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**DRAFT BASIC ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME
FOR THE PROPOSED PROSPECTING RIGHT APPLICATION FOR CHROME, IRON,
MANGANESE, PLATINUM GROUP METALS (PGMs) AND GENERAL SAND ON THE
FARM ZANDFONTEIN 476 KQ SITUATED IN BELA-BELA MAGISTERIAL DISTRICT,
LIMPOPO PROVINCE.**

APPLICANT: ISOSCELE CONSTRUCTION AND PROJECTS (PTY) LTD.

DATE: SEPTEMBER 2019

REF NO.: LP 30/5/1/1/2/13266 PR.

COMMENTING PERIOD: 10 OCTOBER– 11 NOVEMBER 2019



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| Registration Number: 2015/432441/07



mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DRAFT BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATION 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: LP 30/5/1/1/2/13266 PR

This Draft Basic Assessment Report (DBAR) and Environmental Management Programme (EMPr) is being submitted to the Department of Mineral Resources (DMR) in support of the Prospecting Right Application lodged by Isoscele Construction and Projects (Pty) Ltd.

i. 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.

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

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

Draft Basic Assessment and Environmental Management Programme for the proposed prospecting right application for Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand on the Farm Zandfontein 476 KQ in Bela- Bela Magisterial District, Limpopo Province.

- (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
- (iii) identify residual risks that need to be managed and monitored.



Executive Summary

Isoscele Construction and Projects (Pty) Ltd has applied for an Environmental Authorisation for the proposed prospecting activities for Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand on Farm Zandfontein 476 KQ situated in Bela-Bela Magisterial District, Limpopo Province.


The application has been lodged in terms of Regulation 16 of the National Environmental Management Act (Act 107 of 1998) (NEMA): Environmental Impact Assessment (EIA) Regulations, 2014 and Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). In terms of the NEMA (Act 107 of 1998). EIA regulations of 2014 (amended April 2017), the proposed prospecting activity triggers Activity 20 and 22 of Listing Notice 1 GNR 327 and the applicant cannot proceed without an Environmental Authorisation.

Nkhophela Holdings (Pty) Ltd has been appointed by Isoscele Construction and Projects (Pty) Ltd as an independent Environmental Assessment Practitioner to undertake the Environmental Impact Assessment for the proposed prospecting right project. The purpose of the study is to identify and assess all the possible impacts that may arise from the implementation of the proposed project and also to find the most effective way of enhancing environmental benefits and mitigating potential impacts to encourage sustainable development in the area.

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 entail percussion and diamond drilling.

The potential risks and key issues identified were based on consultation with I&APs, internal process based on similar projects and the current state of the environment of the site. A description of the biophysical and socio-economic 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. A brief description of the potential aspects that will be impacted include the following:

- Policy requirements
- Air quality



Draft Basic Assessment and Environmental Management Programme for the proposed prospecting right application for Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand on the Farm Zandfontein 476 KQ in Bela- Bela Magisterial District, Limpopo Province.

- Fauna
- Flora
- Waste
- Water Resources
- Geology
- Soils
- Traffic
- Cultural and Heritage
- Socio-economic

This document (DBAR) and the Environmental Management Programme (EMPr), was compiled in terms of the EIA Regulations of 2014 (amended, April 2017).

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Acronyms

CA – Competent Authority

CARA – Conservation of Agricultural Resources Act

DAFF- Department of Agriculture, Forestry and Fisheries

DBAR – Draft Basic Assessment Report

DMR - Department of Mineral Resources

EIA - Environmental Impact Assessment

EMPr - Environmental Management Programme

GNR – Government Notice Regulation

GVA – Gross Value Added

I&AP - Interested and Affected Party

IDP – Integrated Development Plan

LIHRA – Limpopo Heritage Resources Authority

MPRDA - Mineral and Petroleum Resources Development

NDP – National Development Plan

NEMA National Environmental Management Act

NEM:AQA – National Environmental Management Air Quality Act

NEM:BA – National Environmental Management Biodiversity Act

NEM:WMA – National Environmental Management Waste Management Act

PGMs – Platinum Group Metals

SAHRA South African Heritage Resources Agency



PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. Contact Person and correspondence address

1.1. Details of the EAP

Name of the Practitioner: Tokollo Kobe

Cell No.: +27 (073) 284 5142

Fax No. : 086 565 5359

E-mail address: tokollo.kobe@nkhopheleh.co.za

1.2. Expertise of the EAP

1.2.1. The qualifications of the EAP

Tokollo Kobe

Bachelor of Environmental Sciences; Bachelor of Environmental Sciences honours in Geography

(EAP CVs has been attached as **Appendix 1**)

1.2.2. Summary of the EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure)

Ms Tokollo Kobe holds a Bachelor of Environmental Sciences Honours in Geography from the University of Venda and works as an Environmental Assessment Practitioner at Nkhophele Holdings (NH). She has over 2 years of working experience as an Environmental Assessment Practitioner. She was previously employed as a Junior Environmental Assessment Practitioner at Tshikovha Green and Climate Change Advocates prior to being appointed at Nkhophele Holdings (NH).



She has vast understanding of the National Environmental Management Act (Act 107 of 1998) Occupational Health and Safety Act (Act No. 85 of 1993) and other associated legislation. Up to date, Tokollo has experience in conducting Environmental Assessments, Environmental Auditing, Stakeholders engagements, Waste Management Strategies and Plans and has been involved in over 10 projects ranging from housing, mining, agricultural EIA etc.

2. Location of the overall Activity

Table 1: Location details of the site.

Farm Name:	Farm Zandfontein 476 KQ.
Application area (Ha)	Approximately 2 099 ha
Magisterial district:	Bela-Bela Magisterial District
Distance and direction from nearest town	Approximately 10 km North East of Rooiberg Town (Limpopo)
21-digit Surveyor General Code for each farm portion	T0KQ00000000047600012
	T0KQ00000000047600003
	T0KQ00000000047600005
	T0KQ00000000047600009



	T0KQ000000000476000008
	T0KQ000000000476000015

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



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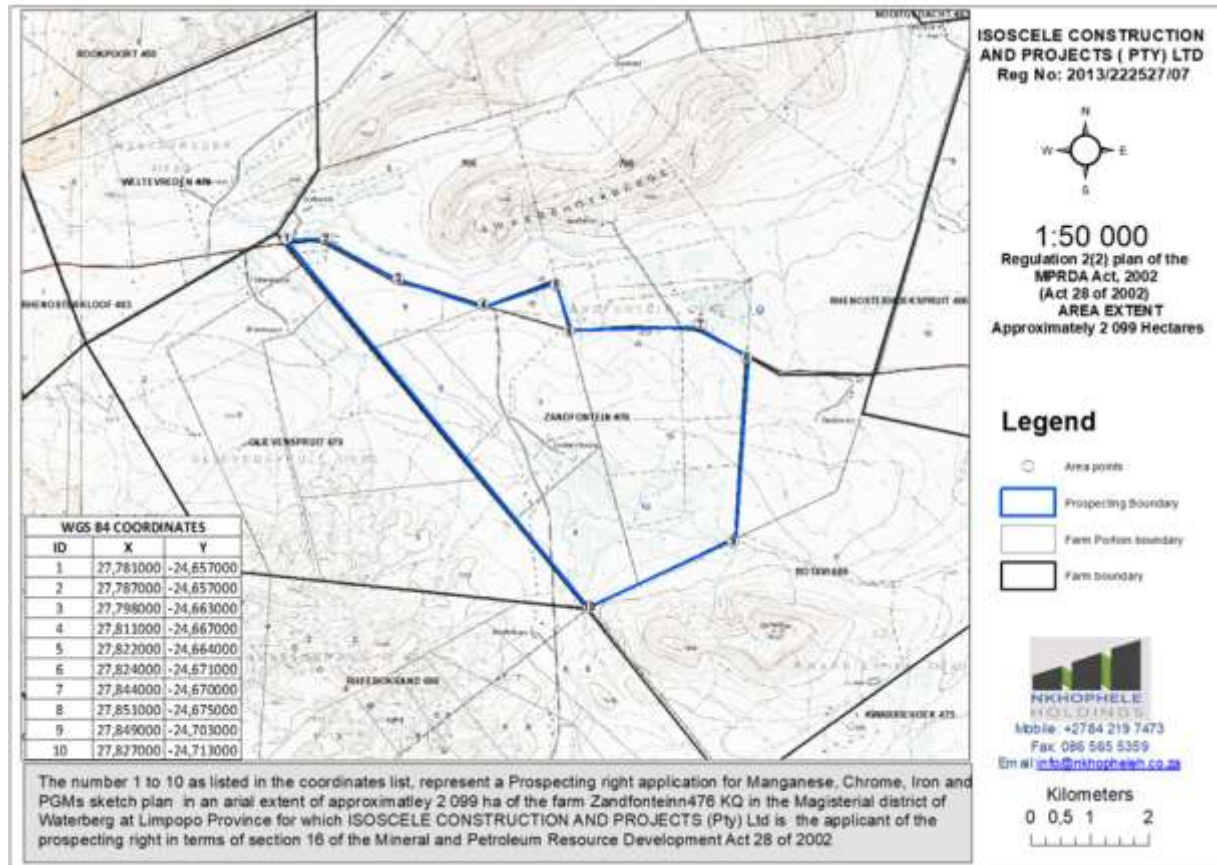


Figure 1: Locality map of the site

Locality map has been attached as **Appendix 2A**



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

Isoscele Construction and Projects (Pty) Ltd intends to prospect for Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand for a period of 5 years. The proposed prospecting will include both invasive and non-invasive activities.

The description of the prospecting method to be implemented is as follows.

Prospecting Work

The aim of the prospecting work programme is to identify and evaluate the existence of Manganese, Iron Chrome and PGMs minerals in the area under application. The prospecting work programme will be designed in phases, each phase conditional on the success of the previous phase. The phased exploration program is described below and summarized in Table 1.

Phase 1: Data Acquisition and Desktop Study: A desktop study of all available data for the area will be performed in order to accumulate as much regional and historical data around the area as possible. This includes published geological reports, infrastructure mapping, satellite imagery and existing geophysical information if available. Mineral deposits will be targeted.

Phase 2: Target Generation and Ground Truthing: Should the initial results of the desktop study be encouraging; further data will be generated through airborne or ground geophysics. Targets generated by geophysics and/or historical information will be investigated on the ground and subject to more detailed target-specific ground geophysics for the presence of Manganese, Iron Chrome and PGMs content. If any of the exploration targets give a positive result, a drilling program will be undertaken in order to identify the causative body for the geophysical targets.

Phase 3 and phase 4: Percussion drilling, Diamond drilling, hole rehabilitation and Reporting: Targets that have been prioritized through detailed ground geophysics will be tested by initial diamond or percussion drilling. If Manganese, Iron Chrome and PGMs is intersected, samples of Manganese, Iron Chrome and PGMs will be taken from the drilled core. These will be analyzed to determine the quality of the Marble/Limestone. Dependent on the mineral quality results, further diamond drilling and mineral sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from the samples taken would be followed by more detailed diamonds drilling and geological modeling to assess potential resource tonnage. All drilled holes will be rehabilitated. Information gathered during these phases would be used in the decision to embark on additional prospecting and evaluation activities that will satisfy the SAMREC and SAMVAL standards for a mineral resource statement.

Phase 5: Closure or conversion of prospecting right: Feasibility Study, Financial Studies, Market Research, Mine Planning, Financial studies and Market susceptibility study and Mine planning



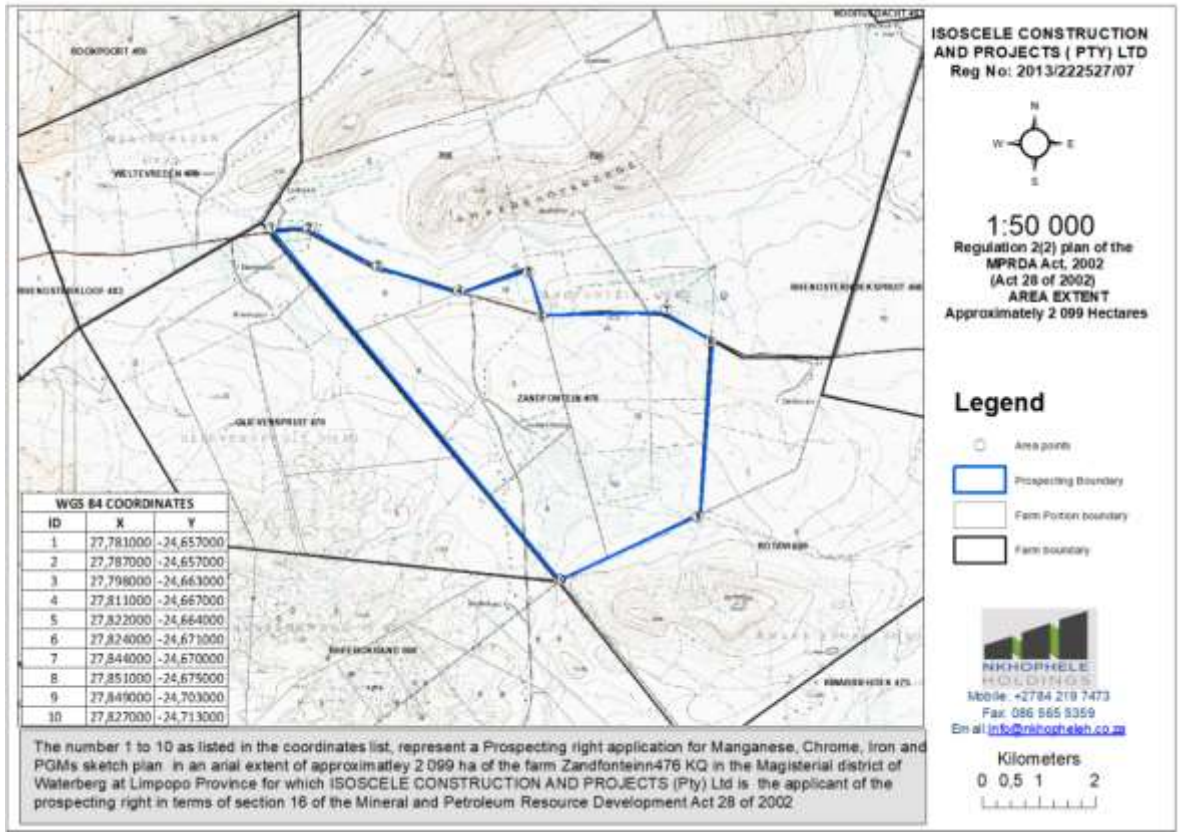


Figure 2: Regulation 2.2 sketch plan for the proposed area.

