



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

**THE PROPOSED PROSPECTING FOR COAL ON PORTION 4 AND 7 OF
THE FARM RESERVE NO. 20 15840 BY NTUTHUKO EXPLORATION AND
MINING IN THE MAGISTERIAL DISTRICT OF ZULULAND, KWAZULU-
NATAL PROVINCE
FINAL
BASIC ASSESSMENT REPORT
And
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

SEPTEMBER 2019

DMR REFERENCE NUMBER: KZN 30/5/1/1/2/10802PR

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

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1. IMPORTANT NOTICE

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

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

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

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

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

un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2. Objective of the basic assessment process

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

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

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PART A
SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: **NTC Environmental Services**

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e-mail address: **raisibe@ntcgroup.co.za**

ii) Expertise of the EAP.

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

The qualifications of the Environmental Assessment Practitioner (EAP) are attached as **Appendix A.**

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

A detailed Curriculum Vitae of the EAP is attached as **Appendix A.**

b) Location of the overall Activity.

Farm Name:	Portion 4 & 7 of Reserve No.20 Noo.15840GU – MAHLABATHINI
Application area (Ha)	53694.4978
Magisterial district:	Magisterial District of Zululand; Ulundi Local Municipality
Distance and direction from nearest town	The project site is approximately 50 km north from Ulundi
21 digit Surveyor General Code for each farm portion	NOGU00000001584000004 (PORTION4) NOGU00000001584000007 (PORTION7)

c) Locality map

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

A locality map is attached as **Appendix B.**

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

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

Ntuthuko Exploration and Mining (hereon referred to as Ntuthuko) has lodged a prospecting right application with the Department of Mineral Resources (DMR) to ascertain whether there is any economically exploitable coal on portion 4 and 7 of the farm reserve no. 20 15840 situated in the magisterial district of Zululand, KwaZulu-Natal Province. The site plans are attached as **Appendix B** and depict the farm portions associated with the proposed prospecting area.

The proposed prospecting of coal activities triggers GNR 327 Activity 20 of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) Environmental Impact Assessment Regulations as amended on 07 April 2017 as well as the Minerals and Petroleum Resources Development Act (No. 28 of 2002), and as such requires Environmental Authorisation (EA) prior to commencement of the proposed activities. Ntuthuko has therefore appointed NTC Group (Pty) Ltd as the independent Environmental Assessment Practitioner (EAP) to undertake the required EA (in the form of a Basic Assessment (BA)) for prospecting activities.

(i) Listed and specified activities

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. for mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)
Temporary site establishment (including site clearance, construction of stormwater management berms, soil stripping and temporary storage thereof, removable chemical ablution facilities, removable camp tents, rented	4400m ²	X	GNR 327 Activity 20

zozo tank, temporary fencing infrastructure, core log storage boxes, drill rig, parking facility)			
Establishment of temporary access roads and rehabilitation thereof.	2000m ²	N/A	N/A
Establishment of drill sumps	2m ²	X	GNR 327 Activity 20
Re-interpretation all existing data including Desktop Studies and Project Geological Reports	N/A	N/A	N/A
Computer Modelling of existing data including 3D modelling and Geological interpretation	N/A	N/A	N/A
Initiation of a Diamond core drill program on the suggested target polygons based on the geological targets interpreted by the project Geologists.	8000 m ²	X	GNR 327 Activity 20
Rehabilitation of drill site, sumps and access roads	1.44 ha	X	GNR 327 Activity 20

(ii) Description of the activities to be undertaken

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

Ntuthuko has lodged a prospecting right application with the DMR to explore for economically viable coal in the proposed prospecting area. The prospecting activities will be carried out in planned phases within specific timeframes as follow:

Phase 1

It is envisioned that Phase 1 of the activities will be undertaken over 6 months and it entails re-interpretation of all existing data, computer modelling of existing data as well as site establishment on bulk sampling site. There is no environmental risks associated with the re-interpretation of existing data and computer modelling of the terrain as they are non-invasive activities. The temporary site establishment will involve site clearing to allow the entry of heavy vehicles mounted with drilling rigs as well as levelling of ground where temporary shelter will be erected.

Phase 2

Phase 2 will be undertaken for approximately 30 months and it entails diamond core drilling, logging and sampling, sample analysis as well as geostatistical modelling and evaluation. There are no risks associated with geostatistical modelling and evaluation as it is a non-invasive activity. The diamond core drilling is invasive and entails undertaking confirmatory drilling of holes using Diamond drilling. The diamond drilling operation will extract the core which will be logged before taken to the laboratory for analysis. This stage determines the exact location of the ore body. An experienced drilling contractor will carry out the works in accordance with the industry best practice and in compliance with the Mine Health and Safety Act. It is anticipated that most negative environmental impacts will occur at this stage. Post drilling activities, the borehole will be covered and made safe by means of concrete cap.

OPERATIONAL PHASE: Prospecting phase

This phase entails the commencement of the prospecting activities upon approval of the prospecting right application. Existing access roads will be utilised as far as possible to access the proposed prospecting site. Should there be areas that cannot be accessed via existing access roads, temporary access roads or tracks will be established to access those areas and will be rehabilitated thereafter. The invasive prospecting phase requires the drilling of about 100 prospecting holes using diamond drilling. Each exploration borehole drilling operation will temporarily occupy a small portion of land at any given time. This phase involves the entire prospecting operation from the desktop study to the actual drilling, survey and sampling. Measures should be taken to mitigate the negative impacts associated with the prospecting operations.

The following will be carried out before the commencement of activities:

- **Site preparation**

Site clearance will be avoided wherever possible, however should it be required, it will be limited to drill sites only.

- **Conservation of Heritage Resources**

Should any items of historical or archaeological importance be uncovered during prospecting phase, all activities must cease until the South African Heritage Resources Agency (SAHRA) has been notified. Further drilling activity will only proceed once the go-ahead has been received from SAHRA.

- **Roads**

Access to the proposed prospecting area will be gained from the existing gravel roads. Should there be areas that cannot be accessed via the existing roads, temporary roads/tracks will be established to access the drilling area.

- **Limitation of activities**

All drilling activity will take place in accordance with the provisions made in the Environmental Management Programme report (EMPr), industry best practice guideline documents where available, and in compliance with the Mine Health and Safety Act.

No trespassing on properties adjacent to the approved prospecting areas will be allowed. Poaching of animals, collection of flora and interference with livestock is prohibited.

- **Solid waste management**

All waste generated on site (e.g. domestic waste from the camp and/or drilling sites) will be collected and stored in a designated temporary storage area, following which it will be collected and disposed of at a registered or approved off site waste disposal facility. The reclamation, recycling and reuse of waste must be given preference to disposal. Record of disposal should be retained as evidence.

No burning, burying or dumping of any waste materials, vegetation, litter or refuse shall be permitted.

Hazardous wastes, including used oil and batteries will be stored in tamper proof containers and should be disposed of at the nearest hazardous waste disposal site. The only mine residue produced will be overburden. This will be stockpiled in a specified area and returned to the drill holes on closure.

- **Temporary Site Establishment**

A temporary site camp will be established at a designated area and will comprise of the following:

- Waste Storage;
- Equipment and vehicle storage;
- Chemical and Hazardous material storage cage;
- Ablution facilities (portable toilets); and
- Temporary site offices.

Scrap metal generate during machinery and vehicle maintenance will be stored in this designated area at the site storage until either disposal or removal for recycling. Temporary/portable toilets will be provided for site-personnel and will be serviced regularly by the appointed service provider. No septic tanks or pit latrines are to be established. The contractor must provide proof of safe waste disposal/treatment. Drip trays will be utilized in cases of minor vehicle maintenance at the designated temporary site storage area and all major services will be undertaken off site.

- **Water supply**

The water that will be used during the prospecting operations will be transported to site. No water will be sourced from water bodies without relevant authorisation from the Department of Water and Sanitation (DWS).

DECOMMISSIONING PHASE

- **Prospecting area rehabilitation**

After the end of the prospecting operations, the area will be rehabilitated to ensure revegetation and restoration occurs. The site will be cleared of all equipment, litter and/or scrap, ablution facilities and any rock remnants. All boreholes will be covered and made safe by means of concrete cap. Topsoil will be returned to the site, and its vegetation cover will be monitored according to the rehabilitation plan. Rehabilitation measures will be detailed in the subsections in this report.

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT. (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA)	Section 16	The application for prospecting right was lodged with the Department Mineral Resources.
National Environmental Management: Air Quality Act (Act No. 39 of 2004) (NEM: AQA)	To enhance dust suppression and to control emissions from vehicles working on the proposed prospecting site.	No Authorisation required
National Environmental Management Act (Act 107 of 1998) (NEMA) as amended. Environmental Impact Assessment Regulations (2014).	GNR 983	The application for prospecting right was lodged with the Department Mineral Resources.
National Water Act (Act No 36 of 1998) (NWA)	Reducing and preventing pollution and degradation of water	There are a number of wetlands and watercourses in the

	resources as well as preventing the unauthorised abstraction of water.	prospecting area. Should any prospecting activity occur within 500m of a wetland and within 100m of a watercourse, a WUL application in terms of Section 21 c & i of the NWA must be lodged with the DWS.
National Heritage Resources Act (Act No. 25 of 1999) (NHRA)	Section 38	Should a need arise for an Authorisation based on the occurrences of sensitive heritage resources in the proposed prospecting area, the applicant must obtain the obligatory permits prior to commencing with the activities.
Occupational Health and Safety Act (Act No. 85 of 1993)	To ensure that Health and Safety measures are implemented and adhered to on site.	No Authorisation Required, only implementation is necessary.
The Constitution of South Africa	Section 24	No Authorisation required. The constitution is observed in NEMA.
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEM:BA)	The proposed development must aim to protect species and ecosystems that warrant national protection.	Should there be protected species in the prospecting area, authorisation must be obtained for the removal or relocation thereof.

f) Need and desirability of the proposed activities.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The mining industry is a major force in the world economy and contributes roughly 8.3 per cent to the South African Gross Domestic Product (GDP). South Africa has an abundance of

mineral resources which makes it one of the top mineral producers in the world. The Zululand District Municipality (ZDM) Integrated Development Plan (IDP) (2018) indicates that the Zululand District Municipality, which comprises of the Ulundi Local Municipality, has a shortage of large economic investments to boost the local economy. According to the ZDM IDP (2018), the district relied heavily on coal mining in the late 1990's, however, this has declined in recent years as a result of closure of mines due to open markets on coal mining and agriculture which has led to a decline in the economy of the area.

Table 1: Gross Value Added (GVA) per Capita per District Municipality (ZDM IDP, 2018)

District	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Average
KwaZulu-Natal	4.4%	5.8%	5.3%	6.4%	4.2%	-1.2%	3.2%	3.5%	2.5%	2.2%	1.8%	3.5%
eThekweni	3.5%	6.0%	5.6%	7.0%	4.9%	-1.0%	2.8%	3.6%	2.9%	2.3%	1.3%	3.5%
Ugu	8.4%	7.6%	6.2%	6.0%	3.8%	-1.8%	3.5%	3.9%	0.2%	-0.1%	1.4%	3.6%
uMgungundlovu	4.7%	5.4%	4.7%	5.2%	4.8%	-0.5%	3.9%	3.7%	2.0%	1.6%	2.3%	3.4%
Uthukela	4.8%	6.2%	4.9%	5.5%	4.0%	-1.1%	3.4%	2.9%	1.2%	-1.4%	2.5%	3.0%
Umzinyathi	11.9%	4.9%	3.8%	4.3%	2.3%	-1.5%	2.3%	2.4%	3.0%	2.7%	3.5%	3.6%
Amajuba	1.6%	1.8%	4.5%	7.4%	0.7%	-3.8%	1.8%	0.7%	5.6%	3.1%	2.3%	2.3%
Zululand	5.3%	3.1%	2.5%	4.4%	2.5%	-1.8%	1.0%	0.8%	2.7%	2.0%	3.0%	2.3%
Umkhanyakude	7.0%	7.4%	5.5%	5.3%	4.3%	-0.9%	4.0%	3.9%	2.1%	3.4%	2.7%	4.1%
Uthungulu	4.1%	4.9%	4.9%	6.2%	0.9%	-2.2%	5.3%	4.7%	1.5%	3.7%	2.2%	3.3%
iLembe	10.2%	8.8%	6.0%	4.2%	4.7%	-2.0%	4.9%	3.3%	-0.4%	2.3%	2.5%	4.0%
Harry Gwala	7.5%	7.4%	7.5%	6.0%	5.1%	-0.8%	5.0%	6.0%	6.1%	4.0%	3.7%	5.2%

Table 1 above depicts the KwaZulu-Natal provincial GVA for each of the district in the province. Zululand is ranked lower for economic output for the province than it is for total population with a GVA per capita being comparatively low in the provincial context. The KwaZulu-Natal GVA per sector/ industry in 2014 depicts 9.5% for Mining with Agriculture at 7.9% (ZDM IDP, 2018).

