



## mineral resources

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

# **BASIC ASSESSMENT REPORT**

## **And**

# **ENVIRONMENTAL MANAGEMENT PROGRAMME**

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).

### **PROJECT TITLE:**

**Environmental Basic Assessment Process and Mining Permit Application for the Proposed Formalization and Expansion of an Existing Borrow Pit (Ref: NBP029), Located on Sub 9 of Reserve No 12/15832, within the Nongoma Local and Zululand District Municipalities of KwaZulu-Natal**

**FILE REFERENCE NUMBER SAMRAD:** \_\_\_\_\_

### **DETAILS OF THE APPLICANT:**

Project applicant:	KwaZulu-Natal Department of Transport		
Contact person:	Mr. Sandile Hlabisa		
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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.

## PART A

### SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

#### 1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

##### 1.1) Details of the EAP

EAP:	Dr. Rebecca Bowd		
Professional affiliation/registration:	EAPSA, IAIA, IWMSA, SAIEA, Cert. IEM, Cert. AUDIT		
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## 1.2) Expertise of the EAP

### 1.2.1) The qualifications of the EAP

B.A. Geog and Env. Science (Hons) (U.K.), MEnvDev (UKZN), PhD. Refer to Appendix A – Curriculum Vitae of the EAP.

### 1.2.2) Summary of the EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure)

Please refer to Appendix A – Curriculum Vitae of the EAP.

## 2. THE PROPOSED ACTIVITY

### 2.1) Location of the overall Activity

<b>Farm Name:</b>	Sub 9 of Reserve No 12/15832
<b>Application area (Ha)</b>	1.47 ha (0.72 ha existing, 0.75 ha expansion)
<b>Magisterial district:</b>	Nongoma Local Municipality, Zululand District Municipality, KwaZulu – Natal
<b>Distance and direction from nearest town</b>	24 km north-east of Nongoma. Accessed off the D1802 District Road, near Mangamude.
<b>21 digit Surveyor General Code for each farm portion</b>	N0HU00000001583200009

### 2.2) Locality map

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

Please refer to Appendix B – Locality Map.

### 2.3) 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.

Please refer to Appendix C – Plan of the Site.

#### 2.3.1) Listed and specified activities

<b>NAME OF ACTIVITY</b> (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.)	<b>Aerial extent of the Activity</b> Ha or m <sup>2</sup>	<b>LISTED ACTIVITY</b> Mark with an X where applicable or affected	<b>APPLICABLE LISTING NOTICE</b> (GNR 544, GNR 545 or GNR 546)
Activities requiring a mining permit in terms of section 27 of the mineral and petroleum resources development act, 2002 (act no. 28 of 2002) ... related to the extraction of the mineral resource...;	1.47 ha	X	GNR 983 – part 21
<i>Excavation (borrow pit expansion)</i>	1.47 ha	X	GNR 983–part 21
<i>Clearing of vegetation and vegetation stockpiling</i>	1.47 ha	X	GNR 983–part 21
<i>Materials stockpiling siting</i>	1.47 ha	X	GNR 983–part 21
<i>Spoil stockpile siting</i>	1.47 ha	X	GNR 983–part 21
<i>Top soil stockpile siting</i>	1.47 ha	X	GNR 983–part 21
<i>Blasting</i>	N/A	N/A	N/A
<i>Construction of site drainage</i>	1.47 ha	X	GNR 983–part 21
<i>Temporary ablutions</i>	1.47 ha	X	GNR 983–part 21
<i>Access road – existing, no need for upgrade</i>	1.47 ha		GNR 983–part 21
<i>Materials storage area</i>	1.47 ha	X	GNR 983–part 21
<i>Machine storage area</i>	1.47 ha	X	GNR 983–part 21
<i>Security</i>	1.47 ha	X	GNR 983–part 21
<i>Placing of warning signs and PPE signage</i>	1.47 ha	X	GNR 983–part 21
<b>Please note that the proposed activity does not trigger any other listed activities under the National Environmental Management Act (NEMA, Act 107 of 1998) and the EIA Regulations of 2014.</b>			

#### 2.3.2) 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)

## **Background Information and Context of the Application**

The KwaZulu-Natal Department of Transport currently has 76 borrow pits in the Zululand District Municipal area, within the Nongoma and Ulundi Local Municipalities. The existing borrow pits are used to source materials used in the construction and maintenance of new and existing road infrastructure within the Zululand District. None of the existing borrow pits have a Mining Permit or Environmental Authorisation and thus the KwaZulu-Natal Department of Transport is in the process of conducting the necessary Environmental Processes in order to obtain the required Permits and Authorisations.

Currently each individual site comprises an established borrow pit and no other related infrastructure, except for informal access routes. It is proposed to expand the borrow pits and properly furnish them with fencing and site camps for the duration of their operational phases, as well as properly formed access routes and drainage to prevent erosion and further environmental degradation.

Approximately half of the Zululand municipal area is under the jurisdiction of traditional authorities while the remainder is divided between commercially-owned farms and conservation areas. The District is characterised by rolling green hills, incised by numerous watercourses and deep valleys. The natural vegetation in the area comprises of natural grasslands and numerous pockets of forest, particularly on hillslopes and within the valleys. In general, the area suffers from severe erosion, loss of indigenous vegetation and the increasing establishment of alien invasive plant species. This is in part due to bad land management practices, such as over-grazing and a lack of formal care for communal lands, in terms of annual burning and livestock rotation. It is also partly due to a lack of effective environmental management in the area, where developed areas have developed informally and have not been adequately planned for or rehabilitated. As such, some sites are in better condition than others and a site specific environmental description can be formulated from the specific features on each particular site, along with the site specific mitigation and management measures and rehabilitation objectives. Each site is subject to an individual Environmental Basic Assessment Process and Mining Permit Application, in terms of the National Environmental Management Act (107 of 1998) and the Mineral and Petroleum Resources Development Act (28 of 2002), as amended.

## **Description of the Proposed Site and Details of the Activities to be Undertaken**

The proposed site is located approximately 24 km north-east of Nongoma, near Mangamude, within the Nongoma Local and Zululand District Municipalities of KwaZulu-Natal. The GPS coordinates are 27°45'26.63" S and 31°49'40.55" E. Currently the site is 0.72 Ha with a proposed extent of 1.47 Ha after expansion (0.75 ha expansion).

The site is located in a rural area and there are sparsely populated residential settlements within 100 km of the site. The site is accessed via the D1802 road. The site is located on undeveloped communal land (Ingonyama Trust Board) and there are no known features of cultural or heritage significance on the site.

The proposed site is accessed directly off the D1802 road, which borders the site to the south and west. The site is bounded to the north by undeveloped grasslands, to the east by a gravel road to the south by a homestead and associated cultivation. There are no wetlands or rivers within 500 m of the site, although there are several drainage lines / erosion gullies to the north and north-west of the site. The site has historically been subject to overgrazing and currently comprises degraded grassland, and scattered trees and shrubs. Alien vegetation is well established on site. The proposed activity will not negatively impact on the surrounding land uses in any way, aside from temporary nuisance impacts (dust and noise) for the nearby residents.

The existing borrow pit will be formalised, in terms of site drainage and on-going management (establishment of a perimeter, access control and general housekeeping on site). The proposed expansion area will be denuded of vegetation, stripped of topsoil, which will be stockpiled and stripped of any sub-soil above the required material, which will be stockpiled separately. The required material will be excavated and loaded directly onto tipper trucks, which will remove it for delivery to the end use site. If required, material will be stockpiled temporarily on site before being loaded onto the tipper trucks and removed.

The preferred technique is dry, open cast mining. The machinery involved will be limited to a single excavator and a tipper truck for transportation of the material between the site and the areas where the material is to be used. Details of the methodology to be employed are summarised below:

### **Equipment used:**

- One Excavator;
- One 10 m<sup>3</sup> Tipper Truck; and
- One water storage trailer tank.

### **Materials to be used:**

- Diesel
- Grease
- Hydraulic oil
- Water (for drinking and dampening).

### **Storage of materials:**

- Hazardous materials (e.g. diesel, grease & oil) will be stored within a container or within a bunded area at the Site Camp associated with the Contractor's base for road construction. No hazardous materials will be stored on site at the borrow pit.
- Water will be stored in a sealed water tanker.
- Stockpiles of topsoil and spoil material will be located in such a way as to prevent soil loss in the event of an unexpected flood or heavy rain event.
- It is not anticipated that required material will be stockpiled on the site as it will be loaded directly onto vehicles for transportation to the end use site.

#### **Spillages:**

- Drip trays will be used under vehicles and the excavator while they are parked on site.
- Should any spillages occur, they will be dealt with immediately and cleaned up using appropriate remediation methods. Contaminated materials will be collected in a watertight skip and disposed of at an appropriately registered landfill site.
- A spill kit (Drizit, Hazmat or similar) will be kept on site at all times and workers will be informed as to how it is to be used in the event of a spill.

#### **Personnel:**

- The Applicant intends to employ a Contractor to excavate the site, as part of a road construction or maintenance contract. This is because the material removed from the site will be used for roads maintenance and construction in the area.
- Additional temporary labourers / drivers will be employed, as and when needed.
- Wherever possible, local labour will be employed.

#### **Transportation to site:**

##### *Personnel*

- Labourers will travel to and from site each day and there will be no accommodation on the site. Local labour will be used and it is likely that residents from the surrounding residential settlements will be employed.
- Machinery will be parked on site or at the Contractor's site camp (associated with roads projects, not the borrow pit), within a secure area, when not in use.

##### *Equipment & Materials*

- Diesel / fuel will be transported to the site in sealed containers on a bakkie or truck.
- All hazardous materials (hydrocarbons) will be brought onto site in sealed containers.
- The water tank will be refilled regularly and used to water the area to minimize dust.
- Any specialised tools required will be transported to the site and will not be stored on site.

#### **Sanitation:**

- Ablution facilities will be provided on site and one portable chemical toilet will be provided, which is sufficient for up to 20 workers.
- Potable water will be obtained from a permitted local source and will be made available to all staff at all times, in sufficient volumes.

#### **Waste:**

- Waste will be removed from the site and disposed of at the nearest registered landfill site.
- Hazardous waste, from spills, drip trays and contaminated containers will be collected in a designated skip (waterproof, lidded, wind and scavenger proof) and stored in a watertight container before being removed for disposal at the nearest H: h landfill site.
- Spoil from excavation, such as rocks and boulders, will be stockpiled on site for use during backfill and rehabilitation of the site.

#### **Water:**

##### *Potable Water*

- Potable water, to be sourced from an existing, permitted supply, will be available on site for all staff.

##### *Process Water*

- Water for washing/dampening will be stored in the water tank and refilled as necessary, from an existing, permitted supply (no water will be extracted specifically for this purpose).
- Surface water (if any accumulates from rain) will be drained from the site and allowed to infiltrate naturally back into the soil.

#### **Safety:**

- Safety boards and appropriate signage will be prominently displayed, indicating that PPE is necessary on site.
- All necessary PPE will be provided to the staff on site.
- All relevant regulations of the Mine Health and Safety Act (Act 29 of 1996) will be adhered to at all times.

#### **Excavations:**

- The site will be excavated dry, using a TLB or excavator.
- The site will be expanded in stages, with each new cut being less than 20 m x 20 m in size and roll over backfilling will be utilised to ensure that each cut is backfilled and rehabilitated as the next cut is opened.
- Excavations are estimated to be at a maximum depth of 5 m, although it must be noted that due to the topography of the site, depths may increase where the soil profile is elevated to the north of the site.

#### **Topsoil removal & storage:**

- Topsoil will be removed and stored on dedicated top soil stockpiles, for use during rehabilitation of the site, at the highest point on the site and in such a way as to reduce the potential for soil loss due to heavy rain or wind events.
- The site will be rehabilitated using spoil and the stockpiled topsoil, after cessation of mining activities on the site.

**Noise:**

- Noise will be from staff, vehicles and digging activities. There will be **no** explosions / blasting or drilling required on the site.
- There are no residential settlements and agricultural activities located in close proximity to the site, thus noise pollution is not anticipated to be problematic.
- Noise generating activities will be limited to normal working hours (7.30 am to 5.00 pm – weekdays only) and staff will be instructed to keep noise levels to a minimum.
- The excavator and tipper trucks will be regularly serviced to reduce engine noise and any machinery which can be silenced will be fitted with the appropriate silencers.

**Dust:**

- There are no residential settlements or formal agricultural activities located in close proximity to the site, thus nuisance dust pollution is not anticipated to be problematic. However, dust suppression will be undertaken on the site.
- Vehicles will be limited to driving at 15 km/hr on site.
- The loaded vehicles will be covered during windy conditions.
- The excavation site will be dampened if necessary to control dust.
- Stockpiles will be dampened and / or covered during windy conditions.
- Long term stockpiles (topsoil) may also be vegetated to reduce erosion and control dust.
- The access road must be maintained, and dampened if dust emissions become problematic.

**2.4) Policy and Legislative Context**

<b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b> (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)			<b>REFERENCE WHERE APPLIED</b>	<b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b> (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
National Environmental Management Act	DEA	1998	BAR & EMPr	Environmental Authorisation has been applied for, in terms of the NEMA and the EIA Regulations (2014).
Environmental Impact Assessment Regulations, section 24(5) of the National Environmental Management Act, 1998	DEA	2014	BAR & EMPr	Environmental Authorisation has been applied for, in terms of the NEMA and the EIA Regulations (2014).
Integrated Environmental Management Guideline Series: Companion to the EIA Regulations 2010 and Public Participation 2010.	DEA	2010	BAR & EMPr	The Basic Assessment Process was conducted in line with the Integrated Environmental Management Guideline Series: Companion to the EIA Regulations 2010 and Public Participation 2010, as well as the EIA Regulations 2014.
The National Water Act (NWA), 1998 (36 of 1998)	DWA	1998	BAR & EMPr	The site was assessed in terms of the NWA and it was found that there was no need for a Water Use License Application. However, the EMPr includes mitigation measures to prevent the pollution of water resources, in line with Section 19 of the NWA, which states that the person responsible for land upon which any activity is or was performed and which causes, has caused or is likely to cause, pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring.
National Water Act Regulations, 1999	DWA	1999	BAR & EMPr	The stipulations of the NWA Regulations (1999) have been incorporated into the EMPr for the project to ensure that the DWS requirements are met.
The National Heritage Resources Act, 1999	SAHRA	1999	BAR & EMPr	The potential impact to Heritage Resources has been assessed in the BAR and the EMPr includes the appropriate procedure to follow if any such resources are uncovered on site, during the excavation of the site.
KwaZulu Natal Heritage Resources Act 10 of 1997	SAHRA	1997	BAR & EMPr	The potential impact to Heritage Resources has been assessed in the BAR and the EMPr includes the appropriate procedure to follow if any such resources are uncovered on site, during the excavation of the site.