Regulation 2.2 sketch plan has been attached as Appendix 2B



3.1 Listed and specified activities

Section 16 of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended by Section 12 of the MPRDA, 2008 (Act No. 49 of 2008) states that an Environmental Authorization is required for a Prospecting Right and that the applicant must notify and consult with Interested and Affected Parties (I&APs). In terms of EIA Regulations 2014, published in Government Notice (GN) R324, R325, R327 as amended on 7 April 2017 under section 24(5) of the National Environmental Management Act (NEMA), the application for a prospecting right is subjected to an application for Environmental Authorization. The proposed prospecting activities trigger the following activity(s) under GNR 327 which requires a Basic Assessment Report (BAR) and Environmental Management Programme (EMPr):



Table 2: Summary of NEMA Listed Activities being applied for.

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
Prospecting	2 099 ha	X	GNR 327, Listing Notice 1, Activity 20
20 boreholes will be drilled 1 drill hole site = 10 m x15 m Total 20 drilling site= 3 000 m ² (0,3 ha)	3000 m ²	X	GNR 327, Listing Notice 1, Activity 20
Site camp	0 m ²		N/A



Sampling and storage	200 m ²		N/A
Ablution	5 m ²	X	GNR 327, Listing Notice 1, Activity 20
Access road	0 m ²		N/A
Waste generated, stored and disposed.	Less than 2m ³		N/A
Rehabilitation of prospected area and decommissioning of activities this includes: borehole capping; re-spreading of stockpiles covering cleared sites; and removal of temporary site facilities, water tanks, mobile toilets, waste and all machineries.	0.3 ha (3000 m ²)	X	GNR 327, Listing Notice 1, Activity 22



3.2 Description of the activities to be undertaken

Isoscele Construction and Projects (Pty) Ltd intends to undertake prospecting of Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand on Farm Zandfontein 476 KQ situated in Bela-Bela Magisterial District, Limpopo Province. The prospecting activities are expected to be undertaken for a period of five (5) years.

3.2.1 The prospecting method or methods to be implemented

3.2.1.1 Description of planned non-invasive activities

Data Acquisition and Desktop Study: A desktop study of all available data for the area will be performed in order to accumulate as much regional and historical data around the area as possible. This includes published geological reports, infrastructure mapping, satellite imagery and existing geophysical information if available Manganese, Iron Chrome and PGMs deposits will be targeted. No disturbance of vegetation is envisaged.

Ground and/or airborne magnetic survey over prospecting area. The area will be flown with an airborne gradient magnetic survey in conjunction with other adjacent prospecting rights applied for. If the survey area is too small for a cost-effective airborne survey, then ground magnetics will be carried out on parallel lines spaced at 100m across the prospecting area. Minimal disturbance of vegetation and wildlife is envisaged.

Target-specific ground geophysics (magnetics, electromagnetics and gravity). This will entail detailed ground geophysical surveys being carried out using handheld equipment on parallel lines spaced at an appropriate interval based on the dimensions of the target being investigated. Minimal disturbance of vegetation and wildlife is envisaged.

3.2.1.2 Description of planned invasive activities:

Percussion (Reverse circulation) and diamond drilling: If carried out, drilling may necessitate the establishment of access tracks and minor bush clearing for establishment of drill pads. The need for drilling can only be established once phase 1 and 2 of the Prospecting Works Program has been completed. 20 boreholes are intended to be drilled.

3.2.1.3 Description of pre- feasibility Studies

Initial geological modelling will be carried out on delineation drilling information if any potential ore bodies are discovered.

Environmental Impact Assessment: An assessment of the possible positive or negative impact that a proposed project may have on the environment, together consisting of the natural, social and economic aspects.

The purpose of the assessment is to ensure that decision makers consider the ensuing environmental impacts when deciding whether to proceed with a project. The International Association for Impact Assessment (IAIA) defines an environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made." EIAs are unique in that they do not require adherence to a predetermined environmental outcome, but rather they require decision makers to account for environmental values in their decisions and to justify those decisions in light of detailed environmental studies and public comments on the potential environmental impacts of the proposal.

4.2.1.4 The Prospecting Phases to be implemented

These intended prospecting activities will be conducted in phases using the aforementioned methods. The intended phases in sequence are indicated in the Table 3 below.

Table 3: Planned Prospecting Phases

Phase	Activity (what are the activities that are planned to achieve optimal prospecting)	Skill(s) required (refers to the competent personnel that will be employed to achieve the required results)	Timeframe (in months) for the activity)	Outcome (What is the expected deliverable, e.g. Geological report, analytical results, feasibility study, etc.)	Timeframe for outcome (deadline for the expected outcome to be delivered)	What technical expert will sign off on the outcome? (e.g. geologist, mining engineer, surveyor, economist, etc)
Phase 1: From approval to end of 2 months	Data Acquisition: acquire historical geological/exploration data over area applied for and surrounds	Geologist	2 months	Compile data. Refine exploration strategy.	2 months	Geologist



<p>Phase 2: From 2 months to months 7</p>	<p>Ground and or aerial magnetic survey over prospecting area</p>	<p>Geologists and geophysicists</p>	<p>3 months</p>	<p>Define and prioritize exploration targets for detailed follow up.</p>	<p>5 months</p>	<p>Geologist</p>
	<p>Anomaly-specific ground geophysics</p>	<p>Geologists and geophysicists</p>	<p>2 months</p>	<p>Detailed follow up on targets to establish which targets warrant percussion drilling and diamond</p>		



Phase 3: From 7 months to 30.	Percussion Drilling (5 boreholes) and Manganese, Iron Manganese, Iron Manganese, Iron Chrome and PGMs sampling. Hole rehabilitation	Geologists and Driller	8 months	Confirm which targets are due to the presence of Marble/Limestone.	23 months	Geologist and Drilling contractor
	Manganese, Iron Chrome and PGMs sample analysis	Laboratory Analysts	2 months	Test Manganese, Iron Chrome and PGMs quality and estimate potential grade		Laboratory Analysts
	Initial diamond drilling for Manganese, Iron Chrome and PGMs (8		11 months	Delineate and model ore body		

	<p>bore holes). Detailed Manganese, Iron Chrome and PGMs sampling to delineate areas of Manganese, Iron Chrome and PGMs concentration. Hole rehabilitation</p> <p>Manganese, Iron Chrome and PGMs sample analysis</p>	<p>Geologists and Driller</p> <p>Laboratory Analysts</p>	<p>2 months</p>	<p>Test Manganese, Iron Chrome and PGMs quality and estimate potential grade</p>		
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<p>Phase 4: From 30 months to 53.</p>	<p>Detailed diamond drilling for Manganese, Iron Chrome and PGMs (7 bore holes). Detailed Manganese, Iron Chrome and PGMs sampling to delineate areas of Manganese, Iron Chrome and PGMs concentration. Hole rehabilitation</p>	<p>Geotechnical engineer, Geologists and Driller</p>	<p>20 months</p>	<p>Delineate and model ore body</p>	<p>23 months</p>	<p>Geologist Drilling contractor</p>
	<p>Collating of all exploration data and results to compile a Competent Persons Report</p>	<p>Geologist</p>	<p>3 months</p>	<p>To provide a mineral resource and mineral reserve statement according to the SAMREC and SAMVAL code</p>		



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<p>Phase 5: From 53 months to 60.</p>	<p>Feasibility study, Financial study, Market research</p>	<p>Geologist Research and Developer</p>	<p>7 months</p>	<p>An investigation will be carried out concerning the proposed project to determine its chances of operating, the resources and financial requirements.</p>	<p>7 months</p>	<p>Geologist Research and Developer</p>
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4. Policy and Legislative Context

Table 4: Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?
Constitution of the Republic of South Africa, 1996	During Operational and Decommissioning phase of the proposed development.	<p>Section 24 of the Constitution of the Republic of South Africa provides the overarching environmental legislative framework for environmental management. According to this section:</p> <p>“Everyone has the right: to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that - Prevent pollution and ecological degradation; promote conservation; and Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>

<p>National Environmental Management Act, 1998 (Act No. 107 of 1998)</p>	<p>During Planning phase of the project, the proposed development is listed in GNR 327 Listing Notices 1. Activities number 20 and 22 triggered.</p>	<p>Isoscele Construction and Projects (Pty) Ltd has appointed Nkhophela Holdings (Pty) Ltd to conduct Environmental Impact Assessment for the proposed project in line with Impact Assessment Regulations of the National Environmental Management Act 107 of 1998 as amended in 2017.</p> <p>Submission of Basic Assessment Report and Environmental Management Programme Report to the Competent Authority is required by NEMA</p>
<p>Mineral and Petroleum Resources Development Act</p>	<p>The prospecting right activities requires the prospecting right from the Department of Mineral Resources</p>	<p>A prospecting right application has been lodged with and accepted by the DMR as the competent Authority.</p>
<p>National Heritage Resources Act (Act No 25 of 1999)</p>	<p>All cultural and heritage resources must be protected if or when encountered.</p>	<p>A permit may be required if identified cultural/heritage sites on the proposed site will be disturbed or destroyed as a result of the prospecting activities.</p>



National Environmental Management: Air Quality Act (Act No 39 of 2004)	Minimal Dust from moving vehicles and drilling can be generated.	This Act governs the standards associated with dust generation which are used in Impact Assessments to regulate the concentration of particulates that can be tolerated without the deterioration of environmental aspects.
Occupational Health and Safety Act (No 85 Of 1993)	During construction and operational phase, contractors and employees must adhere to the requirements of this legislation for a safe working environment.	The Act provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of machinery; the protection of persons other than persons at work, against hazards to health and safety arising out of or in connection with the activities of persons at work.
National Environmental Management: Biodiversity Act (Act No 10 of 2004)	The prospecting activities may encounter critical endangered species, endangered or vulnerable.	The Act provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), and vulnerable (VU) or protected.



<p>National Forests Act (Act No. 84 of 1998)</p>	<p>During the site establishment, there may be a clearance of vegetation which includes trees.</p>	<p>In terms of S5(1) no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree.</p>
<p>National Road Traffic Act (Act No 93 of 1996)</p>	<p>The technical recommendations for highways (TRH 11): “Draft Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for other Events on Public Roads” outline the rules and conditions which apply to the transport of abnormal loads and vehicles on public roads and the detailed procedures to be followed in applying for exemption permits are described and discussed.</p> <p>Legal axle load limits and the restrictions imposed on abnormally heavy loads are discussed in relation to the damaging effect on road pavements, bridges, and culverts.</p>	<p>An abnormal load/vehicle permit may be required for the drill rig to be taken to the site. These include route clearances and permits will be required for vehicles carrying abnormally heavy or abnormally dimensioned loads.</p>



	<p>The general conditions, limitations, and escort requirements for abnormally dimensioned loads and vehicles are also discussed and reference is made to speed restrictions, power/mass ratio, mass distribution, and general operating conditions for abnormal loads and vehicles. Provision is also made for the granting of permits for all other exemptions from the requirements of the National Road Traffic Act and the relevant Regulations.</p>	
<p>Mine Health and Safety Act ,1996 (No. 29 of 1996</p>	<p>The mine Health and Safety Act, 1996 (No, 29 of 1996) provides for the protection of the health and safety of employees and other persons at mines and, for that purpose- promote culture of health and safety</p>	<p>The applicant will be required to meet the requirements of the Mine Health and Safety Act during invasive and non-invasive prospecting phases.</p>
<p>National Water Act (Act No. 36 of 1998)</p>	<p>The proposed activities require minimum use of water however it will not consume enough water to trigger a water use license application.</p>	<p>No water use license is required for this application. Any water required for drilling activities will be brought in via a mobile water tanker.</p>



National Environmental Management: Waste Act, Act 59 of 2008	Management measures environmental awareness plan.	The generation of potential waste will be minimised by ensuring that employees of the drilling contractor are subjected to the appropriate environmental awareness training before commencement of drilling. All waste generated during drilling activities will be disposed of in a responsible legal manner.
Conservation of Agricultural Resources Act, 1983	The overall Prospecting Activities.	The project must promote the conservation of soil, water and vegetation.
Section 34 of the Local Government: Municipal Systems Act, 2000 (ACT 32 of 2000)	The overall prospecting activities.	Municipal System Act compels municipalities to draw up the IDP's as a singular inclusive and strategic development plan. In terms of section 26 of the MSA, A municipality produces an IDP every five year.
National Development Plan 2030.	The overall prospecting activities.	The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities,





		enhancing the capacity of the state, and promoting leadership and partnership throughout society.
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5. Need and desirability of the proposed activities.