Ulundi is listed as a tertiary provincial node, acting as a representative in the district in terms of agriculture service nodes, mining service nodes, government administrative centres, rural service centres, etc. Mining and quarrying makes up 5% of the main economic sectors in the district, which is an aspect that could be improved by establishment of mining operations should the proposed prospecting discover exploitable coal reserves.

The proposed prospecting activities are detrimental in determining whether there is any economically exploitable coal in the proposed prospecting area. The proposed prospecting activities could lead to the discovery of the economically viable coal reserves which will contribute positively to the economy of KwaZulu-Natal and South Africa as a whole. Coal is likely to occur in the proposed location based on the geological characteristics of the area and literature research completed thus far. The prospecting activities will be restricted to the preferred location so as to prevent unnecessary environmental impacts.

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

The Geology of KwaZulu-Natal comprises of the Pongola Supergroup overlain by the Karoo Supergroup which is made up of the Ecca Group shale and sandstones. The Ecca group is made up of the Vryheid Formation which is well known for the occurrences of coal beds. The proposed prospecting area is located approximately 50km north of Ulundi. Historical reports, regional geological maps and geophysical data suggest that the site has the presence of coal reserves hence the election of this particular site. The applicant intends to utilise the best technology available to ensure that the prospecting activities are carried out with minimal negative impacts on the receiving environment.

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

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

i) Details of the development footprint alternatives considered.

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

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

a) Proposed Location

The site for the proposed prospecting activities is located approximately 50 km North of Ulundi in the magisterial district of Zululand, KwaZulu-Natal Province.

b) Activity to be undertaken

Ntuthuko proposes the core drilling of deep exploration boreholes to get additional reef intersections. The drilling will be carried out after conducting desktop studies and in accordance with the proposed drilling map as depicted in **Appendix B**. The drilling operation will extract the core which will be logged before taken to the laboratory for analysis.

c) Preferred design and layout of the activity

The design and layout of the activity aims to ensure that only existing roads may be used to access the site, as well as attempt to minimise the impacts on the current land use and social aspects. Should there be areas that cannot be accessed via the existing roads,

temporary roads/ tracks will be established to access the drilling area. The final layout plans will only be available after the completion of phase 1 of the prospecting operations, following geophysical survey. These final plans will be communicated with the landowner and Interested and Affected Parties (I&APs).

d) Preferred technology of the activity

The applicant intends to utilise the best technology available to ensure minimal negative impacts and to enhance positive impacts thus no provision has been made for alternative technology. Diamond core drilling operation will be utilised to extract the core which will be logged before taken to the laboratory for analysis.

e) Operational Aspects of the activity

The prospecting activities will take place over a period of 3 years or 36 months, with the first 6 months dedicated to non-invasive activities such as desktop study of the area, geological surveys as well as literature review. The remaining 30 months will be allocated to invasive activities which includes drilling of about 100 boreholes, survey and sampling. Training and employment opportunities will be offered to the locals so as to contribute to local job creation.

f) 'No-go' alternative

Should the proposed prospecting operations not be permitted, it will result in the following outcomes:

- The potential coal resources may not be discovered and the prospect of future mining activities will be lost and the potential resources will remain untapped. Similarly, the downstream impacts such as potential contribution loss to the local, provincial and South African Economy/GDP.
- Employment creation and training opportunities that would be triggered by the prospecting activity may be lost.

ii) Details of the Public Participation Process Followed

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

The PPP / stakeholder notification is a requirement of the NEMA EIA and NWA regulations, and it aims to ensure that all Interested and Affected Parties (I&APs) are consulted and involved in such processes. Public notification and consultation ensures that all stakeholders have an opportunity to raise their comments/concerns/issues with regards to the process and project thus ensuring an open and transparent process with parties involved e.g. the

applicant, the EAP, I&APs and competent authority, which in turn ensures for a comprehensive environmental assessment and reporting. The objectives of the PPP are as follows:

- To ensure an open and transparent consultation and assessment process;
- To identify and inform of a broad range of I&APs of the proposed project and associated environmental assessment Process;
- Establish an ongoing line of communication between the I&APs and project team;
- Provide an opportunity for I&APs to raise their issues, concerns and questions and ensure that these are addressed in the Process;
- To identify the potential significant impacts and alternatives and issues in terms of the Ntuthuko project; and
- To develop a Comments and Response table which adequately records all comments/issues raised by I&APs, as well as the EAP and Applicants responses thereto.

The subsections below outline the various forms of notification and consultation that were conducted during the PPP. Evidence of the PPP has been included as **Appendix C**.

1. Interested and Affected Parties (I&AP) Database

The identification and registration of stakeholders has and will be an ongoing process during this environmental authorisation process. Neighbouring businesses, adjacent landowners / tenants, as well as other I&APs (inter alia non-government organisations, local forums, municipal and provincial departments) were identified and specific attention was given to the local organisations, commenting government departments, active organisations in the area and local business owners.

NTC developed an electronic I&APs database which includes details of the stakeholders who have registered with NTC and provided comment or request inclusion notification regarding the environmental authorisation process' progress. A copy of the I&APs database is included in **Appendix C1**.

It should be noted that registered stakeholders are entitled to comment, in writing, on all written submissions made to the competent authority by the applicant or the EAP managing an application, and to bring to the attention of the competent authority any issues which that party believes may be of significance to the consideration of the application, provided that comments are submitted within the timeframes that have been approved or set by the competent authority or any extension of a timeframe agreed to by the applicant or EAP.

Please note that contact details of all stakeholders have not been included in the database for confidentiality reasons. Should these be required, they will be provided in accordance with the Promotion of Access to Information Act (No 2 of 2000).

2. Site Notices

The NEMA EIA Regulations (specifically regulation 41(2)(a)) requires public that site notices be fixed at a place conspicuous and accessible to the public at the boundary or on the fence of the site where the activity to which the application relates is to be undertaken and on any alternative sites. Alternative sites that have been identified were in close proximity to the preferred line and consideration of such was noted during placement of the site notices. Two site notices will be placed at the following locations (**Appendix C2**):

- Entokozweni Store in Ceza; and
- The Tribal Authority Offices in Ceza.

The purpose of the site notices was to notify the public of the project and to invite stakeholders/I&APs to register and comment on the project. Refer to **Appendix C2** for the site notice compiled and photographic evidence of the placement.

3. Background Information Documents

The NEMA EIA Regulations (specifically regulation 41(2)(b)) requires that written notice be given to the:

- Owners and occupiers of the site as well as adjacent properties;
- Municipal ward councillor;
- Municipality; and
- Any organ of state having jurisdiction in respect of any aspect of the activity.

NTC compiled a background information document (BID) which contained background information on the proposed project, outlined the environmental process(es) and detailed the process that must be followed to provide comments. The BID further provided the necessary EAP contact details to allow for I&AP registration.

The BID's were distributed to all landowners and tenants around the Ceza area, as well as emailed to identified I&APs listed in the database. A copy of the BID is contained in **Appendix C3** along with proof of distribution.

4. Advertisements

The NEMA EIA Regulations (specifically regulation 41(2)(c)) requires that an advertisement be placed in either a local newspaper or a Government Gazette. Should the project have a potential impact that extends beyond the boundaries of the metropolitan or local

municipality, the project should be advertised within at least one provincial or national newspaper. In terms of the proposed prospecting project, NTC published an advertisement (notifying stakeholders of the project and legal requirements thereof) in a local newspaper. The Ilanga Newspaper published the advertisement on 11 August 2019 on page 18, in the classified section. Refer to **Appendix C4** for the newspaper advertisement and proof of placement.

5. Stakeholder Meeting

A public meeting with the I&APs was held on 28 June 2019 in Ceza to inform the surrounding community of the application, the processes underway and the potential environmental and social impacts (negative and positive) associated with the proposed prospecting project, as well as inviting them to register as I&APs. The meeting minutes from the consultation meeting are attached as **Appendix C5**.

6. Landowners Consent

Landowners consent letters are attached as **Appendix C6**.

7. Authority Correspondence

The draft BAr and EMPr was sent to the Department of Water and Sanitation (KwaZulu-Natal Provincial Offices), Economic Development, Tourism and Environmental Affairs (EDTEA) for comment. The DMR was sent a draft EMPr for comment and a prospecting rights application in order to register the project as required. Comments on the Draft BAr were only received from KZN EDTEA and are attached as **Appendix C7**. The authority correspondence is attached as **Appendix C7**.

iii) **Summary of issues raised by I&Aps**
 (Complete the table summarising comments and issues raised, and reaction to those responses)

Comments raised by I&APs are attached as Appendix C1.

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			
<u>AFFECTED PARTIES</u>					
Landowner/s	X				
Lawful occupier/s of the land	X				
Landowners or lawful occupiers on adjacent properties	X				
Municipal councillor					
Municipality					
Organs of state (Responsible for					

infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e	X				
Communities	X				
Dept. Environmental Affairs	X				
Other Competent Authorities affected	X				
<u>OTHER AFFECTED PARTIES</u>		X			
<u>INTERESTED PARTIES</u>					

iv) The Environmental attributes associated with the alternatives. (The environmental attributes described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

(1) Baseline Environment

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

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

1. Geographical Environment

The proposed project is located on Portion 4 and 7 of the Reserve No.20,15840GU spanning approximately 53 694.4978 hectares located on the southern boundary of the Zululand District Municipality in north-east of KwaZulu-Natal under the Ulundi Local Municipality (**Appendix B**). The largest part Ulundi Municipality is predominantly rural with very few settlements exhibiting urban characteristics in context to other Zululand Municipalities.

2. Physical Environmental

2.1 Climate

According to the Zululand District Municipality Integrated Development Plan Review 2014/15, varying climate conditions prevail across the Zululand Region, where Ulundi Municipality is situated. The region generally experiences mean annual temperatures of approximately 4°C to 20°C with warm to hot summers and cool dry winters. The mean annual precipitation ranges from 493mm to 1 682mm. The prevalent form of precipitation in the region are thunderstorms with occur during the summer rainfall except for Zululand Lowveld and Mistbelt areas (cold from precipitation in winter) (Zululand District Municipality Integrated Development Plan Review 2014/15). Ceza settlement falls under the Ulundi Municipality that experiences a mixture of two “precipitation sectors” with an average between 722 to 826mm and 827 to 912mm per annum respectively. This is linked to the varying topography within the district. However, a few selected pockets receive above average precipitation of 1,012mm to 1,251mm per annum. Evaporation rates of the municipality has means of 1801mm to 2000mm per annum for low lying areas and means of 1601mm to 1800 mm per annum for high lying areas and these conditions may affect wind occurrences in the district (Ulundi Municipality, IDP Review 2018/2019).

2.2 Air Quality

There are scattered areas of air pollution in the Zululand region that houses Ulundi Municipality, due to mining, industrial and domestic burning activities. Air quality is below the acceptable threshold and is not considered a major problem. The air pollution hotspots are primarily located in the Vryheid vicinity from mining activities. Sparsely scattered hot spots have been identified across the region due to domestic burning activities especially in the Nongoma local municipality. However, monitoring stations for key pollutants within the area have not been identified and there are no strategies in place to control the air quality. Ulundi and Nongoma

local municipalities are mainly rural communities that indulge in domestic burning of wood for fuel and have high risks of veld fires. These are the major factors that may lead to poor air quality thus veld fires should be properly controlled and maintained at acceptable thresholds (Zululand District Municipality 2013).

2.3 Geology

Groenewald (2012) ascertains that the geological foundation of KwaZulu-Natal is characterised by the Kaapvaal Craton and the Natal Metamorphic Province, which is overlain by the Pongola Supergroup with specific reference to the lower Nzuse Group which contains fossils of stromatolites (Figure 1). The overlying Natal Group sediments are followed by the Dwyka Group tillites, Ecca Group, Beaufort Group and Stormberg Group sedimentary sequences, culminating in the Jurassic volcanic deposits of the Drakensberg Formation and Lebombo Group with associated dolerite intrusions.

