mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMMME FOR THAYA TRADING ENTERPRISE

PROSPECTING RIGHT APPLICATION OF DIAMOND ALLUVIAL, DIAMOND GENERAL ON PORTION1 OF SCHMIDTSDRIFT 248, REGISTRATION DIVISION HERBERT, NORTHERN CAPE PROVINCE, SOUTH AFRICA.

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).

NAME OF APPLICANT: Nyezi Holdings (Pty) LTD

TEL NO: 076 753 2362

FAX NO: N/A

POSTAL ADDRESS: 19 Westbrooke Drive, Sandton, 2196

PHYSICAL ADDRESS: 19 Westbrooke Drive, Sandton, 2196

FILE REFERENCE NUMBER SAMRAD: NC30/5/1/1/2/12076PR

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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 Scoping process

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

(a) Identify the relevant policies and legislation to the activity;

(b) Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;

(c) Identify and confirm the proffered activity and technology alternative through and impact and risk assessment and ranking process;

(d) Identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;

(e) Identify the key issues to be address in the assessment phase;

(f) Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and

(g) Identify, 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

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: Zandile Dwane

Tel No.: 083 265 7992

Fax No. :

e-mail address: kamvisto@gmail.com

ii) Expertise of the EAP.

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

M. Sc in Geology
South African Council for Natural Scientific Professionals
American Association of Petroleum Geologists
Attach evidence as Appendix1

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

Relevant past experiences include, but not limited, to the following: Environmental Impact Assessments, Environmental Management Plans and / or Reports, Rehabilitation progress assessments, Environmental compliance monitoring, Scoping Reports, etc.

See CV herewith attached
Attach evidence as Appendix

b) Location of the overall Activity.

Table 1: Description of property

Farm Name:	Portion1 of Schmidtsdrift 248
Application area (Ha)	3337.068ha
Magisterial district:	Herbert RD
Distance and direction from nearest town	The property is located approximately 32km North East of Douglas in the Northern Cape Province.
21 digit Surveyor General Code for each farm portion	C03200000000002700000/ C03200000000024800000

c) Locality map

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

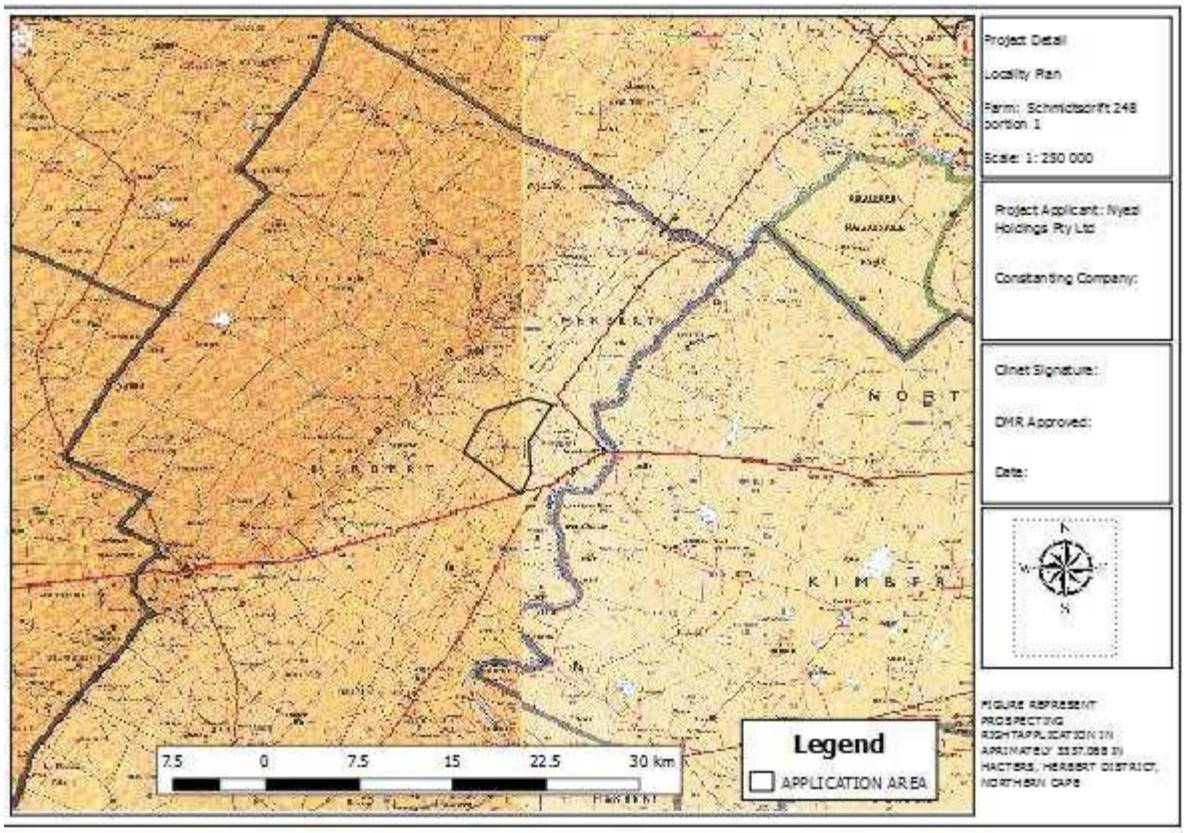


Figure 1: Locality Map, Herbert Region

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

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

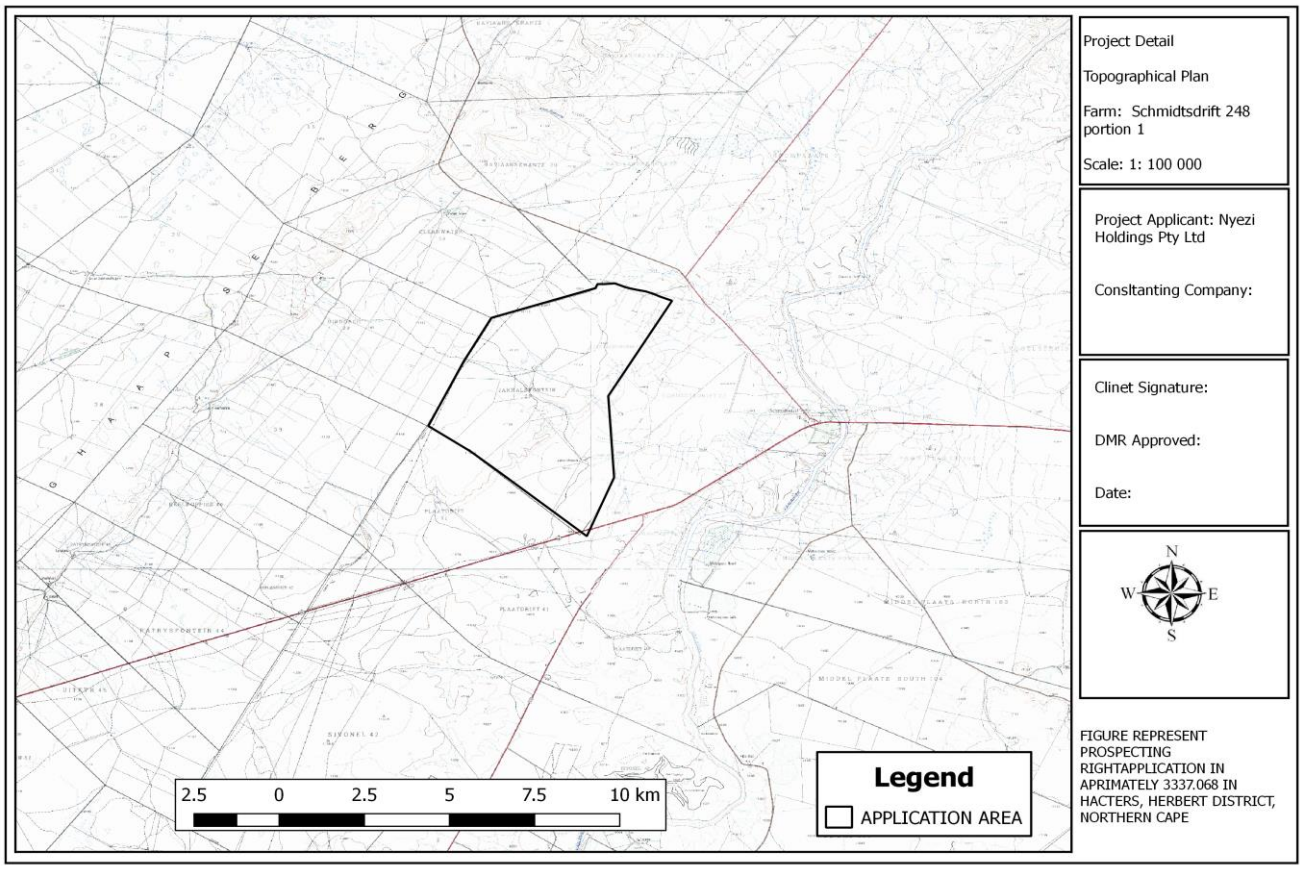
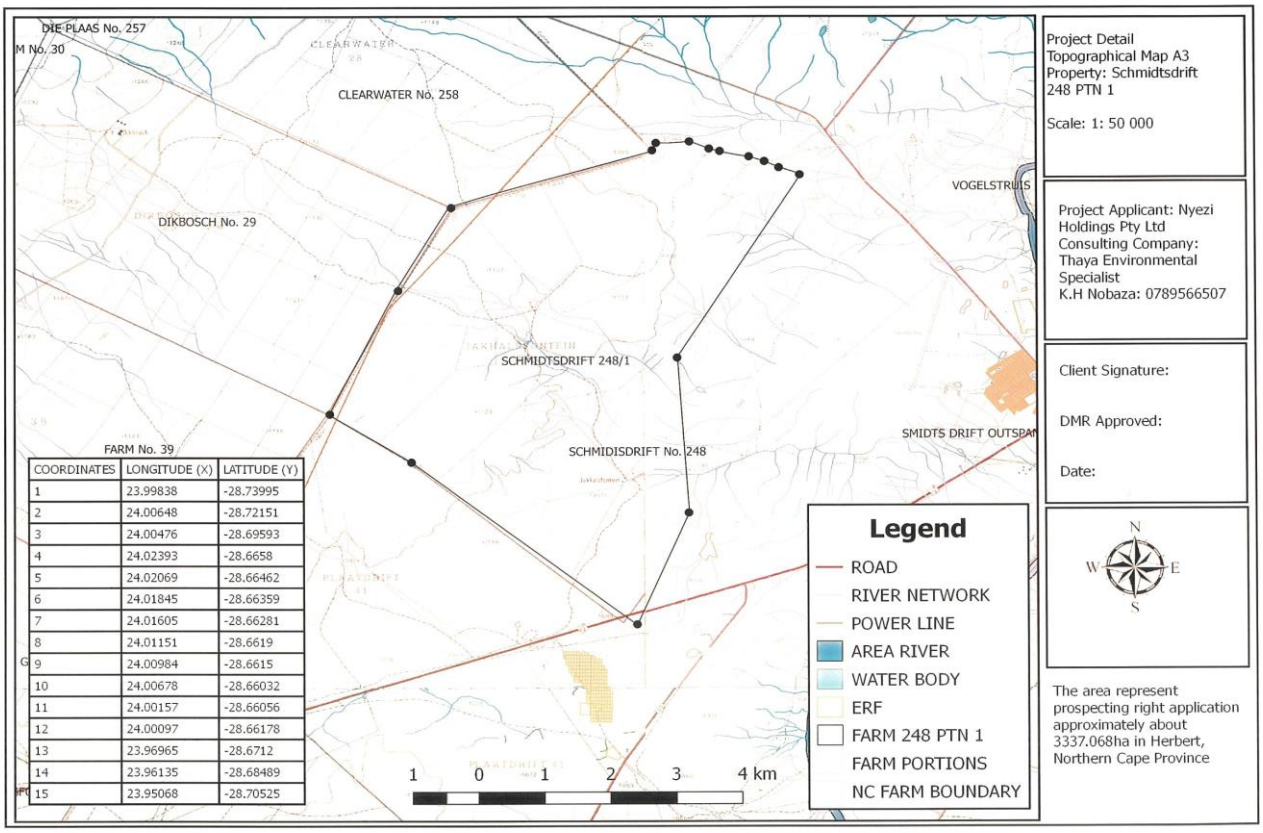


Figure 2a: Map shows the location, and area (hectares) of all the aforesaid main and listed activities



COORDINATES	LONGITUDE (X)	LATITUDE (Y)
1	23.99838	-28.73995
2	24.00648	-28.72151
3	24.00476	-28.69593
4	24.02393	-28.6658
5	24.02069	-28.66462
6	24.01845	-28.66359
7	24.01605	-28.66281
8	24.01151	-28.6619
9	24.00984	-28.6615
10	24.00678	-28.66032
11	24.00157	-28.66056
12	24.00097	-28.66178
13	23.96965	-28.6712
14	23.96135	-28.68489
15	23.95068	-28.70525

Figure 2b: Map shows the location and infrastructure

(i) Listed and specified activities

Table 2

NAME OF ACTIVITY **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**Aerial extent of the Activity** **Ha or m²**	**LISTED ACTIVITY** **Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE** ***(GNR 544, GNR 545 or GNR 546)***
This includes any activity, together with the operations of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of Section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) Activity 20 of Listing Notice 1	3337.068 Ha	X	GNR 893
The extraction, removal and disposal of minerals that is envisaged in terms of Section 20 of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002) ("Act"), including affected infrastructure, structures and earthworks, directly related to prospecting of a mineral resource and activities for which an exemption has been issued in terms of Section 106 of the Act. Activity 19 of Listing Notice 2	3337.068 Ha	X	GNR 984
All activities, including the operation of a particular activity associated with primary processing of a mineral resource such as extraction, classifying, reduction, concentrating, winning, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case Activity 6 of this Notice applies. Activity 21 of Listing Notice 2	0.26 Ha	X	GNR 984
Temporary structures (3 x Park	0.215 ha		Not listed

Homes)			
Temporary Dump Site	0.19 ha		Not listed
Residue Dam	0.5 ha		Not listed
Concrete spillage control at diesel bousers	100 m^2		Not listed
Oil storage facility	100 m^2		Not listed
Water pipeline of undetermined length but less than 10 Km	10 Km		Not listed
Roads to trenches and processing plant	+- 3 Km		Not listed
Stockpiling of topsoil	3337.068 ha – 3m X 2m X 3m pit (200 pits) 25m X 15m X 0.5 - 7m trench (50 trenches)		Not listed

(ii) Description of the activities to be undertaken

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

1) Description of Planned Non-Invasive Activities

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

Phase 1

Imagery Analysis and Geological Mapping

High resolution satellite images will be studied and used to geologically map the application area. Contacts between various lithologies will be mapped and specific attention will be given to delineate and define areas underlain by alluvial gravels and/or diamonds general.