National Environmental Management: Biodiversity Act, 2004	DEA	2004	N/A	The proposed activity does not involve any activities listed under the NEM: BA.
National Environmental Management: Air Quality Act, 2004	DEA	2004	N/A	The proposed activity does not involve any activities listed under the NEM: AQA.
South African National Standards for Dust Fallout, 2005	SANS 1929:2009	2005	BAR & EMPr	The requirements of SANS 1929:2009 with regards to dust fallout, monitoring and mitigation, are incorporated into the EMPr, to ensure that the site is compliant with these requirements.
National Environmental Management: Waste Act, 2008	DEA	2009	N/A	The proposed activity does not trigger any listed activities under the NEM: WA.
National Environmental Management: Protected Areas Act, 2003	DEA	2003	N/A	There are no Protected Areas within 5 km of the site and it is not anticipated that there will be any impact to Protected Areas as a result of this Application.
National Forests Act, 1998	DAFF	1998	N/A	There are no protected forests or protected tree species, in terms of the NFA, on or in close proximity to the proposed site.
Conservation of Agricultural Resources Act 43 of 1983	NDA	1983	BAR & EMPr	The potential for land degradation and the establishment of alien invasive plant species is assessed in the BAR and mitigation measures are included in the EMPr, which also includes an Alien Invasive Control Programme.
Hazardous Substances Act 15 of 1973	DOH	1973	N/A	The proposed activity does not involve the handling, storage or disposal of any hazardous substances regulated under the HSA.
KwaZulu Natal Nature Conservation Act 29 of 1992	DoA	1992	BAR & EMPr	The potential impacts of the project on species of conservation significance and the relevant portions of the act with regards to littering and waste management have been assessed in the BAR and appropriate mitigations have been included in the EMPr for the project.
KwaZulu Natal Planning and Development Act 5 of 1989	KZN DOH	2008	-	A planning and development application, for planning permission from the Nongoma Local Municipality, will be lodged if and when a positive Environmental Authorisation is obtained.
Mine, Health and Safety Act 29 of 1996	DMR	1996	BAR & EMPr	The relevant risk / hazard analysis, Codes of Practice (COPs) and mitigations are included in the BAR and EMPr to ensure compliance with the MHSA.
National Road Traffic Act 83 of 1996	DOT	1996	BAR & EMPr	The relevant provisions of the NRTA are included in the EMPr for the project to ensure that drivers, operators and vehicles are appropriately licensed and that all vehicles are roadworthy.
National Veld and Forest Fire Act 101 of 1998	DAFF	1998	BAR & EMPr	The EMPr contains stipulations to ensure the site is in compliance with the NVFFA with regards to fire breaks and fire fighting / prevention.
The Constitution of South Africa 108 of 1996	DOJCD	1996	BAR & EMPr	Application for Environmental Authorisation has been made. All environmental laws fall under the Constitution of South Africa and the right to a clean and healthy environment is included in the Bill of Rights.
National Roads Act 83 of 1996	DOT	1998	BAR & EMPr	The requirements of the DoT (Applicant) in terms of access location will be adhered to, in order to ensure compliance with the NRA.
Water Services Act 108 of 1997	DWA	1997	N/A	The proposed activity does not involve industrial water use and thus the WSA does not apply.
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning: Guideline on Alternatives,	DEA&DP	2011	BAR	The Basic Assessment Process was conducted in line with the Guideline on Alternatives, which informed the assessment of alternatives in the Basic Assessment Report.
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs	DEA&DP	2011	BAR	The Basic Assessment Process was conducted in line with the Guideline on Public Participation, which informed the methods of stakeholder engagement



& Development Planning: Guideline on Public Participation.				employed during the Basic Assessment Process.
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning: Guideline on Need and Desirability.	DEA&DP	2011	BAR	The Basic Assessment Process was conducted in line with the Guideline on Need and Desirability, which informed the need and desirability assessment detailed within the Basic Assessment Report.
EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning: Guideline on Generic Terms of Reference for EAPs and Project Schedules.	DEA&DP	2011	BAR	The Basic Assessment Process was conducted in line with the Guideline on Generic Terms of Reference for EAPs and Project Schedules, as well as the EIA Regulations of 2014.
Zululand District Municipal IDP		2012 2013 2016 2017		The Zululand District Municipality's 2012/2013 – 2016/2017 Integrated Development Plan (IDP) and associated Spatial Development Framework (SDF) identify the following key objectives: i) improved road infrastructure; ii) improved rural to urban linkages; and iii) the need for improved service delivery to rural and historically disadvantaged communities. Thus the project is directly in line with the IDP and SDF for the area.

### 3. NEED AND DESIRABILITY

#### 3.1) 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).

##### Introduction

The Guideline on Need and Desirability publication, compiled as part of the EIA Guideline & Information Document Series, has been used to assess the need and desirability of the proposed development. The Publication provides a list of 14 aspects, which must be considered. Below the 14 aspects have been addressed for the proposed activities:

**1 *Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP).***

The proposed application area is currently established as an existing borrow pit. It is proposed to formalise and expand the existing borrow pit and the material excavated from the proposed expansion area will be used for the development of new roads and the maintenance of existing roads within the Zululand District Municipal area. The Zululand District Municipality's 2012/2013 – 2016/2017 Integrated Development Plan (IDP) and associated Spatial Development Framework (SDF) identify the following key objectives:

- i) improved road infrastructure;
- ii) improved rural to urban linkages; and
- iii) the need for improved service delivery to rural and historically disadvantaged communities.

Thus the land use associated with the project will not be altered and the project is considered to be directly in line with the IDP and SDF for the area.

**2 *Should development, or if applicable, expansion of the town/area concerned, in terms of this land use (associated with the activity being applied for) occur here at this point in time?***

Yes. The proposed development involves the formalisation and expansion of an existing borrow pit. Thus, there will be no change in land use and, as the existing borrow pit is currently unmanaged, it will benefit from formalisation and proper, on-going management and rehabilitation.

**3 *Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate).***

Yes. The proposed activity is in line with the objectives of the IDP and SDF and will directly strengthen economic activities (agriculture, small scale retail and tourism) in the area (Zululand District), through improved accessibility. The establishment of improved access roads will provide a platform on which enterprises can supplement and augment their existing enterprises, unhindered by poor access infrastructure. This will contribute to the viability and long term sustainability of existing enterprises and will aid job security for those currently employed by existing enterprises in the area, as well as their future employees. This will benefit the local communities directly, through income generation and income stability.

**4 *Are the necessary services with adequate capacity currently available (at the time of application), or must additional***

**capacity be created to cater for the development?**

The proposed activity does not require any additional services and no additional capacity is required in order to accommodate the proposed development.

**5 Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?**

The proposed application area is currently established as an existing borrow pit. It is proposed to formalise and expand the existing borrow pit and the material excavated from the proposed expansion area will be used for the development of new roads and the maintenance of existing roads within the Zululand District Municipal area. The Zululand District Municipality's 2012/2013 – 2016/2017 Integrated Development Plan (IDP) and associated Spatial Development Framework (SDF) identify the following key objectives:

- i) improved road infrastructure;
- ii) improved rural to urban linkages; and
- iii) the need for improved service delivery to rural and historically disadvantaged communities.

Thus the project is considered to be directly in line with the IDP and SDF for the area and no additional services are required from the municipality for the proposed activities.

**6 Is this project part of a national programme to address an issue of national concern or importance?**

The proposed development does not form part of a specific National Programme but it is directly in line with the long term strategic goals and objectives (service provision and poverty alleviation) of the Zululand District Municipality, which are aligned to National and Provincial Strategic Perspectives and have a direct link with The Millennium Development Goals (MDGs).

**7 Is the development the best practicable environmental option for this land/site?**

Yes. The existing borrow pit is currently established but has no formal management plan in place and is not covered by a Mining Permit. As such, there is no management of environmental impacts associated with the borrow pit. The formalisation and expansion of the borrow pit is considered the best practicable environmental option for the land in question as it will result in the site being managed appropriately and rehabilitated at the end of the site's operational lifetime.

**8 Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF as agreed to by the relevant authorities?**

The proposed development is directly in line with the key objectives of the most recent IDP and SDF. As such, it will have a positive impact on their integrity and credibility as their theoretical objectives are supported and can become tangible achievements.

**9 Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?**

The approval of this application would not compromise the integrity of any existing environmental management priorities. The approval of the proposed activity would actively support responsible environmental management in the area and would have a highly positive impact on the site, which is currently degraded due to unmanaged excavation and a lack of rehabilitation on site. The approval of this application will result in the site being properly managed and rehabilitated.

**10 Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context).**

The location of the proposed activity is directly in line with the Local and District Municipality's IDPs and SDFs. The preferred location is favourable for this activity in that it is in keeping with the existing land use (existing borrow pit) and surrounding land uses in the vicinity, which will be served by the roads built and maintained with material from the proposed expansion of the existing borrow pit. No additional service infrastructure is required for the proposed development. In addition, the proposed activity can feasibly be carried out without having any significantly detrimental impact to the natural environment and will not constitute an unacceptable loss of any sensitive environmental areas. Thus, the location is considered to be favourable both on site and within the broader spatial, social and environmental context.

**11 How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural / natural environment)?**

The proposed development involves the formalisation and expansion of an existing borrow pit and will not alter the current land use. The proposed upgrade will not encroach on any existing built areas on any adjacent properties. Thus, the proposed development will not impact negatively on the surrounding built environment. However, the material to be removed from the site will be used for the construction and maintenance of roads in the area, which is considered to be a positive impact.

In terms of cultural / heritage features, a Heritage Impact Assessment (Appendix D) was conducted and found that there were no sensitive archaeological sites identified on the proposed site or in close proximity to the site. However, the Specialist noted that the area was identified as an area of high palaeontological sensitivity and that there was a high likelihood of fossil's being found on site if bedrock was to be excavated. In addition, the presence of homes in the vicinity of the site indicates a possibility of unmarked graves being found. As such, a chance find procedure has been included in the EMPr (Appendix E) and the site will be regularly monitored by the ECO.

In terms of the natural environment, the location of the proposed development is favourable as it is currently features an existing borrow pit. There are no sensitive environmental areas in close proximity to the expansion area of the site and the site is currently degraded. Extensive rehabilitation is required to prevent additional negative impacts from occurring, such as erosion and resultant off site sedimentation impacts. The proposed formalisation and expansion of the site will result in the site being properly managed and rehabilitated, which will have a significantly positive impact. Thus, the proposed activity will have a positive impact on the natural environment.

**12 How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc)?**

The proposed activity is in keeping with the current land use on site and will not significantly alter the sense of place. The proposed development will create noise, odour, dust and visual impacts, during the construction and operational phases. However, these impacts are currently experienced, due to the existing borrow pit. It is anticipated that the proposed activity will not constitute an increase in nuisance impacts as they will be properly managed and mitigated once the site has been formalised. At present, the borrow pit is existing and there is no regulation or management of the site and thus no mitigations in place to reduce nuisance impacts. Thus, it is anticipated that the proposed activity will have a positive impact to people in the area, in terms of health and a sense of well being, because the site will be properly managed and nuisance impacts will be mitigated.

**13 Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?**

No. The opportunity costs associated with the proposed development are acceptable and in line with the accepted norms for the type of activity to be undertaken. In addition, the cost of excavation from the proposed expansion area and transportation of material from the excavation site to the end use site is lower than the cost of buying material from another source and then transporting it from farther afield to the end use sites. Thus, the proposed activity is economically favourable as well as environmentally favourable.

**14 Will the proposed land use result in unacceptable cumulative impacts?**

Cumulative effects can occur when impacts are:

- i) Additive (incremental);
- ii) Interactive;
- iii) Sequential or synergistic.

It is not practical to investigate the cumulative effects of an action on every environmental facet. Thus the list of environmental aspects has been reduced and focused, in line with the receiving environment's characteristics and the type of activities currently occurring in the area. The approach used in this investigation was, therefore, to assess the receiving environment and identify existing activities which could play a cumulative part in the proposed activity's impacts.

Through the assessment of the local environment, it was established that there were no interactive activities in the area which could have any significant interactive or sequential impact when combined with the potential impacts of the proposed activity.

The only activities identified in the area, which could potentially have an additive / incremental cumulative impact, when coupled with the impacts of the proposed activity, are the prolific informal or unauthorised mining / quarrying activities and the prevalence of poor land management practices and over-grazing within the Zululand District. These activities have resulted in significant erosion and soil loss, resulting in a loss of vegetative and faunal diversity.

Aerial imagery of the area shows that there are numerous borrow sites in the Zululand District, which could have significantly contributed to erosion. However, very few of those sites have been properly managed or maintained and none appear to have rehabilitated after they ceased to be used.

The proposed formalization and expansion of the existing borrow pit will assist in reducing the potential cumulative impacts of having numerous, unauthorised and un-regulated quarries in the District because the borrow pit will be subject to a management plan and will be rehabilitated once the expansion is complete.

Thus, despite the prevalence of mining / quarrying activity in the area, if the proposed site is well managed, maintained and is properly decommissioned and rehabilitated after use; the site is unlikely to have any significant contribution to the cumulative impacts of mining in the area.