The Ecca group comprises of the shales of the Pietermaritzburg Formation, the light grey sandstones of the Vryheid Formation which is known to be coal rich as well as the dark grey siltstone of the Volksrust Formation (Groenewald, 2012). The geology in the study area varies with mainly shales and sandstones of the coal rich Ecca group.

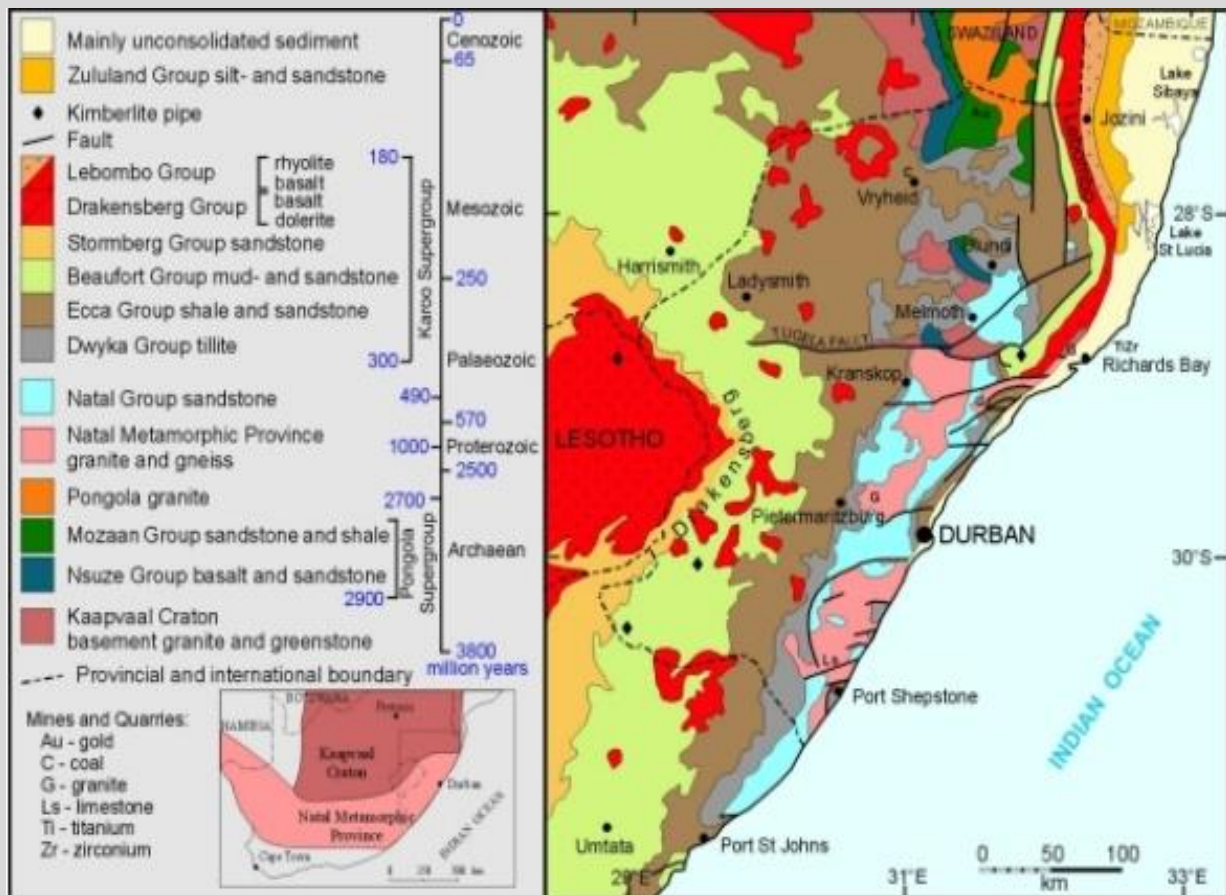


Figure 1: The Geology of KwaZulu-Natal (University of KwaZulu-Natal, n.d)

2.4 Topography

The mean elevation above sea level in Ulundi Municipality ranges from 1600 metres in the western area that is further divided by the White Mfolozi River into the northern and southern region; 723 metres (in the central areas) and up to 140 metres (eastern areas boundary). The slope categories range from smaller than 1:10 (10% incline), 1:6 (17% incline) and 1:3 (33% incline) and steeper. Should the Ceza area have a greater gradient- increase from a ratio of 1:6 to 1:3, the more difficult and expensive it will be come for transportation infrastructure provision and construction. Therefore, it should be noted that the slope can affect which modes of transport are used and the terrain will determine settlement patterns or the line of roads. Catchments areas are evident where rainwater drains downhill into a drainage basin i.e. streams and rivers that are separated from adjacent basins by a catchment divide. The water is ultimately utilised to provide potable water for household purposes in the area.

2.5 Land Use and Cover

There are six main land cover elements visible within the Ulundi Municipal area, namely urban areas, rural settlements and subsistence farming, woodlands, grasslands and plantations as illustrated **Figure 2**. Densely populated areas are scattered in smaller pockets along major transport routes but is also scattered throughout the municipality. Concentrations of subsistence farming are found near the settlement. Ulundi Municipality is characterised by large areas of woodlands situated on the evenly sloped areas and scattered grasslands which are the main land cover category in the western areas. Plantations are in the southwestern parts of the municipality, with some isolated plantations in the north with some dense bushland groupings.

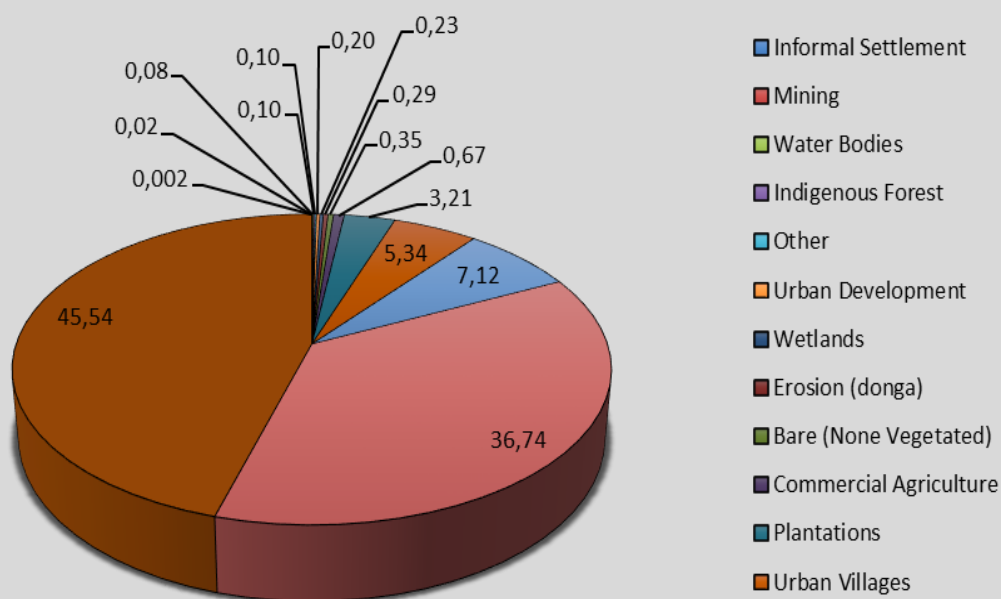


Figure 2: Broad land Use for Ulundi Municipality (extracted from Ulundi Municipality IDP, 2018)

3. Biological Environment

3.1 Flora

A landscape corridor stretches along the Ulundi Municipal southern border area, including the protected areas and up along the R34. Small pockets of irreplaceable Conservation Biodiversity Areas (CBA's) are sparsely scattered throughout the municipal area and near Mahlabathini and other areas i.e. Bababango, Nguthu border and aBaqulusi Border). The CBA's are mainly concentrated in the east, where Ulundi borders on the HluhluweMfolozi Game Reserve. Optional CBA's are mainly concentrated in the western parts of the municipality surrounding the areas of Bloubank, and Babanango (Ulundi Municipality IDP, 2018).

3.1.1 On site vegetation

The site was not subjected to a detailed biodiversity assessment, the study of the onsite vegetation was conducted during a site visit that occurred on the 28th of June 2016. The proposed prospecting site is made up of grassland and sparsely populated trees and shrubs. (See **Appendix D** for site Photographs).

3.2 Fauna

Ulundi Municipal is part of the Zululand district, a region, that is considered an avifaunal hotspot (greater than 400 birds) with at least a minimum of the following: critically endangered species (2); endangered species (4); vulnerable species (35) and near threatened species (50). Additionally, 5 important fish species, 19 mammals, 3 reptiles and 6 invertebrates have been identified. Therefore, it is important to consider the following factors when looking at rural developments that does not cost the CBA's: biodiversity threats, particularly from areas designated for the development in the SDF and IDP (Zululand IDP Review 2014/15).

4. Socio-economic

The study area falls under the Ulundi Local Municipality (Ulundi LM) which falls under the Zululand District Municipality. The socio-economic factors of both the above mentioned local municipalities are discussed below.

4.1 Economic Activities and Employment

The study area is mainly populated by Zulu people (96,7 %) with 54% of households in the area headed by women. 45% of the population are younger than 19 years of age, increasing the chances of a child-headed household as well as limited number of people with higher education qualifications. According to the Statistics SA (2015) data, approximately half of the population (50,4%) within Ulundi Municipality are dependent on some form of grant and subsidy as a result of the socio-economic predominant in a rural based economy. Figure 3 illustrates that approximately 17.1% households has no access to an income, whilst 5.1% households have a combined income of less than R4800 per annum.

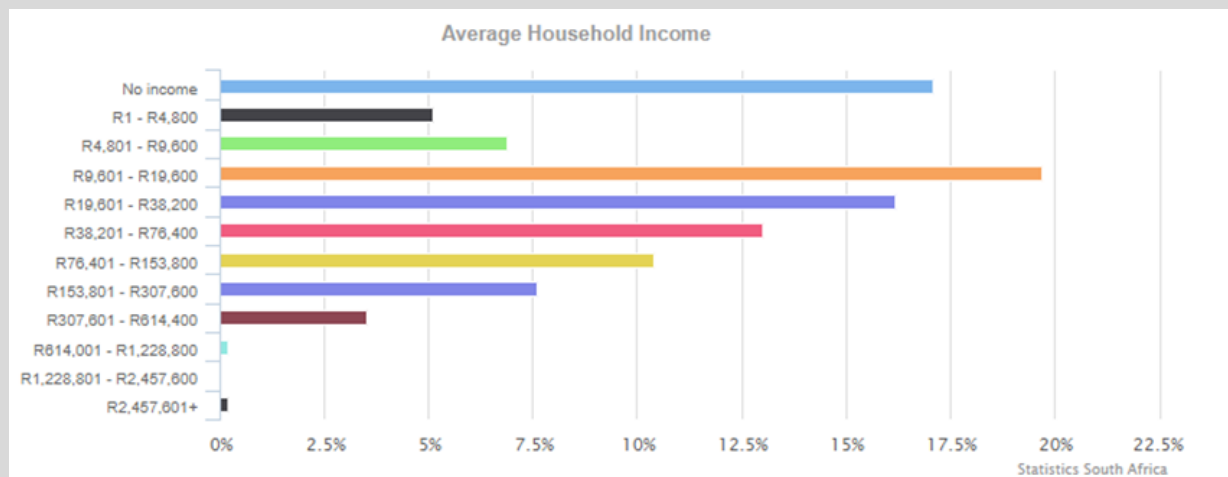


Figure 3: Average Household Income (Accessed from StatsSA, 2011 Census)

The Municipality ranks 6th in the provincial Gross Value Added (GVA) for Zululand region that contributes approximately 4,1% to the provincial GVA. Thus, the municipality GVA per capita within the region is comparatively low in the provincial context with community services (30.3%), finance (13.3%), trading (10.3%), mining (9.5%) and agriculture (7.9%). (Ulundi Municipality IDP, 2018).

Agriculture crop and fruit potential of the communal areas of Ulundi is marginal to poor except for the negligible portions in high lying plateaus in each district (Zululand District Municipality IDP Review 2014/15). The informal economy makes an important contribution to the economic and social life in rural settlement and offers an alternative to the traditional formal retail sector and a source of income to the unemployed. The study area has predominantly rural communities with lower income levels and high levels of unemployment which may be possible impacts of poverty and in a bid to alleviate these socio-economic statuses, the Ulundi Municipality IDP 2018 make's mention of interventions that will be run in comparison to other urban communities of Ulundi Municipality (Ulundi Municipality IDP,2018).