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.

A prospecting right allows a company to survey or investigate the area of land for the 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.

The prospecting of the subject minerals is therefore needed to confirm and obtain additional information concerning potential targets through minimally invasive activities (e.g. desktop studies) and non-invasive (e.g. drilling) activities. As well as to assess if the resource can be extracted through future mining in an environmentally, socially and economically viable manner.

If prospecting activities prove that there are feasible minerals to allow for mining, a new mine may be developed which would generate extensive employment opportunities. Mining is a key component of the economy and the proposed prospecting is envisaged to contribute to the local economy in the long run. These contributions will include temporary employment creation, skills transferring and contribution to the local economy with the influx of Isoscele Construction and Projects (Pty) Ltd personnel which will contribute to the lodging and accommodation establishments in the area. If Isoscele Construction and Projects (Pty) Ltd become successful with this prospecting right application, the envisaged contribution to the local economy can be realised through the eventual beneficiation of these mineral deposits.

6. Motivation for the overall preferred site, activities and technology alternative including Full description of the process followed to reach the proposed preferred alternatives within the site.

The proposed site was selected based on extensive research and also following on information from previous prospecting activities in 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.

6.1. Details of the development footprint alternatives considered.

6.1.1. Location Alternatives

There is no preferred site alternative for the proposed prospecting project because the minerals that are being proposed to be prospected are located within the preferred site.

6.1.2. Design/Layout Alternatives

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.

6.1.3. Technology Alternatives

The percussion and diamond drilling technique are the only major method used in exploring for deposits of this type and also for resource definition and evaluation. The technology to be used cannot be replaced by any other methods thus these are the preferred methods.

6.1.4. Operational Alternatives

Exploration Drilling Methods

The principal prospecting method will be diamond core drilling. One drill rig will be utilised to drill NQ – 60mm diameter of core size. This core size provides sufficient sample mass for laboratory analysis. Thus, no other methods have been considered for the proposed prospecting.

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 areas. 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. In 2014, the mining industry was the dominating sector and contributed 25% of the province's economy and is one of the main



contributors to the Provincial GDP and as such the option of not carrying out the prospecting activities would prevent future prospects of mining which could result in more increase 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.
- 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 and around the surrounding 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 the Public Participation Process Followed

This section of the report provides an overview of the tasks to be 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. This appendix will be included in the Draft Basic Assessment.
- 5) Publishing of newspaper advert.



7.1 Identification of key Interested 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:

- Landowners
- Other I I&APs
- Thabazimbi Local Municipality
- Waterberg District Municipality
- Limpopo Department of Economic Development, Environment and Tourism.
- Department of Water and Sanitation (DWS)
- Department of Agriculture Forestry and Fisheries (DAFF)
- Limpopo Heritage Resources Authority (LIHRA)
- South African Heritage Resources Agency (SAHRA)

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

The project will be announced as follows:

Newspaper Advert Notice:

A newspaper advert on a local newspaper will be used to notify all interested and affected parties (I&APs) of the proposed project and for them register as stakeholders for the project. Registered I&APs have been forwarded a draft BAR & EMPr for a 30-day commenting period. Comments received are included in this Draft BAR & EMPr to be sent to the Competent Authority.

Site notice placement: -

In order to inform surrounding communities and adjacent landowners of the proposed development, site notices will be erected on site and at visible locations close to the site. Site notice will be attached as **Appendix 3A**.

Written notification: -

I&AP's and other key stakeholders will be sent the notification letter and Background Information Document (BID) to notify them of the project and the Draft Basic Assessment report will also be sent to all registered I&AP's for a 30-day commenting period. BID has been attached as **Appendix 3B** and notification letter has been attached as **Appendix 3C**.

Distribution of Draft BAR and EMPr

All registered stakeholders and I&APs will be informed of the availability of the Draft Basic Assessment Report and Environmental Management Programme for public viewing. The stakeholders and I&APs will also be invited to submit their comments regarding the proposed project. Proof of distribution of the Draft BAR and EMPr as well as the stakeholder database will be included in the Final Basic Assessment. Stakeholder database has been attached as **Appendix 3D**

Stakeholders' database

Stakeholders database of all I&APs have been attached as **Appendix 3D**.

Consultation Report A consultation report as required by the DMR will be compiled once comments have been received from different stakeholder. The report will contain comments and responses as obtained from stakeholders, community members and other I&APs. Consultation report will be attached in the Final BAR.

7.3 Summary of issues raised by I&APs

Few comments have been received from landowners and have been addressed in Table 5 below. The draft will be distributed to all I&APs for a 30-day commenting period. All comments from I&AP will be included in the final BAR and EMPr for submission to DMR.



Table 5: Issues raised up to date.

Interested and Affected Parties		Date	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Comments Received			
AFFECTED PARTIES					
Landowner/s	X				
Louis & Marelize Nienaber	X	19/09/2019	Mrs and Mr Nienaber wrote that they are a game reserve that loves silence and nature. They host and welcome foreign and local guests and the site of the mine is going to break into the beautiful scenery, more noise and water pollution will take place. There will be more job opportunities but burglaries and crime rate will increase as well. The disturbance of the natural environment is	Prospecting refers to the search of economically exploitable mineral deposits and usually involves low-impact and less mechanical activities which may include small scale drilling and excavation, where else mining refers to physical extraction of minerals and metals from earth at a large scale. Prospecting does not necessarily lead to mining activities. If mining activities are proposed in the future, a new application will be lodged with the	Section 3.2, Section 3.3, Section 10.6 and Part 2.

			<p>going to be sore to the eye and to the people in the area and all owners.</p>	<p>DMR and public consultation will be done. All the comments in consideration of other aspects, are assessed by the DMR for decision to grant or deny a prospecting / mining right.</p> <p>Prospecting activities will be done in phases and minimal impacts are expected. Less than 1% (0,3 hectares) of the total farm area will be affected where those affected areas will be rehabilitated.</p> <p>There will be no more than 10 people working on site during the prospecting activities and those workers won't be staying on site thus eliminating any chances for crime. However, the land owner has the option to monitor the workers while prospecting is occurring and also provide conditions for access into the property.</p> <p>There will be a buffer zone of 32m from wetlands and 100 m from streams during the drilling</p>	
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				<p>activities ensuring that there will be no water pollution as stipulated in the DBAR and EMPr.</p> <p>Noise from drilling machines will be minimal and cannot be heard from approximately 300m away.</p> <p>No prospecting activities will be undertaken within 500m from dwellings. The prospecting activities are temporary.</p> <p>No large trees will be cut down.</p>	
Francois De Bruin	X	19/09/2019	Mr De Bruin wrote that he owns part of the farm and even if his farm is not directly affected by this, it will be if they start mining or drilling around his farm.	<p>Prospecting refers to the search of economically exploitable mineral deposits and usually involves low-impacts and less mechanical activities. Prospecting may include small scale drilling and excavation, where else mining refers to physical extraction of minerals and metals from earth at a large scale.</p>	Section 10.6, Part 2 and Section 3.2



				<p>Prospecting does not necessarily lead to mining activities. If mining activities are proposed in the future, a new application will be lodged with the DMR and public consultation will be done. All the comments in consideration of other aspects, are assessed by the DMR for decision to grant or deny a prospecting / mining right.</p> <p>Prospecting activities have minimal impacts on the environment. Less than 1% (0,3 hectares) of the farm area will be affected by the overall prospecting activities. The applicant is bound to follow the proposed mitigation measures outlined in the DBAR and the EMPr.</p>	
Chris Ransome	x	17/09/2019	Mr Ransome wrote that he acts on behalf of Sansedoni Investments (Pty) Ltd, the registered owner of portion 12 of Farm Zandfonetin 476 KQ. He registered as an 'Interested and Affected Party'. He raised that, on the detailed reading of the BID and	The comment was noted.	N/A



			Notification letter, he found them to be confusing, contradictory and deficient in terms of requisite details in order to make an informed decision. Therefore, he will be engaging with legal, mining and environmental experts to oppose the application.		
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties					
Municipal councillor					
Municipality					



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Thabazimbi Municipality	Local	X				
Organs of state (Responsible for infrastructure that may be affected)	Roads Department, Eskom, Telkom, DWA etc	x				
Communities		x				
Dept. Land Affairs						
Dept. of Water and Sanitation						
Other Competent Authorities affected						



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<u>OTHER AFFECTED PARTIES</u>					
<u>INTERESTED PARTIES</u>					



NKHOPHELE HOLDINGS
| Registration Number: 2015/432441/07



8. The Environmental attributes associated with the alternatives.

8.1. Climate

The nearest town next to the site where climate data was available is Rooiberg Town which is situated approximately 10 km from the site. The highest average temperature in Rooiberg is 33°C in December and the lowest is 22°C in June. The average climate figure for Rooiberg is an 9,3°C. This is based on various factors, such as average temperatures, the chance of precipitation and weather experiences of others.

Rooiberg has prevailing semi-arid climate. The average annual temperature for Rooiberg is 27° degrees and there is about 336 mm of rain in a year. It is dry for 222 days a year with an average humidity of 52% and an UV -index of 5 as shown in Table 6 below.

Table 6: Climate data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Day max °C	32	32	32	28	26	22	22	27	30	32	32	33
Night min °C	19	18	17	14	11	8	7	10	14	17	18	19
MM rain	82 mm	48 mm	38 mm	22 mm	6 mm	2 mm	1 mm	1 mm	6 mm	29 mm	37 mm	66 mm
Rain days	20	16	14	10	3	1	1	1	3	9	13	21
Dry days	11	12	17	20	28	29	30	30	27	22	17	10
Sun hours per day	12	12	10	7	7	7	7	7	9	12	12	12
Wind force in Bft	2	2	2	2	2	2	2	2	2	2	2	2
UV-index	6	6	6	5	4	4	4	5	6	6	6	6

8.2. Geology

The prospecting area is overlain by granite as well as quartzite with embedded shale, grit and agglomerate and lava. The formation is known to be underlain by the bushveld complex which is a host to the Merensky reef. There is a rich history on mining of Manganese, Iron, Chrome and PGMs from the Merensky reef. The geology of the site is illustrated on Figure 3 below.

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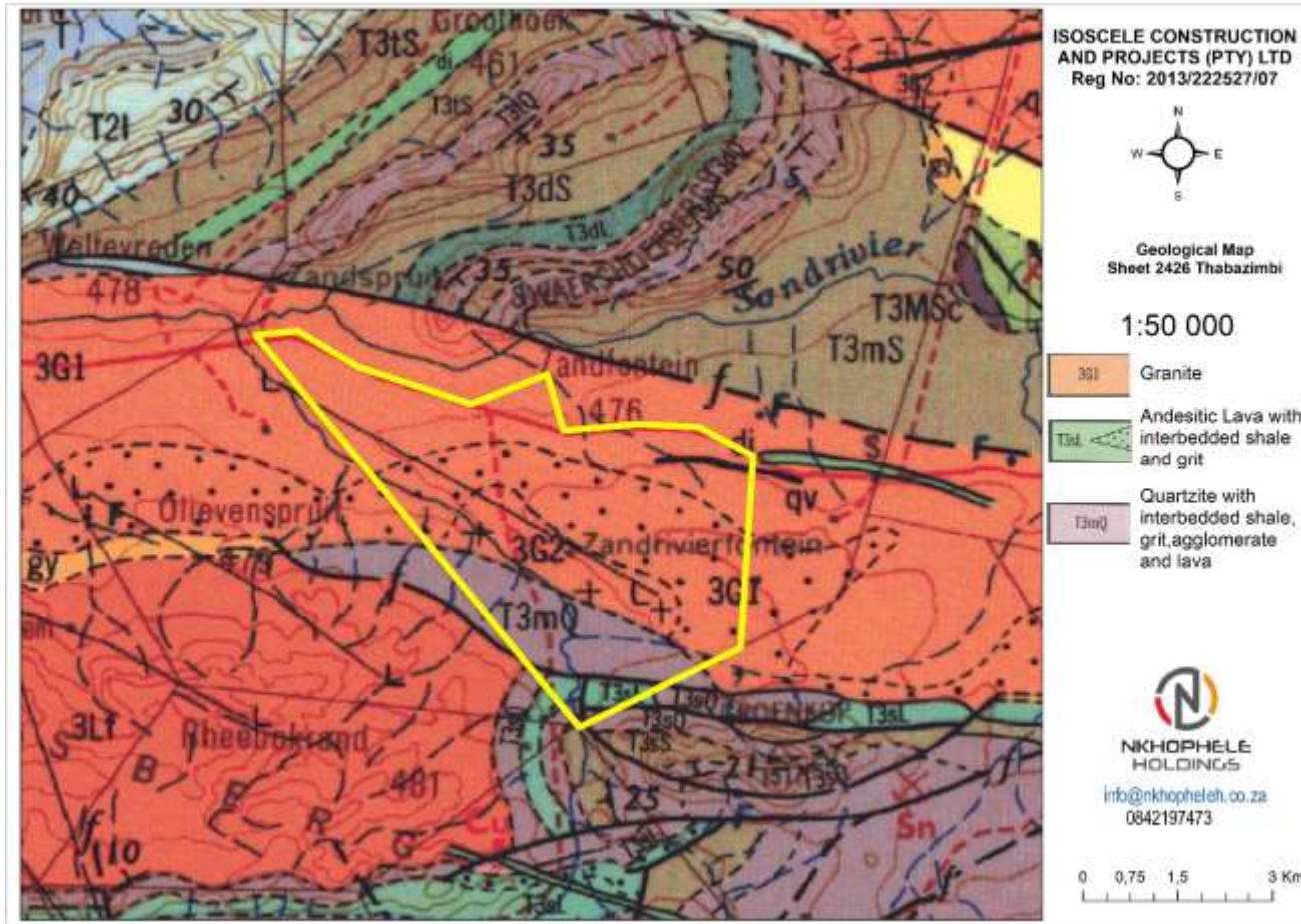


Figure 3:Geology of the site.