In addition, the borrow pit is existing and does not currently offer any grazing to supplement the requirements of the surrounding community. The formalization of the borrow pit will result in the pit being rehabilitated once mining has ceased. Thus, the currently unproductive site will offer grazing once it has been re-vegetated.

**Conclusion**

In conclusion, it can be seen from the above need and desirability aspects of the proposed project that the project is both needed and desirable. The proposed activity is directly in line with local, district, provincial and national, long term strategic goals and objectives. It will have a positive impact on the social and economic environments on the area. It is favourably situated in terms of location, does not

necessitate the transformation of any sensitive area or result in unacceptable impacts to sensitive natural environments, such as wetlands, in order to be feasible.

#### **4. ALTERNATIVES**

##### **4.1) Motivation for the overall preferred site, activities and technology alternative**

The site is located in a rural area and there are sparsely populated residential settlements within 100 m of the site. The site is accessed via the D1802 road, near Mangamude. The site is located on undeveloped communal land (Ingonyama Trust Board) and there are no known features of cultural or heritage significance on or near the site.

The proposed site is accessed directly off the D1802 road, which borders the site to the south and west. The site is bounded to the north by undeveloped grasslands, to the east by a gravel road to the south by a homestead and associated cultivation. There are no wetlands or rivers within 500 m of the site, although there are several drainage lines / erosion gullies to the north and north-west of the site. The site has historically been subject to overgrazing and currently comprises degraded grassland, and scattered trees and shrubs. Alien vegetation is well established on site. The proposed activity will not negatively impact on the surrounding land uses in any way, aside from temporary nuisance impacts (dust and noise) for the nearby residents.

The expansion of the site will not encroach onto any sensitive areas and will comprise the currently degraded area around the existing borrow pit. Thus, the location of the proposed site is considered to be preferable to another location, which would involve mining a new site that has not been previously degraded. In addition, the portion of the proposed site that is currently excavated will benefit from proper management and rehabilitation. As the borrow pit is currently established at that location and on that property, it is not considered practical or feasible to assess alternative sites / properties, which would involve the mining of a new site, at considerable additional cost and with considerable additional environmental impacts.

The preferred layout has been chosen for the following reasons:

- It does not constitute a change of land use.
- It will not negatively impact on surrounding land uses.
- It is in line with the municipal IDP and SDF.
- It will not result in any negative socio-economic impacts.
- The site and site property are currently affected by the existing borrow pit, which required rehabilitation after use.
- It does not encroach onto any sensitive areas or necessitate the unnecessary transformation of any valuable or sensitive vegetation types.
- It takes into consideration the faunal species present in the area and will not result in the destruction of any sensitive faunal habitats.
- It allows for the continuation of mining activity, as required for road construction and maintenance in the area, without necessitating the mining of a new and previously unmined site or the import of material from an external site at greater cost.
- It does not encroach on any sensitive cultural / heritage sites and will not impact any heritage sites in the area.
- It does not result in any unacceptable and unmanageable impacts to sensitive environmental or heritage sites.

In conclusion, the preferred site, technology and activities on site have been selected to ensure that the impacts to the natural environment are minimised, reduced and adequately mitigated. The impacts to the proposed site, using the proposed activities and technology are easily manageable and, provided the EMPr (Appendix E) is properly implemented on site, it is not anticipated that there will be any significantly negative impacts as a result of the proposed activity.

##### **4.2) 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.

Please refer to 4.2.1, below, for details of the process followed to determine the preferred site layout.

##### **4.2.1) 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.

The following alternatives have been considered in this Report:

- (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) The property on which or location where it is proposed to undertake the activity:**

**Property**

The proposed site is located on Sub 9 of Reserve No 12/15832, near Mangamude, within the Nongoma Local and Zululand District Municipalities, KwaZulu-Natal. The borrow pit is already established on the above mentioned property and cost of obtaining a second property and the environmental impact of mining a second site would make an alternative property an unfeasible alternative. Thus, no alternative properties have been investigated in this Report.

**Location**

In terms of location, the borrow pit is already established at 27°45'26.63" S and 31°49'40.55" E. It is proposed to expand the existing site, incorporating both the existing borrow pit and the proposed expansion area into one application. The location of the existing borrow pit and the distribution of the required material dictates the location of the application area. Thus, no additional locations have been investigated in this Report.

**b) The type of activity to be undertaken:**

The proposed activity involves the continuation of excavation of material from an existing borrow pit. The material is used for the construction and maintenance of public roads in the area and this Application is specifically for this purpose and no alternative activity types have been assessed in this Report.

**c) the design or layout of the activity:**

**Design:**

In terms of design, the borrow pit will be structured in line with the relevant SANS requirements and will be shaped to ensure that the site drains freely and does not impound any surface water.

**Layout:**

In terms of layout, the site and site access are currently established. It is intended to retain this same layout in order to reduce the environmental impacts associated with the establishment of a new access road.

The preferred layout has been chosen for the following reasons:

- It does not constitute a change of land use.
- It will not negatively impact on surrounding land uses.
- It is in line with the municipal IDP and SDF.
- It will not result in any negative socio-economic impacts.
- The site and site property are currently affected by the existing borrow pit, which required rehabilitation after use.
- It does not encroach onto any sensitive areas or necessitate the unnecessary transformation of any valuable or sensitive vegetation types.
- It takes into consideration the faunal species present in the area and will not result in the destruction of any sensitive faunal habitats.
- It allows for the continuation of mining activity, as required for road construction and maintenance in the area, without necessitating the mining of a new and previously unmined site or the import of material from an external site at greater cost.
- It does not encroach on any sensitive cultural / heritage sites and will not impact any heritage sites in the area.
- It does not result in any unacceptable and unmanageable impacts to sensitive environmental or heritage sites.

As the site is already established and no change in layout is required to effectively and efficiently operate the site or to avoid any sensitive environmental features, no other layouts have been assessed further in this Report.

**d) The technology to be used in the activity:**

There are no alternative technologies to be used in the proposed activity.

**e) The operational aspects of the activity:**

There are no alternative operational aspects to be considered for the proposed activity, which comprises the formalisation, appropriate management and expansion of an existing borrow pit.

**f) The option of not implementing the activity.**

In this instance, the no-go alternative would mean that the existing borrow pit would be closed and rehabilitated and no further mining would occur on the site. This would mean that the Applicant would be forced to either find a new site to mine, which would involve significantly higher environmental impacts than continuing to mine the already excavated site, or to import the material required from a commercial source, which would be considerably costly for the Applicant due to the distance that material would need to be transported to reach the end use sites.

From a socio-economic perspective, importing the material regularly from a commercial source and transporting it over considerable distance to the area, would not be feasible. This could lead to significant economic and health and safety impacts for people living in the area if roads were less frequently maintained and new roads were not built. The alternative to importing material and to using the preferred site would be to find a new site to mine, in the area. This would involve the mining of a previously unmined site and the loss of an area of land that could be used for agriculture or left as natural wooded grassland and used for communal grazing. This would also have a negative economic impact to the area as a whole.

From an environmental perspective, the continued mining of the already excavated and denuded site is preferable to the denuding and mining of a new site that has not been previously mined. The existing site is also located where there are no sensitive environmental features in the vicinity of the site and the potential for off-site impacts are likely to be lower at the current site than they would be at a new site.

In conclusion, there are no positive impacts associated with the no-go alternative that are not available with the preferred alternative and the negative impacts are undesirable from both an environmental and a socio-economic perspective. Thus, the no-go alternative is not supported, from both an ecological and a socio-economic perspective.

## **5. PUBLIC PARTICIPATION PROCESS**

### **5.1) 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)

A Public Participation Process, as described in Regulation 39 to 44 of the EIA Regulations 2014, was conducted and included the notification of all relevant authorities, the public, neighbouring landowners, and other key community figures and representatives. Notifications were conducted in the following manner:

#### **Site Information Posters**

Site Posters, in English and isiZulu, were placed on and around the site on 20 February 2014. The posters gave notification of the proposed Mining Permit Application process and invited people to register as Interested and Affected Parties. Refer to Appendix F – Report on the Results of Public Consultation for a copy of the site posters and photographs of the posters in place.

#### **Compilation of List of Interested and Affected Parties**

A list of relevant authorities, organizations and departments was compiled. The list also included the land owners, local ward councillors, chiefs and community members. The list was regularly updated to include people responding to the site posters and newspaper advertisements. Appendix F – Report on the Results of Public Consultation for a copy of the List of Interested and Affected Parties.

#### **Background Information Document**

A Background Information Document (BID) was circulated to all registered Interested and Affected Parties from 12 March 2014. Appendix F – Report on the Results of Public Consultation for a copy of the Background Information Document.

#### **Public Meeting**

A public meeting was held at Phembumuzi Primary School on 07 April 2014. The meeting was attended by 29 people, including members of the local community and key local figures such as chiefs and ward councillors.

Attendees were given the opportunity to ask questions and raise any issues they would like to be considered and addressed. These issues were responded to at the time and are listed in this report, below.

The general consensus at the meeting was that the community was supportive of the project and was appreciative of any opportunities for employment that might result from the proposed activity.

Please refer to Appendix F – Report on the Results of Public Consultation for details of the Public Meeting, including invitations, invitation posters, the handout presented and the attendance register, as well as hard copies of all the comments received to date.

#### **Circulation of the Draft Basic Assessment Report and Supporting Documentation**

Copies of the Draft Basic Assessment Report and all supporting documentation have been circulated to the following key I&APs for review and comment:

- Strini Govender – Department of Water and Sanitation;
- Amafa;
- Stephan Landman – Zululand District Municipality;
- Bonga Ntazni – Nongoma Local Municipality;
- Jenny Longmore – Ezemvelo KZN Wildlife;
- Petrus Mans – Department of Agriculture; and
- Nandipha Sontangane – Department of Agriculture, Forestry and Fisheries.

A hard copy of this Draft Basic Assessment Report has been left at the Nongoma Local Municipality's Offices for public viewing.

All registered I&APs have been notified of the availability of this Draft Basic Assessment Report and their opportunity to comment. I&APs will be given 30 days to comment on the Draft Basic Assessment Report.





## 5.2) Summary of issues raised by I&APs

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

Interested and Affected Parties		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted					
<b>AFFECTED PARTIES</b>					
<b>Landowner/s</b>	X				
<b>Ingonyama Trust Board</b> <i>No comment was received from the Ingonyama Trust Board; however, they have signed the relevant Land Owner Consent Forms and are fully aware of the project.</i>	X				
<b>Lawful occupier/s of the land</b>	X				
<i>Please see comments received at the Public Meeting, below. However, it must be noted that there are no people residing on, or in close proximity to, the proposed development footprint.</i>					
<b>Landowners or lawful occupiers on adjacent properties</b>	X				
<i>Please see comments received at the Public Meeting, below.</i>					
<b>Municipal councillor</b>	X				
<i>No comment has been received to date from the Local Ward Councillor and comment will be included in the Final Basic Assessment Report</i>					
<b>Municipality</b>	X				
<i>No comment has been received to date from the Nongoma Local Municipality or the Zululand District Municipality and comment will be included in the Final Basic Assessment Report.</i>					
<b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e</b>	X				
Roy Ryan <b>KZN Department of Transport</b>	X	13 May 2014	<ul style="list-style-type: none"> <li>With reference to your letter dated, May 2014 in connection with the abovementioned proposed Expansion of Existing Borrow Pits application, I have to inform you that the Minister as the Controlling Authority as defined in the KwaZulu-Natal Roads Act No. 4 of 2001, has in terms of section 21 of the said Act, no objections to the proposed application as represented in the Background Information Document.</li> <li>In terms of Section 10 of the Roads Act, the access points shall be positioned, constructed and upgraded in consultation with this Department Cost Centre Manager Ulundi (Tel No. 035-8798100).</li> <li>This correspondence does not grant authorization or exemption from compliance with any other relevant and applicable</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> <li>Noted. This is included in the Environmental Management Programme (EMPr).</li> <li>Noted.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> <li>EMPr (Appendix E)</li> <li>N/A</li> </ul>

			legislation.		
Nicole Govender <b>KZN Department of Water Affairs</b>	X	31 March 2014	<ul style="list-style-type: none"> <li>Storm water management</li> <li>If you are within 500m of a wetland a water use license is required.</li> <li>Water for construction will be obtained from which source?</li> <li>More comment will be given during scoping phase.</li> </ul>	<ul style="list-style-type: none"> <li>Noted. Storm water management is included in the Environmental Management Program me (EMPr).</li> <li>Noted.</li> <li>Water will be brought onto site via water tanker. The water will be sourced from an existing, permitted, supply in the area.</li> <li>Noted. However, it must be noted that this application is subject to the Basic Assessment Process and not the Scoping and EIA Process.</li> </ul>	<ul style="list-style-type: none"> <li>EMPr (Appendix E)</li> <li>N/A</li> <li>EMPr (Appendix E)</li> <li>N/A</li> </ul>
Michelle Nicol <b>Eskom</b>	X	07 April 2014	<ul style="list-style-type: none"> <li>We confirm that Eskom Holdings Limited has no objection to the proposed borrow pits, providing there are no encroachments into Eskom Servitudes, or damage to any of its powerlines.</li> <li>A building restriction of 12/twelve metres on either side of any reticulation line must be considered when building developments are planned.</li> <li>In the case where there are transmission lines, the follow servitude restrictions apply:- <ul style="list-style-type: none"> <li>132kV lines = 18 metres on either side of the centre line</li> <li>88kV lines = 16 metres on either side of the centre line</li> <li>33kV lines = 16 metres on either side of the centre line</li> </ul> </li> <li>Eskom's underground cables are usually laid 1 meter to 1.5 meters, when excavation is anticipated, ensure you check with our offices for cable positions.</li> <li>A developer requiring a new supply, an increase of supply or line deviation, from Eskom should make application to Eskom via the Eskom toll free number 0860037566, which will be processed in terms of Eskom's standard customer connection tariffs, conditions and policies, the costs of which will be for the developer's account.</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> <li>Noted. This is included in the Environmental Management Program me (EMPr).</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix)</li> <li>EMPr (Appendix E)</li> </ul>
Michelle Nicol <b>Eskom</b>	X	02 June 2014	<ul style="list-style-type: none"> <li>Please take note and ensure that the following is carried forward in your documents, that in respect of Eskom's powerlines, no encroachments are permitted within the following in respect of our servitudes: <ul style="list-style-type: none"> <li>132kV lines = 18 metres on either side of the centre line</li> <li>88kV lines = 16 metres on either side of the centre line</li> <li>33kV lines = 16 metres on either side of the centre line</li> <li>22kV lines = 12 metres on either side of the centre line</li> <li>11kV lines = 12 metres on either side of the centre line</li> </ul> </li> <li>Prior to the approval of the development, the owner shall lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it, will be provided, and have been depicted on the general plan, after installation of the services of the development.</li> <li>Trees should not be planted within their horizontal falling</li> </ul>	<ul style="list-style-type: none"> <li>Noted. This is included in the Environmental Management Program me (EMPr).</li> <li>Noted. However, this is not applicable.</li> <li>Noted. This is included in the EMPr.</li> </ul>	<ul style="list-style-type: none"> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> </ul>