According to Stats SA Census (2011), the high dependency levels of 48.5% indicate the low levels of education, that affect the types of employment opportunities available for the population, impacting the potential income generation per household. Therefore, it becomes important for the municipality to harness and diversify economic sectors i.e. agriculture and mining sector to create formal and informal employment opportunities in the local communities that call for semi and unskilled (Ulundi Municipality IDP,2018).

The undertaking of the proposed development may create employment opportunities for individuals in the local area as well as potential training and learning opportunities throughout its operation. The proposed project will aim to address in part, the prioritised access to youth unemployment, seeing mining as a 'sunrise industry', of income, as well as use special

economic zones to attract foreign and domestic direct investment; radical economic transformation aimed at significantly improving the position of black women and communities in the economy.

4.2 Infrastructure

Transportation of people and goods within the Ulundi Municipality can be achieved mainly by road and to a lesser extent rail and air. The road network and infrastructure consist of mainly gravel roads with only the main thoroughfares and Ulundi town having blacktop roads. The study area is reached via gravel roads extending from the R34 and the R66. The gravel roads are underdeveloped making the settlement highly inaccessible. Lack of transportation access to the area is also a major contributory factor to the lack of economic activity within the rural area. It is estimated that 74% of the population are pedestrians because of socio economic challenges that limit out of town movements due to lack of funds and reliable public transport system. The proposed prospecting activity may promote economic opportunities and possible businesses that will move into the area. As well as motivate for provision of a transportation infrastructure (Ulundi Municipality IDP, 2018).

The Ulundi Municipality, as per the Water Services Act of 1997 must provide water and sanitation infrastructure to fulfil its statutory obligation as local government as per Section 24 and Section 156 of the Constitution of South Africa (Act 108 of 1996), which indicates the right to human and environmental health and waste management. Access to water and sanitation for the traditional communities within the Ulundi Municipality was determined with the use of Statistics South Africa (StatsSA) Census 2011 data for water use, supplied at a district level. It approximates between 26% to 50% of the district's population is reliant on boreholes, springs, dams, water tanks, rainfall and rivers as their primary water source. The percentage of districts with no access to water-borne sewage falls within 80% to 100%. Therefore, the direct abstraction from open surface waters, i.e. river, and lack of access to sanitation services may also imply an increased risk of poor water quality. However, study area uses other means of sanitation, such as pit latrines, which are sufficiently high enough to exceed the natural capacity of the receiving environment to process the waste.

Refuse removal is currently limited to the urban areas of the Municipality; this service is not available to the existing informal settlements and rural areas except for hospitals. Therefore, most of the population disposes of their own refuse in informal dump sites, probably by burning it which impacts negatively on the sustainability of the environment (Ulundi Municipality IDP, 2018). It is evident from the Statistics SA Census data that within Ulundi municipality electricity is the predominant source of energy for lighting, heating and cooking, followed by wood, paraffin and gas. However, it is noted that the number of households using solar as a source of lighting

increase from 2011. This indicates that residents within Ulundi are slowly moving towards using more sustainable sources of energy. However, this may not be a true reflection for the study area.

(b) Description of the current land uses.

The proposed prospecting site is made up of grassland and sparsely populated trees and shrubs. Land use within the site includes isolated rural homesteads, infrastructure such as powerlines, rivers and wetlands. It is envisioned that no infrastructure will be affected by the prospecting activities and a safe 100m buffer will be placed around the existing infrastructure. No prospecting activities will be conducted within 500m from a wetland and 100m to a watercourse without the proper authorisation for Section 21 c and i in terms of the NWA.

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

Surrounding Land use

The proposed prospecting site is made up of grassland and sparsely populated trees and shrubs. Land use within the site includes isolated rural homesteads, infrastructure, rivers and wetlands. The infrastructure in the area includes powerlines and roads. Environmental features on the site include wetlands and rivers. No infrastructure will be affected by the prospecting activities and a safe 100m buffer has been placed around the existing infrastructure. Existing farm access roads will be used to get to site as far as possible. Existing access roads will be utilised as far as possible to access the proposed prospecting site. Should there be areas that cannot be accessed via existing access roads, temporary access roads or tracks will be established to access those areas and will be rehabilitated thereafter.

Heritage

No burial sites identified on the larger sections of the exact area proposed for the prospecting activities. However, there is always a possibility of encountering previously unidentified burial sites in any landscape in South Africa. The site personnel must watch out for possible finds in the proposed area. In the event that burial sites are encountered during construction, they are still protected by applicable legislation and may not be disturbed without engaging with SAHRA.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

Locality map is attached as **Appendix B**. Also refer to site photographs attached as **Appendix D** showing the current land use features.

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

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

The following potential impacts were identified by the EAP as potentially relevant to the prospecting operations, and were identified from a desktop review, site visit and in consultation with identified I&APs:

- Vegetation and Fauna loss and disturbance;
- Topsoil loss;
- Surface water contamination;
- Groundwater contamination due to drilling;
- Noise generation;
- Increased dust generation;
- Loss of a natural resource;
- Improved local infrastructure;
- Loss and sterilisation of mineral resources;
- Change in land use and
- Increased job opportunities and skills transfer.

These are further detailed in the subsections below and have been assessed in accordance with the NTC Impact Assessment Methodology (noted in **section (vi)** below).

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

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

The potential environmental impacts identified for the prospecting project were evaluated according to severity, duration, extent and significance of the impact, and include the potential occurrence and assessment of cumulative impacts. The Risk Assessment Methodology below was used for the ranking of the impacts.

This system derives environmental significance by rating the consequence of the impact on the environment and the likelihood of the impact occurring. Consequence is calculated as the average of the sum of the severity, duration and extent, while Likelihood is the average of the frequency of the activity together with the probability of an environmental impact occurring during those frequencies. **Table 2** to **Table 4** detail the rating assignment process, as well as the

calculations applied to achieve averages and the overall significance.

The methodology was applied to the identified impacts without and with the application of proposed mitigation measures.

Determination of Consequence

Consequence is calculated as the average of the sum of the ratings of severity, duration and extent of the environmental impact.

Table 2: Assessment and Rating of Severity, Duration and Extent

Rating/Description	1	2	3	4	5
Severity	Negligible / non-harmful / minimal deterioration (0 – 20%)	Minor / potentially harmful / measurable deterioration (20 – 40%)	Moderate / harmful / moderate deterioration (40 – 60%)	Significant / very harmful / substantial deterioration (60 – 80%)	Irreversible / permanent / death (80 – 100%)
Duration	Less than 1 month / quickly reversible	Less than 1 year / quickly reversible	More than 1 year / reversible over time	More than 10 years / reversible over time / life of project or facility	Beyond life of project of facility / permanent
Extent	Within immediate area of activity	Surrounding area within project boundary	Beyond project boundary	Regional / provincial	National / international
Consequence	(Severity + Duration + Extent) / 3				

Determination of Likelihood

Likelihood considers the frequency of the activity together with the probability of the environmental impact associated with that activity occurring.

Table 3: Assessment and Rating of Frequency and Probability

Rating/Description	1	2	3	4	5
Frequency	Less than once a year	Once in a year	Quarterly	Weekly	Daily
Probability	Almost impossible / Never	Unlikely	Probable	Highly likely	Definite
Likelihood	(Frequency + Probability) / 2				

Environmental Significance

Environmental significance is the product of the consequence and likelihood values:

- **Significance = Consequence X Likelihood**

Table 4: Determination of Environmental Significance

Significance	Description
L (1 – 4.9)	Low environmental significance
LM (5 – 9.9)	Low to medium environmental significance
M (10 – 14.99)	Medium environmental significance
MH (15 – 19.9)	Medium to high environmental significance
H (20 – 25)	High environmental significance. Likely to be a fatal flaw.

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

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

The current layout plan is the only plan that was assessed and no alternative sites have been investigated because prospecting is a locality bound industry that has to occur where the resources are likely to be found depending on the geological character of the area and this area is known for coal mining activity. However, the final drilling site layout plans that will determine the exact drilling sites (will be available after the completion of the re-interpretation of desktop studies being supported by phase 1 drill results). The positive and negative impacts that the proposed activity will have on the environment and the community that may be affected include:

- Vegetation and Fauna loss and disturbance;
- Groundwater contamination due to drilling;
- Improved local infrastructure;
- Economic growth for Ulundi LM and KwaZulu-Natal;
- Change in land use and
- Increased job opportunities and skills transfer.

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

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

Impact (Risk)	Risk	Action/Management
<p>Air quality</p> <ul style="list-style-type: none"> • Generation of dust due to wind exposure • Generation and emission of dust and/or fumes into the atmosphere resulting in reduced air quality 	Medium	<p>The area should be watered regularly to prevent dust generation impacting neighboring residents.</p> <p>The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used</p>
<p>Soil</p> <ul style="list-style-type: none"> • Soil contamination from leaking or dripping hydrocarbons from parked vehicles. • Soil contamination from leaking or poorly maintained portable ablution facilities. 	Medium	<p>Vehicles or machinery should be well maintained and regularly inspected for leaks and faults. Vehicles or machinery should use drip trays if stationary for extended periods.</p> <p>Dirty surface run-off should be directed to water-tightholding facilities i.e. contained on site.</p>
<p>Security and site accessibility</p>	Medium	<p>Landowners will be notified about all the activities that will be undertaken on site and about any authorisations granted by the department.</p> <p>Site staff will not reside on the property and the final locations of the drill holes will be communicated with landowners so as negotiations can be made with the relevant landowners.</p>

Employment	Medium	Employment of local labourers will be preferred where possible and where skills are available. Similarly, training of the local community members to ensure skills transfer and improvement will be undertaken.
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ix) Motivation where no alternative sites were considered.

No alternative sites were considered as prospecting is a locality bound industry that has to occur where the resources are likely to be found depending on the geological character of the area. The majority of the community members in the settlement area close to the proposed prospecting site are unemployed and are likely to directly benefit from the prospecting operations through temporary employment opportunities and skills transfer, as well as spin-off economic benefits such as small business development, supply chain etc.

x) Statement motivating the alternative development location within the overall site. (Provide a statement motivating the final site layout that is proposed)

No alternative development locations were assessed as prospecting is a locality bound industry that has to occur where the resources are likely to be found depending on the geological character of the area. Coal is the common mineral that is mined in the province and **Figure 4** below depicts the project locality in relation to the neighbouring coal mining activities in the area.