A site investigation of the target areas will be undertaken to identify infrastructure and determine any potential problems that may need to be addressed.

2) Description of Planned Invasive Activities

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

Phase 2

Trenches Sampling

Discussed herein after, Section 3.

3) Description of Pre-feasibility Studies

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

Phase 3

Analytical Desktop Study

The project Geologist monitors the programme, consolidates and processes the data and amends the programme depending on the results. This is a continuous process throughout the programme and continues even when no prospecting is done on the ground.

Each physical phase of prospecting is followed by desktop studies involving interpretation and modelling of all data gathered. These studies will determine the manner in which the work programme is to proceed in terms of activity, quantity, resources, expenditure and duration.

A GIS based database will be constructed to capture all exploration data.

4) Description of Bulk Sampling Activities

Bulk sampling is a sampling technique.

Volumes of the mineral to be tested

About 100 Trenches will be excavated with the following dimensions that prove to contain gravels. It is estimated that an average 3m of overburden (calcrete and soil) will be removed before accessing the gravel layer (average width 2 – 4m) which is host to the diamonds. The trenches will be 25m x 15m x 0.5 – 7m deep. We calculated the volume of gravel on 2m and if all 100 trenches are going to be excavated an average of 37 500m³ will be tested.

Why will they be tested?

The gravel will be tested to determine a grade (carats per hundred tonne) and value (US$ per carat). The closest alluvial operation is next to these farms on all sides of the river which necessitates bulk sampling for this project.

Where will they be tested?

All bulk sampling activities will take place on site or out of site. Herewith follows a description of the process:-

The planned bulk sampling technique is that of a typical South African alluvial diamond operation. The planned prospecting method is a strip mining process with oversize material from the gravel scalping and the tailings from the plant, being used as a backfill material prior to final rehabilitation. Gravels are excavated, loaded and transported to the nearby treatment facility using articulated dump trucks. The access to the various gravel trenches will be provided by a haul road to the screening and processing plants. The operation is to be conducted using conventional open pit mining equipment comprising 4 articulated dump trucks supported by appropriate excavators and a front-end loader. The vegetated soil overlying the planned trenches is stripped prior to excavation of the gravel and stockpiled on a dedicated dump to be used for rehabilitation purposes at a later stage. The gravel is loaded with a 60-t excavator into ADT's. Ore is hauled to

the screening plant. As an integral part of the bulk sampling processes, backfilling will take place continuously. The operation is to be conducted using conventional open pit mining equipment:

Earthmoving and ancillary equipment

2 x Excavator

2 x Front-end Loader

4 x Articulated Dump Trucks

2 x Water Truck

1 x 16ft-Rotary Pan

Screen

Utility vehicles and small tools

Diamond recovery unit with Flow sort Machines, Plant, and recovery, crushing and screening equipment

Gravels are loaded onto a vibrating grizzly and the +85mm oversize material is discarded back into the open pit (about 25% reduction). The remaining -85mm fraction is loaded into a 16-foot rotary pan with a treatment capacity of 50 tph. A magnetic separator is used to extract some of the heavy banded iron stones. Tracer tests are done regularly to ensure that the pans are operating at the correct density. Approximately 2.5 tonne of concentrate is tapped from the pan every hour and transported in locked containers to the final recovery unit. The final recovery unit consists of a holding bin, sizing screen, sizing bins and one state of the art Flowsort X-ray recovery unit which recover diamonds from the +2mm to -32mm size fraction. Final sorting of the X-ray concentrate will be done manually. Rehabilitation will take place continuously and at any stage only one trench will be open.

To whom they will be disposed of:

At an expected grade of 0.5 carats per hundred tonnes, 8 800 carats could be recovered from the gravels. Diamonds will be sold at a reputable diamond tender house in Kimberley to determine an average US$ carat value for the diamonds.

Rehabilitation

Rehabilitation will be carried out as far as possible, however it should be noted that the site will not be able to be completely backfilled as it will be an open cast prospecting due to the removal of sand (if any), stone aggregate.

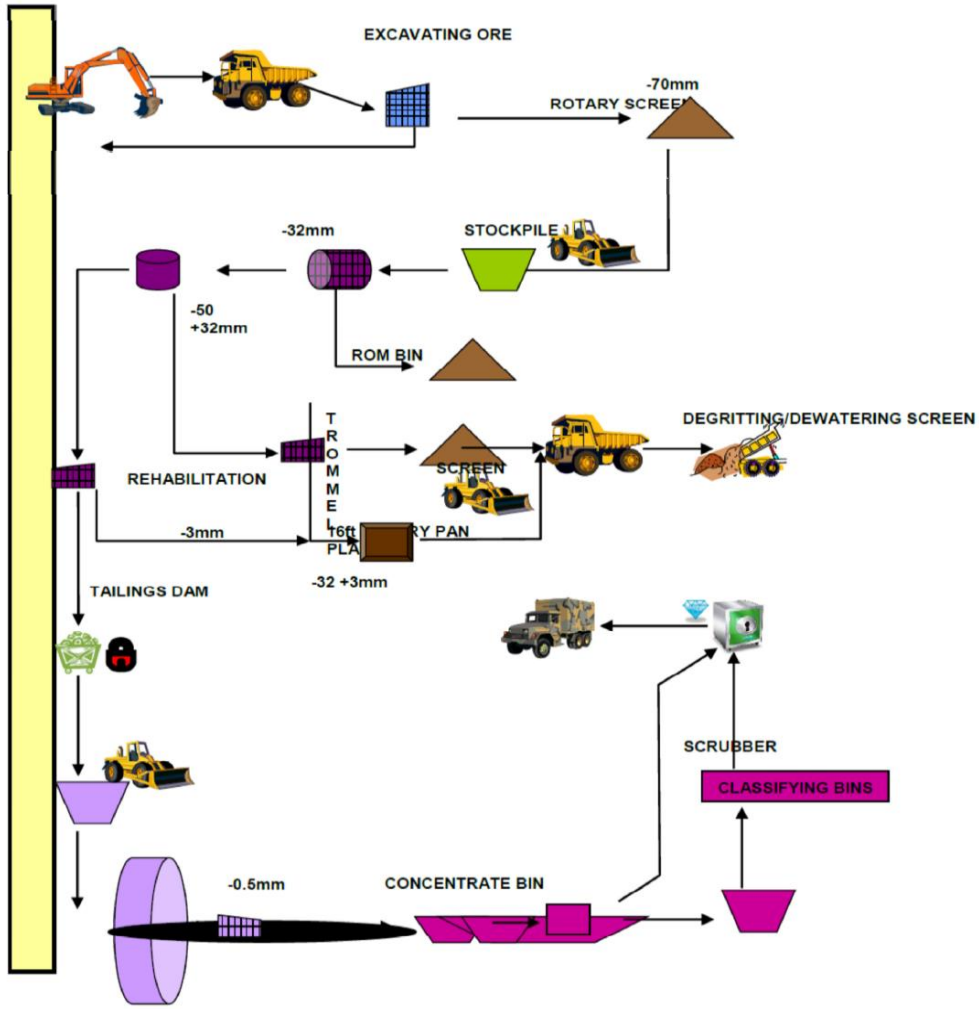


Figure 3: Schematic representation of the planned process flow

Table 3: Bulk Sampling Activities

ACTIVITY		DETAILS
Number of pits/trenches planned		50 trenches
	Number of pits/trenches	**Length Breath Depth**
	100	25m 15m 0.5 - 7m
		18 750 m^2 = 1.875 ha that will be disturbed with trenches (0.7% of the property will be tested and disturbed)
Locality		See figure 1
Volume Overburden (Waste)		43 706.25
Volume Ore		37 500 (estimated 2m gravel)

Density Overburden	1.6
Density Ore	1.78
Phase when bulk sampling will be required	Phase 3
Timeframe(s)	From time-to-time during months 7 to 42

e) Policy and Legislative Context

Table 4: Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)	Prospecting Right application process	Prospecting Rights have been applied for and have been accepted by the Department of Mineral Resources.
Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)	Prospecting Right and Environmental Authorisation processes	In progress
National Environmental Management Act, 1998 (Act 107 of 1998)	Section 28 of the National Environmental Management Act, Act 107 of 1998 stipulates an obligation of consideration of care where reasonable measures are taken to prevent pollution or degradation from occurring, continuing or recurring, or, where this is not possible, to minimise	In progress

	and rectify pollution or degradation of the environment. Section 29 provides for the protection of workers who refuse to undertake work that posses a hazard to the environment. Section 30 emphasises on procedures to be followed in the event of an emergency, especially an incident which may impact negatively on the environment. Section 31 covers the aspect of access to environmental information and protection of whistle blowers.	
National Environmental Management Act, 1998 (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014 (G38282-2982-985)	GNR 983: 2014 Regulations promulgated in terms of NEMA, Act 107 of 1998: GNR 982, 983, 984 and 985 Government Gazette No. 38282, Pretoria, in terms of Chapter 5 of the National Environmental Management Act, Act 107 of 1998 (as amended), contain the EIA Regulations, as well as a schedule of activities that may have substantially negative effects on the environment, therefore, require authorisation from the competent environmental authority.	In progress
National Environmental Management Act: Biodiversity Act, 2004 (Act 10 of 2004)	The National Environmental Management: Biodiversity Act, Act 10 of 2004 provides for the MEC/ Minister to list ecosystems that are threatened and in need of protection (Section 52) and to identify any process or activity in such a listed ecosystem as a threatening process (Section 53). A list of threatened and protected species has been published in terms of Section 56(1) GG 29657 GNR 151 and GNR 152, Threatened or Protected Species Regulations. The Act also deals with restricted activities involving alien species; restricted activities involving certain alien species totally prohibited; and duty care to be taken pertaining to listed invasive species.	
National Environmental Management Act: Waste Act, 2008 (Act 59 of 2008)	Regulates waste management in order to protect health and the environment by stipulating reasonable measures to be taken to ensure prevention of pollution and ecological degradation,	

	and for securing ecologically-sustainable-development.	
National Water Act, 1998 (Act 36 of 1998)	In terms of the definitions contained in Section 1 of the National Water Act, Act 36 of 1998, a "water resource" includes a watercourse, surface water, estuary, or aquifer. "Aquifer" means a geological formation which has structures or textures that hold water or permit appreciable water movement through them. "Watercourse" means a river or spring; a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may, by notice in the Gazette declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks. In addition, in terms of the definitions contained in Section 1 of the National Water Act, waste "includes any solid material or material that is suspended, dissolved or transported in water (including sediment) and which is spilled or deposited on land or into a water course in such volume, composition or manner as to cause, or to be reasonably likely to cause, thewater resource to be polluted". The Minister of Water and Environmental Affairs is allowed to regulate activities which have a detrimental impact on water resources by declaring them to be controlled activities. No person may undertake a controlled activity unless such person is authorised to do so by or under the Act. Duty of Care to prevent and remedy the effects of pollution to water resources is addressed in Section 19. Section 20 addresses the procedures to be followed, as well as control of emergency incidents which may impact on a water resource. Recognised water uses are addressed in terms of Section 21 and the requirements for registration of water uses are stipulated in Section 26 and Section 34.	In progress