			<p>distance of the power lines.</p> <ul style="list-style-type: none"> <li>The roads crossing under the power lines may only cross in safe areas where, what is known as "broken conductor conditions" as defined in the Occupational Health &amp; Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.</li> <li>The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.</li> <li>No construction or excavation shall be executed within 10 meters of any steel Eskom power line structure or within 3 metres of any wood pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 meter radius of undisturbed soil.</li> <li>Please note that the applicable building restrictions either side of any existing powerline must be adhered to when planning new buildings or developments on the property.</li> <li>Please further take note that the costs of relocations of any of Eskom's infrastructure, will be for the account of the developer.</li> <li>Applications can be lodged via Eskom's call centre on 086 003 7566.</li> <li>Please further take note that if any 275kV, 400kV or 765 kV Lines are involved, you need to send a copy of the application to Eskom's transmission division at Megawatt Park. Attention Lungile Motsisi, email: motsisL@eskom.co.za.</li> </ul>	<ul style="list-style-type: none"> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> </ul>	<ul style="list-style-type: none"> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> </ul>
Roland Moore Eskom	X	27 March 2014	<ul style="list-style-type: none"> <li>No Sub Transmission lines are affected by the borrow pits however the following reticulation power lines may be affected by the proposed expansion area: Nyokeni Network Breaker 99 – 22 kV Lines</li> <li>The width of the building restriction is 12 metres on either side of the centre line of the power line.</li> <li>Each of the pits (except 5) has a 22kV reticulation line within 500m, if blasting is required, only single shot blasting would be permitted and this would require Eskom's approval.</li> <li>The extent and direction of pit expansion is not described in the BID.</li> <li>The following servitude conditions apply:</li> <li>If Eskom has to incur any expenditure in order to comply with statutory clearances or other regulations as a result of the applicant's activities or because of the presence of his/her equipment or installation within the servitude area, the applicant shall pay such costs to Eskom on demand.</li> <li>Changes in ground level may not infringe on statutory ground to conductor clearances or statutory visibility clearances. After any changes in ground level, the surface shall be rehabilitated and stabilized so as to prevent erosion. The measures taken shall</li> </ul>	<ul style="list-style-type: none"> <li>Noted. The position of all existing infrastructure will be confirmed prior to any expansion taking place.</li> <li>Noted. This is included in the Environmental Management Programme (EMPr).</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is detailed in the Basic Assessment Report.</li> <li>Noted.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> </ul>	<ul style="list-style-type: none"> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>N/A</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> </ul>



			<ul style="list-style-type: none"> <li>The height of laden vehicles crossing our servitude is not to exceed 4.5 metres.</li> <li>Cranes and other lifting equipment are not to be operated within our servitude.</li> <li>All correspondence relevant to this matter should be addressed to the Principal Survey Technician, Mr R M Moore, Eskom Sub-Transmission Survey, P.O. Box 5, Mkonjeni, 3212.</li> </ul>	<ul style="list-style-type: none"> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> <li>Noted. This is included in the EMPr.</li> </ul>	<ul style="list-style-type: none"> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> <li>EMPr (Appendix E)</li> </ul>
<b>Communities</b>	<b>X</b>				
S. Zulu <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	Which borrow pit is the closest to us / which one is this meeting concerned with?	All five are covered by this meeting as they are all located in this area. (EAP showed I&APs the aerial locality map and indicated where the meeting was taking place in relation to the borrow pits).	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Bongani Nkosi <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	How will we, the community, benefit from this?	The local community will benefit from the jobs that will be created, as it will be stipulated that people from the area must be employed ahead of people from further afield. The community will also benefit from the borrow pits being managed correctly and improved safety measures being put in place. The environment in the area will also be protected from damage, which will benefit the people living there. The Material taken from the borrow pits is used to build and maintain roads in the area, which will also benefit the community. The borrow pits will be properly rehabilitated once they are decommissioned and the land on which they are situated will become useful once again.	<ul style="list-style-type: none"> <li>EMPr (Appendix E).</li> </ul>
Local Community Member <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	Dust from the trucks going to and from the borrow pit is a huge problem here as houses are close to the gravel road.	Noted. Dust suppression methods, such as dampening, covering loads and implementing strict speed restrictions on the road will be included in the EMP, which is a legally binding document.	<ul style="list-style-type: none"> <li>EMPr (Appendix E).</li> </ul>
Local Community Member <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	How will these things (dust suppression) be enforced?	The pits will be monitored regularly and there will also be a complaints book on the site for people to lodge complaints if they feel that the rules are not being adhered to and are causing a nuisance for the community. The Applicant can be fined if they are not in compliance with their EMPr.	<ul style="list-style-type: none"> <li>EMPr (Appendix E).</li> </ul>
Local Community Member <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	We are very concerned about the safety of the school children to attend this school (Phembumuzi Primary School) as the school is located over the road from all the houses and the children have to cross the road every day to go to school. The trucks from the borrow pits speed along here, endangering our children.	Noted. A speed limit will be put in place and speed limit signs will be put up. In addition, the possibility of putting a formal stop sign / children's crossing outside the school will be explored during the compilation of the EMPr.	<ul style="list-style-type: none"> <li>EMPr (Appendix E).</li> </ul>
Local Community Member <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	I can drive trucks. Will I be able to get work as a part of this project?	Yes. People from the local community will be employed wherever possible and so if there is a driver needed they will consider you if you apply.	<ul style="list-style-type: none"> <li>EMPr (Appendix E).</li> </ul>
Local Community Member <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	I am also very concerned about the dust and children's safety with the speeding trucks. The dust is a huge problem it reduces visibility for pedestrians, causes health problems and blows inside the houses that are near the road causing a huge nuisance.	Noted. Dust suppression and formal speed limits will be implemented and enforced as far as possible.	<ul style="list-style-type: none"> <li>EMPr (Appendix E).</li> </ul>
Local Community Member <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	Where can we complain if the trucks do not obey the speed limits?	You can report the noncompliance at the site camp. The site agent will record it and pass it on to the environmental consultant who will deal with it and inform the Applicant. You can also contact the Department of Transport offices in Nongoma and / or the Nongoma Local Municipality.	<ul style="list-style-type: none"> <li>EMPr (Appendix E).</li> </ul>
Local Community Member	X	07 April 2014	Who is the local induna for the nearest borrow pit, is it our induna	The EAP noted this question but it was answered by another I&AP, who	<ul style="list-style-type: none"> <li>N/A</li> </ul>

<b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>			here?	indicated that the induna for the borrow pit was not the same one as the induna for this area.	
Local Community Member <b>Comment received at the Public Meeting, held at Phembumuzi Primary School</b>	X	07 April 2014	There are no indunas at this meeting. They ought to be here as well.	The local indunas were all invited to the meeting, in person and by telephone, but none have come. Unfortunately we cannot force people to come, but we did invite them and made sure that they were aware of the meeting.	• N/A
<b>Dept. Land Affairs</b>					
Nonhlanhla Myeni <b>KZN Department of Agriculture, Environmental Affairs &amp; Rural Development – Land Use Regulatory Unit</b>	X	20 June 2014	<ul style="list-style-type: none"> <li>• The Provincial Department of Agriculture and Environmental Affairs: Macro Planning acknowledges receipt of the above Background Information Document.</li> <li>• The application is for the expansion of existing Borrow pits for the Department of Transport in Ulundi Local Municipality. The proposal is to formalize and expand a total of 75 existing Borrow Pits.</li> <li>• The site inspections to evaluate the significance of agricultural resources were conducted on the 17<sup>th</sup> – 19<sup>th</sup> June 2014 to evaluate the significance of agricultural resources that are likely to be impacted upon by this development.</li> <li>• According to the evaluation most of the borrow pits are existing.</li> <li>• The mining in question will be over a period of two years and not exceeding 5 hectares extent for each Borrow Pit.</li> <li>• A number of environmental impacts are expected, which will be addressed by the Environmental Management Plan.</li> <li>• In reference to KZN Agricultural Land Potential categories the areas of concern have very severe limitations making them unsuited to cultivation because of the shallow soils and stones.</li> <li>• It is recommended that a resource assessment of the entire 75 Borrow Pits to be carried out in accordance with the Survey Standards Guideline 'Natural Resources Survey Specifications' attached here-to. In particular the following information is required: <ul style="list-style-type: none"> <li>○ Total land parcel size as well as affected area (foot print)</li> <li>○ The Bio-resource Group</li> <li>○ The Bio-resource Unit</li> <li>○ The water resources available on the entire property</li> <li>○ A soil survey including: <ul style="list-style-type: none"> <li>▪ Identification of soils to the family level</li> <li>▪ Soil observation points (a map of soil observation points should be included), and documented information as per the guideline document</li> <li>▪ Demarcation of important soil boundaries; and</li> </ul> </li> <li>○ A detailed vegetation survey as per the guideline</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• However, each individual borrow pit will be subject to an individual Basic Assessment Process. Thus, the EAP is of the opinion that a combined assessment of all the borrow pits is not necessary, as the relevant information for each borrow pit will be detailed in the Basic Assessment Report.</li> <li>• Noted. However, the borrow pits are existing, which means that</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• BAR, EMPr and Specialist Studies</li> <li>• BAR, EMPr and</li> </ul>

			<p>document attached, which must include an assessment of veld condition and the grazing capacity.</p> <ul style="list-style-type: none"> <li>• Interpretation of land capability and land potential classes with recommendations on the current and proposed land use as well as an evaluation of alternatives (including possible crops and likely yields), and consideration of other successful agricultural practices taking place in the area.</li> <li>• And impact assessment in terms of loss of agricultural land and production. *Please note that the survey must be signed off by a registered professional scientist.</li> <li>• A detailed layout which indicates the exact proposed position of all of the infrastructure and associated sports facilities, stables etc. is required.</li> <li>• The position of the two proposed dams should also be indicated. The layout should also indicate the area of land that is intended for use for agricultural purposes and should reflect the agricultural potential as defined by the resources assessment study.</li> <li>• Please be advised that the Provincial Department of Agriculture and Environmental Affairs: Land Use Regulatory Component has no objection to the activity in principle but awaits further documentation before concluding our comments on the proposed project.</li> </ul>	<p>they are currently excavated / denuded and have no vegetative cover or grazing capacity. The area proposed for expansion is minimal and the quality of the vegetative cover is adequately addressed in the Basic Assessment Report for each individual borrow pit.</p> <ul style="list-style-type: none"> <li>• Noted. However, the borrow pits are existing, thus the current and proposed land use are the same and there are no immediately available land use alternatives.</li> <li>• Noted. However, as the borrow pits are existing, there will be no loss of agricultural land or production. The proposed expansion of borrow pits will not constitute a significant loss of agricultural land or production as none of the areas proposed for expansion are currently utilized for agriculture.</li> <li>• Noted. A layout plan is included in the Basic Assessment Report. There will be no sports facilities or stables.</li> <li>• Noted. However, this is not applicable as there are no dams proposed.</li> <li>• Noted.</li> </ul>	<p>Specialist Studies</p> <ul style="list-style-type: none"> <li>• N/A</li> <li>• N/A</li> <li>• BAR Appendix C.</li> <li>• N/A</li> <li>• N/A</li> </ul>
<p>O. A. Ogunnaike Agriculture, environmental affairs &amp; rural development KZN</p>	X	23 <sup>rd</sup> April 2014	<ul style="list-style-type: none"> <li>• The background information document (BID) shows a proposed formal expansion of a total of 75 existing borrow Pits, located within the Nongoma and Ulundi Local municipalities, Zululand District Municipality, KwaZulu-Natal.</li> <li>• The current application refers to five Borrow Pits which are located near Nhlophenkulu, within Nongoma local Municipal area as indicated in the BID document. As an Interested and affected party (I&amp;Ap) i.e Department of Agriculture and Environmental Affairs, Land use regulatory unit, we are looking forward to obtaining a Basic Assessment Report (BAR) from you.</li> <li>• This document should be submitted in Duplicate hard copies, at our offices in Cedara (Former Engineering Building)</li> <li>• Please note that a site inspection will be conducted to verify all claims and for decision making purposes.</li> <li>• Please feel free to contact me for any information that you</li> </ul>	<ul style="list-style-type: none"> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> <li>• Noted.</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> </ul>

			may require, as we move forward with the process		
<b>Traditional Leaders</b>					
<i>Please see comments received at the Public Meeting, above.</i>					
<b>Dept. Environmental Affairs</b>					
<i>No comment has been received to date and comment will be included in the Final Basic Assessment Report</i>					
<b>Other Competent Authorities affected</b>					
<i>No comments received.</i>					
<b><u>OTHER AFFECTED PARTIES</u></b>					
		N/A			
<b><u>INTERESTED PARTIES</u></b>					
Langalakhe Nyembe <b>Maye Youth Initiated Trading and Services Cooperative Limited</b>	27 March 2014	<ul style="list-style-type: none"> <li>Kindly find the attached letter of interest in your Borrow pits. We have a Cooperative known as Maye Youth Initiated Trading and Services Cooperative Limited. We also have site given to us for Crushed Stone project.</li> </ul>	<ul style="list-style-type: none"> <li>Noted. Thank you for your interest.</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	



## 6. ENVIRONMENTAL ATTRIBUTES

### 6.1) The Environmental attributes associated with the alternatives

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

#### 6.1.1) Baseline Environment

##### **Introduction**

The proposed site is located approximately 24 km north-east of Nongoma, near Mangamude, within the Nongoma Local and Zululand District Municipalities of KwaZulu-Natal. The GPS coordinates are 27°45'26.63" S and 31°49'40.55" E. Currently the site is 0.72 Ha with a proposed extent of 1.47 Ha after expansion (0.75 Ha expansion).