Geology map has been attached as **Appendix 2D**.

8.3. Topography

The topography of the proposed area is moderately steep and varies from plains to moderate steep slopes. The proposed site lies within 1218 m above sea level as the highest height. Refer to Figure 4 below.

8.4. Soil

Soil class in the area is described as undifferentiated shallow soils as shown in Figure 5 below. The soils have minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils..

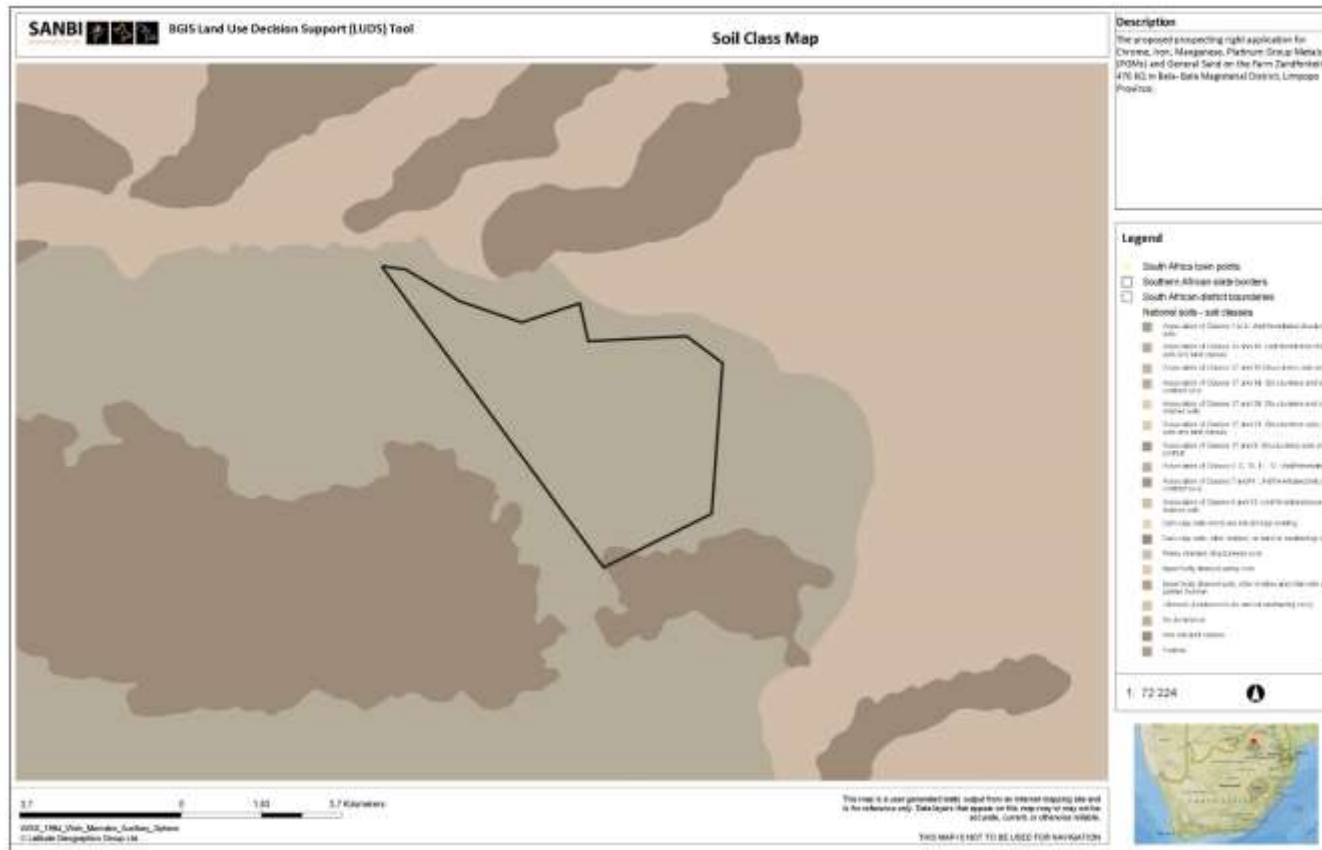


Figure 5: Soil class on site.

Soil map has been attached as **Appendix 2F**.



8.5. Biodiversity

8.5.1. Biodiversity Sensitivity

According to the Limpopo Biodiversity Sector Plan, some portion of the site is located within Ecological Support Area 2 and some portion of the farm do not have any sensitivity as shown in Figure 6 below. This means that the site has been moderately modified. The animals and vegetation found on site are needed to support those in Critical Biodiversity Areas.

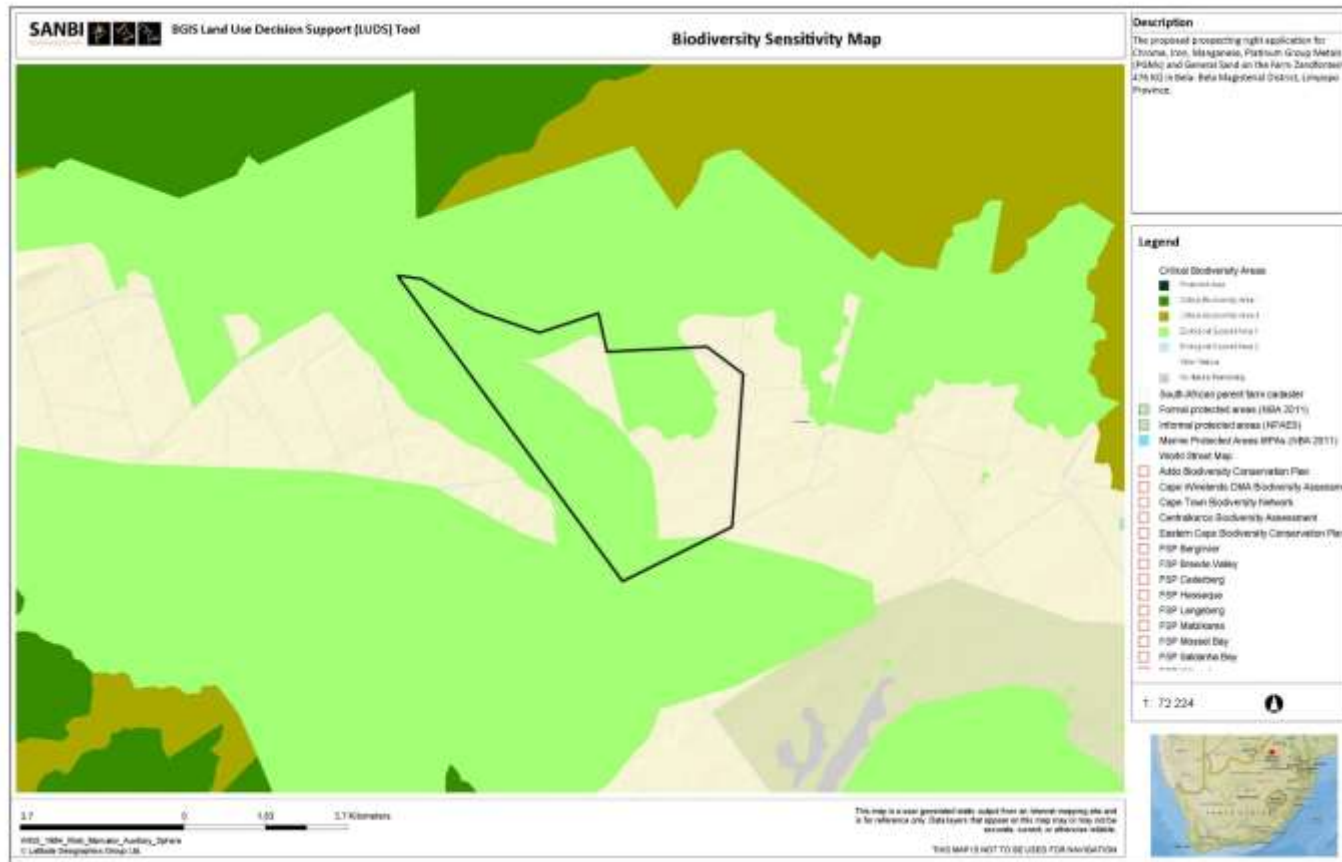


Figure 6: Biodiversity Sensitivity Map of the site.

Biodiversity Sensitivity map has been attached as **Appendix 2H**

8.5.2. Flora

The area falls under Central Sandy Bushveld which consists of Dwaalboom Thornveld as shown in the Figure 7 below. This is a small part of the site that falls under Western Sand Bushveld. It consists mainly of deciduous microphyllous tree species with only a few mesophyllous trees scattered in a continuous herbaceous layer dominated by grass species.

Dominant forbs are for example *Heliotropium ciliatum*, *Kohautia caespitosa* and *Nidorella hottentotica*, while dominant grass species include *Aristida biparta*, *Bothrichloa insculpta*, *Digitaria eriantha* and *Panicum maximum*.

The tree-shrub layer shows a low to medium high growth habit with different tall-growing *Acacia* species as the most dominant. But broad-leaved species are found among the shrubs: tall shrubs such as *Combretum hereroense*, *Diospyros lycioides* and *Euclea undulata*, as well as the low-growing shrubs *Abutilon austro africanum* and *Hirpicium bechuanense* are important taxa. Succulent shrubs such as *Kalanchoe rotundifolia* and *Talinum caffrum* are common (Mucina & Rutherford, 2006)

Western Sandy Bushveld occurs on slightly undulating plains. The vegetation varies from tall open woodland to low woodland, broad-leaved as well as microphyllous tree species prominent. In conservation it is classified as least threatened.

Important taxa include:

- Tall trees: *Acacia erioloba*, *A. nigrescens*, *Sclerocarya birrea* subsp. *caffra*;
- small trees: *Acacia erubescens*, *A. mellifera* subsp. *detinens*, *A. nilotica*, *A. tortilis* subsp. *heteracantha*, *Combretum apiculatum*, *C. imberbe*, *Combretum apiculatum*, *C. imberbe*, *Terminalia sericea*, *Combretum zeyheri*, *lannea discolor*, *Ochna pulchra*, *Peltoporum africanum*;
- Tall shrubs: *Combretum hereroense*, *Euclea undulata*, *Coptosperma supraaxillare*, *Dichrostachys cinerea*, *Grewia bicolor*, *G. flava*, *G. monticola*
- Low shrubs: *Clerodendrum ternatum*, *Indigofera filipes*, *Justica flava*;
- Graminoids: *Anthrephora pubescens*, *Digitaria eriantha* subsp. *eriantha*, *Eragrostis pallens*, *E. rigidior*, *Schmidtia pappophroides*, *Aristida congesta*, *A. diffusa*, *A. stipitata* subsp. *graciliflora*, *Eragrostis superba*, *Panicum maximum*, *Perotis patens*; and Herbs: *Blepharis integrifolia*, *Chamaecrista absus*,

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Evolvulus alsinoides, *Geigeria burkei*, *Kyphocarpa angustifolia*, *Limeum fenestratum*, *L. viscosum*, *Lophocarpus tenuissimus*, *Monsonia angustifolia*.



8.5.3 Fauna

The farm is a home of variety of wild animals and most parts of the farm is being used for game farming. Elandsberg Nature Reserve is one of the game reserves on site. Elandsberg has all the naturally occurring plains game of the Limpopo Province including sable, roan, East African buffalo, white rhino, brown hyena and leopard.

8.6. Hydrology

8.6.1. Surface Water

The proposed area is situated in the “Crocodile West and Marico Water Management Area” which is one of the many waters stressed catchments in South Africa due to changing weather patterns and agricultural practices, mining etc. Figure 8 below shows that there are two wetlands and an unknown tributary that falls to the Sand river which is located approximately 500 m away from the site. The site does not fall under any National Freshwater Ecosystem Priority Area (NFEPA).