World Heritages Convention Act, 1999 (Act 49 of 1999)		
Environmental Conservation Act, 1989 (Act 73 of 1989)	Section 25 of the Environment Conservation Act, Act No. 73 of 1989, as well as the National Noise Control Regulations GNR 154 dated 10 January 1992, regarding noise, vibration and shock, is applicable.	
Environmental Conservation Amendment Act, 2003 (Act 50 of 2003) G26023		
National Environmental Management Act: Protected Areas Act, 2003 (Act 57 of 2003)		
In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)	In terms of the National Heritage Resources Act, Act No. 25 of 1999, any person who intends to undertake "any development or other activity which change the character of a site – exceeding 5 000m² in extent" and "the construction of a …. Linear development or barrier exceeding 300m in length" must at the very earliest stages of initiating the development notify the responsible heritage resources authority, viz. the Northern Cape Provincial Heritage Resources Agency (NCPHRA) and/or the South African Heritage Resources Agency (SAHRA), as well as the Northern Cape Department of Sports, Arts and Culture.	
Conservation of Agricultural Resources Act, Act No 43 of 1983	Section 5 of the Conservation of Agricultural Resources Act, Act No. 43 of 1983, prohibits the spreading of weeds and Section 6 and Regulation 15 and 15E of GNR 1048 address the implementation of control measures for alien and invasive plant species. This aspect has been addressed in the Environmental Management Programme. This Act also make provision for the conservation of agricultural land.	
National Forests Act, 1998 (Act No. 84 of 1998)	National Forests Act, Act No. 84 of 1998 and Regulations, Section 7: No person may cut, disturb, damage or destroy any indigenous, living tree in a	

	natural forest, except in terms of a licence issued under Section 7(4) or Section 23; or an exemption from the provisions of this subsection published by the Minister in the Gazette. Sections 12 – 16 deal with protected trees, with the Minister having the power to declare a particular tree, a group of trees, a particular woodland, or trees belonging to a certain species, to be a protected tree, group of trees, woodland or species. In terms of Section 15, no person may cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister.	
Subdivision of Agricultural Land Act, Act 70 of 1970	Control the subdivision, and in connection therewith, the use of agricultural land. It also controls long terms leases over portions of agricultural land. The applicant needs to apply for consent from Department of Agriculture for these leases.	
Section 17 of the Fencing Act, Act No 31 of 1963	States that any person erecting a boundary fence may clean any bush along the line of the fence up to 1.5m on each side therefore and remove any tree standing in the immediate line of the fence. However, this provision must be read in conjunction with the environmental legal provisions relevant to protection of flora.	
Section 8 of the Atmospheric Pollution Prevention Act, Act No. 45 of 1965	Section 8 of the atmospheric Pollution Prevention Act, Act No. 45 of 1965, regulating controlled areas, as well as Section 27, with regard to dust control, is still applicable.	
The Occupational Health and Safety Act, Act No. 85 of 1993 GN R 2281 of 1987 – 10-16.	Environmental Regulations for Workplaces are applicable.	
The Northern Cape Nature Conservation Act, Act No. 9 of 2009 addresses protected species in the Northern Cape and the permit application	Addresses protected species in the Northern Cape and the permit application processes related thereto.	

processes related thereto.		
The South African Civil Aviation Regulation Act, Act 13 of 2009.	Controls markings of structures that may influence aviation through the Civil Aviation Technical Standard, SA-CATSAH 139.01.33 Obstacle Limitations and Markings outside Aerodrome or Heliports. It states that any structure exceeding 45m above ground level, or structures where the top of the structure exceeds 150m above the MEAN ground level, like on top of a hill, the mean ground level considered to be the lowest point in a 3km radius around such structure. Structures lower than 45m, which are considered as a danger or a potential danger to aviation, shall be marked as such when specified. Overhead wires, cables, etc., crossing a river, valley or major roads shall be marked and in addition, their supporting towers marked and lighted if an aeronautical study indicates that is could constitute a hazard to aircraft. The highest structures that would be constructed at the proposed development would be the lighting conductors, which would have a height of 25m.	

f) Need and desirability of the proposed activities.

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

The proposed development of the Mine is aimed at supporting the economy of South Africa by producing a commodity that has a potential to leverage the economy of the country. The primary beneficiaries of this project include, among others, the employees, members of surrounding communities and the country. Secondary beneficiaries include the suppliers of goods and services, and the local businesses through the buying power of employees.This is in line with the National Development Plan (NDP). The Social Labour Plan of the Proposed development is aimed at ensuring local economic development through implementation of the various projects.

The applicant estimates that these small pieces of land could, if prospecting rights are granted, prove to be bearing commodities of high economic value.

g) Period for which the environmental authorisation is required.

The environmental authorisation is required for a minimum period of 10 years.

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

Each of the phases is dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond bulk sampling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken.

i) Details of all 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 EIA process identifies, among others, critical components of alternatives to be considered whilst ensuring that the desired outcome pertaining the proposed project is realised. In the process of identifying and assessing the feasible options, factors such as the National Development Plan and sustainable development to mention just a few are considered. The assessment process may include the environmental friendliness, economic viability and reasonable practicability among others. As a consequence, alternatives for the locality of the prospecting activities are not discussed in this piece of work because the position and location of the mine are influenced to an unlimited extent by the availability of the commodity at a particular location. Additionally, no other location or properties have been applied for by the applicant, Nyezi Holdings (Pty) Ltd

Land use

There is no specialist comparative study in place for the proposed prospecting work area. The process that is going to be employed from beginning to end of prospecting works is going to be step-wise; the initial step is going to be to establish whether or not there are commodities of economic value that could be mined in the area of interest before any development can take place. If need arises, during prospecting phase, the infrastructure used will be mobile only.

The rehabilitation process and the prospecting phase are going to be conducted simultaneously in order to ensure that the pits that get opened during the prospecting phase are backfilled. All the material taken out of the pits that does not bare the commodity of interest will be deposited back into the pits. The rehabilitation process will be performed with the aim to enable normal agricultural activities to be undertaken after the mining has been deemed economically not viable.

Consultation of I&APs

Results obtained from the consultation process followed are going to be discussed later in this report.

Prospecting Method

To the best of our knowledge, the most economically viable method to be applied in open pit mining operations is 'backfilling'. The method of backfilling is going to be used in this proposed development as well.

Proceed without the Mine (no go)

Biodiversity

The proposed development is going to have an impact on biodiversity because some indigenous vegetation is going to be removed. Additionally, there is going to be some destruction of habitats. However, none of this destruction would have been possible if this proposed development was not going to go on.

Heritage and Cultural Resources

The existing heritage resources, if any, are going to be protected through demarcation of the NO-GO zone(s). All encountered graves, if any, are going to be preserved.

Socio-Economy

The proposed project will, if proven to be economically viable, definitely contribute to the economy of the local communities, and to that of the country at large. On prospecting phase of the proposed development alone, there are some people who are going to benefit as employees of the company.

Nyezi Holdings (Pty) Ltd is in a position to employ people from all walks of life, however, preference is going to be given to locals. Furthermore, Nyezi Holdings (Pty) Ltd is committed to Development and Sustainability of the Local Economy and Infrastructure Development.

Technology to be used during Activities

In terms of the technologies proposed, these have been chosen based on the long term success of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

The preferred technology for the proposed mining activity will be to remove the diamond bearing gravel with an excavator, depositing it in the 10 – 18 feet rotary pan(s) to be washed and sorted. However, if it happens, kimberlite deposits are identified on this site, the Dense Media Separation (DMS) plant may become a technique of choice.

Operational Aspect of the Activity

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage services are required.

The activities will commence with a site investigation and desktop studies, which will comprise of non-invasive techniques. This manner of survey will ensure that the applicant can clearly delineate areas which are suitable for further investigation and no unnecessary surface disturbance will be undertaken.

Based on the outcome of the desktop studies and site investigation, pits will be dug by an excavator for the purpose of soil sampling. If gravel is found, the applicant wil determine the composition and quality of the gravel.

The applicant will proceed with this way of prospecting by means of the open cast/trenching method, simultaneously or after pitting depending on the information obtained from the earlier work done. The trenches will be dug to remove and wash the gravel. It will be washed by a washing pan to determine diamond proceeds per 100 tons of gravel.

All data will be consolidated and processed to determine the diamond bearing resources on the property. This will be a continuous process throughout the prospecting work programme.

No feasible alternatives to the pitting and trenching method currently exist. Impacts associated with the prospecting operations will be managed through the implementation of a management plan, developed as part of the application for authorisation. See Figure 3.

ii) Details of the Public Participation Process Followed

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

Letters are going to be sent out by registered mail to interested and affected parties (land owners, neighbouring farmers, certain government departments and parastatals). Identified I&APs, including key stakeholders representing various sectors, were directly informed of the proposed development and the availability of the Scoping Report via registered post in this month**.**

The consulted parties include the following:

Departments that are going to be consulted:

Water and Sanitation, SAHRA (Consulted with the Mc Gregor Musuem), Agriculture, Environment and Nature Conservation, Eskom, Transnet, Herbert Municipality, Public Works, Rural Development, Land Commission & SANRAL

A notice was published in English on DFA newspaper on the 16 January 2018 for public participation and registration as Interested and Affected Parties (I&APs). All the I&APs were requested to submit comments and objections to Thaya Trading Enterprise CC within 30 days of the advertisement.

The process as described by NEMA for Environmental Authorisation was followed. Letters were sent by registered mail to all parties given below. See attachment.

iii) Summary of issues raised by I&Aps

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

Table 5: Summary of issues raised by I&As

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
AFFECTED PARTIES					
Landowner/s	**X**				
Herbert Local Municipality	X	No comments received up to date			
Lawful occupier/s of the land		16 January 2018	Please allow me to introduce myself. I am Leonardo Steenkamp- Secretary of the Fonteintjie Gemeenskap Ontwikkelings Trust. The said Trust has a 50% Real Right over the Farm Schmidtsdrift 248 in the Herbert District, with the Bathlaping Trust with the Schmidtsdrift Communal Property Association being the vehicle of convenience through which these communities should benefit from the property.	Telephonic conversation: The Batlhaping Trust members were consulted by the applicant. Please follow-up with them.	
		26 March 2018	Notice of Objection by Mr LN Steenkamp of Fonteintjie Gemeenskap Ontwikkeling Trust to notice of	The matter is being address in consultation with the applicant.	

			intended prospecting activity		
Landowners or lawful occupiers on adjacent properties	**X**	No comments received up to date			
Municipal councillor	**X**				
Municipality	**X**				
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA					
Communities					
Dept. Land Affairs	X				
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					
SANRAL	X				
Transnet	X				
OTHER AFFECTED PARTIES					
None					
INTERESTED PARTIES					
None					

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

(1) Baseline Environment

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

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

Geology of the Area
Local Geology

The geology of the area of interest is described as that of outcrops of the andesitic lavas of the Ventersdorp Supergroup, which are mostly overlain by calcrete that occurs in isolated patches as rocky hills. Outcrops of tillite of the Dwyka Formation and shale of the Prince Albert Formation (Karoo Sequence) occur in the North-Western part of the area of interest. The largest part of the study area is underlain by Aeolian sand and sometimes alluvial gravels of tertiary to recent age covering Dwyka tillite. Surface limestones occur sporadically in the area. During the 1920's relatively rich diamond deposits were found in the ancient gravel filled water course of the Vaal River within area. The heaps of mixed gravel still present in the area attest to the disturbance to which it was subjected.

The larvas are green to grey-green in colour. The non-amygdaloidal varieties occur within the study area. The amygdaloidal, which comprise quartz, agate, chalcedony and carnelian are a major source of the Vaal Rover agates. Stratigraphically the larvas belong to the Allenridge formation and represents the uppermost volcanic stage of the Ventersdorp Supergroup. Quartzites of the Bothaville formation which underlies the ilenridge formation, rarely outcrop within the area of interest and are usually exposed where alluvial diggings have removed the surficial deposits.

The older gravels within the study area occur in channels or so-called "sluits". One prominent "sluit" is found within the study area, however there exists no evidence in the literature to suggest that the channels are sites of eroded kimberlite dykes.

The area forms further part of the old Palaeo River Valley which flowed from north to south and the Vaal River. The country rocks are lavas of the Ventersdorp supergroup and remnants of the Dwyka Tillite and Shale. The anticipated deposits are situated in channels and are covered in calcrete in some places. The deposits normally consist of thick medium to coarse grained fluvial gravels of mixed lithological composition. (Lava, Dolomite, Fe-shale, Chert, Quartzite, Agate, Quartz etc)

The deposit is further an alluvial gravel deposit situated on bedrock of shale and greywacke of the Dwyka formation. The gravel is underlain by quartzite and shale of the schmidtsdrif formation of the Transvaal Sequence, as well as carboniferous shale and tillite of the Dwyka Formation of the Karoo Sequence Rock Sequence. Rock types of both sequences found on the deposit are horizontally or near horizontally bedded, and are not conductive to pothole formation. Outcrops of rocks of the Transvaal sequence occur along the western and southern boundaries of the deposit. Deflation Gravel, Sand, Scree, Pebbly sand, Sandy Gravel, Gravel, Boulder gravel and Bedrock are found.

Land Use

The land use and land cover of the area is grazing and bushveld land. Most of the area is bare land, with thin soil layer between fractures and also covered by thin vegetation which was used for grazing by the farmers. The grazing land is on the flat land, which covers most of the project area.

Soil Type

The vaal rivers in the area meanders through various geological structures which give rise to a variety of soil types and textures. Based on the soil textural classification method, the soil that is found in the study area is grouped into different soil classes. Namely: gravel, sandy loam, clayey sand and sandy clay loam. Loam is a soil composed of a relatively even a mixture of three mineral particle size groups: sand, silt and clay. Loams are plastic when moist, and retain water easily. The proportions of sand sized particles are also prominent in sandy clay loam and sandy loam soil types. Sand loam, clayey sand and sandy clay loam have 12.5%, 8.3%, 7.7% aerial coverage, respectively.