The site is located in a rural area and there are sparsely populated residential settlements within 100 m of the site. The site is accessed via the D1802 road. The site is located on undeveloped communal land (Ingonyama Trust Board) and there are no known features of cultural or heritage significance on the site.

The proposed site is accessed directly off the D1802 road, which borders the site to the south and west. The site is bounded to the north by undeveloped grasslands, to the east by a gravel road to the south by a homestead and associated cultivation. There are no wetlands or rivers within 500 m of the site, although there are several drainage lines / erosion gullies to the north and north-west of the site. The site has historically been subject to overgrazing and currently comprises degraded grassland, and scattered trees and shrubs. Alien vegetation is well established on site. The proposed activity will not negatively impact on the surrounding land uses in any way, aside from temporary nuisance impacts (dust and noise) for the nearby residents.

As the site has already been excavated and the proposed expansion is minimal (less than 1 hectare), it is unlikely that the proposed expansion of the site will have significant impacts to the surrounding environment. In addition, the formalisation of the site will result in the site benefitting from proper management and rehabilitation after cessation of mining activities. This will also be beneficial to the receiving environment. A Specialist Wetland and Biodiversity Comment (Appendix G) has been compiled, which details the following characteristics of the site and surrounding area:

##### **Climate and General Characteristics**

The site is currently 0.72 hectares in extent, with a proposed expansion area of 0.75 hectares (1.47 hectares combined). It is located on a gentle north facing slope just above a drainage line, adjacent to the D1802 District Road in the Nongoma Local Municipal area of northern KwaZulu-Natal. According to the AGIS database, general terrain within the study site comprises open high gradient hills or ridges. The surrounding area is characterised by summer rainfall with some rain in winter. The area has an average rainfall of approximately 601 - 800mm per year. It receives the lowest rainfall in June and July and the highest rainfall in December and January. The area is generally frost free, with mean maximum annual temperature of 29.1°C – 31°C and a mean minimum annual temperature of 6.1°C - 8°C.

##### **Geology and Soils**

Soils in the area are generally Black clay and duplex soils derived from clastic sediments of the Dwyka, Ecca and Beaufort groups, as well as igneous rocks of the Lebombo Groups (all of the Karoo Supergroup). Well drained, shallow soil forms also occur, particularly on stony slopes. Lime is generally present in part or most of the landscape. According to the AGIS database, the borrow pit site and surrounding area is susceptible to water erosion due to the steep gradient of the terrain. The area is moderately susceptible to wind erosion. Some erosion and soil loss is evident from aerial images, along a drainage line located below the borrow pit site.

##### **Vegetation**

The site is located within the SVI 23 Zululand Lowveld vegetation type, which has a conservation ranking of vulnerable. However, this vegetation type is not listed in the National List of Threatened Ecosystems (Government Gazette No. 34809, 11 December 2011). Approximately 11% of this vegetation type is statutorily conserved, mainly in the Hluhluwe-iMfolozi Park and Phongolaport Nature Reserve. Regionally, approximately 26% of this vegetation type has been transformed, mostly by cultivation.

This vegetation type is characterised by extensive flat or only slightly undulating landscapes which support various bushveld units ranging from dense thickets of *Dichrostachys cinerea* and *Acacia* species, to park-like savanna with flat-topped *Acacia tortilis*, to tree-dominated woodland with broad-leaved open bushveld with *Sclerocarya birrea* and *Acacia nigrescens*. This typical savanna thornveld, bushveld and thicket patches are interspersed with tall grassveld types with sparsely scattered solitary trees and shrubs. Biogeographically important taxa that occurs within this vegetation type includes *Acacia thetonii* (small tree) and *Lycium shawii* (tall shrub).

Vegetation on the current borrow pit site was likely to have been tall grassveld. According to the SANBI Biodiversity GIS spatial data on Invasive Alien Plants, *Chromolaena odorata* (Triffid weed) and *Melia azedarach* (Syringa) are present within the general study area. The presence of alien vegetation indicates disturbance of the natural vegetation.

Based on Google Earth imagery the vegetation on the proposed expansion site appears to comprise grassveld with some small shrubs. This vegetation is however likely to be disturbed as a result of livestock grazing, and the close proximity of the site to nearby settlements and agricultural areas.

### **Fauna**

Due to the transformed nature of the existing and proposed borrow pit site, and close proximity to settlements, it is unlikely that any endangered or red data faunal species will be present within the immediate vicinity of the current and proposed expanded borrow pit. Thus, extending this borrow pit is unlikely to have a negative impact on any faunal species present in the area.

### **Lifespan**

The proposed mining site, after expansion, will be approximately 1.47 ha in size and the mining method proposed is dry, opencast mining, using TLB diggers and excavators. It is anticipated that the proposed mining operation will have removed the required volume of material in less than two years. The rehabilitation of the site is anticipated to take less than 10 months to conduct, although vegetation may take a full season to become fully established on the site after re-vegetation.

### **Surface and Groundwater**

There are no watercourses or wetlands identified within a 500 m radius of the proposed site. However, there is a drainage line and an erosion gully to the north of the site, within a 500 m radius.

In terms of impacts to ground and surface water quality in the surrounding environment, it is unlikely that the proposed activity will have any direct impact to water quality under normal working conditions. The EMPr (Appendix E) stipulates appropriate management and mitigation measures to prevent and minimise any potential impacts to water quality.

### **Current State of the Site**

The site is currently significantly degraded as a result of past mining, which has not been rehabilitated. As such, it is likely there will be no significant loss of biodiversity as a result of the proposed activity. In addition, the site will benefit from proper stormwater management and alien vegetation control during operation and from rehabilitation and re-vegetation after cessation of the mining activities.

### **Potential for Off-site Impacts**

The potential for off-site impacts as a result of the activities on site is limited, provided that the EMPr is properly implemented on site. The EMPr addresses the following, in terms of their potential impacts:

- Soil, ground and surface water quality;
- Soil erosion;
- Alien vegetation;
- Re-establishment of indigenous vegetation;
- Noise;
- Dust;
- Vibrations;
- Visual impacts; and
- Potential injury or damage to property.

In addition, the EMPr (Appendix E) contains management and mitigation measures to ensure that no unacceptable environmental degradation takes place as a result of the activities proposed, during both normal and abnormal working conditions.

#### **6.1.2) Type of environment affected by the proposed activity**

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

The type of environment that will be affected by the proposed activity has the following characteristics:

#### **Geographical and physical**

The preferred site is located at 27°45'26.63" S and 31°49'40.55" E, on Sub 9 of Reserve No 12/15832, near Mangamude, within the Nongoma Local and Zululand District Municipalities, KwaZulu-Natal.

The site is currently approximately 0.72 ha in size and it is anticipated that it will increase to approximately 1.47 ha in size. The material mined from the site is conglomerate, which is used for road construction and maintenance on the surrounding area, by the Applicant, the KZN Department of Transport.

#### **Biological**

The majority of the site is currently denuded due to the presence of the existing borrow pit. The margins of the site feature degraded grassland, ruderal weeds and alien vegetation, as well as some sparse patches scrub and thicket. No animals were noted to be present on the site and due to the high level of transformation surrounding the site, it is not anticipated that faunal species in the area will be directly impacted by the proposed activity.

## **Socio-economic**

The site is located on a communal land, which is owned and managed by the Ingonyama Trust Board. The site is operated and managed by the KZN Department of Transport. The area surrounding the site, to the north, south and west comprises undeveloped wooded grasslands, which are used for communal grazing. A small rural homestead and farm is located to the south-east of the site. There is very little in terms of public infrastructure or services in the area, other than the D1802 Road, located to the immediate south and west of the site and another gravel road to the immediate east of the site. Thus, the socio-economic character of the area immediately surrounding the site can be considered to poor and less privileged, as is the majority of rural Zululand, in terms of economic and educational opportunities.

## **Cultural**

Culturally, the main cultural groups in the area are Zulu speaking and the types of settlement in the area are rural and remote. Migrant labour and subsistence farming are the main economic activities in the area. It was noted during the assessment of the site that there were no sites of cultural significance identified within 500 m of the proposed site and thus it is not anticipated that the proposed activity will have any impact on the cultural characteristics of the area.

### **6.1.3) Description of the current land uses**

#### **Current land use**

The current land use comprises an existing borrow pit, which is currently excavated. It is proposed to expand the borrow pit in order to obtain additional material from the existing site. The expansion area of the borrow pit is dictated by the location of the desired material, in relation to the existing pit. The expansion of the borrow pit will not encroach onto any sensitive areas or land uses.

#### **Surrounding land uses**

In terms of land use, the proposed site is surrounded by large stretches of undeveloped land, a rural homestead and associated cultivation (small cultivated fields, household vegetable garden and some livestock) and two roads, the D1802 to the south and west and another gravel road to the east. The site itself is not suitable for agricultural use, other than grazing; due to the presence of the existing borrow pit and the site's proximity to the two roads, which border the site on two sides.

### **6.1.4) Description of specific environmental features and infrastructure on the site**

#### **Environmental features on site**

The site currently features an existing, denuded, borrow pit. The site is bounded by the D1802 Road to the south and west, undeveloped land to the north and a gravel road and a homestead and cultivation to the east. The previously excavated portions of the site are currently degraded and the presence of ruderal weeds and alien vegetation was noted on site. The unexcavated portion of the site comprised degraded grassland. No sensitive vegetation species were noted on site and no animals were noted on site.

#### **Infrastructure on site**

The site currently features an existing, denuded, borrow pit. There is no infrastructure on site, other than the existing access point off the D1802 Road to the immediate south of the site. There are no fences or demarcations on the site and no facilities for storage or ablutions of any kind. It is anticipated that the infrastructure to be established on site will include permanent fencing and demarcation of the site to control access and prevent accidental injury and the establishment of designated areas for stockpiling topsoil and spoil, as well as designated areas for the temporary storage of machinery, materials and portable ablutions.

### **6.1.5) Environmental and current land use map**

(Show all environmental, and current land use features)

Please refer to Appendix B – Locality Map, Appendix C – Site Plan and Appendix G – Specialist Wetland and Biodiversity Comment for the relevant maps and plans of the site and surrounding land uses.

## **7. IMPACT ASSESSMENT**

### **7.1) 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).

Please refer to Appendix H - Impact and Risk Assessment.

### **7.2) 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).

In order to assess the potential environmental issues associated with the proposed activity, each aspect addressed was given a qualitative rating in relation to its environmental impact. Each aspect was then divided into a number of different classes, each of which was assigned various criteria, as follows:

ASPECT	CLASS	CRITERIA
<b>NATURE OF IMPACT</b>	Positive	The impact on the environment will be positive.
	Negative	The impact on the environment will be negative.
	Direct	The impact is caused directly by the activity and generally occurs at the same time and at the place of the activity.
	Indirect	The impact induces changes that may occur as a result of the activity.
	Cumulative	The impact is a result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities.
<b>PROBABILITY OF IMPACT OCCURRING (with mitigation)</b>	Definitely	The impact will definitely occur even with mitigation (100%).
	Likely	It is likely that the impact will occur (60%-99%).
	Fair	There is a fair chance that the impact will occur (30% -59%).
	Unlikely	It is unlikely that the impact will occur (0% - 29%)
<b>REVERSIBILITY (with mitigation)</b>	Possible	It is possible to reverse the impact.
	Partly	It is partly possible to reverse the impact.
	Not possible	It is not possible to reverse the impact.
<b>EXTENT OF IMPACT (with mitigation)</b>	Site	The impact will be limited to the site.
	Local	The impact will affect the local area (within a radius of 40 km).
	Provincial	The impact will affect areas beyond the site but within the boundaries of KwaZulu-Natal.
	National	The impact will affect areas beyond the Province but within the boundaries of South Africa.
<b>DURATION (with mitigation)</b>	Short-term	0-5 years
	Medium-term	5-40 years
	Long-term	(>40 years).
	Permanent	Permanent damage to the environment.
<b>SIGNIFICANCE OF IMPACT WITHOUT MITIGATION</b>	Low	Small impact / disturbance.
	Medium	Moderate impact / disturbance expected.
	High	Significant impact / disturbance expected.
<b>SIGNIFICANCE OF IMPACT POST-MITIGATION</b>	Low	Small impact / disturbance.
	Medium	Moderate impact / disturbance expected.
	High	Significant impact / disturbance expected.

Please refer to Appendix H – Impact and Risk Assessment, for further information on the above method of impact and risk assessment.

**7.3) 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)

Please refer to Section (i), above, for details of the alternatives and alternative layouts considered in this Report and refer to Appendix H – Impact and Risk Assessment for a full list of positive and negative impacts associated with the preferred site alternative and layout.

The potential negative impacts that require mitigation are summarised as follows:

- Inconvenience of additional heavy, slow moving vehicles on the local road network.