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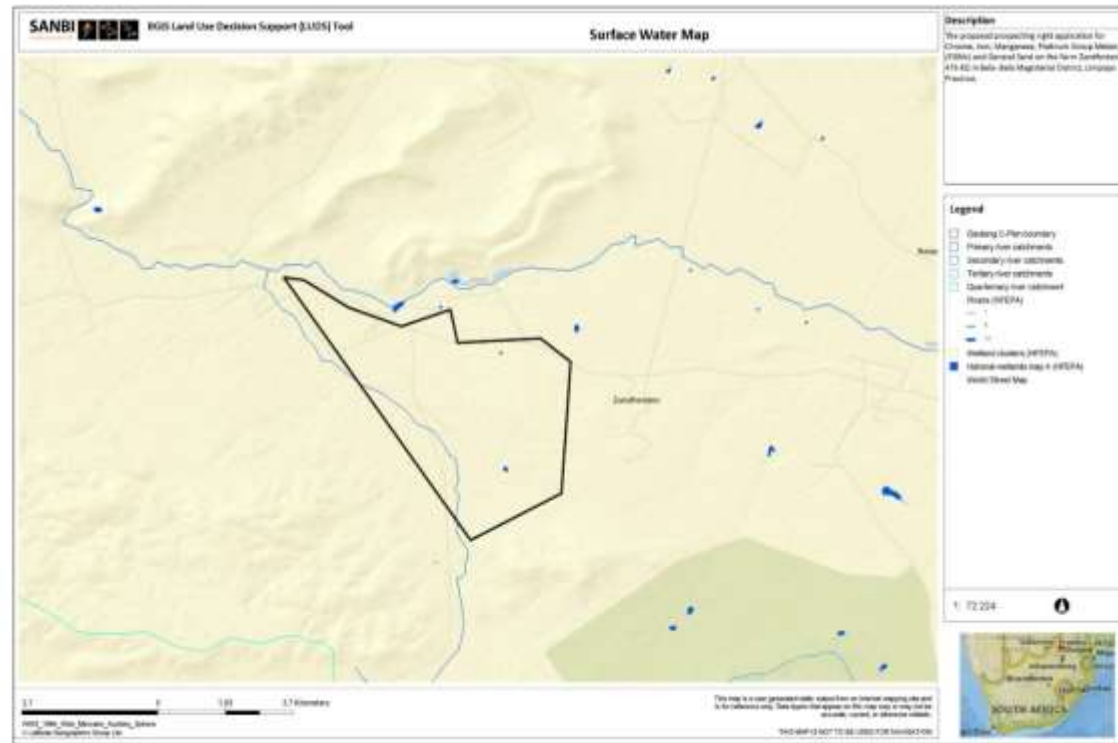


Figure 8: surface water on site.

Surface water map has been attached as **Appendix 21**.

8.6 Land Cover

According to National Landcover, 2014, most of the land in question is covered with open bush also which is also known as woodland represented by the green colour as shown on Figure 9 below. The white area on the map represent an area that has been eroded or has dongas. The marron colour represents commercial cultivated lands and the purple colour represent low shrubland.

8.7 Socio – Economic aspects

8.7.1 Demographics

According to the Thabazimbi Municipality IDP (2018/2019), approximately 85 234 people were living in the Thabazimbi Municipality area. a comparison between the census done in 2001 and a community survey done in 2011, the Thabazimbi Municipality area experienced a population growth rate change of 30.1%. The population of the area has increased as it was 65 533 in 2001 as shown in the Table 7 below.

Table 7: Population trend in Thabazimbi Local Municipality

	2001	2011	% change
Thabazimbi	65 533	85 234	30.1
Lephalale	85 272	115 767	35.8
Mookgophong	34 541	35 640	3.2
Modimolle	69 027	68 513	-0.7
Bela-Bela	52 124	66 500	27.6
Mogalakwena	298 439	307 682	3.1
Waterberg	604 936	679 336	12.3

Source: Statssa, Census 2011

8.7.2 Age distribution by gender

The Thabazimbi Local Municipality has experienced an overall population growth between 2001 and 2011. Most of the population in the municipality is aged below 35 years as shown in Table 8 below.

Table 8: Age distribution by gender

Thabazimbi	1996			2001			2011		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 - 4	2 438	2 325	4 763	3 359	3 515	6 874	4 004	4 058	8 062
5 - 9	2 450	2 414	4 864	2 720	2 682	5 402	2 693	2 607	5 300
10 - 14	2 406	2 169	4 575	2 454	2 332	4 786	2 327	2 290	4 618
15 - 19	1 913	1 940	3 853	2 406	2 502	4 908	2 532	2 478	5 010
20 - 24	2 596	2 032	4 628	2 953	3 022	5 975	5 391	3 792	9 184
25 - 29	3 873	2 241	6 114	3 367	3 566	6 933	7 296	4 447	11 743

30 - 34	4 668	2 260	6 928	3 340	3 260	6 600	6 285	3 566	9 851
35 - 39	5 075	1 878	6 962	3 691	3 026	6 717	4 974	2 968	7 942
40 - 44	3 609	1 479	5 088	3 703	2 275	5 978	3 615	2 570	6 185
45 - 49	2 461	983	3 444	2 503	1 627	4 130	3 650	2 198	5 848
50 - 54	1 491	715	2 209	1 768	966	2 734	3 032	1 621	4 652
55 - 59	1 130	533	1 663	1 051	658	1 709	1 935	1 039	2 975
60 - 64	641	432	1 073	694	456	1 150	827	631	1 458
65 - 69	412	336	748	395	259	654	446	396	842
70 - 74	256	187	443	251	209	460	296	238	534
75 - 79	172	131	303	140	125	265	142	160	302
80 - 84	84	73	157	67	73	140	101	114	216
85 +	78	104	182	52	63	115	87	80	167
Total	35 757	22 245	58 002	34 915	30 617	65 532	49 634	35 253	84 887

8.7.3 Employment rate

The municipality employment rate significantly decreased from 1996 to 2001 but increased between 2001 and 2011. The most significant employer in the Thabazimbi Municipal Area is the mining sector (68.7% with a 7.8% increase average per annum) which has made substantial contributions to in-migration. Other sectors that are responsible for employment in the municipal area include: agriculture (8.3%), households (4.9%), and community services (3.6%)

8.7.4 Unemployment rate

The Municipal area experienced an average decrease in unemployment of 1.5%. An estimated 10.3% of people in the Municipal area who are economically active are unemployed, which can be attributed to a lack of employment opportunities and / or lack of relevant skills. In terms of employment, a great challenge that the municipality face is the fact that most of the mines in the area are mature and are nearing the end of life, which will have implications for future employment rates.

8.7.5 Education Profile

Over the years there has been a steady decline in the number of persons who have not received an education.

Table 9: Education profile.

Thabazimbi	1996			2001			2011		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
No Schooling	5 123	2 591	7 714	4 068	3 554	7 622	2 766	2 138	4 904
Some Primary	6 483	2 850	9 332	5 719	4 012	9 731	4 600	2 975	7 575
Completed Primary	2 402	1 114	3 516	2 113	1 736	3 849	1 970	1 342	3 311
Some Secondary	8 257	4 075	12 331	7 096	6 386	13 482	12 482	8 392	20 873
Grade 12	2 698	1 852	4 550	3 967	3 025	6 992	8 433	6 140	14 573
Higher	796	466	1 262	1 015	874	1 889	2 609	1 939	4 548
TOTAL	25 758	12 948	38 705	23 977	19 587	43 563	32 860	22 925	55 785

According to Census 2011, Females went to school but most didn't get Grade 12 or Higher education. There was inequality between Males and Females. Most Males were given the opportunity of going to school than females. The number of Females going to school has since increased from the year 1996 as shown in Table 9 above.

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 10: Impacts Identified, phases and description

Impacts	Phase	Description
Policy requirements	Planning	Identification of legislative requirements.
Flora	Construction	Destruction / loss of indigenous natural vegetation due to site preparation activities.
Fauna	Construction, Operational	Disturbance of species habitats (i.e. snake holes, spiders, reptiles, etc.)
Groundwater	Construction and Operational	Spillage of fuels, lubricants and other chemicals.
Geology	Operational.	Removal of rocks and debris for analysis, disturbance of local geological formation.
Soils	Construction and operational.	Disturbance of soils during site clearance and during drilling operations.
Air Quality	Construction and Operational.	Dust stemming from drilling and vehicles going to site.
Traffic	Construction and decommissioning	Increase of traffic in the area as vehicles access and exit the site.
Noise nuisance	Construction and Operational.	Noise caused by moving vehicles and drill rigs.

Economic	Operational.	Project expenditure (incl. direct capital investment).
Socio-economic	Planning.	Potential friction with I&APs and Landowners, part time employment opportunities.
Visual	Construction, Operational and Decommissioning.	Visual disturbances with all the vehicles, signs and drilling rigs.
Cultural/Heritage - historical	Construction and Operational.	Disturbance of artefacts of cultural and heritage importance (i.e. unidentified grave sites).
Waste	Construction and Operational.	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 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 11: Criteria for evaluating potential environmental impacts

CRITERIA	DESCRIPTION			
Extent	<p>National (4)</p> <p>The whole of South Africa.</p>	<p>Regional (3)</p> <p>Provincial and parts of neighbouring provinces.</p>	<p>Local (2)</p> <p>Within a radius of 2 km of the construction site.</p>	<p>Site (1)</p> <p>Within the construction site.</p>
Duration	<p>Permanent (4)</p> <p>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.</p>	<p>Long-term (3)</p> <p>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.</p>	<p>Medium-term (2)</p> <p>The impact will last for the period of the construction phase, where after it will be entirely negated.</p>	<p>Short-term (1)</p> <p>The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase.</p>
Intensity	<p>Very High (4)</p> <p>Natural, cultural and social functions and processes are altered to extent that they permanently cease.</p>	<p>High (3)</p> <p>Natural, cultural and social functions and processes are altered to extent that they temporarily cease.</p>	<p>Moderate (2)</p> <p>Affected environment is altered, but natural, cultural and social functions and processes continue</p>	<p>Low (1)</p> <p>Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.</p>

			albeit in a modified way.	
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 will 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.

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 12: Criteria for Rating of Classified Impacts

<p>Low impact/ Minor (3 -10 points)</p>	<p>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.</p>
<p>Medium impact/ Moderate (11 -20 points)</p>	<p>Mitigation is possible with additional design and construction inputs.</p>
<p>High impact (21 -30 points)</p>	<p>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.</p>
<p>Very high impact/ Major (31 - 48 points)</p>	<p>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.</p>
<p>Status</p>	<p>Denotes the perceived effect of the impact on the affected area.</p>
<p>Positive (+)</p>	<p>Beneficial impact.</p>
<p>Negative (-)</p>	<p>Deleterious or adverse impact.</p>
<p>Neutral (/)</p>	<p>Impact is neither beneficial nor adverse.</p>
<p>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.</p>	

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 I&APs and other relevant stakeholders warrants that we change the layout or have alternative, those comments will be addressed accordingly. The project will have minimal impacts on the environment, about 20 exploration holes will be drilled. This should be viewed in the context that the drilling sites are 0.3 ha in comparison to the 2 099 ha that is being applied for; the impacts will be very minimal. The impacts associated with drilling can be mitigated and after drilling has been completed; the drill pads will be rehabilitated to pre-drilling status.

Table 13: Positive and Negative Impacts

Impacted Environment	Impact	Status of impact
CONSTRUCTION/ ESTABLISHMENTPHASE		
Fauna and Flora	Destruction / loss of indigenous natural vegetation and plant species during site preparation.	Negative
	Impacts on animal species.	Negative
	Establishment and spread of declared weeds and alien invader plants.	Negative
Groundwater	Damage/contamination of groundwater resulting in hydrological impacts.	Negative
Air Quality	Dust emissions.	Negative

Impacted Environment	Impact	Status of impact
Surface water	Deterioration of surface water from contaminated topsoil run-off.	Negative
Noise generation	Nuisance to surrounding landowners.	Negative
	Disturbance of animals.	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.	Negative
Waste generation	Generation of solid waste (e.g. littering).	Negative
Traffic	Increase of traffic in the area as vehicles access the sites.	Negative
OPERATIONAL PHASE		
Soils	Physical disturbance of soils during land clearing.	Negative
Social	Disturbance of surrounding landowners and local businesses.	Negative
	Direct employment and skills development.	Positive

Impacted Environment	Impact	Status of impact
Water resource	Damage to groundwater and surface water resulting in hydrological impacts.	Negative
Geology	Physical removal of rock material for logging and sampling purposes during drilling phase.	Negative
Noise generation	Nuisance to surrounding landowners and local businesses.	Negative
	Disturbance of animals.	Negative
Cultural-historical resources	Potential impact on heritage resources and archaeological resources.	Undetermined at this stage
DECOMMISSIONING		
Air quality	Dust emissions.	Negative
Soil	Soil degradation.	Negative
Noise generation	Nuisance to surrounding landowners.	Negative
	Disturbance of wild animals on surrounding farms.	Negative
Traffic	Increase of traffic in the area as vehicles exit the site.	Negative

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

The mitigation measures have addressed in the Section 10.6 under Environmental Impact Assessment.

10.4 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 to be prospected can only be found within the proposed area.

10.5 Statement motivating the alternative development location within the overall site.

Since exploration is temporary in nature, no permanent structures will be constructed, negotiations and agreements will be made with the farm owners to use any existing infrastructure like accommodation for the explorers, access roads and other things if there is a need. 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.



