition must be collected from site for disposal. Once the area is shaped correctly the compacted areas are to be ripped at 300mm and topsoil is to be replaced. Areas that have not had topsoil striped are to be monitored for alien plant growth and vegetation recovery. If after a year the vegetation has not recovered the area is to be hand seeded with a Highveld indigenous grass	Rehabilitation in terms of MPRDA and NEMA principles. General implementation of activities taking Biodiversity Act and its guidelines into account.	Throughout the Decommissioning Phase	Avoid	Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in consultation with landowners.
Pollution of surface water environment	Surface water	Ensure that the rehabilitation of the site does not have detrimental impacts on the surface water environment.	The surface water leaving the rehabilitation site will comply with the Department of Water and Sanitation target	Throughout the Decommissioning Phase	Avoid	Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in

			of water quality parameters.			consultation with landowners.
Potential injuries to fauna and residents due to Geological instability.	Geology and social	Ensure that all drill holes have been refilled with rocks and or cement to avoid potential injuries to fauna and residents.	Rehabilitation in terms of MPRDA and NEMA principles Health and safety Act	Decommissioning Phase	Avoid	Rehabilitation of drilling sites shall be undertaken in line with closure objective
Air pollution from rehabilitation site.	Air Quality	Where necessary, wet suppression will be conducted at areas with excessive dust emissions. Vehicles and machinery will be well maintained. The traffic volumes and speed within the rehabilitation site will be controlled	National Environmental Management Air Quality Act	Throughout the Decommissioning Phase	Avoid	Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in consultation with landowners.
Migration of animal life due to disturbance caused proposed project	Fauna	Use sites with most degraded environment for the site development. Trapping and killing of fauna will be prohibited at the prospecting site.	General implementation of activities taking Biodiversity Act and its guidelines into account.	During Site establishment	Control through visual monitoring and inspection	Minimise impact on fauna
Generated noise from the rehabilitation site	Noise	Smaller or less disruptive equipment should, where possible, be used when working near receptors. Equipment will be well maintained and fitted with the	National Noise Control Regulations, SANS10103:2008 guidelines.	Throughout the Decommissioning Phase	Avoid	Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in

		correct and appropriate noise abatement measures.				consultation with landowners. Ensure that the rehabilitation activities do not have detrimental impacts on people.
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5. FINANCIAL PROVISION

5.1 Determination of the amount of Financial Provision

A total of R 326 159.00 is required to both manage and rehabilitate the environment in respect of rehabilitation. NK24 Enterprises must update and review the quantum of the financial provision annually.

Table 15: Calculation of the Quantum

CALCULATION OF THE QUANTUM							
Applicant: NK 24 ENTERPRISES (PTY) LTD		REF: KZN30/5/1/1/2/1141PR					
Evaluators: LUSHIKA SERVICES (PTY) LTD							
No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	14,71	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	204,96	1	1	0
2 (B)	Demolition of reinforced concrete buildings and structures	m2	0	302,05	1	1	0
3	Rehabilitation of access roads	m2	150	36,68	1	1	5502
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	355,99	1	1	0
4 (B)	Demolition and rehabilitation of non-electrified railway lines	m	0	194,18	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	408,93	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	214 888,54	1	1	0
7	Sealing of shafts adits and inclines	m3	0	110,03	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	143 259,03	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	178 426,53	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	518 235,21	1	1	0
9	Rehabilitation of subsided areas	ha	0	119 957,86	1	1	0
10	General surface rehabilitation	ha	2	113 485,31	1	1	226970,62
11	River diversions	ha	0	113 485,31	1	1	0
12	Fencing	m	0	126,45	1	1	0
13	Water management	ha	0	43 150,31	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	15 102,61	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		232472,62
1	Preliminary and General		27896,7144	weighting factor 2			27896,7144
					1		
2	Contingencies		23247,262				23247,262
					Subtotal 2		283616,60
					VAT (15%)		42542,49
					Grand Total		326159

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

For a prospecting operation such as this, the primary closure and environmental objectives are to:

- Minimise the area to be disturbed and to ensure that the areas disturbed during the prospecting activities are rehabilitated and stable, as per the commitments made in this EMP.
- Sustain the pre-prospecting land use.

- To record and communicate the results of the monitoring programme during decommissioning to the participating stakeholders.