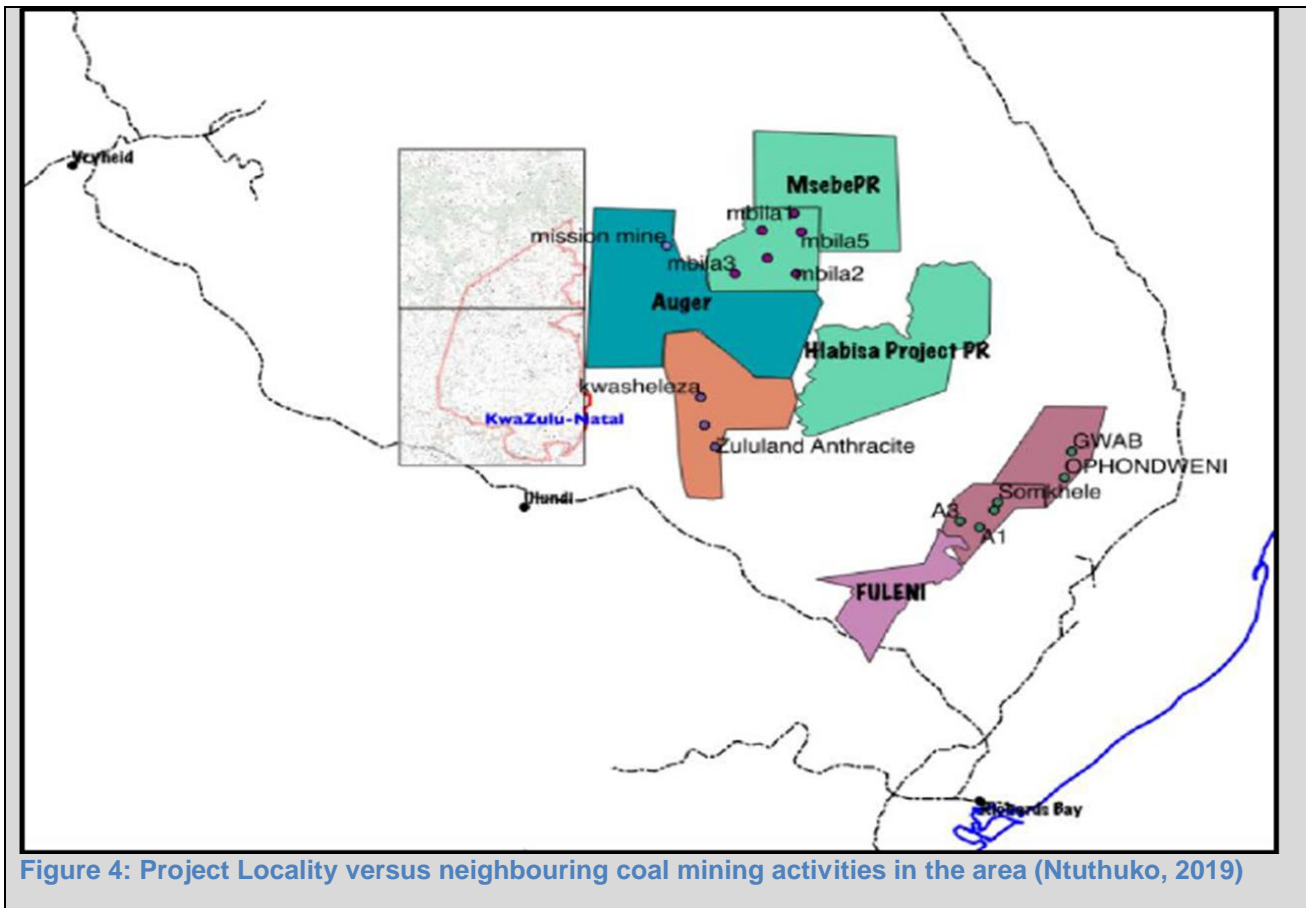


Figure 4: Project Locality versus neighbouring coal mining activities in the area (Ntuthuko, 2019)

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

(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

The significance of an impact is an expression of the cost or value of an impact to society. Parameters such as intensity of impacts, duration, extent, significance and probability of occurrence are used in assessing the identified environmental impacts. Impacts are divided according to phases, construction and operation phase, assessed and mitigation measures proposed.

Section J below provides a summary of the impact assessment and details the potential impacts noting both the determined significance rating without mitigation (WoM) measures, proposed mitigation measures, and significant rating with mitigation measures (WM). The full impacts table with calculations is included in **Appendix E**.

i) 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).

<p>NAME OF ACTIVITY</p> <p>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc</p> <p>E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)</p> <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollutionetc....etc...)</p>	<p>ASPECTS AFFECTED</p>	<p>PHASE In which impact is anticipated</p> <p>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)</p>	<p>SIGNIFICANCE if not mitigated</p>	<p>MITIGATION TYPE</p> <p>(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p> <p>E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation.</p>	<p>SIGNIFICANCE if mitigated</p>
<p>Foot and vehicular movement on site; Temporary access road/ tracks</p>	<p>Loss of topsoil from the site due to erosion.</p>	<p>Soils</p>	<p>Construction; operation and Decommissioning</p>	<p>Low</p>	<ul style="list-style-type: none"> • Ensure that site personnel and vehicles are restricted to designated roads. • Ensure the areas cleared are the minimum possible. • Mark out areas for clearance prior to clearing works. 	<p>Low</p>

					<ul style="list-style-type: none"> • Ensure that exposed areas are covered with slag/gravel or grassed to reduce surface run-off where possible. 	
<p>Storage, handling, and / or use of dangerous or hazardous materials on site</p>	<p>Soil contamination from dirty water run-off and / or dirty water storage.</p>	Soils	Construction and operation	Low-Medium	<ul style="list-style-type: none"> • If hydrocarbons and/or chemicals are stored / kept on site, they must be stored in an impermeable bund. • Safety Data Sheet (SDS) must be readily available and only personnel appropriately trained should handle such materials. • Spill kits must be well stocked and readily available to contain possible leaks and or spills. • Where possible drip trays must be utilised for vehicles standing longer than 24hrs, and all 	Low

					<p>vehicles must be well maintained (off site maintenance only).</p> <ul style="list-style-type: none"> • Should spills occur, they must be cleaned up immediately. 	
Parked vehicles leaking / dripping	Soil contamination from leaking or dripping hydrocarbons from parked vehicles.	Soils	Construction; operation and Decommissioning	Low-Medium	<ul style="list-style-type: none"> • Vehicles or machinery should be well maintained and regularly inspected for leaks and faults. • Vehicles or machinery should use drip trays if stationary for extended periods (more than 24hrs). 	Low
Use of ablution facilities	Soil contamination from leaking or poorly maintained portable ablution facilities.	Soils	Construction; operation and Decommissioning	Low-Medium	<ul style="list-style-type: none"> • Ablution facilities must be well maintained and cleaned regularly. • Dirty surface run-off should be directed to water-tightholding facilities i.e. contained on site. 	Low
Storage of	Potential ground	Ground	Construction and	Low-Medium	<ul style="list-style-type: none"> • Dirty surface run-off 	Low

contaminated surface run-off	water contamination from dirty water run-off and / or dirty water storage permeating through the soil.	water	operation		<p>should be directed to the water holding facility i.e. contained on site.</p> <ul style="list-style-type: none"> • Used oils should be transferred off-site for recycling or re-use by a license party. 	
Vegetation and soil removal, or continued bare soil exposure to the elements	Increased sedimentation of surrounding areas due to erosion onsite.	Surface Water	Construction and operation	Low-Medium	<ul style="list-style-type: none"> • During topsoil removal, it must be removed and stockpiled separately for later use during rehabilitation. • Erosion protection must be implemented to ensure sedimentation of surrounding areas is prevented. 	Low
Site clearance and excavations	Loss of species diversity during drilling activity and increase habitat fragmentation. Loss of flora/	Flora and/or Fauna	Construction and operation	Low-Medium	<ul style="list-style-type: none"> • Ensure the areas cleared are the minimum possible. • Mark out areas for clearance prior to clearing works. • Where possible, large 	Low

	faunal habitat due to clearing and plant operations, as well as stockpiling. Death/injury to faunal species which may be located beneath the ground should excavations be required on site e.g. establishment of additional infrastructure.				tree or indigenous species should be retained or relocated for later use during rehabilitation. <ul style="list-style-type: none"> • Ensure that the rehabilitation plan is implemented to mitigate fragmentation and re-introduce biodiversity. • A qualified Botanist should conduct a site walk over prior to clearance and excavations to facilitate the identification of protected species. • Species located on site should be removed by a trained / qualified professional and authorisations thereof must be obtained prior to removal or relocation. 	
Transport of	Increased soil	Flora	Construction and	Low-Medium	<ul style="list-style-type: none"> • Ensure alien plant 	Low

<p>materials, and use of vehicles on site and the surrounding road network</p>	<p>disturbance and vehicle use on and around the site could increase alien invasive species propagation in the area and onsite.</p>		<p>operation</p>		<p>species are not allowed to establish and / or are removed at regular intervals should they establish.</p>	
<p>Use of lighting and noisy vehicles / machinery</p>	<p>The use of lighting may disturb fauna (especially nocturnal fauna) resulting in migration to the surrounding areas</p>	<p>Fauna</p>	<p>Construction; operation and Decommissioning</p>	<p>Low-Medium</p>	<ul style="list-style-type: none"> • Only use lighting when and where it is essential to the safe operation of the plant. • Where lighting is necessary to the plant operation, they should face down. • The use of infrared or coloured lighting should be considered as an alternative to white lighting to avoid impacting nocturnal fauna or avifauna e.g. owls and rodents. 	<p>Low</p>

Vehicle, machinery and equipment use	<p>Increased ambient noise during operation, particularly during drilling operations and vehicles use.</p>	<p>Noise</p>	<p>Construction; operation and Decommissioning</p>	<p>Low-Medium</p>	<ul style="list-style-type: none"> • Vehicles, equipment, machinery generating loud noise volumes must be repaired or fitted with noise abatement protection. • Delivery or collection should occur during daylight hours. • The use of heavy noise generating machinery (pumps, vehicles etc.) should be limited to daylight hours only. 	<p>Low</p>
Vehicle and machinery accessing the site	<p>Increased traffic congestion along access roads to and from the site, particularly peak hours.</p>	<p>Traffic</p>	<p>Construction; operation and Decommissioning</p>	<p>Low-Medium</p>	<ul style="list-style-type: none"> • Speed limits and traffic regulations must be adhered to on and off site. • Access to surrounding roads must be minimised during peak hour traffic and wherever possible right turns across lanes should be avoided e.g. plan routes in advance 	<p>Low</p>

					and where possible implement use of single route to mitigate traffic impacts.	
Appointment of contractors and subsequent sub-contractors	This will result in direct temporary jobs, as well as up and down stream employment of suppliers or contractors.	Socio-economic	Construction; operation and Decommissioning	Low-Medium	<ul style="list-style-type: none"> Local contractors and community members should be used as far as practical. Promotion of local labour use by subcontractors should be encouraged, along with the employment and use of local suppliers. 	Medium
Skills transfer and mentorship, as well as on the job training	Skills transfer and mentorship resulting in improved local skills set in the medium and long term.	Socio-economic	Construction and operation	Low-Medium	<ul style="list-style-type: none"> To ensure that skill transfer occurs, local employees should undergo both informal and formal training, e.g. job shadowing, training courses, tool box talks, skills assessments. A training programme should be developed to track training and 	Medium

					development of employees, as well as schedule training.	
Movement on and around the site, storage of materials and waste, as well as possible clearing or construction of infrastructure	The possibility of uncovering unearthed burial grounds and graves within or around the operational area may arise.	Heritage	Construction and operation	Low-Medium	<ul style="list-style-type: none"> Should any heritage resources be found on site, be it archaeological artefacts, graves and structures older than 60 years old; the applicant should immediately cease with the activity and report the incident to the relevant authorities. The applicant should induct employees on the importance of heritage resources and that they should not be impacted in any way if uncovered on site. 	Low
Community Unrest	Community unrest may cause interruptions to drilling activities.	Social	Construction; operation and Decommissioning	Medium	<ul style="list-style-type: none"> Open communication must be established for the community and the applicant. The applicant must 	Low

					<p>ensure that there is an individual designated to addressing community issues.</p> <ul style="list-style-type: none"> • A complaints register must be placed at the project site and be made to community members to allow them to record any disputes. 	
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The supporting impact assessment conducted by the EAP is attached as **Appendix E**.

j) Summary of specialist reports.

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

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
N/A	<ul style="list-style-type: none"> • No specialist assessments have been conducted at this point in time. • Should there be a need to conduct prospecting activities within 500m of a wetland and within 100m of a watercourse, a WUL application for Section 21c and i must be lodged with the NWA prior to commencement. A wetland impact assessment, ecological impact assessment as well as Surface Water studies must be undertaken to support this application. • If it happens that artefacts are discovered during prospecting, then a heritage impact assessment will be conducted, and the site will be reported to SAHRA as per National Legislation. • Should a potential for mining arise following the prospecting, a mining rights application will be required which will necessitate a number of detailed specialists and licensing/permitting assessment processes. 	N/A	N/A

k) Environmental impact statement

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

During the BAr process, the potential impacts of the prospecting operations on the biophysical and socio-economic environments were assessed and it was determined that there are mitigation measures that can be implemented to ensure that the impacts are minimised. The main potential impacts were limited to:

- Biodiversity loss and fragmentation;
- Topsoil loss;
- Surface water contamination;
- Noise and dust generation;
- Loss of a natural resource;
- Improved local infrastructure;
- Community unrest; and
- Increased job opportunities and skills transfer.

The operations are expected to provide employment to and skills transfer within the local community, and on the job training and mentorship by contractors will be encouraged.

The potential impacts assessed can be sufficiently minimised through the implementation of the recommended mitigation and management measures as detailed in the EMPr and impacts table (**Appendix E**).

The socio-economic impacts associated with the proposed project should have a positive influence on the area which can be further enhanced through adequate contractor management, and improved plant management through EMPr implementation.

(ii) Final Site Map

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

A site map is attached as **Appendix B**.

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

Positive Impacts

Positive impacts on the socio-economic status for the area will arise through the provision of employment. During the prospecting activities temporary employment opportunities will be created for local residents, thereby creating economic benefit to the community. The potential attainment of mineral resources as a result of prospecting may lead to mining activity thus adding to local economic development.