10.6 Environmental Impact Assessment

Table 14: Environmental Impact Assessment

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
Non-compliance with legislative requirements.	Non commencement/delayed commencement of proposed project.	Planning	3	4	3	2	(-20)	N/A	N/A	Comply with all applicable legislative requirements such as NEMA EIA 2017 regulations and MPRDA Act of 2002.	1	1	1	2	(-6)

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
Destruction loss of indigenous natural vegetation.	Habitat and loss of species.	Construction and Operational	1	1	3	3	(-15)	Moderate	Possible	Appoint an Environmental Control Officer (ECO) prior to commencement of construction phase. Responsibilities must include, but not necessarily be limited to, ensuring adherence to EMPr guidelines, guidance of activities,	1	1	2	2	(-8)



Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
	Alien plant invasions in disturbed areas.	Construction and Operational.	1	1	2	2	(-8)	Possible	Possible	planning, reporting to authorities.	1	1	1	2	(-6)
Disturbance of soils	Exposed soils susceptible to erosion.	Construction and Operational.	1	1	2	2	(-8)	Moderate	Possible	Conduct a search and rescue operation for all conservation important plants on the site. This operation must be	1	1	1	2	(-6)



<p>Impacts on indigenous plant species.</p>	<p>Plant species are especially vulnerable to infrastructure development due to the fact that they cannot move out of the path of the construction activities but are also affected by overall loss of habitat.</p>	<p>Construction and Operational.</p>	1	2	2	2	(-10)	Moderate	Possible	<p>conducted during the period when there is reproduction.</p> <p>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.</p> <p>Alien invasive plants should be monitored a month after drilling ceases on that particular drilled site and immediate area.</p>	1	2	1	1	(-4)
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Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
Fauna	Faunal mortality and displacement on site.	Construction and Operational.	1	1	2	3	(-12)	Highly impossible	Possible	No animal must be hunted, killed or harmed during prospecting. Avoid disturbing animal habitats as far as possible. Use sites with most degraded environment for the site development.	2	1	1	2	(-8)



	Disturbance of Wildlife on neighbouring game farms.	Construction, Operational and decommissioning	2	2	2	4	(-24)	Moderate	Possible	Vehicles accessing the site must use a route that is less likely to disturb the wildlife in the surrounding game farms. Engine silencers must be installed on all equipment and vehicles used on site.	1	2	1	2	(-8)
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Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	



Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	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	2	4	(-28)	Possible	Highly probable	Cap off and seal all drilled boreholes with cement.	1	3	1	3	(-15)



<p>Groundwater quality</p>	<p>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.</p> <p>Material used for backfilling may leach pollutants that will result in the pollution of the surrounding groundwater regime.</p> <p>Drilling machines may spill hydrocarbons into the water.</p>	<p>Operational</p>	<p>2</p>	<p>1</p>	<p>3</p>	<p>3</p>	<p>(-18)</p>	<p>Moderate</p>	<p>Possible</p>	<p>Groundwater monitoring network (both quality and quantity) must be established. Any spillage must be cleaned using spillage kit.</p> <p>Ensure that the land owners' borehole yield is observed and monitored 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</p>	<p>2</p>	<p>1</p>	<p>2</p>	<p>2</p>	<p>(-10)</p>
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Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
									compensated by the applicant.						



<p>Surface water</p>	<p>The drilling operations may result in the generation of surface water runoff contaminated with drilling muds and cuttings if spillages occur.</p> <p>The sedimentation and possible contamination with carbonaceous material will have negative impacts on the surrounding clean water environment. These will cause an increase in the turbidity and will decrease acidity of the water in the streams and wetlands, which will affect the aquatic habitat, hence important habitats may be lost.</p>	<p>Construction and operational</p>	<p>3</p>	<p>3</p>	<p>2</p>	<p>2</p>	<p>(-16)</p>	<p>Highly impossible</p>	<p>Moderate</p>	<p>No prospecting operations must be undertaken within 100 metres from the nearby streams and 32 meters from the nearby wetland areas.</p> <p>The sumps must be excavated for the collection mud and excess water from the drilling sites.</p> <p>The sump must be sized such that it must be able to contain the water and mud that will be generated during the prospecting operation.</p>	<p>2</p>	<p>3</p>	<p>1</p>	<p>2</p>	<p>(-12)</p>
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Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
									Storm water generated around the drilling site must be diverted away to the clean water environment. No concrete mixing and vehicle maintenance must be allowed on site. All hydrocarbons must be stored in containers away from the streams.						



Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
			Air quality	<p>Increase in traffic on unpaved roads and drilling activities will increase levels of dust generated on site.</p> <p>Greenhouse gases emitted from drilling machinery and vehicles used on site, could contribute to reduced levels of air quality and contribute to climate change.</p>	Construction, Operational and Decommissioning.	2					1	2	3	(-15)	

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
Project expenditure (incl. direct capital investment)	Investment and growth in local economy.	Construction and Operational Phase and decommissioning	2	1	2	4	(20)	Highly impossible	N/A	None	2	1	2	4	(20)



<p>Noise disturbance</p>	<p>Noise generated from prospecting operations activities may add to the current noise levels. This may have impacts on surrounding property owners and wildlife.</p>	<p>Construction and Operational</p>	<p>2</p>	<p>3</p>	<p>2</p>	<p>2</p>	<p>(-14)</p>	<p>Moderate</p>	<p>N/A</p>	<p>Engine silencers must be installed in all equipment and vehicles used on site.</p> <p>Working must be restricted to 8 hours during daytime, to minimise the ecological and social disturbance.</p> <p>Inform the landowner on the type of machinery and equipment to be used at the prospecting site.</p>	<p>1</p>	<p>2</p>	<p>2</p>	<p>2</p>	<p>(-10)</p>
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Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
Visual Disturbance	The activities undertaken during the construction or and associated infrastructure might be visible from the nearby roads and properties. However, due to the presence of natural vegetation obstructing infrastructure, visibility for the most part will most probably be restricted to short distances.	Construction, Operational and Decommissioning.	2	2	2	2	(-12)	Moderate	N/A	Ensure that lighting is conducted in manner that must reduce the impacts on visual aspects at night times.	1	1	2	2	(-8)

Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
Fire hazards	Possible outbreak of fire.	Construction, Operational, decommissioning	2	3	2	2	(-14)	Moderate	Possible	Ensure that there are ready fire extinguishers on site. Isoscele Construction and Projects must be held liable for any damage that may result from an outbreak of fire. Workers to be trained in for basic firefighting skills.	1	3	1	2	(-10)



Health and safety	Safety and health risks to workers.	Construction, Operational, decommissioning	1	3	3	3	(-21)	Highly irreversible	N/A	<p>Appropriate Personal Protective Equipment (PPE) must always be worn to avoid injuries i.e. gloves, ear plugs, helmet, dust mast.</p> <p>Identify and demarcate the extent of the site where the associated geotechnical works are going to take place.</p> <p>No unauthorised access to the site.</p> <p>Dust to be suppressed where possible during digging of sumps and whenever necessary.</p>	1	3	2	2	(-12)
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Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
									Maintain the demarcation line and ensure that no personnel or materials move outside the designated site.						
Socio-economic	Potential friction with local business individuals on site and nearby who are running tourist attractions and breeding game life.	Planning, Construction, Operational, decommissioning .	2	3	2	2	(-14)	N/A	N/A	Extensive public consultations which must increase public awareness record and address comments, concerns and questions.	1	2	1	1	(-4)



Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
	Temporary employment opportunities.	Operational and Decommissioning.	2	1	2	3	(+15)	N/A	N/A	Source labourers locally as far as possible.	2	1	2	3	(+15)



Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
	Potential decline in local business due to prospecting activities.	Construction Operational and Decommissioning.	2	2	3	2	(-16)	Moderate	N/A	Prospecting must be conducted following best practices is to minimise negative economic impacts on local businesses.	3	2	2	1	(-7)



<p>Cultural/ Heritage historical impacts.</p>	<p>Discovery of gravesites and historical artefacts in the proposed area.</p>	<p>Construction and Operational</p>	<p>1</p>	<p>2</p>	<p>1</p>	<p>3</p>	<p>(-15)</p>	<p>Highly impossible</p>	<p>Possible</p>	<p>Should any paleontological or cultural artefacts be discovered work at the point of discovery must stop, the location be clearly demarcated and SAHRA & LIHRA must be contacted immediately. Work at the discovery site may only be recommenced on instruction from LIHRA or/and SAHRA.</p> <p>There must not be any demolishing of structure of 60 years and older without permission from LIHRA or/and SAHRA.</p>	<p>1</p>	<p>1</p>	<p>1</p>	<p>2</p>	<p>(-6)</p>
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Waste management	Littering by workers and waste generation from prospecting activities.	Construction and Operational	2	3	2	3	(-21)	Moderate	Possible	<p>No litter must be disposed on site on the ground.</p> <p>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.</p> <p>General waste must be disposed in bins.</p> <p>All hydrocarbons must be stored in closed containers until disposal to a registered landfill.</p>	1	3	2	2	(-12)
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Impact pathway	Nature of potential impact/risk	Phase impact occurs	Before Mitigation				Significance of impact	Reversibility of impact	Irreplaceability of receiving environment/resource	Potential mitigation measures	After Mitigation				Ranking of impact / risk
			E	D	I	P					E	D	I	P	
			Traffic	Increase of traffic in the area as vehicles access the sites.	Construction, and Decommissioning.	2					3	2	2	(-14)	

10.7 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 15: 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 (-ve)	The applicant must ensure that all relevant legislations and regulations have been adhered to before commencement of the project.	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Set-up of drilling Equipment	Clearing of Vegetation	Flora and Fauna	Operational Phase	Low (-ve)	Already cleared areas must be preferred over heavily dense areas.	Low (-ve)
Set-up of drilling Equipment	Theft	Socio-Economic	Operational Phase	Low (-ve)	The site camp must be secured and entrance into the site must be controlled.	Low (-ve)
Preparation of drilling sites and access roads	Loss of Vegetation	Flora and Fauna	Operational Phase	Medium (-ve)	Where possible existing access roads must be used.	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Drilling Activities	Ground Surface & Water contamination	Hydrology	Operational Phase	Medium (-ve)	The drill bits must be maintained in good condition to prevent leakages of oil when in the underground.	Low (-ve)
					Aquifer detection methods must be applied before drilling can be undertaken.	Low (-ve)
					Streams must be diverted where alluvial activities are taking place.	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	Mortality and displacement of fauna	Fauna	Operational Phase	Medium(-ve)	Search and rescue mission must be undertaken for species on drilling site.	Low(-ve)
	Waste Generation	Waste Management	Operational Phase	High (-ve)	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 (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Drilling Activities	Spillages of hazardous chemicals.	Soil & geology; Hydrology.	Operational Phase.	Medium (-ve)	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 (-ve)
				Medium (-ve)	Hazardous substances / materials are to be transported in sealed containers or bags.	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
				Medium (-ve)	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 (-ve)
	Destruction of Heritage Resources.	Cultural and Heritage.	Operational Phase	Medium (-ve)	Should any paleontological or cultural artefacts be discovered work at the point of discovery must stop, the location be clearly demarcated	Low (-ve)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
					and SAHRA and LIHRA contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA or/and LIHRA.	
Decommissioning of Site Camp	Waste generation.	Waste management.	Decommissioning Phase.	Medium (-ve)	The uncontaminated stockpiled materials must be used for backfilling.	Low (-ve)



NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Decommissioning of Site Camp	Contamination of the soil and water.	Soil and water.	Decommissioning Phase.	Medium (-ve)	<p>The hazardous substances onsite must be stored in marked containers.</p> <p>All the equipment must be shipped out of the site.</p> <p>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.</p>	Low (-ve)

11 Summary of specialist reports.

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

Site investigations have indicated that no specialist studies will be required for the proposed project unless determined by the Competent Authority and other organs of state. This is because prospecting activities have very minimal impacts on the receiving environment. Sensitive areas on site will be avoided during the prospecting activities. All the mitigation measures that have been included in this report, must be followed

12 Environmental impact statement.

12.1 Summary of the key findings of the environmental impact assessment;

In nature impacts associated with prospecting are will have very low impacts on the environment or socially. Often, the impacts caused during the prospecting activity can be reversed or rehabilitated. The invasive impacts that can be envisaged is the drilling of the 20 exploration holes which collectively amounts to 0.3 Ha which makes up to less than 1% of area that is being applied for which is 2 099 ha.

The proposed prospecting operation may affect existing alternative land uses on adjacent property or non-adjacent properties as the area predominantly breeds wildlife. 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.