Climate

Schmidtsdrift normally receives about 400 mm of rain per year, with most rainfall occurring mainly during autumn. It receives the lowest rainfall (1mm) in June and the highest (64mm) in March. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Schmidtsdrift range from 18.4°C in June to 41.2°C in January. The region is the coldest during July when the mercury drops to 1°C on average during the night.

Topography

The topography is flat with irregular plains and less than 1º slopes running from east to west. The landscape is broken in places by a series of ridges which cover about 5% of the area. The elevation is approximately 2 km. The area lies at an altitude of 1030 meters above sea level, with the highest elevations occurring in the east. Vaal river flows eastward between the Project areas.

Ecology

The information below was obtained from Mucina & Rutherford, 2006.

Flora

The region is dominated by the Savanna biome vegetation. This biome is species rich and contains many threatened flora and fauna. The project area is situated within the North Eastern shrubveld grass which is characterised by bushveld. The shrubveld grass also occurs approximately 900m to the south east of the study area. The regional vegetation of the area is, however, used for grazing, mainly by cattle, goat and pigs. A major factor delimiting the biome is the lack of sufficient rainfall which prevents the upper layer from dominating, coupled with fires and grazing, which keep the grass layer dominant. This ensures a sustained supply of low quality water into the rivers. The west side of the study area is used for goat, pig and cattle-farming, it can thus be considered as effectively preserved.

The most distinctive trees in the area are the Camel Thorn (*Acacia mellifera*) and the *A. tortilis*. Other prominent trees are the Portly Baobab (*Adansonia digitata*) and the Candelabra tree (*Euphorbia ingens*).

Air Quality

The air quality of the pre-mining period is expected to have been of a better quality; however, the existing mines in the surrounding areas also contribute to the air quality degradation. The main concern in this regard would however be dust from the proposed diamond mining settling on surrounding areas. However, a dust control plan will be implemented for the proposed project in order to control any possible nuisance dust that might give rise from the surrounding.

Wetlands

A wetland as defined by the National Water Act refers to land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water and which under normal circumstances supports or would support vegetation typically adapted to life in water saturated soil. However, there are no wetlands in the region surrounding the project area.

The proposed Project area is in a low rainfall area at about 211 mm per annum and Sandstone and conglomerate are a prominent feature of the geology and result in considerable linkage between surface and ground water systems.

Hydrogeology

According to the Hydrogeological Map of the Republic of South Africa (Sheets 2722 – Kimberly 1:50 000) the main water bearing strata in the area is an intergranular and fractured aquifer made up of sandstone and conglomerate rocks.

According to the map, groundwater resources are generally limited, with sustainable borehole yields ranging from 0.5 – 1.9 l/s. The groundwater quality is thought to be good, with total dissolved solids (TDS) of less than 300mg/l. In intergranular and fractured aquifers, the water occurs in both the upper weathered rock zone and the fractured but fresh rock formation below. These zones are in hydraulic contact. The regional aquifer system is defined as a Minor Aquifer System (Parsons, 2005) with low to moderate vulnerability to contamination. Minor Aquifer Systems can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability. The aquifer extent may be limited and water quality may be variable. Although these aquifers seldom produce large quantities of water, they are important both for local supplies and in supplying base flow to rivers.

Local Hydrogeology - Two types of aquifer systems have been recognized in the Project area, represented by:

- Weathered Aquifer - The Dwyka sediments are weathered to depths between 5 – 10 metres below surface throughout the area. The upper aquifer, typically perched, is associated with this weathered zone and water is often found within a few metres of the surface (Hodgson, 2001). This aquifer is recharged by rainfall which infiltrates into the weathered rock and soon reaches an impermeable layer of shale,

underneath the weathered zone. The movement of groundwater on top of this layer is lateral and in the direction of the surface slope (Hodgson, 2001).

- Fractured Aquifer - The pores within the Dwyka sediments are too well cemented to allow any significant permeation of water. All groundwater movement is therefore along secondary structures, such as fractures, cracks and joints. These structures are better developed in competent rocks such as sandstone, hence the better water-yielding properties of the latter rock type (Hodgson, 2001). It should, however, be emphasised that not all of the secondary structures are water-bearing. Many of these structures are closed due to compressional forces and the chances of intersecting a water-bearing fracture by drilling therefore decreases rapidly with depth. Water-bearing fractures with significant yields have been observed at depths of approximately 30m; these boreholes would, however, have insufficient yields for organised irrigation (Hodgson, 2001).

Groundwater Levels and Flow Direction – Groundwater depths range from 15 to 30 mbgl. In general, groundwater follows the topographical setting of the area.

The regional groundwater flow direction appears to be to the south-west towards the vaal River. However, locally and on a small scale, flow directions can vary largely depending on topographic features.

• Groundwater Recharge - According to the Groundwater Resources of the Republic of South Africa Map aquifer recharge in the area is between 50 - 75mm/a.

(b) Description of the current land uses.

The first site visit revealed that land uses on and in the immediate surroundings of the proposed prospecting area are to a great extent comprised of natural land & urban build-up. Figure 5 below shows land cover of the area.

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

Refer to the description above.

(d) Environmental and current land use map.

(Show all environmental and current land use features)

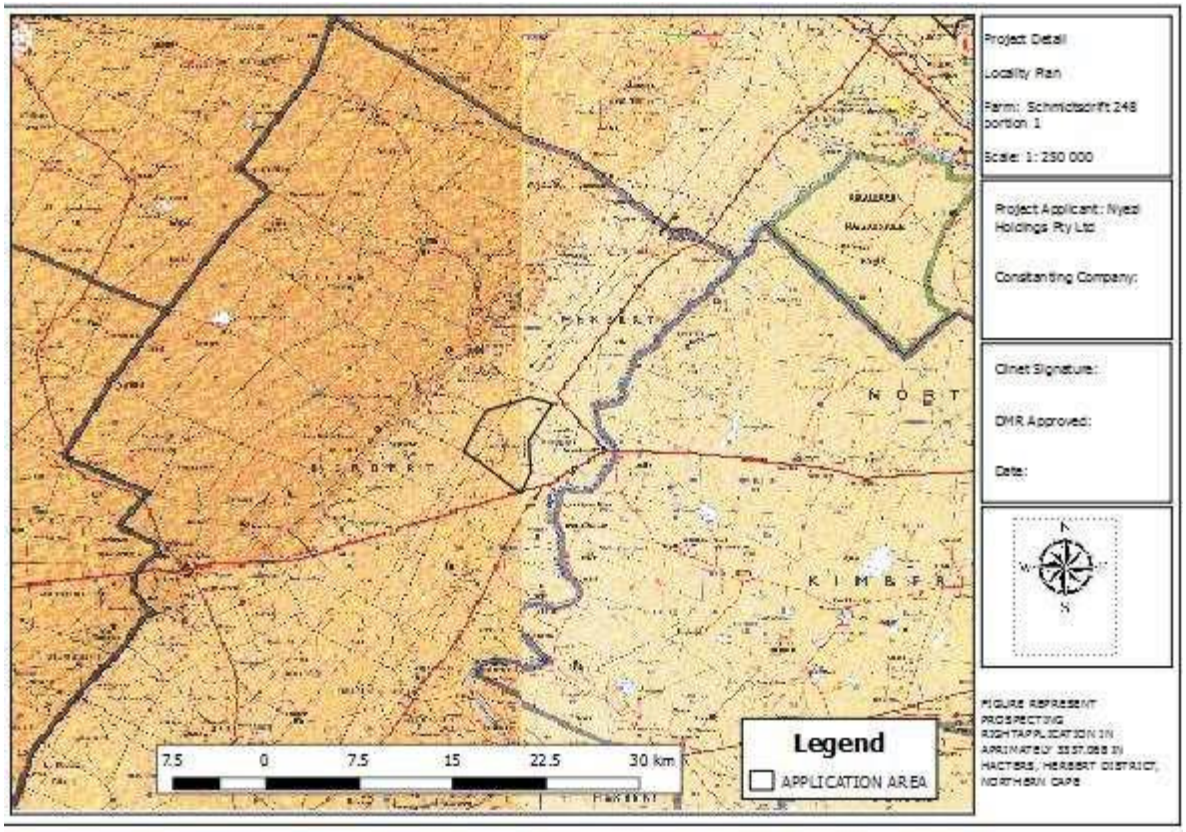


Figure 5: Current land use Map

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

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

Table 6: Potential impacts identified

Environmental Factor	Nature of impact	Significance	Probability	Duration	Consequence	Management
Geology and mineral resource	Sterilisation of mineral resources.	Very low	Highly unlikely	Decommissioning	Insignificant	Ensure that optimal use is made of the available mineral resource.
Topography	Changes to surface topography due to topsoil removal, excavations and placement of infrastructure and development of mine residue deposits.	Low to medium	Certain	Post-closure	Moderate	Backfill all excavations continuously and employ effective rehabilitation strategies to restore surface topography of excavations and plant site, and to stabilise the mine residue deposit.
Soils	Soil erosion by water and wind on disturbed	Low	Possible	Life of operation	Minimal	Employ appropriate management strategies to

	and exposed soils; potential for dust production and soil microbial degradation; potential contaminatio n of soils due to spillages.					preserve soil resources.
Land capabililty	Loss of land capability through topsoil removal, disturbances and loss of soil fertility.	Very low	Possible	Short term	Minimal	Employ appropriate rehabilitation strategies to restore land capability.
Land use	Loss of land use due to poor placement of surface infrastructure and ineffective rehabilitation	Very low	Possible	Short term	Minimal	Carefully plan the placement of infrastructure and employ rehabilitation strategies to restore land capability.
Ground water	Pollution of underground water sources.	Low	Possible	Decommissi oning	Minimal	Construction of measures to prevent seepage into the groundwater by biological and engineering means. Implementatio n of the necessary management programs to ensure the integrity of ground water resources.
Surface water	Deterioration in water quality through spillages	Low	Certain	Decommissi oning	Critical	Frequent monitoring of surface water resources (Standing water). Prevention of overspill of mine associated activities into the surrounding drainage channels streams. Implementatio n of the necessary management programs to ensure the integrity of surface water (Standing water) resources.
Indigenous flora	The clearance of vegetation; potential loss	Low to mediu m	Certain	Life of operation	Major	Prevention of overspill of mine associated

	of floral species with conservation value; potential loss of ecosystem function.					activities onto the surrounding ecological environment. Employ proper protection and rehabilitation strategies.
Alien invasive plants	Proliferation of alien invasive plants species.	Low to mediu m	Certain	Decommissi oning	High	Eradicate, and control the spread, of alien invasive species.
Fauna	Displacement of fauna	Low	Possible	Life of operation	Minimal	Prevention of overspill of mine associated activities onto the surrounding ecological environment. Employ proper protection strategies.
Habitat	The loss, damage and fragmentation of floral and faunal habitats; potential loss of ecosystem function.	Low to Mediu m	Certain	Residual	Critical	Prevention of overspill of mine associated activities onto the surrounding ecological environment. Employ proper protection and rehabilitation strategies.
Air quality	Sources of atmospheric emission associated with the prospecting operation are likely to include fugitive dust from materials handling operations, wind erosion of stockpiles, and vehicle entrainment of road dust.	Low	Cetain	Decommissi oning	Minimal	Effective soil management; identification of the required control efficiencies in order to maintain dust generation within acceptable levels.
Noise and vibration	Increase in continuous noise levels; the disruption of current ambient noise levels; and the disruption of sensitive receptors by means of increased noise and vibration.	Low	Certain	Decommissi oning	Minimal	Minimise the generation of excessive noise and vibration; Ensure all vehicles and equipment is in a good working order; proper communicatio n.
Visual impacts	Visual impact of the mine infrastructure , excavations, mine residue deposits, and	Low	Possible	Decommissi oning	Minimal	Effective planning of the location of infrastructure and operations to minimise visual impact.

	waste rock stockpile; visibility of dust.					
Traffic	Potential negative impacts on traffic safety and deterioration of the existing road networks	Low	Low	Decommissioning	Minimal	Utilise existing access roads, where applicable; implement measures that ensure adherence to traffic rules.
Heritage resources	The deterioration of sites of cultural and heritage importance.	Low to medium	Certain	Residual	Major	Preservation and protection of heritage and cultural resources identified within a no go zone; further resources uncovered during prospecting activities need to be reported to a suitably qualified archaeologist.
Socio-economic	Negative: Loss of agricultural potential; influx of workers to the area increases health risks and loitering (resulting in lack of security and safety); negative impact of employment loss during mine closure.	Low to medium	Certain	Short-term and Closure	High and Major	Application of commitments made in the Social and Labour Plan; implementation of community development programmes
Interested and affected parties		Low to medium	Possible	Decommissioning	High	Ensure continuous and transparent communication with IAPs.

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

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

The criteria used to assess the significance of the impacts are discussed below. The criteria used to assess the significance of the impacts are shown in the table below. The limits were defined in relation to mining characteristics. Those for probability, intensity/severity and significance are subjective, based on rule-of-thumb and experience. Natural and existing mitigation measures were considered.

These natural mitigation measures were defined as natural conditions, conditions inherent in the project design and existing management measures, which alleviate impacts. The significance of the impacts was calculated by using the following formula:

(Severity +Spacial Scope + Duration) x Probability weighting

For the impact assessment, the different project activities and associated infrastructure were identified and considered in order to identify and analyse the various possible impacts. These include roads and hauling, excavations, temporary waste dumping, topsoil storage, mine residue deposit dam, plant and
processing area, temporary office, workshops and ablution facilities, water tanks, diesel tanks, pipeline, other temporary buildings, etc.