Negative impacts

Negative impacts such as soil loss, biodiversity loss, increased noise and dust generation and water contamination may potentially occur during the prospecting operations. However, even without mitigation these were not determined to be significant mainly due to the limited size of the site, the proposed drilling methodologies to be employed, and the positive impacts of the undertaking the proposed activity.

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

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

The objectives of this document are to:

- Encourage good management practices through planning and commitment to environmental issues;
- Reduce or mitigate environmental impacts and risk that may be caused during the construction, operation and decommissioning phases;
- Define how the management of the environment is implemented and designate responsible person(s), as well as how performance is evaluated and reported;
- Provide rational and practical environmental guidelines to:
 - Minimise disturbance of the surrounding environment;
 - Prevent or minimise contamination and / or pollution;
 - Protect of on-site indigenous flora and fauna;
 - Prevent soil erosion and facilitate re-vegetation of affected areas;
 - Prevent contamination of surface and / or groundwater;
 - Prevent potential spillages and leakages of chemical and hydrocarbon substances as well as general / hazardous wastes;
 - Comply with relevant legislation, regulations, standards and guidelines for the protection of the environment; and

- Adopt the best practical means available to prevent or minimise adverse environmental impacts.
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of any waste that could be generated as a result of the project;
- Describe monitoring procedures required to identify and prevent the occurrence of potential environmental impacts; and
- Train employees and contractors with regard to their environmental obligations and general awareness on site.

Soil erosion

- Mark out areas that will be cleared prior to clearing activities.
- Areas cleared shall be levelled in order to minimize the possibility of soil erosion.
- Clearing must only be restricted to planned construction areas.
- Areas where soil erosion is taking place shall be rehabilitated in order to prevent further erosion of the specific area.
- Dust abatement techniques shall be used on open / bare surfaces to minimize windblown erosion.
- Erosion controls shall be applied to minimize soil erosion from vehicular traffic, e.g. soil compacting and speed limits.
- Equipment and vehicles shall not be allowed outside the designated routes and site boundaries as determined by the site engineers.
- Routine site inspections shall be conducted to assess the effectiveness and the maintenance requirements for erosion and sediment control system.
- Rehabilitation of excavated and / or exposed areas should be completed as soon as practical following aggregate material removal.
- Topsoil should be stockpiled separately in a designated area in consultation with the engineer. This soil may only be used for onsite rehabilitation.
- Drip trays should be used under drilling equipment and standing vehicles to avoid oil and fuel spillages on the ground.

Air quality

- Dust generated by excavation activities, stockpiling and transport shall be controlled by means of water spraying. Similarly, covering stockpiles with a tarpaulin or vegetation should be encouraged.
- Vehicles shall travel at low speed on gravel / dirt roads to limit dust generation.
- Rehabilitation of excavated and / or exposed areas should be completed as soon as practical following aggregate material removal.

- Burning of waste is barred on site and fire extinguishers and personnel protective equipment (PPE) is mandatory for the site.

Biodiversity Degradation

- Vegetation clearing shall be restricted to the minimum area only. Proper demarcation of areas to be cleared shall be done which will reduce the risk of unnecessary destruction of vegetation.
- The applicant must ensure that any permits for the removal / relocation of plant or faunal species are obtained prior to undertaking these activities. Appropriately qualified personnel must be utilised in this regard.
- Alien vegetation management should be implemented to prevent propagation of alien vegetation on site and spreading to the adjacent properties.
- Fauna species located on site should be removed / relocated prior to excavations as far as practical. This could be completed through visual inspection and undertaken by trained staff or third party contractors.

Ground and Surface Water Pollution

- Limited amount of water will be used for the prospecting activities and there will be no abstraction of water from the water resources. Water will rather be trucked to site.
- Chemical toilets will not be placed in close proximity with any water resource.
- Potentially contaminated surface water will be retained on site as far as possible.
- No maintenance/servicing of construction vehicles is permitted on site. Places where hazardous material or substances are handled / stored must be bunded.
- In the case of spillage, the contractor will be liable to arrange for a competent company to clear the affected area.
- All spills must be cleaned up immediately.

Noise Pollution

- Construction activities must be limited to working hours specified in the EMPr.
- Vehicles, equipment, machinery generating loud noise volumes must be repaired or fitted with noise abatement protection.
- Noisy operations must be limited to daylight hours only.

Waste Pollution

- Burning or burying of waste is not allowed and staff is required to utilise rubbish bins at all times.
- All waste bins and domestic waste must be removed from site on a regular basis to licenced facility.

m) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The EMPr contains guidelines, operating procedures and rehabilitation/pollution control requirements which should be binding on the holder of the prospecting permit. It is essential that this portion be carefully studied, understood, implemented and adhered to at all time. An ECO should be appointed to monitor compliance with the EMPr and the final drilling layout must be submitted to DMR upon completion of the proposed development.

n) Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

- Due to the brief nature of the site visit conducted at the study area, this assessment is based largely on our understanding of the physical and ecological setting based on available literature and information gathered on site.
- Some landowners were not consulted in person as part of the initial PPP as they were not available to attend the I&AP meeting.
- Although a draft drilling layout plan is attached as **Appendix B**, the final drilling layout plan can only be finalised once Phase 1 of the programme has been completed.
- No abstraction from a watercourse will occur, however, it is unclear whether drilling activities will be undertaken within 500m of wetlands and 100m of a watercourse, thus the requirement for a WUL has not been ascertained.
- No Ecological, Wetland or Heritage Impact Assessments were undertaken.

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

i. Reasons why the activity should be authorized or not.

Following from the above, the sites identified are suitable for the proposed activities, and the EAP did not identify any environmental fatal flaws or significant negative impacts, provided the mitigation and management measures are implemented, that should cease progress. The EMPr sufficiently address the potential negative impacts while enhancing potential positive impacts. The activity should be authorised to provide the opportunity for possible mining activity in the area which will contribute to the economy and also provide a better understanding of both the regional geology and mineralogy of the area.

ii. Conditions that must be included in the authorisation

As per **section (n)** above, the EMPr must be adhered to during the prospecting activities.

p) Period for which the Environmental Authorisation is required.

The Environmental Authorisation is required for five (5) years.

q) 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 EAP confirms that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both this BAR report and the EMPr.

r) Financial Provision

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

A total of R50 000.00 will be provided for rehabilitation activities post drilling operations. The management of environmental aspects during the drilling operations will be undertaken by the drilling contractor.

i. Explain how the aforesaid amount was derived.

The aforesaid amount was derived based on the rehabilitation activities that will be undertaken. Drill sites will be surveyed and backfilled as they are completed. Rehabilitation measures will include the removal of the drill rig, capping of the exploration hole and returning of the stockpiled soil, as well as revegetation and monitoring thereof.

ii. Confirm that this amount can be provided for from operating expenditure. (Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

Ntuthuko will provide the financial provision of R50 000.00 for rehabilitation and post-monitoring of the site.

s) Specific Information required by the competent Authority

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

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

The majority of the community members in the settlement area close to the proposed prospecting site are unemployed and are likely to directly benefit from the prospecting operations through temporary employment opportunities and skills transfer. It was requested by the local communities

(during the Public Participation Process (PPP)) that local labourers and suppliers be utilised during the project so as to promote local benefits further. Landowners, surrounding landowner, national, provincial and local government departments were identified and notified of the application during the PPP. All comments and concerns will be recorded and considered during compilation of the final report. Part A (3) (ii) of this report provides comprehensive details on the PPP to date with sufficient proof attached as **Appendix C**.

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

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

The proposed prospecting activities will be undertaken in phases and the final drilling plans will only be available after the completion of phase 1 of the prospecting operations whereby the exact location of the drilling holes will be determined. Should heritage artefacts including graves and human remains be noted during phase 1, a Heritage Impact Assessment must be undertaken in the areas that are designated for disturbance.

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

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

The proposed drilling activities requested as part of this authorisation is the only current viable manner in which a mineral deposit can be identified and used to generate a South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC) compliant resource which is a minimum requirement to determine whether it is viable to invest in a future mine. The majority of the community members in the settlement area close to the proposed prospecting site are unemployed and are likely to directly benefit from the prospecting operations through temporary employment opportunities and skills transfer. The EAP did not identify any environmental fatal flaws or significant negative impacts, provided the mitigation and management measures are implemented, that should cease progress. The EMPr sufficiently address the potential negative impacts while enhancing potential positive impacts. The activity should be authorised to provide the opportunity for possible mining activity in the area which will contribute to the economy and also provide a better understanding of both the regional geology and mineralogy of the area.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

- a) **Details of the EAP**, (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

Provision for this requirement is included in **Part A, section 1(a)**. Refer to **Appendix A** for a comprehensive CV.

- b) **Description of the Aspects of the Activity** (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).

Provision for this requirement is included in **Part A, section 1 (h)**.

c) **Composite Map**

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

Map is attached as **Appendix B**.

d) **Description of Impact management objectives including management statements**

- i) **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)

The closure objectives have been aligned to the baseline environment and are compliant with regulations. Closure objectives include but are not limited to:

- Ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002 and the NEMA closure requirements
- To ensure that the prospecting footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment.
- To ensure end land use objectives e.g. agricultural or farming, are attainable through rehabilitation practices.
- To ensure that the goals which were specified in the rehabilitation section in this report have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with proposed prospecting are eliminated or minimized to acceptable

standards.

- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighbouring communities.

The main objective of the closure and rehabilitation programme is to return the area to as near as possible to its baseline environment and to allow for the original land use. The rehabilitation programme that has been prepared as part of the Draft EMP in the relevant sections and will guide the rehabilitation activities in a progressive manner. All drill sites will be surveyed and backfilled on an ongoing basis / as they are completed. The rehabilitation of drill sites would take the form of limited manual raking to open and flatten the surface area and reseeded in areas that were disturbed to establish vegetation. The drilled holes will be covered and made safe by means of concrete cap. Rehabilitation aims to minimise erosion and maximise vegetation establishment, and where necessary fertilisation and seeding will be completed along with post monitoring to ensure adequate vegetation establishment.

ii) **Volumes and rate of water use required for the operation.**

The use of water for activities other than water spraying or human consumption is not likely. The water that will be utilised for the prospecting activities will be trucked to site and therefore no water will be sourced from a natural resource in the surrounding areas.

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

No. A water use licence has not been applied for as it is envisioned that no drilling will take place within 32m of any watercourse or within 500m of a wetland, also only a limited amount of water is required for the prospecting activities thus no abstraction will be required. Should it be determined that there will be drilling activities within the abovementioned regulated areas, a WUL application process must be undertaken prior to commencement of activities.

iv) Impacts to be mitigated in their respective phases

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

ACTIVITIES	PHASE	SIZE AND SCALE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc</p> <p>E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>(of operation in which activity will take place.</p> <p>State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure).</p>	<p>of disturbance</p> <p>(volumes, tonnages and hectares or m²)</p>	<p>(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>	<p>Describe the time period when the measures in the environmental management Programme must be implemented Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. . With regard to Rehabilitation, therefore state either: -. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>
<p>Soil loss due to handling, excavation and stockpiling.</p>	<p>Construction and Operation</p>	<p>~500 m²</p>	<ul style="list-style-type: none"> • Topsoil must be stripped aside and be used for rehabilitation. • All areas susceptible to erosion must be vegetated or graded appropriately to it does not result in excessive erosion, gully formation and/or pooling of water. • The contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site used during the contract period. This shall include 	<ul style="list-style-type: none"> • NEMA 	<p>During site establishment and drilling operations.</p>

			<p>existing spoil sites that are being re-entered.</p> <ul style="list-style-type: none"> • Ensure that site personnel and vehicles are restricted to designated roads. • Ensure the areas cleared are the minimum possible. • Mark out areas for clearance prior to clearing works. • Ensure that exposed areas are covered with slag/gravel or grassed to reduce surface run-off where possible. 		
Removal of indigenous, protected plant species or red data species.	Construction, Operation, Rehabilitation and Post Closure.	~500 m ²	<ul style="list-style-type: none"> • Ensure that the rehabilitation plan is implemented to mitigate fragmentation and re-introduce biodiversity. • A qualified Botanist should conduct a site walk over prior to clearance and excavations to facilitate the identification of protected species. • Species located on site should be removed by a trained / qualified professional and authorisations thereof must be obtained prior to removal or relocation. • Where areas are going to be disturbed 	<ul style="list-style-type: none"> • National Environmental Management: Biodiversity Act, 2004 (Act No. 10 Of 2004): Norms and Standards for The Translocation of Indigenous Species in South Africa (2015) (General Notice 44) 	During site establishment, drilling operations, rehabilitation and post closure monitoring phase.