12.2 Draft 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.

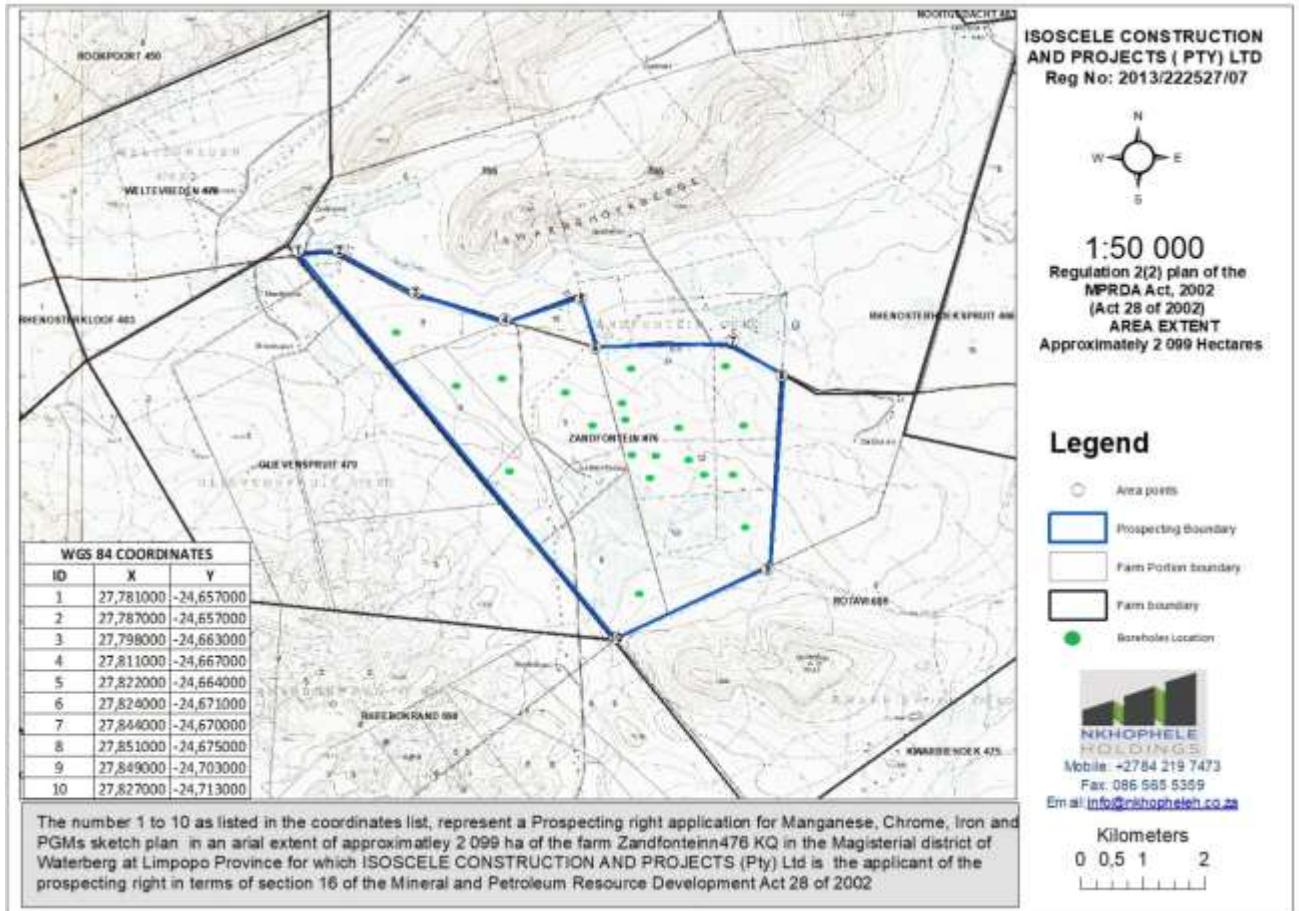


Figure 10: Draft Site Map for Farm Zandfontein 476 KQ.

Boreholes location map has been attached as **Appendix 2C**.

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

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.

13 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 Planning, Construction, 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.



Draft Basic Assessment and Environmental Management Programme for the proposed prospecting right application for Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand on the Farm Zandfontein 476 KQ in Bela- Bela Magisterial District, Limpopo Province.

- 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.

14 Aspects for inclusion as conditions of Authorisation

Isoscele Construction and Projects (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) as amended in 2017 and Minerals and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA).

- Landowners and land occupiers must 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 must be provided to the landowners as well as the DMR prior to commencement of prospecting activities.
- A record must be kept of the implementation of the EMP measures and monitoring of the efficiency of the implemented measures; and
- A buffer of 32m from wetlands and 100m from streams must be established during the construction and operational phase.
- Maintain a buffer zone of 500m from dwellings.
- No sleeping on site

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

- The EAP does not accept any responsibility in an event that additional information comes to light at a later stage of the process.
- All information provided by the EAP was correct at the time it was provided.
- The data from unpublished researches is valid and accurate.
- The scope of this investigation is limited to accessing the potential environmental impacts associated with the proposed project.

16 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 0.3 ha over a prospecting right area of 20 drill sites. Therefore, the actual footprint to be permanently disturbed is minimal in comparison to the total site area thus less than 1% 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 32 m from wetlands and 100m from streams must be established during the operational phase.

16.1 Conditions that must be included in the authorisation

- Maintain a minimum 500m buffer from any infrastructure or dwelling houses etc.
- Landowners and land occupiers must 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 must 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 32m from wetlands and 100m from streams must 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.

17 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.

18 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.

19 Financial Provision

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

A total of R42 285.30 is required to both manage and rehabilitate the environment in respect of rehabilitation.

19.1 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.

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

Should a Prospecting Right be granted, Isoscele Construction and Projects (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.

20 Specific Information required by the competent Authority

20.1 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:

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

Current land uses on the prospecting area, such as grazing by wild animals, 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 activities.

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 and LIHRA contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA and/or LIHRA.

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

This Draft BAR and EMPr has been compiled in accordance with the NEMA (1998), EIA Regulations (2014, amended April 2017) and MPRDA (2002). The Environmental Assessment Practitioner or Environmental Assessment Practitioner 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 REPORT

1. Draft environmental management programme.

1.1. Details of EAP

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

2. Description of the Aspects of the Activity

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

3. Composite Map

No composite map can be presented at this stage.

3.1. Description of Impact Management objectives including management statements

Determination of closure objectives.

- Rehabilitation of areas disturbed because of prospecting, to a land capability that will support and sustain a predetermined post-closure land use;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned Draft land use;
- Removal of existing contaminated material from affected areas;
- Establishment of Draft 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.

3.1.1. Volumes and rate of water use required for the operation

Volumes of water cannot be determined at this point but will be minimal.



3.1.2. 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 project. No groundwater will be used or abstracted during the prospecting operations. Moreover, a buffer of 32m from wetlands and 100m from streams shall be established during the operational phase.



3.2. 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 16: Impacts to be mitigated.

POTENTIAL IMPACT	ASPECTS AFFECTED	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION	MITIGATION TYPE	STANDARD TO BE ACHIEVED
CONSTRUCTION/ 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	Rehabilitation in terms of MPRDA and NEMA principles.	During Construction Phase.	Control	Return as close as possible to pre-

		<p>soil through surface runoff and wind.</p> <p>No topsoil or fertile soil (dark soil) may be stored within 32 m of a wetland and 100m from drainage line, watercourse.</p> <p>Where applicable, construct berms in order to prevent rill erosion and donga formation.</p> <p>All cleared areas and sumps are to be monitored for erosion daily, any erosion forming is to be remediated with immediate effect.</p>	<p>Applicable guidelines from NEM:BA and Department of Agriculture, Forestry and Fisheries (DAFF) and Conservation of Agricultural Resources Act (CARA) regarding removal of species.</p> <p>General implementation of activities taking Mining and Biodiversity Guidelines into account.</p>			<p>prospecting environment.</p>
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<p>Loss of natural vegetation in the affected areas.</p>	<p>Flora.</p>	<p>Site clearance must be limited to only areas where invasive prospecting activities must be undertaken.</p> <p>Ensure minimal disturbance of vegetation when conducting geophysical surveys and geological mapping.</p> <p>No vegetation clearance or tree removal must 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>Rehabilitation in terms of MPRDA and NEMA principles.</p> <p>Permits to (DAFF) and CARA for removal of species in terms of NEM:BA.</p> <p>General implementation of activities taking Mining and Biodiversity Guidelines into account.</p>	<p>During Construction phase</p>	<p>Control through visual monitoring and inspection.</p>	<p>Adhere to rehabilitation standards and Biodiversity Guidelines.</p>
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		Ensure that disturbed areas are preferred for drilling as far as possible.				
Migration of animal life due to disturbance caused by the proposed project.	Fauna	Use sites with most degraded environment for the site development. Trapping and killing of fauna is prohibited at the prospecting site.	General implementation of activities taking Biodiversity Act and its guidelines into account.	During Construction phase.	Control through visual monitoring and inspection.	Minimise impact on fauna.
Deterioration of water quality in the nearby. Water courses and within the	Surface and ground Water.	Site establishment must not be undertaken within sensitive landscapes, these areas must be avoided.	Water management measures in compliance with NWA, 1998 and DWS guidelines.	During Construction Phase	Avoid	Minimise the impacts on sensitive areas such as wetlands and streams.



<p>groundwater regime.</p>		<p>A distance of 32 meters from wetlands and 100m must be kept between stockpiles and water courses.</p> <p>Avoid stripping of areas within the construction sites.</p> <p>Rehabilitate areas that may have been mistakenly stripped.</p> <p>Storm water upslope of the campsite and drill sites must be diverted around these areas.</p>				
<p>Air pollution through emissions from the vehicles and equipment used on</p>	<p>Air quality.</p>	<p>Dust suppression must be conducted in areas with excessive dust emissions.</p>	<p>National Environmental Management Air Quality Act.</p>	<p>Throughout Construction Phase</p>	<p>Minimise impact.</p>	<p>The dust emissions are not to exceed the ambient air</p>



the construction site.		<p>Traffic must be restricted to demarcated areas.</p> <p>Traffic volumes and speeds within the construction site must be controlled.</p> <p>The construction must be undertaken such that the ambient air quality does not exceed the National Air Quality Standards.</p>				quality standards for rural areas.
Increased noise levels.	Noise aspects	<p>Limit the maximum speed to 30 km/h or less, subject to risk assessment.</p> <p>Less noisy equipment must be used, the equipment must be</p>	National Noise Control Regulations, SANS10103:2008 guidelines.	Throughout the construction phase.	Minimise impacts	The noise levels from the construction sites must be managed and levels must be within the regulated



		kept in good working order and the equipment must be fitted with correct and appropriate noise abatement measures.				noise levels as set by the regulations.
Visual impacts on the surrounding communities and road users from the construction.	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.	Measures must 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 construction phase.	Minimise impact.	Ensure that all operations during the construction phase do not result in detrimental visual impacts on surrounding properties, communities and road.



		Lighting must be conducted in a way that must decrease the impacts on visual aspects at night times.				
Impact from the influx of job seekers and employment of farm labourers.	Socio-Economic Aspect	<p>Recruitment must not be undertaken on site.</p> <p>Farm labourers must not be employed unless agreed to with the farm owners.</p> <p>Ensure that all labourers are trained and adhere to all health and safety standards.</p>	<p>Measures taken must be in line with the company's recruitment policies.</p> <p>Occupational Health and Safety Act.</p>	Throughout Construction Phase.	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	Waste Management Act	Throughout the construction phase.	Avoid	Avoid the excessive

		<p>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>The waste bins must be sealed to avoid, leakage of leachate material and must be waterproof so that rainwater cannot enter into them.</p> <p>Bins shall be emptied on a weekly basis or if there is a nauseous smell coming from</p>				<p>generation of general waste during this phase.</p>
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		<p>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>				
POTENTIAL IMPACT	ASPECTS AFFECTED	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION	MITIGATION TYPE	STANDARD TO BE ACHIEVED
OPERATIONAL PHASE						



Exploration: Diamond Core drilling and Percussion drilling of the exploration boreholes, stockpiling, Drilling, use of campsite and rehabilitation of the drilling sites

<p>Soils contamination, disruption of the Soil profile.</p> <p>Disturbance of ecological systems through destruction of natural vegetation.</p> <p>Disturbance to current land use.</p>	<p>Soils, Land Use, Land Capability and natural vegetation.</p>	<p>Ensure that the landowners 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.</p>	<p>Rehabilitation in terms of MPRDA and NEMA principles.</p> <p>Operational control procedures (e.g. spill / leak handling).</p> <p>Incident Reporting System; Environmental Inspections;</p> <p>Planned Maintenance System; water quantity (abstraction) monitoring; continued</p>	<p>Throughout operational phase</p>	<p>Control</p>	<p>Return as close as possible to pre-prospecting environment.</p>
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			communication with surrounding landowners.			
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 32m from wetlands and 100m from watercourses must be maintained during the all prospecting activities.</p> <p>Excess water and mud from drilling sites must be stored in sumps that are sizeable enough to contain them.</p> <p>Storm water generated around drilling sites must be diverted</p>	Water management measures in compliance with NWA (National Water Act) 1998 and GN 704, 1999.	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 must be practiced during the operational phase.</p> <p>Construction vehicles must be regularly maintained in order to minimize greenhouse gas emission.</p>	National Environmental Management Air Quality Act	Throughout the operational phase	Control and minimise	Maintain air quality.



Water courses -- destruction and loss of aquatic habitat.	Aquatic and terrestrial components	<p>A buffer of 32m from wetlands and 100m from watercourses must be maintained during the all prospecting activities.</p> <p>Remove or eradicate all alien invasive vegetation growing on stockpiles or in any area of the drilling site footprint.</p>	<p>National Environmental Management Act</p> <p>National Environmental Management Waste Act</p> <p>National Water Act (NWA)</p> <p>National Environmental Management: Biodiversity Act (NEMBA)</p>	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.	<p>National Noise Control Regulations</p> <p>SANS 10103:2008</p>	Throughout the operational phase	Minimise	Minimal noise

		<p>Use equipment that produces minimal noise as far as possible.</p> <p>Avoid working outside normal working hours (i.e. 08:00 to 17:00) and during weekends.</p> <p>All machinery and equipment must be maintained in good working order and fitted with approved and specified muffler systems.</p> <p>Compliance with local by-laws and regulations regarding the noise and hours of operation</p>				
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Visual impacts	Neighbouring occupants	<p>Visual screening methods could be used on site to reduce visual impacts.</p> <p>Lighting must be conducted in a manner that must reduce the visual impact at night times.</p> <p>Maintain a buffer zone of 500m away from dwellings.</p>	National Road Traffic Act	Throughout the operational phase.	Control	Minimise visual impacts.
Impacts on heritage features	Heritage features on-site	<p>No heritage features must be destroyed or removed without a permit in terms of SAHRA and/or LIHRA.</p> <p>Should any heritage features or remains be discovered, work is to stop, the area is to be</p>	South African Heritage Resources Agency (SAHRA) and Limpopo Heritage Resources Authority (LIHRA).	Throughout the operational phase	Stop and avoid	Protect heritage features.