- Further site clearing and excavation could lead to soil instability and erosion.
- Potential impacts to the Black Umfolozi River if erosion from the site is not adequately controlled.
- Nuisance dust from site clearing and operational activities, such as excavation activities and transportation trucks.
- Faulty or badly maintained machinery could lead to pollution of soil and ground / surface water from leaks or spillages.
- Incorrectly stored fuel / hazardous substances could lead to pollution of groundwater and soil.
- Nuisance noise from machinery and transportation trucks.
- Excavation of the site will alter the topography of the site, potentially altering the characteristics of the immediate area in terms of surface drainage and/or retention.
- High intensity rainstorm events could cause erosion and loss of stockpiled soil.
- Frosts and dry conditions during winter will impede and delay any re-vegetation and rehabilitation efforts.
- Removal of vegetation and soil disturbance could lead to alien vegetation infestation.
- Potential for soil contamination from chemicals used in alien plant removal.
- Accidental fires could cause severe damage to buildings, as well as to neighbouring properties. A fire could potentially have serious environmental and financial implications.
- Environmental pollution from domestic refuse, if it is not managed correctly.
- Potential injury or adverse health impacts for workers onsite if health and safety laws and guidelines are not implemented correctly.

#### 7.4) **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).

The possible mitigation measures for the potential negative impacts that require mitigation (see vii, above), in order to avoid negative environmental impacts occurring and, where negative impacts are unavoidable, to minimise and rectify them, are summarised as follows:

- The recommendations of the EMPr (Appendix E) must be implemented and adhered to at all times.
- Compulsory Environmental Awareness Training must be given to all workers on site to ensure that they have a basic understanding of the environmental issues which could be affected by the proposed activity and how to mitigate those potential impacts by effectively implementing the EMPr (Appendix E).
- The site must be demarcated and adequately sign posted to avoid any human or animal injury and to ensure that activity is isolated to the designated footprint and does not impact on the surrounding environment.
- Excavations are to be conducted in line with the relevant SANS standards.
- The site is to be rehabilitated after cessation of mining activity on the site, according to the specifications stipulated in this EMPr.
- All machinery and associated technology must be used appropriately and be well maintained, in order to reduce potential emissions, noise and leaks.
- Waste and refuse are to be handled appropriately and disposed of at an appropriate, registered landfill site.
- Spill kits are to be kept on site and staff instructed in their effective use.
- Closure objectives, in terms of the environmental rehabilitation and re-vegetation of the site must be kept in mind at all times and must inform how the site is managed and how excavations proceed.
- The preferred method of excavation is the use of dry, open cast mining, as it is both an environmentally and technically sound method of surface mining.
- Excavation should be done by hand and by excavator, using as few vehicles / machines as possible in order to reduce emissions, potential soil compaction, dust and the potential for faulty machinery to leak oil / fuel onto the site.
- Stockpiles must be sited correctly, in order to reduce potential soil loss, and must be managed appropriately to prevent erosion and dust.
- All technical and mechanical operational guidelines must be adhered to at all times.
- No water may be extracted from any local river or stream and all water must be made available on the site from a legitimate external source.
- Potable water, from a permitted local source, must be made available for workers at all times.
- Portable ablutions must be made available for workers at all times (one toilet per 20 workers).
- All workers on site must be equipped with the appropriate Personal Protective Equipment.
- All activities on site must be in accordance with the relevant Health and Safety Laws (Mine Health and Safety Act 29 of 1998).
- A qualified Health and Safety professional must be employed to generate and implement the required Standard Working Procedures and Codes of Practice (Refer to Appendix H – Impact and Risk Assessment).
- Closure objectives, in terms of the environmental rehabilitation and re-vegetation of the site must be kept in mind at all times and must inform how the site is managed and how excavations proceed.

#### 7.5) **Motivation where no alternative sites were considered**

In terms of the location of the proposed activity and the affected properties, the site is located at 27°45'26.63" S and 31°49'40.55" E, on Sub 9 of Reserve No 12/15832, near Mangamude, approximately 24 km north-east of Nongoma, KwaZulu-Natal.

The site currently features an existing borrow pit. The sole purpose of this Application is to obtain authorisation for the continuation of activity within the existing borrow pit and expansion to the periphery of the existing site. As the borrow pit is currently established at that location, it is not considered practical or feasible to assess alternative sites / properties and no other properties or locations have been assessed further in this Report.

**7.6) Statement motivating the alternative development location within the overall site**

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

In terms of layout, the site and access to the site are currently established. It is intended to retain this same layout in order to reduce the environmental impacts associated with the establishment of a new access point. As such, the preferred layout incorporates the existing borrow pit and access point, and makes provision for the establishment of stockpiles, storage areas and ablutions on site.

The preferred layout has been chosen for the following reasons:

- It does not constitute a change of land use.
- It will not negatively impact on surrounding land uses.
- It is in line with the municipal IDP and SDF.
- It will not result in any negative socio-economic impacts.
- It does not encroach onto any sensitive areas or necessitate the unnecessary transformation of any valuable or sensitive vegetation types.
- It takes into consideration the faunal species present in the area and will not result in the destruction of any sensitive faunal habitats.

**7.7) 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.)

Please refer to Appendix H – Impact and Risk Assessment.

## 7.8) 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).

<b>NAME OF ACTIVITY</b> (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route <b>etc...etc...etc</b> 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.)	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts) (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, and air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	<b>SIGNIFICANCE</b> if not mitigated	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) through (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation.	<b>SIGNIFICANCE</b> if mitigated
Please refer to Appendix H – Impact and Risk Assessment.						

The supporting impact assessment conducted by the EAP is attached as an appendix, marked **Appendix H – Impact and Risk Assessment**.

## 7.9) 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)

<b>LIST OF STUDIES UNDERTAKEN</b>	<b>RECOMMENDATIONS OF SPECIALIST REPORTS</b>	<b>SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT</b> (Mark with an X where applicable)	<b>REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED</b>
Heritage Impact Screening Assessment (Appendix D)	<ul style="list-style-type: none"> <li>There are no heritage sites on the footprint and the area is not significant in terms of heritage values. In addition, the footprint does not form part of any identified cultural landscape. Nevertheless there is a slight possibility that excavation and construction work may expose archaeological material. Should archaeological material been exposed during construction then all development work should stop immediately and the provincial heritage agency, Amafa, must be contacted for further evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>X</li> </ul>	<ul style="list-style-type: none"> <li>EMPr (Appendix E) – Construction Phase, contains the procedures to be followed if any heritage, cultural or archaeological finds are</li> </ul>

	<ul style="list-style-type: none"> <li>• The proposed expansion of DOT Borrow Pit 29 may proceed in terms of heritage values as no sites are in any danger of being destroyed or altered. The area is also not part of any known cultural landscape. However, it should also be pointed out that the KwaZulu-Natal Heritage Act requires that operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.</li> <li>• Construction work and excavations may yield archaeological material. If any heritage features are exposed by construction work then all work should stop immediately and the provincial heritage agency, Amafa, should be contacted for further evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>• X</li> <li>• X</li> </ul>	<p>made during excavation of the site.</p> <ul style="list-style-type: none"> <li>• EMPr (Appendix E) – A Paleo Chance Find Procedure is included in the EMPr.</li> <li>• EMPr (Appendix E) – Construction Phase, contains the procedures to be followed if any heritage, cultural or archaeological finds are made during excavation of the site.</li> </ul>
Specialist Wetland and Biodiversity Comment (Appendix G)	<ul style="list-style-type: none"> <li>• It is unlikely that any plants of conservation significance occurred on the site prior to it being quarried.</li> <li>• Although no detailed ground-truthing has been conducted, from review of the available databases, information and knowledge of the area, it is unlikely that there are any plants of conservation significance occurring on the proposed expansion footprint.</li> <li>• The existing and proposed quarrying footprints are unlikely to be an important refuge for any faunal species which has conservation significance.</li> <li>• Based on the information assessed, there are no wetlands or rivers located within 500 meters of the existing and expansion site for Borrow Pit 029. A drainage line is located to the north to the site.</li> <li>• Site decommissioning and closure will be implemented once the required volume of material has been extracted from the borrow pit. The decommissioning phase includes the rehabilitation of the excavated area to create a freely draining land form, the majority of which can be re-vegetated with indigenous grasses to become a productive and stable area. This will allow grazing on the site as well as ensure soil stabilisation and the prevention of erosion and soil loss as a result of excavations on the site.</li> <li>• All structures associated with the activity will be removed, including storage tanks, fences etc.</li> <li>• All litter and refuse will be removed and disposed of appropriately.</li> <li>• Any areas contaminated by spills of fuel or oil will be excavated and the contaminated materials will be disposed of appropriately.</li> <li>• The base of the quarry needs to be shaped in such a way that it does not hold water in the rainy season. This is necessary to ensure that it does not attract livestock to the water in winter, which will lead to increased trampling and grazing of the area to be rehabilitated.</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> <li>• N/A</li> <li>• N/A</li> <li>• EMPr – All phases.</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> </ul>



	<ul style="list-style-type: none"> <li>• Compaction and final topsoiling of the quarry base must create a freely draining landform.</li> <li>• The vertical quarry faces may remain bare, if it is evident that excavation has reached bedrock and erosion will not occur as a result.</li> <li>• Slopes on the expanded portion of the quarry are to be limited to 1:5 (20%) so as to allow the establishment of vegetation.</li> <li>• The expansion area is to be contoured by berms constructed with small rocks (spoil) stacked to a height of 30 cm and spaced approximately 10 meters apart in parallel rows along the expansion area.</li> <li>• The expanded portion (contoured, as above) is to be top-soiled (using stockpiled topsoil from the expansion area, and, if necessary, imported topsoil) to a depth of 5 cm during October / November.</li> <li>• The quarry base is to be topsoiled to a depth of 10 cm.</li>   <li>• The topsoiled areas are then to be raked and sowed with <i>Eragrostis curvula</i> at a rate of 15 kg per Hectare and fertilized at a rate of 100 kg per hectare using LAN Fertilizer.</li> <li>• Re-vegetation will be conducted in line with the area's seasonal precipitation (Planting October / November) in order to facilitate rapid root establishment and minimise the potential for erosion to occur.</li> <li>• If necessary, the site should be watered periodically after re-vegetation occurs.</li> <li>• The site must be monitored through the summer and any bare patches that appear are to be scarified, topsoiled, fertilised and sown with the same seed at the same rate as above.</li> <li>• Weeds and alien vegetation are to be manually removed throughout the site, for the duration of monitoring of the site.</li> </ul>	<ul style="list-style-type: none"> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> <li>• X</li> </ul>	<ul style="list-style-type: none"> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> <li>• EMPr – Rehabilitation Phase</li> </ul>
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Attach copies of Specialist Reports as appendices

Please refer to Appendix D – Heritage Impact Screening Assessment and Appendix G – Wetland and Biodiversity Comment.



## 8. ENVIRONMENTAL IMPACT STATEMENT

### 8.1) Environmental impact statement

#### 8.1.1) Summary of the key findings of the environmental impact assessment

The main environmental impacts are discussed in the headings below:

#### BIO-PHYSICAL IMPACTS

##### **Loss of 0.75 ha of land within a natural area** (*temporary, certainty, low impact*)

The proposed activity will constitute the temporary loss of 0.75 ha (expansion area) of degraded land within an undeveloped, natural area. At present, the majority of the site is degraded from previous mining on the site. However, the site will be rehabilitated after the cessation of mining activities and could potentially be used for agricultural activities, such as grazing or planting, once rehabilitation has been completed. The proposed activity is not anticipated to have any impact on the surrounding land uses.

##### **Water pollution** (*temporary, low probability, high impact*)

There is the potential for the proposed activity to cause surface and groundwater pollution if erosion were not adequately controlled or if machinery were to leak oil or fuel on the site. Machinery must be regularly inspected for oil / fuel leaks and any leaky machines should be removed from site and repaired immediately. Any contaminated soil must be dealt with in the appropriate manner, as stipulated in the EMPr. Erosion control measures in the EMPr must also be implemented and monitored on site. Provided this is done, it is unlikely that the proposed activity will cause any significant water pollution impacts.

##### **Impact Biodiversity** (*temporary, certainty, low impact*)

The biodiversity on site is poor. The majority site was mined previously and is currently denuded of indigenous vegetation and features only weeds and alien vegetation. However, the site will be rehabilitated and revegetated after the cessation of the proposed mining activity and once the site is rehabilitated and cleared of alien vegetation, the site will be improved from its current state. In terms of faunal biodiversity, the site does not appear to host a large variety of faunal species and no species of conservation significance were seen on site. It is not anticipated that the proposed activity will have any significant impact on current fauna. After rehabilitation and re-vegetation, the site may be better suited to support a diverse floral and faunal population.

##### **Waste/Refuse** (*permanent, certainty, low impact*)

Solid waste (if any) and domestic refuse from the workers on site will be minimal. Waste will be removed daily and disposed of at a registered landfill site. As such, it is not anticipated that the waste generated on site will have any significant negative impacts.

##### **Construction and Operational Noise** (*permanent, likely, medium impact*)

Noise from the tipper trucks and the TLB digger will be restricted to regular working times and machines will be maintained to ensure that they are as quiet as possible. The nearest residence to the site is less than 100 meters away and noise from the site may impact residents if it is not controlled and limited to working hours.

##### **Air pollution - Dust** (*permanent, high probability, high impact*)

The proposed activity is likely to generate a high level of nuisance dust as excavation activities will be conducted dry and using a TLB digger. Dust suppression measures will be implemented at all times in order to reduce the effects of windborne dust on the area surrounding the site and on personnel. Dust suppression measures are included in the EMPr.

##### **Traffic Impact** (*permanent, medium probability, low impact*)

The proposed project will increase the number of slow moving, heavy vehicles on the local road network, between the site and various points of end use for the material removed from the site. The trucks will collect material from the excavation site and deliver it to the roads that require maintenance or construction in the area. The slow moving vehicles could cause minor delays for other road users, however, the impact of this is not considered to be significant.