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

The environmental objectives in relation to closure will be consulted with the farmers and affected parties. It will be explained that should the prospecting yield negative results, then the end use for area will revert to its pre-prospecting land use (minutes to be incorporated on the final report). The end-use of the area will therefore not be changed by the prospecting operations.

5.4 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.

Table 16: Rehabilitation Plan

ASPECT/ IMPACT	REHABILITATION MEASURE	MONITORING FREQUENCY & RESPONSIBILITY
Removal of site structures	Clear and completely remove from site all site plant equipment, storage containers, signage, temporary services, fixtures and any other temporary works; and Ensure that all access roads utilised during site establishment (which are not earmarked for closure and rehabilitation) are returned (as far as possible) to their state prior to site establishment.	Once-off; NK Enterprises
Vegetation clearing/Replanting	Remove any emerging alien and invasive vegetation to prevent further establishment; All planting work is to be undertaken by suitably qualified personnel making use of the appropriate equipment; Transplant during the winter (between April and September); and Plant indigenous plants to minimise the spread of alien and invasive vegetation.	When re-vegetation is done and in blooming season; NK24 Enterprises. or sub-contractor appointed
Topsoil replacement	Replace and redistribute stockpiled topsoil together with herbaceous vegetation, overlying grass and other fine organic matter in all disturbed areas of the prospecting site, including temporary access routes and roads. Replace topsoil to the original depth (i.e. as much as was removed prior to site establishment).	Once-off; NK24 Enterprises.

	<p>Prohibiting the use of topsoil suspected to be contaminated with the seed of alien vegetation. Alternatively, the soil is to be sprayed with specified herbicides.</p> <p>Where local soil has poor drainage, broken rock (Approx. 75 mm in diameter) must be placed to a depth of 150mm at the bottom of the planting hole prior to planting and backfilling with approved plant medium mixture.</p>	
Waste and Rubble Removal	Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site.	Once-Off; NK24 Enterprises.
Solid and Hazardous Waste	<p>Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site.</p> <p>Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner.</p> <p>Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment.</p> <p>Dispose of all visible remains of excess cement and concrete after the completion of tasks. Dispose of in the approved manner (solid waste concrete may be treated as inert rubble, but wet cement and liquid slurry, as well as cement powder must be treated as hazardous waste).</p>	Once-off; NK24 Enterprises.
Erosion protection	<p>Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the operational site.</p> <p>Retain shrubbery and grass species wherever possible.</p> <p>Perform regular monitoring and maintenance of erosion control measures.</p>	After rainfall events, NK24 Enterprises or sub-contractor appointed

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

NK24 Enterprises (Pty) Ltd is required to make the prescribed financial provision for the rehabilitation or management of negative environmental impacts. If NK24 Enterprises fails to rehabilitate or manage any negative impact on the environment, the DMR may, upon written notice to the company, use all or part of the financial provision to rehabilitate or manage the negative environmental impact in question. NK24 Enterprises will specify that the appointed contractor is required to comply with all the environmental measures specified in the EMP. This will include avoiding unnecessary disturbance of natural vegetation and the rehabilitation of each drill site, immediately after drilling has been completed. All tracks to the drill sites must be rehabilitated at the end of the prospecting programme. The financial provision provides for the final checking of all sites before site clearance.

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

The quantum of financial provision for the rehabilitation of negative environmental impact was determined in accordance with the National Environmental Management Act, 1998 (Act No.107 of 1998): Regulation (GNR 940) pertaining to the financial provision for the rehabilitation, closure and post closure of prospecting exploration, mining or production operations (DEA,2014).

A total amount of R 326 159.00 will be set aside for rehabilitation purposes as estimated in line with the prospecting work programme.

5.6.1 Confirm that the financial provision will be provided as determined.

NK24 Enterprises (Pty) Ltd undertakes to provide financial provision for the implementation of the rehabilitation plan.