Significance of impacts is defined as follows:

No Impact – There will be no impact on the system or any of its parts.

Very Low – Impact would be negligible. Almost no mitigation and/or remedial activity would be needed, and any minor steps which might be needed would be easy, cheap and simple.

Low – Impact would have little real effect. Mitigation and/or remedial activity would be either easily achieved or little would be required or both.

Medium – Impact would be real but not substantial within the bounds of those which could occur. Mitigation and/or remedial activity would be both feasible and fairly easily possible.

High – Impacts of substantial order. Mitigation and/or remedial activity would be feasible but difficult, expensive, time consuming or some combination of these.

Very High – Of the highest order possible within the bounds of impacts which could occur. There would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which was predicted.

Table 7:

Weight	Severity	Spacial Scope	Duration
1	Insignificant/non-harmful	Activity specific/No effect/Controlled	Immediate (0 – 6 months)
2	Minimal / potentially harmful	Slight permanent deviation / on-site	Short term / construction (6 months- 1 yr)
3	Medium / slightly harmful	Immediate surroundings / local / outside mine area	Life of operation
4	High / Critical / Serious	Regional effect	Decommissioning
5	Catastrophic / major	National/ Severe environmental damage	Residual
6	Disastrous	Trans boundary effects	Residual

Table 8:

Weight Number		1	2	3	4	5
Frequency						
Probability	Frequency of Impact	Highly unlikely	Rare	Low likelihood	Probable/ possible	Certain
		Practically impossible	Conceivable but very unlikely	Only remotely possible	Unusual but possible	Definite
	Frequency of Activity	Annually or less	6 monthly/temporarily	Infrequent	Life of operation	Life of operation

Table 9:

PROBABILITY (Frequency of activity + frequency of impact)	CONSEQUENCE (Severity + Spatial Scope + Duration)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150

Table 10:

Colour Code	Significance Rtating	Value	Negative Impact Management Strategy	Positive Impact Management Strategy
	VERY HIGH	126 – 150	Improve current management	Maintain current management
	HIGH	101 – 125	Improve current management	Maintain current management
	MEDIUM – HIGH	76 – 100	Improve current management	Maintain current management
	LOW – MEDIUM	51 – 75	Improve current management	Maintain current management
	VERY LOW	26 – 50	Improve current management	Maintain current management
		1 - 25	Improve current management	Maintain current management

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

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

During construction and operation of the prospecting operation, there is a possibility of sterilisation of the mineral reserves and resources due to improper placement of infrastructure. The infrastructure and slimes dam will alter the topography by adding features to the landscape. Topsoil removal and excavations will unearth the natural topography. The construction of infrastructure and various facilities in the mining area can also result in loss of soil due to erosion. Vegetation will be stripped in preparation for placement of infrastructure and excavations, and therefore the areas will be bare and susceptible to erosion.

Protected trees should be avoided as far as possible during invasive prospecting activities. Placement of small access roads and or any other associated infrastructure such as office area and storage areas should avoid slow-growing protected trees as far as possible. Areas with high density protected trees should be regarded as “sensitive” it should be mapped and avoided as far as possible. If protected trees cannot be avoided, a licence must be applied for and obtained prior to disturbance of such species.

A search and rescue of plants of special concern (i.e. endemic species; provincially protected or specially protected species; CITES listed species and TOPS listed species) prior to disturbance of natural vegetation will be done. Succulents such as Aloe species should be rescued and transplanted after obtaining the necessary Flora Permit from the Provincial Department of Environment and Nature Conservation (DENC).

The developer may also need a Flora Permit from the DENC for destruction of natural indigenous, protected or specially protected plant species under the Northern Cape Nature Conservation Act, Act 9 of 2009 (NCNCA). The same applies to TOPS or CITES listed plant species under the NEMA. The topsoil that is stripped and piled on surrounding areas can be eroded by wind and rain. The soil will be carried away during runoff. The declared areas will be rehabilitation, but full restoration of soil might only occur over a number of years, subsequent to the re-establishment of vegetation. Furthermore, improper stockpiling and soil compaction can result in soil sterilisation. Leaching can also occur, resulting in the loss of nutrients.

During the construction and operation of the prospecting there is a possibility that equipment might leak oil, thus causing surface spillages. The hydrocarbon soil contamination will render the soil unusual unless they are decontaminated. The storage of fuels on site might have an impact on soil if the tanks that are available on site are not properly monitored and maintained to avoid leakages. Then there is the potential that contaminated soil can be carried through runoff to contaminate water resources and soil stockpiled for rehabilitation. Soil pollution is therefore possible, but through mitigation it can be minimised.

The loss of land capability and land use can occur in two ways. Firstly, through topsoil removal, disturbances and loss of soil fertility; and secondly through the improper placement of infrastructure. The site has a land capability for grazing, but grazing activities can still be performed in areas not earmarked for mining, and with proper rehabilitation the land capabilities and land use potential can be restored.

If oil and fuel spillages occur, then it will seep into the underlying aquifers and contaminate ground water. Improper handling of hazardous material will cause contamination of nearby surface water resourced during runoff episodes. Lack of storm control structures will lead to erosion of stockpiles during heavy rains and runoff will carry suspended solids into the downstream environment. This might cause high silt load and affect stream flow.

Construction and mining activities on site will reduce the natural habitat for ecological systems to continue their operation. It is not expected that the areas of high ecological function will rehabilitation following disturbance events. Vehicle traffic generates lots of dust which can reduce the growth success and seed dispersal of many small plant species. It is expected that protected species will be destroyed during the prospecting operation.

While general clearing of the area and prospecting activities destroy natural vegetation, invasive plants can increase due to their opportunistic nature in disturbed areas. If invasive plant establish in disturbed areas, it may cause an impact beyond the boundaries of the mining site. These alien invasive species are thus a threat to surrounding natural vegetation and can result in the decrease of biodiversity and ecological value of the area. Therefore, if alien invasive species are not controlled and managed, their propagation into new areas could have a high impact on the surrounding natural vegetation in the long term. With proper mitigation, the impacts can be substantially reduced.

The transformation of natural habitats to mining and associated infrastructure will result in the loss of habitat affected individual species, and ecological processes. In turn this will result in the displacement of faunal species dependent upon such habitat. Increased noise and vibration due to mining activities will disturb and possibly displace birds and other wildlife. Fast moving vehicles take a heavy toll in the form of road kills of small mammals, birds, reptiles, amphibians and a large number of invertebrates. The construction of the mine and associated infrastructure will result in the loss of connectivity and fragmentation of natural habitat. Fragmentation of habitat will lead to the loss of migration corridors, in turn resulting in degeneration of the affected population's genetic make-up. This results in a subsequent loss of genetic variability between meta-populations occurring within the site. Pockets of fragmental natural habitats hinder the growth and development of populations.

During the prospecting operation the abovementioned activities have potential for dust generation. It is anticipated that the extent of dust emissions would vary substantially from day to day depending on the level of activity and the specific operations. The prospecting will add a certain amount of noise to the existing noise in the area. However, levels of noise generated by prospecting activities are low.

The impact of site generated trips on the traffic of the existing roads is experienced to be low. Nevertheless, if road safety is not administered it can have a high impact on the safety of fellow road users.

The prospecting operation, especially during construction, will create a limited number of new employment opportunities. The magnitude of this impact will depend on the number of people that will be employed and the number of contractors sourced. An influx of people into the rural area will possibly impact on safety and security of local residents. During the decommissioning and at closure of the prospecting, staff will most likely be retrenched. This can potentially flood the job market, resulting in people being unable to find new employment for a long period of time. It is normally more difficult for people with highly specialised skills to find employment immediately. Those with fewer skills have more flexibility in the job market.

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

It is likely, however that there will be residual positive economic impacts that are not fully reversed with the closure of the mine, and that the economy will not decline to its original level prior to the development of this project. This is because the mine will generate substantial income for the regional and local economy, both directly and indirectly, during its life.

It is difficult to predict the actual impact of the mine closure in advance, but it is acceptable to assume that the mine closure will have a negative impact on the local and regional economy with a high probability of occurrence, a high severity and a high significance.

Positive impact include employment and training opportunities for people in the local community and local contractors; social upliftment and community development programmes; economic benefits.

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

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

Geology and Mineral Resource

Level of risk: Very low

Mitigation measures

- Ensure that optimal use is made of the available mineral resource through proper planning of the prospecting operation.
- The prospecting should be well planned and delineated first and all infrastructure positions should be selected with the main aim of avoiding sterilization of future resources.

- No dumping of materials prior to approval by exploration geologist.

Topography

Level of risk: Low

Mitigation measures

- Backfill all trenches/excavations continuously.
- Employ effective rehabilitation strategies to restore surface topography of excavations and plant site.
- Stabilise the mine residue deposits.
- All temporary infrastructure will be demolished during closure.

Soil Erosion

Level of risk: Very low

Mitigation measures

- At no point may plant cover be removed within the no-development zones.
- All attempts must be made to avoid exposure of dispersive soils.
- Re-establishment of plant cover on disturbed areas must take place as soon as possible, once activities in the area have ceased.
- Ground exposure should be minimised in terms of the surface area and duration, wherever possible.
- The prospecting operation must co-ordinate different activities in order to optimise the utilisation of the excavated trenches and thereby prevent repeated and unnecessary excavations.
- Construction that required the clearing of large areas of vegetation and excavation should ideally occur during the dry season only.
- Construction during the rainy season (November to March) should be closely monitored and controlled.
- The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers.
- The soil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion.
- All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosional induced losses.
- Excavated and stockpiled soil material are to be stored and bermed on theM higher laying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate.
- Stockpiles susceptible to wind erosion are to be covered during windy periods.
- Audits must be carried out at regular intervals to identify areas where erosion is occurring.
- Appropriate remedial action, including the rehabilitation of the eroded areas, must occur.
- Rehabilitation of the erosion channels and gullies.
- The prospecting operation should land with steep slopes.
- Dust suppression must take place, without compromising the sensitive water balance of the area.
- Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion.

Soil Pollution

Level of risk: Very low

Mitigation measures

- Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.

- Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site.
- Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.
- All facilities where dangerous materials are stored must be contained in a bund wall.
- Vehicles and machinery should be regularly serviced and maintained.

Land Capability and Land Use

Level of risk: Very low

Mitigation measures

- Ensure that optimal use is made of the available land through consultation with land owner and proper planning of prospecting activities.
- Surface agreement to be signed with land owners.
- Employ effective rehabilitation strategies to restore land capability and land use potential of the farm.

- All activities to be restricted within the demarcated areas.
- Ensure that land which is not used during construction is made available for grazing.

Groundwater

Level of risk: Very low

Mitigation measures

- Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.
- Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site.
- Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.
- All facilities where dangerous materials are stored must be contained in a bund wall.
- Vehicles and machinery should be regularly serviced and maintained.
- Monitor the quality of the boreholes located down-gradient of the mining site.
- Sample according to the sampling method and parameters for analysis is indicated in the Geohydrological study.

Surface Water

Level of risk: Very low

Mitigation measures

- Sufficient care must be taken when handling hazardous materials to prevent pollution.
- Under no circumstances may ablutions occur outside the provided facilities.
- No uncontrolled discharges from the staff camps to any surface water resources shall be permitted.
- If servicing and washing of the vehicles occur on site, there must be specific areas constructed for these activities, which must have concrete foundations, bunding as well as oil traps to contain any spillages.
- A walled concrete platform, dedicated store with adequate flooring or bermed area and ventilation must be used to accommodate chemicals such as fuels, oils, paints, herbicide and insecticides.
- Oil residue shall be treated with oil absorbent and this material removed to an approved waste site.
- Spill kits must be easily accessible and workers must undergo induction regarding the use thereof.
- At all times care should be taken not to contaminate surface water resources.
- Store all litter carefully to prevent it from washing away or blown into any of the water courses within the area.

- Provide bins for staff at appropriate locations, particularly where food is consumed.

- The prospecting site should be cleared daily and litter removed.
- Conduct on-going staff awareness programmes in order to reinforce the need to avoid littering, which contributes to surface water pollution.

Indigenous Flora

Level of risk: Low to medium

Mitigation measures

- Minimise the footprint of transformation.
- Encourage proper rehabilitation of mined areas.
- Encourage the growth of natural plant species.
- Ensure measures for the adherence to the speed limit.
- Footprint areas of the prospecting activities must be scanned for Red Listed and protected plant species prior to mining.
- It is recommended that these plants are identified and marked prior to mining.
- These plants should, where possible, be incorporated into the design

layout and left in situ.

- However, if threatened of destruction by mining, these plants should be removed (with the relevant permits from DAFF and DENC) and relocated if possible.
- A management plan should be implemented to ensure proper establishment of ex situ individuals, and should include a monitoring programme for at least two years after re-establishment in order to ensure successful translocation.
- All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.

All Invasive Plants

Level of risk: Very low

Mitigation measures

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

Fauna

Level of risk: Very low

Mitigation measures

- Careful consideration is required when planning the placement for stockpiling topsoil and the creation of access routes in order to avoid the destruction of pristine habitats and minimise the overall mining footprint.

- The appointment of a full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance.
- The extent of the mine should be demarcated on site layout plans, and no construction personnel or vehicles may leave the demarcated area except those authorised to do so. Those areas surrounding the

mine site that are not part of the demarcated development area should be considered as a no go zone for employees, machinery or even visitors.