#### SOCIO-ECONOMIC IMPACTS

##### **Job creation** (*permanent, high probability, positive impact*)

The creation of employment opportunities are as follows:

- Direct job creation (temporary) in the planning phase. During the planning phases, employment of engineers, consultants and other skilled professionals will be required.
- Direct job creation (permanent / for the duration of the project) in the construction and operational phases. The day to day operational activities will necessitate the employment of truck and TLB drivers, who will be employed by the Applicant's Contractors.
- Indirect job creation (permanent / for the duration of the project) in the operational phase of the proposed activity, the material excavated from the site will be used for road maintenance and will support the employment of maintenance staff as well as the staff employed by the Applicant's Contractors.

##### **Provision of Basic Services** (*permanent, high probability, positive impact*)

The sole purpose of the proposed project is to supply material to the KZN Department of Transport, for use in the construction and maintenance of roads in the area. The roads in the area facilitate access and mobility to the surrounding communities. Thus, the proposed project directly enables the provision of basic services to previously disadvantaged people, as per the Constitution of South Africa, and the goal is to provide basic services to all citizens. The proposed project will directly contribute towards realising that goal.

#### **Impact to Local Economy** (*permanent, high probability, positive impact*)

The proposed activity will directly support and bolster economic activity in the area, through job creation and utilisation of local services from locally based service providers (e.g. mechanics, fuel). The provision and maintenance of roads will also support economic activity on the area, through improved mobility and connectivity for local communities as well as improved accessibility for visitors to the area. As such, it is considered that the proposed activity will have a positive impact on the local economy.

#### **Conclusion**

In terms of potential environmental implications, the site itself does not have significant conservation value and if the site is well managed and the EMPr is implemented effectively, the potential environmental impacts are acceptable.

#### **8.2) 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. Attach as Appendix)

Please refer to Appendix B and Appendix C for maps of the site.

#### **8.3) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives**

Please refer to Appendix H – Impact and Risk Assessment.

#### **8.4) 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).

#### **Implementation of the EMPr**

The EMPr (Appendix E) for the site is to be implemented on site, throughout all phases of the project, from pre-construction to rehabilitation phases. The aim of the EMPr (Appendix E) is to provide a legally binding document that sets out the actions to be taken in order to avoid, minimise, mitigate and rectify the potential negative impacts of the proposed activity, on the surrounding ecological, economic and social environments.

The EMPr (Appendix E) sets out specific actions to be taken, the timeframe in which they are to be taken and the person responsible for their implementation, as well as the method to be employed in the monitoring of each mitigative action.

#### **Environmental Awareness and Induction Training**

The Applicant is to ensure that all personnel working on the site receive Environmental Awareness Induction Training to ensure that they are familiar with basic environmental concepts and that they are aware of the EMPr (Appendix E) and how the EMPr (Appendix E) is to be implemented on site and the legal implications of non-compliance with the EMPr (Appendix E).

#### **Standards to be Achieved**

The standards to be achieved, in terms of the mitigative measures and rehabilitation measures to be carried out on site, are stipulated in the EMPr (Appendix E).

Where necessary, it is the Applicant's responsibility to ensure that all the relevant guideline documents (e.g. SABS / SANS 1200: Earthworks) are available on the site and that all work is conducted in accordance with the relevant standards.

#### **Compliance Monitoring**

The site is to be monitored monthly by the Applicant for compliance with the EMPr (Appendix E). Monitoring is to include a detailed visual inspection of the site, with particular consideration of dust, erosion, weeds and alien vegetation, drainage and site demarcation. Where any issues are noted, appropriate mitigation measures, as per the EMPr (Appendix E), are to be implemented on site, with immediate effect. Records must be kept, including photographs and a description of the impacts observed and mitigation measures implemented, of each site inspection.

The site is to be monitored every 6 months by an Independent Environmental Control Officer (ECO) to ensure that the monthly monitoring is being conducted and that impact mitigation is being implemented and is effective on site. The ECO must produce a brief EMPr Compliance Audit Report, and submit it to the Applicant and the Competent Authority. The Competent Authority is responsible for the legal enforcement of compliance issues if they are persistent and significant.

### **8.5) Aspects for inclusion as conditions of Authorisation**

(Any aspects which must be made conditions of the Environmental Authorisation)

- Implementation of the EMPr on site;
- EMPr Compliance Monitoring;
- Alien Vegetation Control;
- Soil and Water Management;
- Waste Management;
- Environmental Awareness Induction Training;
- Security;
- Emergency;
- Health and Safety;
- Odours / Leakages / Spillages;
- Noise and Disturbance;
- Environmental Dust;
- Water Quality; and
- Decommissioning and Rehabilitation of the Site.

### **8.6) Description of any assumptions, uncertainties and gaps in knowledge**

(Which relate to the assessment and mitigation measures proposed)

The assessment of this site was limited by the fact that the site has already been mined, which excluded the possibility of conducting an accurate assessment of the baseline environment on the site. In addition, the fact that the site was already mined and the sole purpose of this Application was to authorise the continuance of that activity on the site also limited the assessment of site alternatives.

## **9. RECOMMENDATIONS OF THE EAP**

### **9.1) Reasoned opinion as to whether the proposed activity should or should not be authorised**

#### **9.1.1) Reasons why the activity should be authorized or not**

The EAP is of the opinion that, provided the recommendations contained within this Report are adhered to, and the EMPr is correctly implemented, all potential negative impacts associated with the proposed activity can be mitigated and managed effectively. Thus, it is unlikely that the proposed activity will result in any significant, unavoidable, negative impacts to the local ecological, social and economic environments in the area. As such, the EAP is of the opinion that the proposed activity should be authorised.

#### **9.1.2) Conditions that must be included in the authorisation**

- The Environmental Management Programme (EMPr), contained in Appendix E, must be implemented on site, throughout the project lifetime.
- The Applicant is to conduct monthly site inspections to ensure that the EMPr (Appendix E) is implemented effectively and must keep a record of each site inspection, including photographs of the site and details of any issues noted on site and the measures taken to rectify those issues.
- An independent ECO must be appointed to conduct annual site audits and monitor compliance with the stipulations of the EMPr (Appendix E) efficacy of impact management and mitigation and the efficacy of the monthly site inspections by the Applicant.
- Where possible, skilled and unskilled labour must be sourced from the local community.
- The use of heavy machinery should be limited to normal working hours in order to limit noise impacts.
- All machinery, water tanks and other equipment is to be stored in a secure area with an impermeable liner or drip tray under each machine.
- No hazardous materials or hydrocarbons to be stored on site. These must be stored at the Contractor's base.
- AMAFA should be contacted if any items of cultural or historical significance are identified during excavation and the following procedure is to be followed: stop construction; report finding to the local police station; and report to AMAFA to investigate.

#### **Vegetation**

- An alien vegetation control programme must be implemented on the site for the entire lifetime of the project.
- Indigenous vegetation must be stockpiled for reuse during rehabilitation when excavation is complete.
- Any vegetation clearing activities should take place only immediately prior to the commencement of excavation of any area in order to minimise the time the soil is bare, thus minimising soil erosion, dust and visual impacts.

#### **Soil and Water Management**

- All construction vehicles and machinery and equipment must be properly maintained to prevent leaks.
- Once excavation on a portion of the site is complete, disturbed areas should be stabilised to prevent erosion, and re-vegetated as soon as possible.

- Stockpiles must be stabilized to prevent erosion from occurring.
- Site drainage must be established in such a way that erosion does not occur and offsite impacts are limited.

### **Waste management**

- All domestic waste must be removed from the site and appropriately disposed of at a Registered Landfill Site.

### **Environmental Awareness and the EMPr**

- An environmental awareness training programme for all staff members must be put in place by the Applicant. Before commencing with any work, all staff members must be appropriately briefed about the EMPr (Appendix E), relevant standards and relevant occupational health and safety issues.
- No burning of refuse or vegetation is to be permitted on site.

### **Security**

- Signs should be erected on all entrance gates indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime.
- All workers should be issued with ID badges / clearly identifiable uniforms.
- The site is to be clearly demarcated and all hazards must be clearly marked.

### **Emergency**

- Adequate emergency facilities must be provided for the treatment of any emergency on the site.
- The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site at all times.
- Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimized. This will also ensure that potential liabilities and damage to life and the environment are avoided.

### **Health & Safety**

- The site is to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993), the Mine Health and Safety Act (Act No. 29 of 1996) and the relevant Codes of Practice (COPs).
- An independent Health and Safety Representative is to be appointed to ensure that all the necessary documents are drawn up.
- All vehicles and equipment used on site must be operated by appropriately trained and / or licensed drivers/operators.
- Safe drinking water fit for human consumption must be available at all times.
- Adequate numbers of chemical toilets must be maintained to service the staff using this area. At least 1 toilet must be available per 20 workers on site. Toilet paper must be provided.
- Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.).

### **Odours/ Leakages/Spillages**

- The chemical toilets must be emptied on a regular basis by an approved service provider.
- The chemical toilets must be positioned more than 100 m from any watercourse or drainage line.
- The chemical toilets must be maintained in a clean state, and any spills or overflows must be attended to immediately.
- Machinery and vehicles are to be repaired immediately upon developing leaks and drip trays should be supplied for all repair work undertaken onsite.
- Drip trays should be utilized to catch any incidental spills and prevent contamination. These should be regularly monitored for leaks as well as inspected when rain is experienced so as to prevent overflow.
- Should hazardous substances be required to be stored on site (e.g. grease for machinery maintenance), these substances must be stored in a bunded area, which can hold 110% of the total volume of hazardous substance being stored.

### **Noise and Disturbance:**

- Noise levels shall be kept within acceptable limits set out in the National Noise Laws and local by-laws regarding noise.
- Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc) must be used as per operating instructions and maintained properly during site operations.
- Vehicles and machinery must be kept in good working condition so as to prevent unnecessary air emissions and excessive noise pollution.
- Operations must be kept to normal working hours.

### **Environmental Dust:**

- Dust generation should be prevented / kept to a minimum.
- Dust must be suppressed on access roads and excavation areas during dry periods by the regular application of water or a biodegradable soil stabilization agent.
- Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.

- Heavy vehicles should, as far as possible, be confined to non-peak traffic times.

#### **Water Quality.**

- Any incident that causes or may cause water pollution must be reported to the relevant authorities and immediate action must be taken to rectify it and minimise potential impacts.
- The area must be regularly checked for signs of erosion and, should erosion be evident, rectification measures must be taken immediately.
- Erosion control measures must be implemented and monitored throughout the operation's lifetime as well as post decommissioning.
- The design of the proposed excavation site must feature appropriate surface water / stormwater management and erosion control measures.

#### **Decommissioning & Rehabilitation**

- The site must be properly closed and rehabilitated once the required and permitted volume of material has been extracted.
- The excavated area must be rehabilitated to ensure a free-draining landform and the site must be shaped in order to promote unrestricted drainage throughout the rehabilitated area, thus limiting water-logging and slumping.
- The base of the quarry is to be shaped in such a way that it does not hold water, even in the rainy season
- Compaction and final topsoiling of the quarry base must create a freely draining landform.
- The vertical quarry faces may remain bare, if it is evident that excavation has reached bedrock and erosion will not occur as a result.
- Slopes on the expanded portion of the quarry are to be limited to 1:5 (20%) so as to allow the establishment of vegetation.
- The expansion area is to be contoured by two berms constructed with small rocks (spoil) stacked to a height of 30 cm and spaced approximately 10 meters apart in parallel rows running east – west along the expansion area.
- The expanded portion (contoured, as above) is to be top-soiled (using stockpiled topsoil from the expansion area, and, if necessary, imported topsoil) to a depth of 5 cm during October / November.
- The quarry base is to be topsoiled to a depth of 10 cm.
- The topsoiled areas are then to be raked and sowed with *Eragrostis curvula* at a rate of 15 kg per Hectare and fertilized at a rate of 100 kg per hectare using LAN Fertilizer.
- Re-vegetation will be conducted in line with the area's seasonal precipitation (Planting October / November) in order to facilitate rapid root establishment and minimise the potential for erosion to occur.
- Re-vegetation will restore the site to a stable and non-erodible land form.
- If necessary, the site should be watered periodically after re-vegetation occurs.
- The site must be monitored through the summer and any bare patches that appear are to be scarified, topsoiled, fertilised and sown with the same seed at the same rate as above.
- The rehabilitated area must be monitored for declared weeds and invasive alien plants. These must be controlled and managed in an acceptable manner.
- The site must be burnt off annually, in accordance with sustainable grassland practices, for the duration of the project. This must be communicated to the land owner once work on the site ceases.

#### **9.2) Period for which the Environmental Authorisation is required**

The Environmental Authorisation is required for a minimum period of five years, in order to accommodate the amount of time allowed by a single Mining Permit application (two years and three additional one year renewal periods). However, should the Competent Authority grant a longer term for the Mining Permit, the Environmental Authorisation will need to reflect this, in order to be enforceable for the lifetime of the proposed project.

#### **9.3) 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)

It is confirmed that the undertaking, as required to meet the requirements of this section is provided at the end of the EMPr (Appendix E) and is applicable to both the Basic Assessment Report and the Environmental Management Programme.

### **10. FINANCIAL PROVISION**

#### **10.1) Financial Provision**

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

The amount required for the management and rehabilitation of the proposed activity is calculated as **R 40 829.42**. This applies to the initial formalization of the site and the final rehabilitation of the site, as the ongoing management and operation of the site will form

part of various contracts awarded to Contractor's of the KwaZulu-Natal Department of Transport (the Applicant) for specific road construction and maintenance projects in the area (i.e. when the site is unused for periods of time, there will be no operational cost and when it is used, the costs will form part of the contract awarded to the Contractor using the site).

#### **10.2) Explain how the aforesaid amount was derived**

The amount noted above was calculated using the recommended process and formula detailed in the "Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine" (Department of Minerals and Energy, January 2005). Please refer to Appendix I - Financial and Technical Competence Report and Quantum Calculations.

#### **10.3) 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).

It is confirmed that the amount required for financial provision is anticipated to be an operating cost and is provided for as such in the Financial and Technical Competence Report (Appendix I).