			<p>through the destruction of vegetation, for example the establishment of the temporary site storage protected vegetation occurring in the area to be disturbed must be salvaged and kept in a controlled environment such as a nursery, for future re-planting in the disturbed areas as a measure of rehabilitation.</p>	<ul style="list-style-type: none"> • NEM:BA – Alien and Invasive Species Regulations, 2014 (GNR 598) (2014) • NEM:BA – Alien and Invasive Species Regulations, 2014 (General Notice 83) 	
Use of Herbicide / Pesticides for the eradication of alien plant and/or faunal species	Construction, Operation, Rehabilitation and Post Closure.	~500 m ²	<ul style="list-style-type: none"> • The use of herbicides shall be in compliance with the terms of the Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No 36 of 1947). In terms of this Act, a registered pest control operator shall apply herbicides, or shall supervise the application of herbicides. • The use of herbicides shall be restricted to the removal and control of alien vegetation, and shall not be permitted within identified sensitive areas. 	<ul style="list-style-type: none"> • National Environmental Management: Biodiversity Act, 2004 (Act No. 10 Of 2004): Norms and Standards for The Translocation of Indigenous Species in South Africa (2015) (General Notice 44) 	During site establishment, drilling operations, rehabilitation and post closure monitoring phase.

				<ul style="list-style-type: none"> • SANS 10206:2010 	
Storage and Handling of hazardous / dangerous substances including fuel and gas	Construction and Operation	~10m ²	<ul style="list-style-type: none"> • Before containment or storage facilities can be erected, the contractor shall furnish the Engineer with details of the preventative measures which are proposed to be installed in order to mitigate against pollution of the surrounding environment from leaks or spillage. • The preferred method shall be an impermeable floor that is banded. • The proposals shall also indicate the emergency procedures to be implemented in the event of misuse or spillage of substances that will negatively impact on an individual or the environment. • All the necessary handling and safety equipment required for the safe use of hazardous / dangerous substances shall be provided by the contractor to, and used or worn by the staff whose duty it is to manage and maintain the supplier's 	<ul style="list-style-type: none"> • Mine Safety and Health Act, 1996 (Act 29 of 1996) • Various SANS • NEM:WA • GNR 331_National Norms and Standards Remediation of Contamination 	During site establishment and drilling operations.

			<p>plant, machinery and equipment.</p> <ul style="list-style-type: none"> • Hazardous / dangerous substances shall only be stored under controlled conditions and in minimal volumes which can be kept in a storage cage • All hazardous materials will be stored in a secured, area with access limited to authorised personnel only. • The contractor shall provide proof that relevant authorisation to store such substances has been obtained from the relevant authority. • In addition, hazard signs indicating the nature of the stored materials shall be clearly displayed on the storage facility or containment structure. • In the event of a reportable spillage under Section 30 NEMA or 28 NWA, the contractor is to appoint someone to clean up immediately. Spillage must be reported to Department of Water Affairs as applicable. • Small non reportable spills must be clean by the contractor / staff 		
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			<p>immediately using on site spill kits.</p> <ul style="list-style-type: none"> • Spill kits must be retained on site and in good condition. • Drip trays must be retained on site to contain spillages. 		
Noise and air pollution	Construction, Operation, Rehabilitation and closure.	~5369 .50 ha	<ul style="list-style-type: none"> • To minimize air and noise pollution, construction team shall use only equipment in good condition, which shall be properly maintained. • Cleared areas and roads must be undergo regular dust suppression to prevent dust generation • Disturbance or disruption of the daily lives of local communities and their livelihood, including noise and dust pollution shall be minimized in as far as is practicable. • Construction must be limited to normal working hours i.e. per the Mining Health and Safety Act • All machinery, including earthmoving vehicles must be regularly maintained. • Construction vehicles must use designated entry and exit routes so that 	NEM: AQA (No. 39 of 2004) as amended	During site establishment, drilling operations and closure.

			<p>noise impacts can be largely confined to specific access routes.</p> <ul style="list-style-type: none"> • All construction activities must abide to national noise laws and municipality by-laws. • Noisy operational activities should be undertaken during day light hours only. If noisy activities are temporarily required outside day light hours, neighbours should be informed in advance. • A complaints register must be made available the site security office. Should any complaints be received, these must be logged in the complaints register and reported to the responsible person on-site. All complaints must be closed out within 14 days. 		
Potential fuel and oil spills	Construction, Operation and closure.	~10m ²	<ul style="list-style-type: none"> • No major services or breakdown maintenance/servicing of construction vehicles is permitted on site. • In the case of spillage, the contractor will be liable to arrange for a competent company to clear the affected area. • Chemical toilets must be regularly 	<ul style="list-style-type: none"> • Dangerous Goods (Storage and Handling) SANS standards various • Safety Data Sheet 	During site establishment, drilling operations and closure.

			<p>serviced to avoid spills or leaks from toilets.</p> <ul style="list-style-type: none"> • Potentially contaminated surface water must be contained in a holding facility if generated from site. • Regular inspections of all bund areas should be undertaken to ensure no leakages occur. • No discharge of pollutants such as contaminated water, cement, fuels or oils should be allowed to flow off-site. 		
Storm water management	Construction, Operation and post closure.	~10 m ²	<ul style="list-style-type: none"> • If deemed necessary, the determination and separation of clean and dirty water areas should be implemented via a storm water management plan • Erosion protection measures should be implemented on the site to reduce erosion and sedimentation of the receiving environment. Measures could include: <ul style="list-style-type: none"> ▪ Sandbags; ▪ Sediment traps; ▪ Bunding around soil stockpiles; ▪ Vegetation of areas not to be 	<ul style="list-style-type: none"> • NWA • NWA: GNR 704 • NEMA 	During site establishment, drilling operations and post closure monitoring.

			developed.		
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e) Impact Management Outcomes

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

ACTIVITY (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. <ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring • Remedy through rehabilitation. 	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Soil loss due to handling, excavation and stockpiling	Loss of topsoil, vegetation	Soil Biodiversity	Construction and Operation	<ul style="list-style-type: none"> • Topsoil must be stripped aside and be used for rehabilitation. • All areas susceptible to erosion must be vegetated or graded appropriately to it does not result in excessive erosion, gully formation and/or pooling of water. 	Manage and avoid.

Removal of indigenous, protected plant species or red data species during excavations	Loss of topsoil, vegetation	Soil Biodiversity	Construction, Operational, Decommissioning and Post Closure.	<ul style="list-style-type: none"> • Ensure that the rehabilitation plan is implemented to mitigate fragmentation and re-introduce biodiversity. • A qualified Botanist should conduct a site walk over prior to clearance and excavations to facilitate the identification of protected species. • Species located on site should be removed by a trained / qualified professional and authorisations thereof must be obtained prior to removal or relocation. • Where areas are going to be disturbed through the destruction of vegetation, for example the establishment of the temporary site storage, the vegetation occurring in the area to be disturbed must be salvaged and kept in a controlled environment such as a nursery, for future re- 	Manage and avoid.
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				<p>planting in the disturbed areas as a measure of rehabilitation;</p> <ul style="list-style-type: none"> • The construction camp, office and storage areas for material and equipment must be fenced in to prevent impacts and human interference to spread further than the site. 	
Use of Herbicide / Pesticides for the eradication of alien plant and/or faunal species	Loss of topsoil, vegetation	Soil Biodiversity	Construction, Operational, Decommissioning and Post Closure.	<ul style="list-style-type: none"> • The use of herbicides shall be in compliance with the terms of the Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No 36 of 1947). In terms of this Act, a registered pest control operator shall apply herbicides, or shall supervise the application of herbicides. • The use of herbicides shall be restricted to the removal and control of alien vegetation, and shall not be permitted within identified sensitive areas. 	Manage and avoid.

<p>Storage and Handling of hazardous substances including fuel and gas</p>	<p>Soil and water contamination</p>	<p>Soils Surface and Ground Water</p>	<p>Construction, Operational and Decommissioning.</p>	<ul style="list-style-type: none"> • Before containment or storage facilities can be erected, the contractor shall furnish the Engineer with details of the preventative measures which are proposed to be installed in order to mitigate against pollution of the surrounding environment from leaks or spillage. • The preferred method shall be a concrete floor that is banded. • The proposals shall also indicate the emergency procedures to be implemented in the event of misuse or spillage of substances that will negatively impact on an individual or the environment. • All the necessary handling and safety equipment required for the safe use of hazardous / dangerous 	<p>Manage and monitor.</p>
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				<p>substances shall be provided by the contractor to, and used or worn by the staff whose duty it is to manage and maintain the supplier's plant, machinery and equipment.</p> <ul style="list-style-type: none"> • Hazardous / dangerous substances shall only be stored under controlled conditions and in minimal volumes which can be kept in a storage cage. • All hazardous materials will be stored in a storage cage with access limited to authorised personnel only. • The contractor shall provide proof that relevant authorisation to store such substances has been obtained from the relevant authority. • In addition, hazard signs indicating the nature of the 	
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				<p>stored materials shall be clearly displayed on the storage facility or containment structure.</p> <ul style="list-style-type: none"> • In the event of a reportable spillage under Section 30 NEMA or 28 NWA, the contractor is to appoint someone to clean up immediately. Spillage must be reported to Department of Water Affairs as applicable. • Small non reportable spills must be clean by the contractor / staff immediately using on site spill kits. • Spill kits must be retained on site and in good condition. • Drip trays must be retained on site to contain spillages. 	
Noise and air pollution from drilling and vehicular	Increased dust pollution And Health impacts	Air; Social	Construction, Operational, Decommissioning and closure.	<ul style="list-style-type: none"> • To minimize air and noise pollution, construction team shall use only equipment in good condition, which shall be 	Manage and avoid.

movements				<p>properly maintained.</p> <ul style="list-style-type: none"> • Cleared areas and roads must be undergo regular dust suppression to prevent dust generation • Disturbance or disruption of the daily lives of local communities and their livelihood, including noise and dust pollution shall be minimized in as far as is practicable. • Construction must be limited to normal working hours i.e. per the Mining Health and Safety Act • All machinery, including earthmoving vehicles must be regularly maintained. • Construction vehicles must use designated entry and exit routes so that noise impacts can be largely confined to specific access routes. 	
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				<ul style="list-style-type: none"> • All construction activities must abide to national noise laws and municipality by-laws. • Noisy operational activities should be undertaken during day light hours only. If noisy activities are temporarily required outside day light hours, neighbours should be informed in advance. • A complaints register must be made available the site security office. Should any complaints be received, these must be logged in the complaints register and reported to the responsible person on-site. All complaints must be closed out within 14 days. 	
Potential fuel and oil spills	Soil and water contamination	Soils Surface and Ground Water	Construction, Operational, Decommissioning and closure.	<ul style="list-style-type: none"> • No major services or breakdown maintenance/servicing of construction vehicles is 	Manage and avoid.

				<p>permitted on site.</p> <ul style="list-style-type: none"> • In the case of spillage, the contractor will be liable to arrange for a competent company to clear the affected area. • Chemical toilets must be regularly serviced to avoid spills or leaks from toilets. • Potentially contaminated surface water must be contained in a holding facility if generated from site. • Regular inspections of all bund areas should be undertaken to ensure no leakages occur. • No discharge of pollutants such as contaminated water, cement, fuels or oils should be allowed to flow off-site. 	
Storm water management	Soil and water contamination	Soils; Surface and Ground	Construction, Operational, Decommissioning and	<ul style="list-style-type: none"> • If deemed necessary, the determination and separation of clean and dirty water areas 	Manage and avoid.