- All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.
- The ECO must ensure that all contractors and workers undergo environmental induction prior to commencing with work on site.
- The environmental induction should occur in the appropriate languages for the workers who may require translation.
- Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert.
- Employ measures that ensure adherence to the speed limit.

Habitat

Level of risk: Low

Mitigation measures

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

Air Quality

Level of risk: Very low

Mitigation measures

- Vegetation must be removed when soil stripping is required only. These areas should be limited to include those areas required for prospecting only, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken.
- Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression.
- Where it is logistically possible, control methods for gravel roads should be utilised to reduce the re-suspension of particulates. Feasible methods include wet suppression, avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads.
- The length of time where open areas are exposed should be restricted. Prospecting should not be delayed after vegetation has been cleared and topsoil removed.
- Dust suppression methods should, where logistically possible, must be implemented at all areas that may/are exposed for long periods of time.
- For all prospecting activities management should undertake to implement health measures in terms of personal dust exposure, for all its employees.

Noise and Vibration

Level of risk: Very low

Mitigation measures

- Restrict prospecting activities to daytime unless agreements obtained to do 24hr operations.
- Systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events.
- Where possible material stockpiles should be placed so as to protect the boundaries from noise to individual operations.

- Standardised noise measurements should be carried out on individual equipment at the delivery to site to construct a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in the noise impact over time and increased complaints.
- Environmental noise monitoring should be carried out at regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.

Visual Impacts

Level of risk: Very low

Mitigation measures

- Infrastructure should be placed to optimise the natural screening capacity of the vegetation.
- Where practical, protect existing vegetation clumps during in order to facilitate screening during the prospecting operation.
- _ Remove rubble and other building rubbish off site as soon as possible or place it in a container in order to keep the mining site free from additional unsightly elements.
- Locate the staff camps and the material stockpiles outside of the visual field of sensitive visual receptors.
- Dust suppression procedures should be implemented especially on windy days during earth works.
- Rehabilitation should aim to establish a diverse and self-sustaining surface cover that is visually and ecologically representative of naturally occurring vegetation species.
- Implement a management plan for the post-mining site in order to control the invasion of alien vegetation and to manage erosion, until the site is fully rehabilitated.

Traffic and Road Safety

Level of risk: Very low

Mitigation measures

- Implement measures that ensure the adherence to traffic rules.

Heritage Resources

Level of risk: Very low

Mitigation measures

- The heritage and cultural resources (e.g. graveyards, ruins, historic structures, etc.) must be protected and preserved by the delination of a no go zone if any of these areas are to be found in the prospecting area.
- Intact bedrock strata should be avoided during mining of terrace gravels where possible.
- Stone tools should be avoided where possible and fresh exposure should be recorded before destruction. All stone tool artefacts should be recorded, mapped and collected before destruction.
- Should development necessitate impact on any building structures, the developer should apply for a SAHRA Site Destruction Permit prior to commencement of construction.

Socio-Economic

Level of risk: Very low

Mitigation measures

- The mine must ensure that false expectations are not created regarding job creation.
- Jobs must be allocated as advertised and in so far as is possible to local inhabitants.

- Contractors and employees should not be permitted to wander outside the mining area.
- Uncontrolled settlement of contractors and workers outside of the site will be prevented.
- The expectations of what benefits can accure to the community must be managed from the initiation of the project.
- Commitments as set out in the SLP must be attained.

Interested and Affected Parties

Level of risk: Very low

Mitigation measures

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

ix) Motivation where no alternative sites were considered.

The locality of the prospecting operation is based on the location of the possible diamond deposits that have been identified through extensive exploration activities. There is therefore no other alternative with regard to the overall operation footprint.

The location of the central prospecting site and associated infrastructure is primarily based on proximity to the access roads, proximity to the areas earmarked for prospecting and limited additional impact on the environment and heritage resource.

The prospecting activities and methodologies associated with diamond mining (i.e. open pits with continued backfilling) is the only economic viable method currently being used by the diamond fraternity. There is no alternative prospecting method for the prospecting of diamonds. Noteworthy, diamond kimberlite, if encountered, will be dealt with accordingly.

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

Not Applicable, as no other properties have been secured by the applicant.

i) Plan of study for the Environmental Impact Assessment process

a) Description of alternatives to be considered including the option of not going ahead with the activity.

The option of not approving the activities will result in a significant loss of valuable information regarding the mineral status (in terms of Diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

b) Description of aspects to be assessed as part of the environmental impact assessment process

Table: Aspects to be assessed

Aspects/potential impacts	**Description of the aspect**	**Specialist studies/technical information**
Biophysical Environment		
Impacts on the fauna and flora	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits and the book written by Mucina and Rutherford entitled The Vegetation of South Africa, Lesotho and Swaziland)
Impacts on the air quality	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impacts on the soil	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impacts associated with the geology of the site	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impact on existing services infrastructure	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Impacts on ground and surface water	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS, site visits)
Socio/Economic Environment		
Impacts on local employment rate	Refer to Tables: 9&10	EAP assessment (using desktop studies, IDP's and SDF's)
Impacts on visual landscape	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on traffic volumes	Refer to Tables: 9&10	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on health & safety	Refer to Tables: 9&10	EAP assessment (using

		desktop studies, site visits)

c) Description of aspects to be assessed by specialists

An Archaeological Report based on the study conducted on the area of interest is going to be drafted.

d) Proposed method of assessing the environmental aspects including the proposed method of assessing.

The environmental assessment aims to identify the various possible environmental impacts that could result from the proposed activity. Different impacts need to be evaluated in terms of significance and in doing so highlight the most critical issues to be addressed.

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence. Significance is calculated as shown in the table below.

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

e) The proposed method of assessing duration significance

Impact Rating System

Impact assessment must take account of the nature, scale and duration of impacts on the environment whether such impacts are positive or negative. Each impact is also assessed according to the project phases:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance should also be included. The rating system is applied to the potential impacts on the receiving environment and includes an objective evaluation of the mitigation of the impact. In assessing the significance of each impact, the following criteria are used:

Table: The rating system

NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
DURATION		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter, it will be entirely negated (0 – 2 years).
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
INTENSITY/ MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/ component and the quality, use, integrity and functionality of the system or

		component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
REVERSIBILITY		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity. The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description
6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive high	The anticipated impact will have significant positive effects.

	impact	
74 to 96	Negative very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive very high impact	The anticipated impact will have highly significant positive effects.

f) The stages at which the competent authority will be consulted

Consultation with the competent and commenting authorities will continue throughout the duration of impact assessment phase. The authorities will also comment on whether they deem it necessary to conduct any specialist studies. On-going consultation will include:

- Submission of the Scoping following a 30 day public review period.
- Submission of the EIR following a 30 day public review period.
- Arrangements will be made to discuss the report with the Environmental Officer responsible for the project during the review period.
- The site has been visited already.

g) Particulars of the public participation process with regard to the Impact Assessment process that will be conducted competent authority will be consulted

1. Steps to be taken to notify interested and affected parties.

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein).

All registered I&APs and relevant State Departments will be given the opportunity to review the Scoping, EIR and EMP in accordance with Regulation R982. A minimum of 30 days commenting period will be allowed and all stakeholders and I&APs will be given an opportunity to forward their written comments within that period. All issues identified during this public review period will be documented and compiled into a Comments and Response Report to be included as part of the Final EIR to be submitted to the Northern Cape Province Department of Mineral Resources.

2. Details of the engagement process to be followed.

(Describe the process to be 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 and records of such consultation will be required in the EIA at a later stage).

The public participation process will be conducted strictly in accordance with Regulations 39-44. The following three categories of variables will take into account when deciding the required level of public participation:

- The scale of anticipated impacts.
- The sensitivity of the affected environment and the degree of controversy of the project.
- The characteristics of the potentially affected parties.

the following public participation mechanisms will be used:

- Newspaper advertisement in local newspaper
- Site notices
- Direct notification of surrounding land owners and occupiers
- Circulation of scoping report
- Circulation of EIR
- Public participation meeting
- Direct notification to all stakeholders of the Environmental Authorisation given

3. Description of the information to be provided to Interested and Affected Parties.

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land).

The letter provided to I&APs comprises of an activity, extent and location description, including a locality map of the proposed activity and a Dropbox link to the full Scoping report and Appendices. It also indicates where a hard copy of the report can be viewed or if the need arises for a copy of the report a request can be sent to the relevant EAP who will forward a CD containing all the relevant information.

h) Description of the tasks that will be undertaken during the environmental impact assessment process

Tasks to be undertaken

The following sections describe the tasks that will be undertaken as part of the EIA process.

- Project Description

Further technical and supporting information will be gathered to provide a more detailed project description. This will include a detailed site layout plan that will be compiled once the low – medium areas of sensitivity have been indicated.

- **Location alternatives**

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity.

- **Activity alternatives**

The Scoping process also needs to consider if the development of a Diamonds would be the most appropriate land use for the particular site.
Mining of other commodities – It is possible that kimberlite is present on these sites.
Nyezi Holdings (Pty) Ltd has applied to prospect for Diamonds.
Agriculture – Due to the site being arable & non-arable, in terms of crop production, all of the portions of the property are preferred.

- **Design and layout alternatives**

Design alternatives were considered throughout the planning and design phase (i.e. where is the diamond bearing gravel located?).

- **No-go alternative**

This alternative considers the option of 'do nothing' and maintaining the status quo. Should the proposed activity not proceed, the site will remain unchanged and will continue to be used for grazing and/or hunting.

- Compilation of Environmental Impact Report

An EIR will be compiled to meet the content requirements as per GNR982 and will also include a draft Environmental Management Programme.

i) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

ACTIVITY whether listed or not listed. **(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).**	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air**	**MITIGATION TYPE** **(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control, Control through management and monitoring through rehabilitation.**	**POTENTIAL FOR RESIDUAL RISK**
Impacts on the fauna and flora	Surface disturbance	Monitor through rehabilitation	low
Impacts on the air quality	dust	Dust Control	low
Impacts on the soil	Erosion	Storm water control	low
Impacts associated with the geology of the site	Fly rock	Blasting controls	low

Impacts on ground and surface water	Ground and surface water contamination	Storm water control, avoidance	low
Impacts on visual landscape	dust	Dust control measures	low
Impacts on traffic volumes	dust	Dust control measures	low

j) Description of the tasks that will be undertaken during the environmental impact assessment process

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

(1) Impact on the socio-economic conditions of any directly affected person. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim.

The prospecting activity will not impact directly on any socio-economic aspects. Indirect socio-economic benefits are expected to be associated with the creation of employment in the Northern Cape Province.

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.

The prospecting activity will not impact on any heritage estate referred to in section 3(2) of the National Heritage Resources Act. In terms of the National Heritage Resource Act no 25 of 1999. Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA will be contacted immediately and work will stop.

k) 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.

From a local perspective, the specific site has been chosen for its mineral resources thus making an alternative site selection null and void.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Details of EAP

The requirement to describe the aspects of the activity that are covered by the draft environmental management programme is included in PART A, Section 3(a) herein as required.

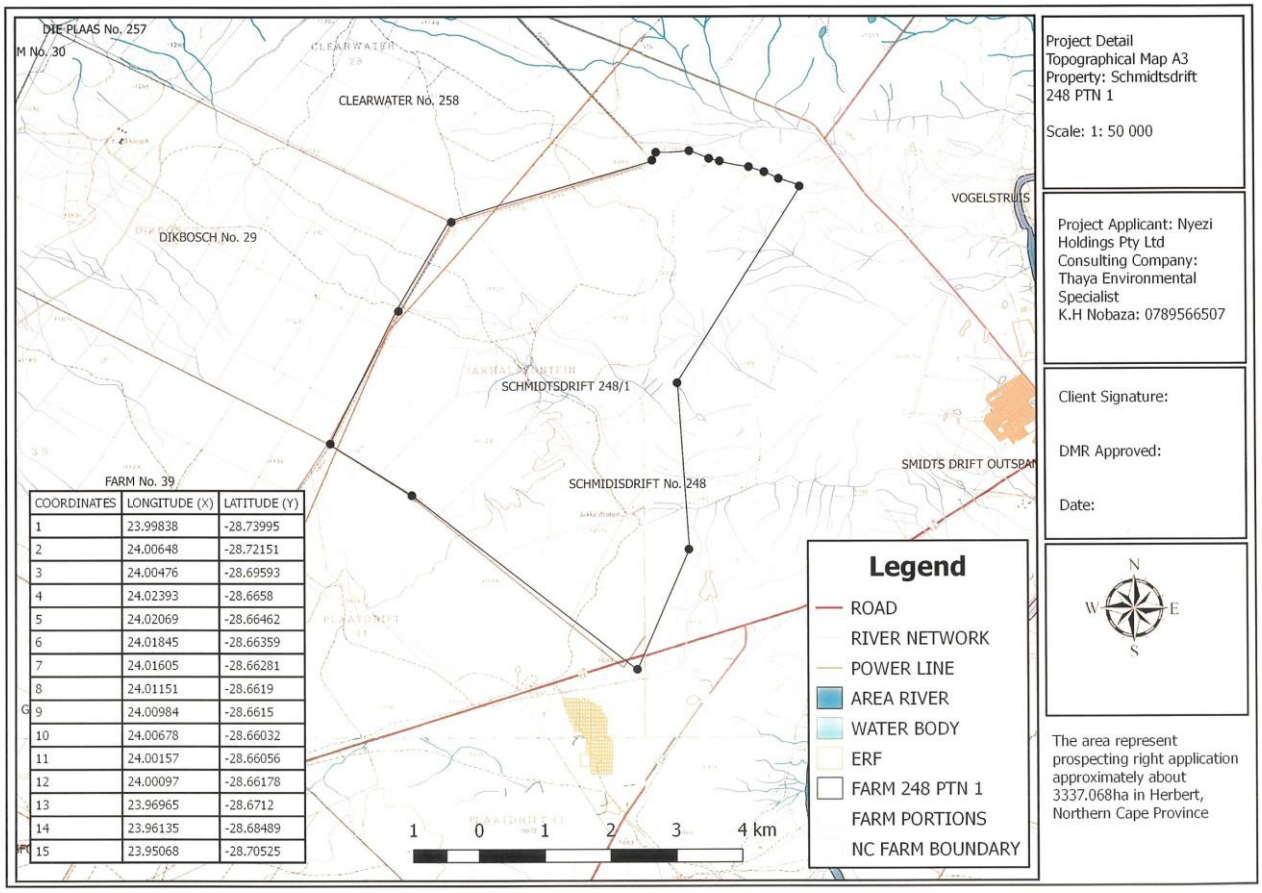
2. Description of the Aspects of the Activity

The requirement to describe the aspects of the activity that are covered by the draft environmental management programme is included in PART A, Section 3(d).