### **11. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY**

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

##### **11.1.1) 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)

This is not applicable as it is not anticipated that the proposed activity will have any significant direct impact on the socio-economic conditions of any persons, other than the Contractor's and labour employed by the Applicant. However, the material removed from the site will be used for the construction and maintenance of roads in the area, which will support all forms of economic activity occurring in the area and improve social conditions for communities residing in the area. The impacts anticipated are included in Appendix H – Impact and Risk Assessment.

##### **11.1.2) 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 site is located on undeveloped land, which has been previously transformed and previously mined. There are no known graves or historical residues on the site. There are no sensitive cultural or heritage features in close proximity to the site and it is not anticipated that the proposed activity will have any impact to cultural or heritage resources in the area. In addition, the site has already been excavated, during the previous mining activity on the site, and no items of archaeological or paleontological significance were uncovered during excavation. Thus, it is not anticipated that the proposed activity will have any impact to 'national estate' as detailed in the National Heritage Resources Act No. 25 of 1999. The impacts anticipated are included in Appendix H – Impact and Risk Assessment and the associated mitigation and management objectives are included in the EMPr (Appendix E).

#### **11.2) 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 site has been previously transformed and previously mined. There are no graves or historical residences on the site. There are no sensitive cultural or heritage features in proximity to the site and it is not anticipated that the proposed activity will have any impact to cultural or heritage resources in the area. In addition, the site has already been excavated, during the previous mining activity on the site, and no items of archaeological or paleontological significance were uncovered during excavation. Thus, it is not anticipated that the proposed activity will have any impact to 'national estate' as detailed in the National Heritage Resources Act No. 25 of 1999 and a Heritage Impact Screening Assessment (Appendix D) has been conducted, which confirmed the above. The impacts anticipated are included in Appendix H – Impact and Risk Assessment and the associated mitigation and management objectives are included in the EMPr (Appendix E). During the Heritage Impact Screening Assessment (Appendix D), it was determined that the area falls within an area of high paleontological sensitivity and thus paleo chance find procedure has also been included in the EMPr (Appendix E).



**PART B**  
**ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

**1) DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME:**

**1.1) 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).

It is confirmed that the details and expertise of the EAP are included in PART A, section 1 (a), above.

**1.2) 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).

It is confirmed that the the aspects of the activity that are covered by the Draft Environmental Management Programme are already included in PART A, section (1) (h) herein as required

**1.3) Composite Map**

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

Please refer to Appendix B and Appendix C for maps of the site.

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

**1.4.1 Determination of closure objectives**

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

The closure objectives for this site include the rehabilitation of the excavated area to create a freely draining land form, the majority of which can be re-vegetated with indigenous grasses to become a productive and stable area. This will allow grazing on the site as well as ensure soil stabilisation and the prevention of erosion and soil loss as a result of excavations on the site. The rehabilitation of the site will return it to a state comparable to its pre-mining state, in terms of the final end land use.

**Final end land use:**

The final land use must be as close as possible to, or an improvement on, the natural grasslands surrounding the site. As the site is currently an established borrow pit, which is significantly degraded and does not offer much in terms of biodiversity value and is unsuitable for agricultural use, the final land use and closure objectives are to reinstate the site to its pre-mined state in terms of its value to biodiversity in the area.

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

- The site will utilise 20 - 30 litres of potable water per day for workers to drink during operation.
- The site will utilise a water tanker / tanker trailer for dampening and dust suppression on site. The volume of water used for this purpose will vary due to climatic conditions and is impossible to predict accurately.
- Water will be sourced from the existing, permitted supply available in the area and will not be extracted from any natural water resources in the area.

**1.4.3 Has a water use licence has been applied for?**

No. A Water Use Authorisation will not be required, as there are no wetlands located within 500 m of the site and no watercourses or drainage lines will be affected by the proposed activity. Water to be used on site will be brought in via a water tanker, from the nearest permitted source.



## 1.5 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 of disturbance (volumes, tonnages and hectares or m <sup>2</sup> )	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>(E.g. For prospecting - drill site, site camp, ablation 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, ablation, 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>(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.</p> <p>.With regards 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>
Please refer to Appendix H – Impact and Risk Assessment.					

## 1.6 Impact Management Outcomes

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

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE In which impact is anticipated	MITIGATION TYPE	STANDARD TO BE ACHIEVED
<p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>(E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>		<p>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)</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.</p> <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> <li>• Remedy through rehabilitation.</li> </ul>	<p>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.</p>
Please refer to Appendix H – Impact and Risk Assessment.					

## 1.7 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).

<b>ACTIVITY</b> 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.).	<b>POTENTIAL IMPACT</b> (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>MITIGATION TYPE</b> (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"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> </ul> Remedy through rehabilitation	<b>TIME PERIOD FOR IMPLEMENTATION</b> Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regards 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.	<b>COMPLIANCE WITH STANDARDS</b> (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)
Please refer to Appendix H – Impact and Risk Assessment.				

## 1.8 Financial Provision

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

The closure objectives for this site include the rehabilitation of the excavated area to create a freely draining land form, the majority of which can be re-vegetated with indigenous grasses to become a productive and stable area. This will allow grazing on the site as well as ensure soil stabilisation and the prevention of erosion and soil loss as a result of excavations on the site. The rehabilitation of the site will return it to a state comparable to its pre-mining state, in terms of the final end land use.

#### Final end land use:

The final land use must be as close as possible to, or an improvement on, the natural grasslands surrounding the site. As the site is currently an established borrow pit, which is significantly degraded and does not offer much in terms of biodiversity value and is unsuitable for agricultural use, the final land use and closure objectives are to reinstate the site to its pre-mined state in terms of its value to biodiversity in the area.

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

The land owner and Interested and Affected Parties have been consulted. No comments on the closure objectives of the site were received from any I&APs during the Public Participation Process. See Appendix F – Report on the Results of Public Consultation.

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

The rehabilitation plan has been developed specifically to meet the closure objectives for this project. The site is currently excavated and established as a borrow pit. However, the closure objectives for this site include the rehabilitation of the excavated area to create a freely draining land form, the majority of which can be re-vegetated with indigenous grasses to become a productive and stable area. This will allow grazing on the site as well as ensure soil stabilisation and the prevention of erosion and soil loss as a result of excavations on the site.

#### Final end land use:

The final land use must be as close as possible to, or an improvement on, the natural grasslands surrounding the site. As the site is currently an established borrow pit, which is significantly degraded and does not offer much in terms of biodiversity value and is unsuitable for agricultural use, the final land use and closure objectives are to reinstate the site to its pre-mined state in terms of its value to biodiversity in the area.

#### Rehabilitation Plan to Meet Environmental Objectives:

##### Site Preparation

- All structures associated with the activity will be removed, including storage tanks, fences etc.
- All litter and refuse will be removed and disposed of appropriately.
- Any areas contaminated by spills of fuel or oil will be excavated and the contaminated materials will be disposed of appropriately.

##### Drainage

- The base of the quarry needs to be shaped in such a way that it does not hold water in the rainy season. This is necessary to ensure that it does not attract livestock to the water in winter, which will lead to increased trampling and grazing of the area to be rehabilitated.
- Compaction and final topsoiling of the quarry base must create a freely draining landform.

##### Re-vegetation

- The vertical quarry faces may remain bare, if it is evident that excavation has reached bedrock and erosion will not occur as a result.
- Slopes on the expanded portion of the quarry are to be limited to 1:5 (20%) so as to allow the establishment of vegetation.
- The expanded portion is to be top-soiled (using stockpiled topsoil from the expansion area, and, if necessary, imported topsoil) to a depth of 5 cm during October / November.
- The quarry base is to be topsoiled to a depth of 10 cm.
- The topsoiled areas are then to be raked and sowed with *Eragrostis curvula* at a rate of 15 kg per Hectare and fertilized at a rate of 100 kg per hectare using LAN Fertilizer.
- Re-vegetation will be conducted in line with the area's seasonal precipitation (Planting October / November) in order to facilitate rapid root establishment and minimise the potential for erosion to occur.
- If necessary, the site will be watered periodically after re-vegetation occurs.

- The site must be monitored through the summer and any bare patches that appear are to be scarified, topsoiled, fertilised and sown with the same seed at the same rate as above.
- Weeds and alien vegetation are to be manually removed throughout the site, for the duration of monitoring of the site.

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

Please refer to (C), above.

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

Please refer to Appendix I - Financial and Technical Competence Report and Quantum Calculations.

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

The National Department of Transport is currently engaged in negotiations with the National Department of Mineral Resources with regards to the lodging of Financial Provision and the development of a Memorandum of Agreement between the two Departments in this regard.

Negotiations are on-going and the outcome of these negotiations will inform the way forward in terms of how the Department of Transport will lodge or guarantee the financial provision for this Mining Permit Application.

**1.9 Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including**  
 (Monitoring of Impact Management Actions, Monitoring and reporting frequency, Responsible persons, Time period for implementing impact management actions and 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
Please refer to Appendix H – Impact and Risk Assessment.				





### **1.9.1 Indicate the frequency of the submission of the performance assessment/ environmental audit report.**

The Permit Holder is responsible for the compliance monitoring of the site, in terms of the EMPr (Appendix E) requirements and stipulations. It is recommended that the Permit Holder does monthly inspections of the site to ensure that all the EMPr (Appendix E) requirements are being adequately fulfilled.

It is recommended that an independent Environmental Control Officer (ECO) is appointed to conduct compliance audits of the site and it is recommended that the site is audited every 6 months. The ECO must compile and submit an Environmental Compliance Monitoring Report and submit it to the Department of Mineral Resources, which is responsible for the legal enforcement of the EMPr (Appendix E), should non-compliance become an issue.

### **1.9.2 Environmental Awareness Plan**

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

According to Section 39 (3) of the MPRDA, the person applying for the Mining Permit must:

*(c) Develop an environmental awareness plan describing the manner in which the applicant intends to inform his or her employees of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment; and*

*(d) Describe the manner in which he or she intends to—*

*(i) Modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

*(ii) Contain or remedy the cause of pollution or degradation and migration of pollutants; and*

*(iii) Comply with any prescribed waste standard or management standards or practices*

In line with the above, the permit holder and their contractors are to ensure that Environmental Awareness Training is provided to all workers on site at the start of the project. Training must also be given to any new staff members joining the project team. In addition, ongoing awareness of relevant environmental topics must be provided as the project progresses. Environmental Awareness Training must include the following:

#### **Basic Environmental Awareness**

- The meaning of “Environment” and why it must be protected.
- The importance of conformance with the Environmental Management Programme (EMPr, Appendix E).
- The significant environmental impacts, actual or potential, of work activities.
- Their roles and responsibilities in achieving conformance with the EMPr (Appendix E), including emergency preparedness and response requirements.
- The potential consequences of departure from specified operating procedures, including the penalties which may legally be imposed on site.

#### **Site Specific Environmental Training**

- A detailed presentation of the environmental risks, and the mitigations included in the EMPr (Appendix E).
- Emergency preparedness and response.
- Spill management.
- Water management.
- Waste management.
- Incident reporting.
- Storage of chemicals and other Hazardous Materials.

The Applicant / Environmental Authorisation / Mining Permit Holder is responsible for ensuring that the above are verbally presented and discussed with all employees and sub-contractors. Where necessary, translators must be used and the training sessions should include interactive learning methods, such as spoken or written questions, posters and pictures and real life, relevant examples. A chain of responsibility must be established and the responsibilities or duties should be allocated to each team member.

#### **Scheduling and conducting of training**

The Applicant / Environmental Authorisation / Mining Permit Holder is responsible for ensuring that all personnel attend the relevant training, prior to beginning their work on site. Proof of attendance at the training sessions must be kept on site.

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

The solution to the potential environmental risks associated with the proposed activity is to effectively implement the site specific EMPr (Appendix E), thereby preventing, minimising and mitigating environmental degradation.

This document has been compiled for the protection of the environment from the potential risks and includes the practical mitigations and precautions necessary to ensure environmental protection. Environmental Awareness Training allows the stipulations of the EMPr (Appendix E) to become tangible and understood by the people responsible for their day to day implementation and plays a significant role in reducing the risk of pollution and environmental degradation.

In addition, Environmental Awareness Training allows the stipulations of the EMPr (Appendix E) to be understood in terms of their broader context and relevance to human quality of life. Effective Environmental Awareness Training results in the effective implementation of the EMPr (Appendix E) on site, which ensures that all risks are understood and dealt with appropriately.

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

**General**

No specific information has been requested by the Competent Authority – this section will be updated if and when such information is requested.

**Financial Provision**

The National Natal Department of Transport is currently engaged in negotiations with the National Department of Mineral Resources with regards to the lodging of Financial Provision and the development of a Memorandum of Agreement between the two Departments in this regard.

Negotiations are on-going and the outcome of these negotiations will inform the way forward in terms of how the Department of Transport will lodge or guarantee the financial provision for this Mining Permit Application, including the annual review of financial provision.

**2 UNDERTAKING**

The EAP herewith confirms:

- the correctness of the information provided in the reports ✓
- the inclusion of comments and inputs from stakeholders and I&APs ✓
- the inclusion of inputs and recommendations from the specialist reports where relevant ✓
- 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 ✓



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Signature of the environmental assessment practitioner:

**GREEN DOOR ENVIRONMENTAL**

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Name of company:

**10 March 2017**

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Date:

**-END-**

**LIST OF APPENDICES**

**APPENDIX A - CURRICULUM VITAE OF EAP**  
**APPENDIX B - LOCALITY MAP OF THE SITE**  
**APPENDIX C - PLAN OF THE SITE**  
**APPENDIX D - HERITAGE SCREENING ASSESSMENT**  
**APPENDIX E - ENVIRONMENTAL MANAGEMENT PROGRAMME**  
**APPENDIX F - REPORT OF THE RESULTS OF PUBLIC CONSULTATION**  
**APPENDIX G - BIODIVERSITY AND WETLAND ASSESSMENT**  
**APPENDIX H - IMPACT AND RISK ASSESSMENT**  
**APPENDIX I - FINANCIAL AND TECHNICAL COMPETENCE REPORT AND CALCULATION OF QUANTUM**