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

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

Table 17: Mechanism for monitoring compliance

SOURCE ACTIVITY MONITORING AND REPORTING	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Site Establishment.	<ul style="list-style-type: none"> • Dust • Noise • removal of vegetation • disruption of animal life 	<ul style="list-style-type: none"> • Daily dust suppression • Monthly dust bucket monitoring 	Geologist and Project Manager	Daily and monthly

	<ul style="list-style-type: none"> • habitat destruction • loss of geology • change in topography 			
Traffic management	<ul style="list-style-type: none"> • Dust • noise • animal life disruption • Traffic Congestion 	<ul style="list-style-type: none"> • Monitor dust fallout levels monthly and • Noise level • Monitor the time frames in which heavy vehicles travel on main roads and national roads. 	Geologist and Project Manager	Monthly and when necessary
Ablution Facility	<ul style="list-style-type: none"> • Land contamination • Water contamination • health hazard 	<ul style="list-style-type: none"> • service the toilet facility monitors water quality 	Geologist and Project Manager	When necessary and monthly
Existing/Access Routes	<ul style="list-style-type: none"> • dust • animal life disruption • Monitor dust. 	<ul style="list-style-type: none"> • Monitor dust fall out levels • Monitor speed on the road 	Geologist and Project Manager	Monthly and when necessary

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

Regular monitoring of all the environmental management procedures and mitigation measures shall be carried out by NK24 Enterprises in order to ensure that the provisions of this EMP are adhered to. Formal monitoring and performance assessment of the EMP will be undertaken on a monthly basis.

7. ENVIRONMENTAL AWARENESS

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

The following Environmental Awareness Training will be implemented by NK24 Enterprises in order to inform employees and contractors of the environmental risk that may result from their work, or the risk of their interaction with the sensitive environment. The training will be conducted as part of the induction process for all new employees

(including contractors) that will perform work in terms of the proposed activities. Proof of all training provided must be kept on-site. The Environmental Awareness Training will, as a minimum cover the following topics.

Table 18: Environmental Awareness Plan

Surface and groundwater	<ul style="list-style-type: none"> • Risks to surface and groundwater, e.g. fuel and chemical handling and further risks of erosion or damage to riparian vegetation. • How incidents should be reported, and emergency requirements. • The importance to reuse water and to prevent spillages.
Cultural Heritage	<ul style="list-style-type: none"> • To respect all cultures and believes. • How to report any sightings of heritage importance as identified during operation activities (e.g. fossils)
Fauna	<ul style="list-style-type: none"> • Overview of the fauna found on/around site and the uniqueness thereof. • Mitigation measures that all contractors and employees need to abide by. • No contractor or personnel allowed to catch or kill any species, and how any sightings should be reported if further actions are required (e.g. to catch and release).
Flora	<ul style="list-style-type: none"> • Overview of the flora diversity on site, and the rare and endangered nature thereof. • Measures taken by the company to protect species. • No contractor or personnel allowed to remove, harvest or destroy any flora species unless clearly instructed based on the operational plans.
Waste management	<ul style="list-style-type: none"> • Measures to avoid waste generation and to participate in waste minimisation/reduction.
Traffic strategies	<ul style="list-style-type: none"> • To stay on designated roads and not create new roads on areas that will not be used for prospecting purposes. • To be aware of the fauna species and to be on the lookout and avoid collisions.
Emergency Preparedness and Response	<ul style="list-style-type: none"> • How to report any emergency or incident. • Incident and emergency reporting requirements
General rules and conduct	<ul style="list-style-type: none"> • Respect for the sensitive environment. • Do not litter.

	<ul style="list-style-type: none">• Respect for each other and for different cultures.• Safety and health requirements
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7.2 Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment

All employees must be provided with environmental awareness training to inform them of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. Employees should be provided with environmental awareness training before prospecting operations start. All new employees should be provided with environmental awareness training Induction courses will be provided to all employees by a reputable trainer.

8. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

No risks have been identified other than those that have been identified within this document, these are to be communicated to all contractors and all contractors are to be provided with a copy of the approved EMP. Environmental training needs for each section should be identified and addressed to ensure environmental management is part of day to day operations. The environmental risk responsibilities guide the training requirements of each individual. The responsibility for each level of management according to the Integrated Risk Management and ISO14001 role descriptions are. Environmental training recommended for the different levels of management guide the training needs identification process. This is a minimum guideline, and any additional training can be added where section specific issues or high-risk items require training and awareness It is the responsibility of the line manager to ensure environmental training needs for individual staff members are identified, agreed to, facilitated and tracked.

9. UNDERTAKING

a) The EAP herewith confirms

- i. the correctness of the information provided in the reports
- ii. the inclusion of comments and inputs from stakeholders and I&APs ;
- iii. the inclusion of inputs and recommendations from the specialist reports where relevant; and
- iv. that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. Parties are correctly reflected herein.



Signature of the environmental assessment practitioner:

LUSHIKA SERVICES (PTY) LTD

Name of company:

APRIL 2022

Date:

-END-