3. Composite Map

Refer to the figure below for a map that superimposes the proposed activity, its associated structures and infrastructures on the environmental sensitivities of the

preferred site, also indicating any areas that should be avoided, including buffers.



COORDINATES	LONGITUDE (X)	LATITUDE (Y)
1	23.99838	-28.73995
2	24.00648	-28.72151
3	24.00476	-28.69593
4	24.02393	-28.6658
5	24.02069	-28.66462
6	24.01845	-28.66359
7	24.01605	-28.66281
8	24.01151	-28.6619
9	24.00984	-28.6615
10	24.00678	-28.66032
11	24.00157	-28.66056
12	24.00097	-28.66178
13	23.96965	-28.6712
14	23.96135	-28.68489
15	23.95068	-28.70525

4. Description of Impact management objectives including management statements

4.1 Determination of closure objectives

The closure objectives for the project were determined taking into account the existing type of environment as described in Section iv, in order to ensure that the closure objectives strive to achieve a condition approximating its natural state as far as possible. Furthermore, the preliminary closure plan objectives and principles have been developed against the background of the proposed prospecting activity location in the Hebert region of the Northern Cape Province, and include the following:

- that environmental damage is minimised to the extent that it is acceptable to all parties involved;

- that at closure, the land will be rehabilitated to achieve an end use of wilderness and grazing;
- that all surface infrastructure will be removed from site after closure. Any open drills will be completely backfilled and the remaining waste rock dumps shaped accordingly;
- that contamination beyond the prospecting site by wind, surface run-off or groundwater movement will be prevented;
- that closure of prospecting area is achieved efficiently, cost effectively and in compliance with the law; and,
- that the social and economic impacts resulting from closure of prospecting area are managed in such a way that negative socio-economic impacts are minimised.

The closure target outcomes for the site are therefore assumed to be as follows:

- to achieve chemical, physical and biological stability for an indefinite, extended time period over all disturbed landscapes and residual prospecting infrastructure;
- to protect surrounding surface water, groundwater, soils and other natural resources from loss of current utility value or environmental functioning;
- to limit the rate of emissions to the atmosphere of particulate matter and salts to the extent that degradation of the surrounding areas' land capability or environmental functioning does not occur;
- to maximise visual 'harmony' with the surrounding landscape; and
- to create a final land use that has economic, environmental and social benefits for future generations that outweigh the long term aftercare costs associated with the mine.

4.2 Acid Mine Drainage (AMD)

AMD is not a significant factor in these Prospecting Activities.

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

The operation would require about 360 m^3 litres per annum over the three year prospecting operation.

4.4 Has a water use license been applied for?

The water use license application is in progress.

5. Impact Management Actions (phases of development)

The EMP addresses the following two (2) phases:

5.1 CONSTRUCTION PHASE

Table below contains a list of potential environmental issues and the appropriate mitigation measures that may be associated with the construction phase of this proposed development. This section serves as a framework for the construction contractor even though Nyezi Holdings (Pty) Ltd plans to utilise mostly mobile equipment and machinery for the prospecting phase of this project within which to execute his contractual duties. This detailed EMP may be included in the final contract(s) with the relevant construction contractors. The table only addresses those impacts that may occur on the site during the Construction and associated management measures that may require additional environmental management.

Table: Construction Phase

Issue	Mitigation	Responsible party	Frequency of Action
Topography			
Objective: To minimise topographic alterations			
General land disturbance	Limit all activities to the proposed mine footprint area.	ESHQ Department	Continuous
Soils			
Objective: To minimise soil degradation			
Soil Erosion by Water	Construct soil conservation measures at stockpiled sites as well as during construction and road-building activities.	Contractor	When necessary
	Avoid bare, disturbed surfaces for long periods (e.g. re-vegetate stockpiled soils).	Contractor	On-going
	Avoid undue storm-water concentration (e.g. construct runoff measures according to soil conservation principles).	Contractor	When necessary
	The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers.	Contractor	When necessary
	The soil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion.	Contractor	On-going
	The placement of the flow retarding barriers must occur in consultation with the Environmental Officer and as part of an overall storm water management system during the construction phase.	Contractor	On-going
	All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosive losses.	Contractor	On-going
	All attempts must be made to avoid exposure of dispersive soils.	Contractor	On-going
Soil Erosion by Wind	Avoid bare, disturbed surfaces (e.g. re-vegetate stockpiled soils).	Contractor	On-going
	Cover exposed soils with brush-packs of non-invasive species in order to minimise erosive losses.	Contractor	When necessary
	Construct windbreaks, where necessary.	Contractor	When necessary
Issue	**Mitigation**	**Responsible party**	**Frequency of Action**
Erosion by	At no point may plant cover be removed	Mine	On-going

water and wind.	outside of the proposed footprint area and beyond the mining authorisation area.	community; ESHQ Department	
	The removal of plant material must be kept to a minimum.	Contractor	On-going
	Audits must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action, including the rehabilitation of the eroded areas, and where necessary, the relocation of the cause of the erosion must be undertaken.	Mine community; Contractor	When necessary and/or during windy periods; after rain
	Rehabilitation of the erosion channels and gullies must take place.	Contractor	When necessary
	Re-establishment of indigenous plant cover on disturbed areas must take place as soon as possible once activities in that area have ceased.	ESHQ Department; Contractor	When necessary
Dustiness.	Limit traffic to definite and existing paths.	Contractor	On-going
	Grade and seal road surfaces.	ESHQ Department	When necessary
	Re-vegetate and irrigate dust sources.	Contractor	When necessary
Chemical Soil pollution.	Personnel must be trained to be able to prevent chemical and hydrocarbon spills.	ESHQ Department	When necessary
	Combat chemical pollution in order to avoid toxic substances entering food chains.	Contractor	On-going
	Spill kits must be available on-site at all times in order to ensure rapid deployment of corrective measures following spill incidents.	ESHQ Department	On-going
	Personnel must be suitably trained in the use of spill kits.	ESHQ Department	On-going
Soil microbiological degradation	Stockpile topsoils in heaps not exceeding two (2) m in height.	Contractor	On-going
Topsoil Degradation	Use only the A-horizon for topsoil purposes.	Contractor	On-going
	Handle topsoil only in the moist state to prevent wind erosion.	Contractor	On-going
	All possible efforts must be made by the contractors to strip topsoil to a maximum depth of 150 mm.	Contractor	On-going
	Topsoil stockpiles must be kept as small as possible in order to minimise compaction, wind erosion and the	Contractor	On-going

	formation of anaerobic conditions.		
	Topsoil must be stockpiled for the shortest possible timeframes in order to ensure that the quality of the topsoil is not impaired.	Contractor	On-going
	Topsoil must not be handled when the moisture content exceeds 12 %.	Contractor	On-going
Topsoil Degradation	Topsoil stockpiles must be kept separate from subsoil.	Contractor	On-going
	Excavated and stockpiled soil material are to be stored and bermed on the higher lying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate.	Contractor	On-going
	The topsoil should be replaced as soon as possible on any backfilled areas, thereby allowing for the regrowth of the seed bank contained within the topsoil.	Contractor	When necessary
	Cover exposed soils with brush-packs of non-invasive species in order to maximise nutrient cycling and minimise erosive losses.	Contractor	When necessary
	Stockpiles susceptible to wind erosion are to be covered during windy periods.	Contractor	When necessary
	Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.	Contractor	On-going
	Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site.	ESHQ Department	On-going
	Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.	ESHQ Department	On-going
Surface Water			
Objective: To mitigate negative impacts on the aquatic systems			
Sedimentation of water resources	To prevent erosion of material that is stockpiled for long periods, the material must be retained in a bermed area.	Contractor	On-going
	All topsoil must be removed and stockpiled on the site.	Contractor	On-going
	Stockpiles should not be higher than two (2) m to avoid compaction, and single handling is recommended.	Contractor	On-going
	Dust suppression is necessary for stockpiles older than a month – with either water or a Bio-degradable	Contractor	When necessary

	chemical binding agent.		
Surface Water pollution	All construction areas should be suitably rehabilitated and re-vegetated as soon as possible after construction.	Contractor	When necessary
	Particles stockpiled on the tailings dam contain diamondiferous gravel and kimberlitic material, which can enter the surface water via runoff or wind drift transport, if the tailings dam is located close to the surface water. Implementation of the one hundred 100 m buffer zone along the river.	ESHQ Department	Once off
	Construction vehicles must be maintained in good working order, to reduce the probability of leakage of fuels and lubricants.	Contractor	On-going
Surface Water pollution	A walled concrete platform, dedicated store with adequate flooring or bermed area should be used to accommodate chemicals such as fuel, oil, paint, herbicide and insecticides, as appropriate, in well-ventilated areas.	ESHQ Department	On-going
	Surface water draining off contaminated areas containing oil and petrol would need to be channelled towards a sump, which will separate these chemicals and oils.	ESHQ Department	On-going
	All Portable septic toilets must be provided and maintained for construction crews. Maintenance must include their removal without sewage spillage.	ESHQ Department	On-going
	Under no circumstances may ablutions occur outside of the provided facilities.	Contractor	On-going
	Trees must be planted over drainage plumes from the tailings dam in order to control the pollution of the water by nitrates, phosphates and sulphates.	ESHQ Department	On-going
	Where possible and if necessary, an artificial wetland must be established immediately downstream of the tailings dam for the removal of heavy metals from water resources.	ESHQ Department	Once off
	If servicing and washing of the vehicles are to occur on site, there must be specific areas constructed for this activity. This areas needs to have a concrete foundation, bunded as well as have oil traps to contain any spillages likely to occur.	ESHQ Department	Once off

	Oil residue shall be treated with oil absorbent such as Drizit or similar and this material removed to an approved waste site. Spill kits must be easily accessible and workers must undergo induction regarding the use thereof.	Contractor	On-going
Surface water pollution: Mixing of concrete	Concrete must be mixed on mixing trays or plastic liners. If mixing of concrete is to take place on exposed soil, this has to occur in demarcated areas that must be bunded. This is so that the cement is not washed away during heavy rainfall events.	Contractor	On-going
	Concrete and tar shall be mixed in specifically demarcated areas only.	Contractor	On-going
	All concrete and tar that is spilled outside these areas shall be promptly removed by the Contractor and disposed of at a registered landfill site.	Contractor	When necessary
	After all the concrete / tar mixing is complete all waste concrete / tar shall be removed from the batching area and disposed of at a registered landfill site.	Contractor	When necessary
Surface water pollution: Mixing of concrete	Storm water shall not be allowed to flow through the above-mentioned areas. Ensure that there are clean water separation systems preventing clean water from entering the affected areas and measure to contain any contaminated water occurring within the actual areas.	Contractor	On-going
	Cement and sediment shall be removed from time to time and disposed of in a manner as instructed by the Mine Manager.	Contractor	On-going
Surface water pollution: litter	In the case of pollution of any surface or groundwater, the Regional Representative of the DWS must be informed immediately.	ESHQ Department	When necessary
	Provide bins for construction workers and staff at appropriate locations, particularly where food is consumed.	ESHQ Department	Once off
	The construction site should be cleaned daily and litter removed.	Contractor	Daily
Ground water			
Objective: To mitigate negative impacts on ground water systems			
Groundwater level	Water level monitoring in boreholes located adjacent to the decline and near	ESHQ Department	Monthly