		<p>demarcated and a qualified Archaeologist is to be contacted and contracted to evaluate the site and apply for the appropriate permit if needed. Once the permit has been obtained from SAHRA/LIHRA the archaeologist is then to supervise the removal or destruction of the item. Once it has been moved or destroyed works can continue.</p> <p>There must not be any demolishing of structures of 60 years and older without permission from LIHRA or/and SAHRA.</p>				
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Health and safety impacts	<p>Socio economic aspects.</p> <p>Employees and land occupants.</p>	<p>Neighbouring occupants must be warned about any disruptions prior the commencement of the activity.</p> <p>Ensure that health and safety measures are put in place to protect employees and neighbouring occupants.</p> <p>Provide employees with personal protective Equipment (PPE).</p>	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 must only move during the day when there is less traffic in the road.	National Traffic Act	Throughout the operational phase	Avoid	Avoid traffic congestion

<p>Introduction of weeds and alien invasive plants</p>	<p>Flora</p>	<p>All sites disturbed by prospecting activities must be monitored for exotic or invasive plant species and weeds.</p> <p>Site clearance must encourage the introduction of alien invasive plant species; Isoscele Construction and Projects Contractor must 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</p>	<p>NEM:BA CARA</p>	<p>Throughout the operational phase</p>	<p>Control and avoid</p>	<p>Control in order to avoid alien plants invasion.</p>
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		<p>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>				
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Soil erosion	Soil	<p>Erosion protection measures are to be undertaken. Daily erosion protection monitoring is to take place at each drilling site 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>Rehabilitation in terms of MPRDA and NEMA principles.</p> <p>General implementation of activities taking National Environmental Management Biodiversity Act and its guidelines into account,</p>	Throughout the operational phase	Control and Remedy	Ensure that soil erosion is minimised.
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		<p>Drainage channels must always be kept free draining.</p> <p>No pooling of water must 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>				
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</p>	National Environmental Management: Waste Management Act	Throughout the operational phase.	Avoid	Avoid the excessive generation of general waste during this phase.



		<p>basis shall be provided at each drilling site.</p> <p>The bins are to be vandal proof; sealed bins that cannot leak leachate material and waterproof that rainwater 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,</p>				
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POTENTIAL IMPACT	ASPECTS AFFECTED	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION	MITIGATION TYPE	STANDARD TO BE ACHIEVED
		re-use and recycling of materials.				
DECOMMISSIONING PHASE						
Removal of temporary infrastructure and Draft rehabilitation of disturbed areas						
Compaction and contamination of soils within the rehabilitation site.	Soil	All vehicles and machinery used at the rehabilitation site must be kept in good working order. No repairs of vehicles or machinery must be conducted at the rehabilitation site unless it	Rehabilitation in terms of MPRDA and NEMA principles. General implementation of activities taking	Throughout the Decommissioning Phase	Avoid	Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in

		<p>is emergency repairs, which must be conducted on protected ground.</p> <p>Movement of vehicles and machinery must be limited to demarcated routes, which must be rehabilitated when no longer in use.</p>	Biodiversity Act and its guidelines into account.			consultation with landowners.
Re-instatement of soil productivity, land capability, land use and topographical patterns.	Soil	<p>Ensure that the soil in the vicinity of the rehabilitation site is not detrimentally impacted.</p> <p>All the waste from demolition must collected from site for disposal.</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	Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in consultation with landowners.



		<p>Once the area is shaped correctly the compacted areas are to be ripped at 300mm and topsoil is to be replaced.</p> <p>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 indigenous grass.</p>				
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 must comply with the Department of Water and	Throughout the Decommissioning Phase	Avoid	Rehabilitation of drilling sites shall be undertaken in line with closure objectives and in



			Sanitation target 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. Occupational 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 must be conducted at areas with excessive dust emissions. Vehicles and machinery must be well maintained.	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.



		The traffic volumes and speed within the rehabilitation site must be controlled.				
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 must be prohibited at the prospecting site.	General implementation of activities taking Biodiversity Act and its guidelines into account.	During Construction phase.	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.	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



Draft Basic Assessment and Environmental Management Programme for the proposed prospecting right application for Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand on the Farm Zandfontein 476 KQ in Bela- Bela Magisterial District, Limpopo Province.

		Equipment must be well maintained and fitted with the 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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4. Financial Provision

4.1. Determination of the amount of Financial Provision.

A total of R42 285.30 is required to both manage and rehabilitate the environment in respect of rehabilitation. Isoscele Construction and Projects (Pty) Ltd must update and review the quantum of the financial provision annually.

4.2 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.

4.3 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 must be consulted with the farmers and affected parties. It must 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 must therefore not be changed by the prospecting operations.



4.3.1 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 17: Rehabilitation Plan

Aspect/ Impact	Rehabilitation Measure	Monitoring Frequency & Responsibility
Removal of construction structures.	<ul style="list-style-type: none"> Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary services, fixtures and any other temporary works. 	Once-off; Isoscele Construction and Projects.
Vegetation clearing/Replanting	<ul style="list-style-type: none"> 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). Plant indigenous plants to minimise the spread of alien and invasive vegetation. 	When re-vegetation is done and in blooming season; Isoscele Construction and Projects or sub-contractor appointed
Topsoil replacement	<ul style="list-style-type: none"> 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 construction). 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. 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. 	Once-off; Isoscele Construction and Projects

Aspect/ Impact	Rehabilitation Measure	Monitoring Frequency & Responsibility
Waste and Rubble Removal	<ul style="list-style-type: none"> Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site. 	Once-Off; Isoscele Construction and Projects
Solid and Hazardous Waste	<ul style="list-style-type: none"> Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site. 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. Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment. 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 construction rubble, but wet cement and liquid slurry, as well as cement powder must be treated as hazardous waste). 	Once-off; Isoscele Construction and Projects
Erosion protection	<ul style="list-style-type: none"> Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site. Retain shrubbery and grass species wherever possible. Perform regular monitoring and maintenance of erosion control measures. 	After rainfall events; Isoscele Construction and Projects or sub- contractor appointed

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

Isoscele Construction and Projects (Pty) Ltd is required to make the prescribed financial provision for the rehabilitation or management of negative environmental impacts. If the Isoscele Construction and Projects (Pty) Ltd 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. Isoscele Construction and Projects (Pty) Ltd must specify that the appointed contractor is required to comply with all the environmental measures specified in the EMP. This must 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 Draft checking of all sites before site clearance



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

Table 18: Quantum of the financial provision

Draft Basic Assessment and Environmental Management Programme for the proposed prospecting right application for Chrome, Iron, Manganese, Platinum Group Metals (PGMs) and General Sand on the Farm Zandfontein 476 KQ in Bela- Bela Magisterial District, Limpopo Province.

Multiplication Factor	
Mineral:	PGMs, Manganese, Chrome, Iron, General Sand
Risk Class:	C- low risk
Area Sensitivity:	Medium
Biophysical:	Low
Social:	Medium
Economic:	Low
Level of Information Available:	Limited Information available (Rule based approach is used)
Weighting Factor	
Weighting Factor 1 - Terrain:	Flat
Weighting Factor 2- Proximity:	Urban

CALCULATION OF THE QUANTUM DMR REF: LP 30/5/1/1/2/13266 PR.

Mine: Isoscele Construction and Projects (Pty) Ltd **Location:** Farm Zandfontein 476 KQ, Rooiberg
Evaluators: Nkhophela Holdings (Pty) Ltd **Date:** 18 September 2019

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (rands)
1	Dismantling of processing plant and related structures (including overland conveyors)	m ³	0	R 13.77	1	1	R -
2 (A)	Demolition of steel buildings and structures	m ²	0	R 181.45	1	1	R -
2 (B)	Demolition of reinforced concrete buildings and structures	m ²	0	R 267.39	1	1	R -
3	Rehabilitation of access roads	m ²	0	R 32.46	1	1	R -
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	R 315.14	1	1	R -
4 (B)	Demolition and rehabilitation of non-electrified railway lines	m	0	R 172.00	1	1	R -
5	Demolition of housing and/or administration facilities	m ²	0	R 363.00	1	1	R -
6	Opencast rehabilitation including final voids and ramps	ha	0	R184,693.00	0.52	1	R -
7	Sealing of Shafts, adits and inclines	m ³	0	R 97.50	1	1	R -
8 (A)	Rehabilitation of overburden and spoils	ha	0	R126,822.00	1	1	R -
8 (B)	Rehabilitation of processing waste ponds (Basic, salt producing waste)	ha	0	R157,954.00	1	1	R -
8 (C)	Rehabilitation of processing waste ponds (acidic, metal-rich waste)	ha	0	R458,771.00	0.66	1	R -
9	Rehabilitation of subsided areas	ha	0	R106,194.00	1	1	R -
10	General surface rehabilitation: remnants	ha	0.3	R100,464.00	1	1	R 30,139.20
11	River diversions	ha	0	R100,464.00	1	1	R -
12	Fencing	m	0	R 115.00	1	1	R -
13	Water management	ha	0	R 38,199.00	0.25	1	R -
14	2 to 3 years of maintenance and aftercare	ha	0	R 13,370.00	1	1	R -
15 (A)	Specialist study	Sum	0			1	R -
15 (B)	Specialist study	Sum	0			1	R -
	Sum of 1 to 15						R 30,139.20
	Weighting factor 2					1	
	Subtotal 1						R 30,139.20
1	Preliminary and General					12%	R 3,616.70
2	Contingencies					10%	R 3,013.92
							Subtotal 2
							R 36,769.82
							Vat @ 15%
							R 5,515.47
							Grand total
							R 42,285.30

Quantum calculation has been attached as **Appendix 4**

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

Isoscele Construction and Projects (Pty) Ltd undertakes to provide financial provision for the implementation of the rehabilitation plan.

5 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 19: 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 /construction.	<ul style="list-style-type: none"> • Dust • Noise • Removal of vegetation • Disruption of animal life • Habitat destruction. • Loss of geology. 	<ul style="list-style-type: none"> • Daily dust suppression. 	Geologist and Project Manager	Daily and monthly

	<ul style="list-style-type: none"> 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 monitor 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

5.1 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 Isoscele Construction and Projects in order to ensure that the provisions of this EMPr are adhered to. Formal monitoring and performance assessment of the EMP will be undertaken and must be submitted to the Department of Mineral Resources every two years.

6 Environmental Awareness Plan

6.1 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 that must be implemented by Isoscele Construction and Projects in order to inform employees and contractors of the environmental risks 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 within Table 18.

Table 20: Environmental Awareness Plan

Air Quality	<ul style="list-style-type: none"> • Activities that may result or mitigate impact on air quality; speeding on roads, the requirements for dust suppression, etc. • Negative impacts on the receiving environment if mitigation measures are not implemented.
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 construction and 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 environments. • Do not litter. • Respect for each other and for different cultures.



	<ul style="list-style-type: none"> • Safety and health requirements
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6.2 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 must be provided with environmental awareness training before prospecting operations start. All new employees must be provided with environmental awareness training. Induction courses will be provided to all employees by a reputable trainer.

7 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 to 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.



8 UNDERTAKING

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
- v. parties are correctly reflected herein.



Signature of the environmental assessment practitioner:

Nkhophele Holdings

Name of company:

26 September 2019

Date:

-END-



APPENDICES

APPENDIX 1: EAP CVs

APPENDIX 2: MAPS

APPENDIX 2A: LOCALITY MAP

APPENDIX 2B: REGULATION SKETCH PLAN

APPENDIX 2C: BOREHOLES LOCATION MAP

APPENDIX 2D: GEOLOGY MAP

APPENDIX 2E: TOPOGRAPHY MAP

APPENDIX 2F: SOIL CLASS MAP

APPENDIX 2G VEGETATION COVER MAP

APPENDIX 2H: BIODIVERSITY SENSITIVITY MAP

APPENDIX 2I: SURFACE WATER MAP

APPENDIX 2J: LAND COVER MAP

APPENDIX 3: PUBLIC PARTICIPATION PROCESS

APPENDIX 3A: SITE NOTICES

APPENDIX 3B: BID AND ACKNOWLEDGEMENT OF RECEIPT

APPENDIX 3C: NOTIFICATION LETTER

APPENDIX 3D: STAKEHOLDERS DATABASE

APPENDIX 4: QUANTUM CALCULATIONS

APPENDIX 5: SITE PICTURES

APPENDIX 6: OTHERS

APPENDIX 6A: ACCEPTANCE LETTER OF THE PROSPECTING RIGHT APPLICATION

APPENDIX 6B: LAND CLAIMS LETTER (to be attached on the final report)