		Water.	post-closure.	<p>should be implemented via a storm water management plan.</p> <ul style="list-style-type: none"> Erosion protection measures should be implemented on the site to reduce erosion and sedimentation of the receiving environment. Measures could include: <ul style="list-style-type: none"> Sandbags; Sediment traps; Bunding around soil stockpiles; Vegetation of areas not to be developed. 	
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f) Impact Management Actions

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

ACTIVITY whether listed or not listed.	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation,	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g.	Describe the time period when the measures in the environmental management programme must be implemented Measures must	(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)

<p>stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>		<ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation. 	<p>be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either:- Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>	
<p>Site clearance for establishment.</p>	<p>Fauna and Flora - Loss of biodiversity Air Quality – dust creation</p>	<ul style="list-style-type: none"> • Managed though demarcation and alien invasive management • Dust will be visually monitored and managed through water spraying and revegetation 	<p>Weekly</p>	<p>Comply with NEM:BA, Environmental Authorisation, NEM:AQA and any available dust regulations relevant.</p>
<p>Drilling activities</p>	<p>Noise pollution – drilling equipment, vehicle movement Air Quality – dust creation due to drilling activities and vehicle movement</p>	<ul style="list-style-type: none"> • Construction should be limited to normal working hours that is 7h00 to 17h00 and / or as per the MHSA. • Managed through compliance with the mitigation measures in the 	<p>Daily</p>	<p>Comply with NEM:AQA and any available dust regulations in terms of air quality Comply with the prospecting method statement and Environmental Authorisations</p>

	<p>Water pollution –due to possible spillages, leaks from vehicles or ablution facilities</p> <p>Soils – soil erosion and pollution due to the lack of management of exposed areas, leaks of or spillages from ablution and hazardous goods facilities</p> <p>Fire prevention – fire may be caused by cigarettes or site fires</p> <p>Cultural and Heritage Artefacts</p> <p>Hunting and livestock areas – noise impacts and loss of flora may affect game farm animals</p>	<p>EMPr, monitoring and remedied through rehabilitation plan implementation</p>		<p>Comply with the Noise Regulations (SANS 10103) for noise management</p> <p>Comply with the Heritage Act and SAHRA guidelines in terms of cultural heritage</p> <p>Comply with NEM:BA, NEM:WA and the NEM: Water Act</p> <p>Comply to MHSA and OHS guidelines in terms of safety and social aspects</p>
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	Social impacts – Traffic congestion, nuisance, water pollution, cultural environment and economic impacts			
Vehicle use on access roads	Dust	Dust suppression control should be implemented	When required	NEM:AQA
Stockpiles	Soil erosion	<ul style="list-style-type: none"> • Proper storage of spoil material. • Dust Control Measures and • Storm water controlmeasures 	When required	NEM:AQA
Storage of hazardous materials	Water pollution	<ul style="list-style-type: none"> • Chemical abluion is recommended and should be maintained. • The hazardous storage cage should be kept on a drip-tray. 	Weekly	National Water Act, 1998 (Act No. 36 Of 1998) Hazardous Materials Act 15 of 1973 as amended and SANS
Storm water management	Surface water contamination	Clean and dirty water should be separated and dirty water contained onsite.	Ongoing (daily)	National Water Act, 1998 (Act No. 36 Of 1998) GNR 704
Closure of boreholes and rehabilitation of sites	Fauna and Flora - Loss of biodiversity due to uncontrolled vehicle movement or improper rehabilitation	Managed through compliance with the mitigation measures, monitoring and remedied through rehabilitation.	Ongoing (daily)	Comply with the prospecting method statement, Environmental Authorisation as well as the safety MHSA guidelines

	Land degradation – as a result of improper site clean-up			
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i) Financial Provision

(1) Determination of the amount of Financial Provision.

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

The closure objectives have been aligned to the baseline environment and are compliant with regulations. Closure objectives include but are not limited to:

- To ensure that rehabilitation occurs concurrently with drilling activities upon completion of each drill hole and immediate rehabilitation of the completed borehole/s will be undertaken.
- To ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002.
- To ensure that the prospecting footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment.
- To ensure that the goals which were specified in the rehabilitation section in this report have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with proposed prospecting are eliminated or minimized to acceptable standards.
- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighbouring communities.

The main objective of the closure and rehabilitation programme is to return the area to its baseline environment and to allow for the original land use to be reinstated. The rehabilitation programme has been prepared as part of the Draft EMP in the relevant sections and will guide the rehabilitation activities in a progressive manner. All drill sites will be surveyed and backfilled on an ongoing basis as they are completed. The rehabilitation of drill sites would take the form of limited manual raking to open and flatten the surface area and reseeded of disturbed areas to establish vegetation.

(b) 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 have been discussed with

interested and affected parties during the I&AP notification period and also communicated in the EMPr. Consultation with the landowner and I&APs occurred from 12 August 2019 to 10 September 2019 whereby the EMPr was made available to stakeholders

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

The main purpose of rehabilitation is to minimize and remediate the negative impacts associated with the prospecting activities. This will mean that the borehole will be covered and made safe by means of concrete cap, areas where vegetation was removed will be re-vegetated, any piling of drill material will be removed from site, any stockpiled soil will be returned back to where it was excavated and any fuel and oil leaks cleaned. All efforts will be made to rehabilitate the land to a quality as near to the original state as possible.

Rehabilitation process

The rehabilitation of impacted areas will involve the following process:

1. Removal of all construction equipment from the site

All construction equipment must be removed from the site. This includes vehicles, temporary structures, fencing, unused pipes/culverts etc.

2. Erosion mitigation

Any tunnels, drill sumps and holes or erosion channels developed during the prospecting activities shall be backfilled and compacted and the areas restored to an appropriate condition. Stabilisation of cleared areas to prevent and control erosion shall be undertaken.

3. Dust Prevention

During rehabilitation, the contractor shall ensure that the generation of dust is minimised and shall implement dust suppression measures (e.g. water spray vehicles, covering of material stockpiles, etc.) if and when required.

4. Hazardous Material

There will be no bulk hazardous material on site. Hazardous / dangerous substances shall only be stored under controlled conditions and in minimal volumes

and will be kept in a storage cage.

5. Fire Management

Major steps should be taken to avoid increasing the risk of fire through activities on site. Basic fire-fighting equipment will be available during rehabilitation. No possible threat of fire except through cigarettes. This will be addressed during toolbox talks.

6. Spillages

Water pollution should be prevented from direct or indirect spillage of pollutants such as fuels or oils. In the event of a spillage, the Contractor will be liable to arrange for competent instances to clear the affected area.

7. Landscaping and ground surface preparation

All visible weeds shall be removed from the area before replacing topsoil. Compacted soil shall be ripped along the contour and hand-trimmed. Topsoil shall then be spread evenly over the surface. The final prepared ground surface shall be furrowed to follow the natural contours of the land.

8. Revegetation

The re-vegetation process will not only focus on the rehabilitation of the drill holes but includes all exposed soil, transformed areas and areas where alien invasive plant species have been removed within the site caused as a result of the prospecting activities.

Top soil will be reinstated to ensure revegetation. No construction equipment, vehicles or unauthorized personnel shall be allowed onto areas that have been finished off.

Only persons or equipment required for the preparation of areas and rehabilitation of the site shall be allowed to operate on these areas.

9. Land use

The areas impacted shall be reclaimed for future use.

The rehabilitation plan should be adhered to so that negative environmental impacts can be avoided. This rehabilitation plan should be used as an on-site reference during rehabilitation of prospecting site.

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

The rehabilitation plan of the proposed mining activity in line with the closure objectives. The closure objective includes the promotion of biodiversity and biological sustainability as well the utilization of closure strategies that promotes a self-sustaining condition with little or no need for on-going care of maintenance. The rehabilitation plan makes provision and measures to address the closure objectives. An application for prospecting activity closure will be submitted within three months prior to closure for DMR approval and will include the rehabilitation methodologies implemented, monitoring during activities and post closure, responsible persons, and financial provisions available for rehabilitation.

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

Breakdown for Rehabilitation cost

Activity	Cost
Site restoration and access roads	R5,000.00
Collection and disposal of waste	R5,000.00
Shaping , levelling and vegetation subsided areas rehabilitation of damaged existing infrastructure (fences)	R7,000.00
Monitoring, maintenance, management cost	R25,000.00
Follow up monitoring, maintenance, planting seeding and fertilizer application (revegetation)	R8,000.00
Total	R50,000.00

- c. **Confirm that the financial provision will be provided as determined.**

Ntuthuko is prepared to provide the indicated financial provision of **R50, 000.00** for rehabilitation and post-monitoring of the site.

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

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

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Soil stockpiling	Location of stockpile	Stockpiles to be located on area where indicated by the mine plan These stockpiles should not impede natural drainage lines.	Environmental officer; Contractor	Monthly; Continuously.
Vehicle maintenance	Water pollution	Ensure all vehicles are in good working order	Environmental officer; Contractor	Monthly; Continuously.
Drilling activity – Dust creation	Air quality	Usage of water tanker as and when necessary	Environmental officer; Contractor	Monthly; Continuously.
Site clearance	Vegetation clearance	Vegetation should be limited to demarcated area only	Environmental officer; contractor	Monthly; Continuously.
Excavation	Heritage impacts	Should there be heritage resources discovered during the project phase, all work must cease and SAHRA must be consulted.	Environmental officer; contractor	Monthly; Continuously.

Biodiversity	Planting and spreading of alien plant species	Alien vegetation shall be managed in terms of the Regulation GNR. 1048 of 25 May 1984 (as amended) issued in terms of the Conservation of Agricultural Resources Act, Act	Environmental officer; Contractor, Municipality	Daily
Surface and Groundwater pollution	Managed sanitation facilities for construction workers	Regular servicing of chemical toilets, vehicles and equipment, as well as the use of drip trays for standing vehicles.	Environmental officer; Contractor	Daily
Waste Generation	Waste removal services	Records of the volumes of waste and/or recyclables leaving the site must be retained. Certificates of safe disposal must be retained.	Environmental officer; Contractor	Monthly
Rehabilitation	Concurrent and final rehabilitation monitoring	Concurrent rehabilitation of areas affected by prospecting activities must be undertaken.	Environmental officer; Contractor	Daily

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

Ntuthuko will appoint an independent EAP to undertake, on an annual basis, an EMPr performance assessments of the prospecting operations. Records of the assessment must be submitted to the applicant who will be made aware of non-compliances and recommendations required to rectify such. The annual performance assessment reports include the review of the financial provision. Similar, copies of these annual reports must be submitted to the DMR on request for their records.

h. Environmental Awareness Plan

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

A formal site induction will be conducted for all contractors, sub-contractors and labourers, preferably in their native language, before the commencement of the prospecting activities. Provisions should be made for all contractors, sub-contractors and labourers to undertake an annual refresher. The induction training will, as a minimum, include the following:

- The importance of conformance with environmental policies;
- The environmental impacts, actual or potential;
- Roles and responsibilities in achieving conformance with the company's environmental policies and procedures;
- The mitigation measures required (i.e. in the EMPr) to be implemented when carrying out activities;
- The potential consequences of defying specified operating procedures;
- Operational Procedures Documents and Plans implemented and their availability;
 - Storm water management;
 - Monitoring;
 - Vegetation management;
 - Safety Data Sheets (SDS);
 - Maintenance and training schedules/records,
 - Air / Dust management;
 - Housekeeping
 - Use of PPE
 - Machinery, equipment and vehicle use
 - Fires and/or floods
- Environmental awareness;
- Heritage or culturally significant area management;

- Pollution prevention and incident / accident reporting and close-out;
- Emergency procedures and contact persons(s).
- Contractors, sub-contractors and employees must acknowledge their understanding of the EMPr and environmental responsibilities by signing an induction attendance record.
- Regular toolbox talks should be completed and include an environmental element to ensure continual awareness is maintained on site.

2. Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

An Environmental Officer must be appointed to ensure that the contents of the EMPr are adhered to during the project phase from construction until post closure. The applicant can further appoint an Environmental Control Officer to monitor compliance with the environmental authorisation.

Further to the above, an environmental awareness training will be conducted for all site personnel and should include the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures as well as with the requirement of environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.
- The entire staff and contractors must comply with the procedures.
- Compliance monitoring must be conducted by supervisors and reported to the management team as well as the environmental control officer.
- Regular toolbox talks should be completed and include an environmental element to ensure continual awareness is maintained on site.
- Implementation of standard operating procedures and job shadowing during training thereof.

i. Specific information required by the Competent Authority (Among others, confirm that the financial provision will be reviewed annually).

The financial provision will be reviewed annually. No other specific information was required by the Competent Authority.

2) UNDERTAKING

The EAP herewith confirms

- j. the correctness of the information provided in the reports
- k. the inclusion of comments and inputs from stakeholders and I&APs ;
- l. the inclusion of inputs and recommendations from the specialist reports where relevant; and
- m. That the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.

Signature of the environmental assessment practitioner:

NTC Group (Pty) Ltd

Name of company:

09 August 2019

Date:

-END-