impact - dewatering	the surface mining area. The location of boreholes between the river and the mining operation in the corridor would assist with the identification of impacts the activities may have on the river.		
	A water balance for the operations should include a measurement of the water collected in the decline and the underground mine/s as a result of dewatering activities. This volume should be reconciled with the findings from the numerical groundwater model.	ESHQ Department	On-going
	Water volumes and the water balance should be compiled using actual flows. These flows should be measured using strategically placed, calibrated flow meters.	ESHQ Department	On-going
Groundwater quantity impact	Water level monitoring on the site and in neighbouring boreholes to determine water level changes and aquifer storage changes with time. These impacts are not likely to be directly related to a change in recharge, however, a result of dewatering and the removal of groundwater from the aquifers.	ESHQ Department	Monthly
Groundwater pollution of the neighbouring users water quality	Monitoring of water quality in neighbouring boreholes should be considered for background water quality identification. The frequency of sampling would be less than for the on-site monitoring boreholes. These boreholes are categorised as off-site boreholes.	ESHQ Department	Monthly
	Indigenous trees must be planted over drainage plumes from the tailings dam in order to control the pollution of the water by nitrates, phosphates and sulphates.	ESHQ Department	On-going
	Where possible, an artificial wetland must be established immediately downstream of the tailings dam for the removal of heavy metals from water resources.	ESHQ Department	Once off
Monitoring	A groundwater and surface water monitoring programme should be planned and implemented prior to the commencement of mining. Monitoring measures must be implemented as detailed.	ESHQ Department	Once off
	Monitoring boreholes should be established as soon as infrastructure	ESHQ Department	Once off

	design is completed and approved.		
	Monitoring boreholes should be constructed and sited according to DWS standards and guidelines.	ESHQ Department	Once off
	Additional site characterisation boreholes should be drilled around the mine site to determine the position of the aquifers over the whole site.	ESHQ Department; Geo-hydrologist	Once off
	The site characterisation boreholes with water strikes should be tested for aquifer parameters i.e. transmissivity and storativity,	ESHQ Department	Monthly
	Water level and quality monitoring should commence when the construction of the decline commences.	ESHQ Department	Monthly
Flora			
Objective: To mitigate the removal and/or disturbance to flora			
Loss of vegetation of high ecological importance	No development should take place within 100 metres Vaal River.	ESHQ Department	On-going
	Where natural habitats must be transformed, consideration should be given to the quality of the habitat (based on the presence of microhabitats).	ESHQ Department	Once off
	The highest quality habitat should be conserved.	Ecologist; ESHQ Department	When necessary
	Minimise the footprint of transformation.	Ecologist; ESHQ Department	On-going
Loss of vegetation of medium ecological importance	The highest quality habitat must be conserved.	Ecologist; ESHQ Department	Once off
	Incorporate as much of the indigenous vegetation into the design layout as possible.	Ecologist; ESHQ Department	Once off
Loss of vegetation of medium ecological importance	After pegging of the site, the ecologist must return to site to provide the final consent regarding the location of the pegs.	Ecologist; ESHQ Department	Once off
	Where natural habitats must be transformed, consideration should be given to the quality of the habitat (based on the presence of microhabitats).	Ecologist; ESHQ Department	Once off
Loss of conservation important plant taxa.	Footprint areas of the proposed development must be scanned for Red Listed, protected and important plant species. No protected plant species were identified on the area.	Ecologist; ESHQ Department	Once off

Loss of trees due to water extraction.	Trees within the draw-down area must be monitored.	Ecologist; ESHQ Department	Annually
Fragmentation of Natural Habitat.	No development may take place within the 100 m no development zone along the Vaal River.	ESHQ Department	On-going
	Retain natural corridors within the design layout as far as possible.	ESHQ Department	On-going
	Natural corridors must be retained where possible to promote movement of fauna, especially during the construction phase when a high rate of natural disruption is expected.	Ecologist; ESHQ Department	On-going
	All road networks must be planned with care to encourage faunal dispersal and should minimise dissection or fragmentation of any important faunal habitat type.	Ecologist; ESHQ Department	Once off
	The ecologist must advise the applicant regarding exact placement of measures such as fencing of nest sites on the final approved layout.	Ecologist; ESHQ Department	Once off
Floral disturbance in riparian zone.	No development within the 100 m of development zone.	ESHQ Department	On-going
	No vehicular movement within the 100 m of development zone.	ESHQ Department; Contractor	On-going
Vegetation clearance	Herbicides will not be used for vegetation clearance.	Contractor	On-going
	Plant species pre-inoculated with mycorrhizae must be planted on tailings in experimental plots as soon as possible to test species suitability for decommissioning.	ESHQ Department	On-going
Vegetation clearance	Stockpile all non-invasive woody vegetation removed for site establishment for brush packs to be used during rehabilitation.	ESHQ Department	On-going
	Cover exposed soils with brush-packs of non-invasive species in order to maximise nutrient cycling and floral re-establishment.	ESHQ Department	On-going
	Access roads must be kept to a minimum, and where possible existing tracks should be used	Contractor	On-going
Invasive species	All invasive species must be eradicated from the site and prevented from spreading.	ESHQ Department	On-going
	All landscaping must take place with	ESHQ	On-going

	indigenous species occurring in the area.	Department	
	All exposed areas must be covered with brush-packs of indigenous species as soon as possible following exposure in order to limit the opportunity for invader species establishment. These areas must be seeded with seeds of indigenous species collected on-site as described in the Planning phase.	ESHQ Department	On-going
Fauna			
Objective: To mitigate disturbance of fauna			
Faunal displacement and loss of habitat	The 100 m no development zone around the Vaal River must be avoided.	ESHQ Department	On-going
	Careful consideration is required when planning the placement for stockpiling construction material, topsoil and the creation of access routes in order to avoid the destruction of pristine habitats and minimise the overall development footprint.	ESHQ Department; Contractor	Once off
	Placement thereof should occur in areas of medium ecological importance only, and not areas of high ecological importance.	ESHQ Department; Contractor	Once off
	The appointment of a full-time Environmental Officer must render guidance to the contractors with respect to suitable areas for all construction-related disturbance.	ESHQ Department	Once off
Disturbance to fauna.	The extent of the proposed prospecting activities should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance), and no construction personnel or vehicles may leave the demarcated area except those authorised to do so. Those areas surrounding the mine site that are not part of the demarcated development area should be considered as “no-go” areas for employees, machinery or even visitors.	Contractor	On-going
	All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.	ESHQ Department; Contractor	On-going
	The Environmental Officer must ensure	ESHQ	When

	that all contractors and workers undergo Environmental Induction prior to commencing with work on site.	Department	necessary
	The environmental induction should occur in the appropriate languages for the workers who may require translation.	ESHQ Department	When necessary
	Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert, if practically feasible.	Contractor	When necessary
Disturbance of Raptor nests	Raptor nests located in large trees may be destroyed during the construction phase. It is therefore strongly advised, that all large trees within the development footprint be scanned for nests by suitable person. As should any nest be present, they can be relocated or chicks removed, should no other alternative be available.	ESHQ Department	Once off
Mortality of invertebrates and other nocturnal species.	The lights used for illumination of the plant will attract many invertebrates and other nocturnal species. The light causes disorientation and often results in mortality. It is therefore recommended that the lights should not include any source that emits light in the white spectrum (e.g. mercury arc or halogen lamps). It is therefore recommended that all lights be fitted with sodium lights (yellow), if practically feasible.	ESHQ Department	Once off
Air Quality			
Objective: To mitigate negative impacts on ambient air quality			
Dust entrainment and concomitant PM10 emissions	Vegetation is to only be removed when soil stripping is required. These areas should be limited to include only those areas required for development, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken.	Contractor	When necessary
	Brush packs on exposed soil will limit the amount of dust liberated from these exposed surfaces.	Contractor	When necessary
	Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression. (Usually, the options exist in scheduling this activity to coincide with periods when soil moisture can be expected to	Contractor	When necessary

	be optimal. However, in the current case, given the arid nature of the environment, it would be impractical to base topsoil removal activity schedule based on soil moisture considerations.)		
Dust entrainment and concomitant PM10 emissions	Where it is logistically possible, control methods for unpaved roads should be utilised to reduce the re-suspension of particulates. Feasible methods include wet suppression (or chemical suppression to reduce water requirements), avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads.	Contractor	When necessary
	The length of time where open areas are exposed should be restricted. Construction of infrastructure should not be delayed after land has been cleared and topsoil removed.	Contractor	On-going
	Dust suppression methods must, where logistically possible, be implemented at all areas that may / are exposed for long periods of time.	Contractor	When necessary
	Blasting and drilling (if required) should be delayed under unfavourable windy and atmospheric conditions.	ESHQ Department	When necessary
	Where logistically feasible, seasonal meteorological conditions should be taken into consideration during construction activities (i.e. precipitation and wind field).	ESHQ Department	When necessary
	For all construction activities management should undertake to implement health measures in terms of personal dust exposure, for all its employees.	ESHQ Department	On-going
Noise			
Objective: To minimise the disruption of ambient noise levels and/or increase in continuous noise levels			
The impact of the operations on ambient noise climate	Maintenance of equipment and operational procedures: Proper design and maintenance of silencers on diesel-powered equipment, systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual	ESHQ Department; Contractor	On-going

	noisy events.		
	Placement of material stockpiles: Where possible material stockpiles should be placed so as to protect the boundaries from noise from individual operations. If a levee is constructed, it should be of such a height as to effectively act as a noise barrier, if line of sight calculations show this to be practicable.	Contractor	When necessary
The impact of the operations on ambient noise climate	Equipment noise audits: Standardised noise measurements should be carried out on individual equipment at the delivery to site to construct a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in the noise impact over time and increased complaints.	Contractor	Monthly
	Environmental noise monitoring should be carried out regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.	Contractor	Monthly
Sites of Archaeological and Cultural Interest			
Objective: To protect and preserve all cultural and heritage resources located within the study area			
Destruction of heritage resources.	No development must take place within 100 metres of the Vaal River in order to prevent disturbance to heritage sites.	ESHQ Department;	On-going
	A 10 metre protection buffer must be kept around the graves during drilling in the vicinity. Due to the fact that only underground mining will take place in the area of the graves no further mitigation will be required, aside from on-going maintenance of the fence.	ESHQ Department;	Once off
	The area in the vicinity of the lithic stone tools must be avoided	ESHQ Department;	On-going
Disruption of sites with archaeological and/or cultural interest.	If any archaeological sites are exposed during construction work, it should immediately be reported to a museum, preferably one at which an archaeologist is available, in order for further investigations to be conducted.	Contractor	On-going
Visual Aspects			
Objective: To minimise extensive scarring of the landscape			
Visual Impact	Locate construction camps and stockyards out of the visual field of highly sensitive visual receptors. Utilise	ESHQ Department	Once off

	the existing screening capacity of the site and provide an additional screen shade by enclosing the construction site and stockyards with dark green.		
	Retain some of the existing vegetation cover of the site through selective clearing. Where practically feasible, protect existing vegetation clumps during the construction phase in order to facilitate screening during construction and operational phases.	ESHQ Department	On-going
	It is imperative that topsoil from the footprint of the mining infrastructure is stripped and stockpiled. Stockpile the topsoil from the construction site on the perimeter of the facility to firstly construct a visual barrier and secondly, to protect the topsoil and the seed bank contained in it for future use in rehabilitation. The topsoil must not be stockpiled higher than two (2) m and must be vegetated directly after placement.	Contractor	On-going
	Pave roads where relatively high traffic volumes are expected, to minimise dust generation and the potential unsightly discoloration of vegetation along these roads.	ESHQ Department	On-going
	Keep the construction sites and camps neat, clean and organised in order to portray a general tidy appearance.	Contractor	On-going
	Remove rubble and other building rubbish off site as soon as possible or place it in a container in order to keep the construction site free from additional unsightly elements.	Contractor	Monthly
	Locate the construction camps and the material stockpiles outside of the visual field of sensitive visual receptors. It is proposed to locate the temporary facilities of the construction camp on one of the areas earmarked for a stockpile or slimes dam. This will reduce the footprint of disturbance over time and effectively reduce the associated landscape impact.	ESHQ Department	Once off
	If construction is necessary during night	ESHQ	On-going

	time, light sources shall be directed away from residential units and roads as to prevent obtrusive lighting.	Department	
	Dust suppression procedures should be implemented especially on windy days during earth works.	Contractor	When necessary
Socio-Economic Structure			
Objective: To avoid detrimental impacts on the communities			
Social Impact	It is recommended that a Community Liaison Forum (CLF) must be established for the surrounding communities. This committee would serve as a communication channel between the communities and the applicant. Members of the committee should include representatives from environmental groups, civil society, ward councillors, government departments (DEA, DTEC), District and Local Municipalities, construction teams and the applicant. Such a committee will play an important role in executing the proposed mitigation measures.	ESHQ Department	On-going
Social Impact	The CLF should ensure that the needs of all the different groups are addressed and that decisions are clearly communicated to the community at large.	ESHQ Department	On-going
	The CLF, if established, must meet on a monthly basis before and during the construction phase and on a bimonthly basis during the operational phase. If necessary, it can be replaced by the Future Forum as prescribed by the MPRDA, on the condition that the relevant parties remain members of the committee.	ESHQ Department	On-going
	Local people should, as far as possible, be utilised in the construction and operation of the project. This will maximise local economic development and the creation of employment in the area. This will also serve to minimise the risk of negative feelings and behaviour between locals and new comers, and lessen the need for developing temporary housing for construction workers. However, it is not anticipated that the mine could be staffed from local people only, and therefore it is very	ESHQ Department	On-going

	likely that a construction camp would be necessary. Using local labour would ensure a smaller camp.		
	Recreational facilities should be established for labourers living in the construction camp, either in town or on site, to reduce the levels of mischief.	ESHQ Department	Once off
	The local community must not be exploited. If they are employed, they should receive proper contracts in accordance to the Labour Act.	ESHQ Department	Once off
	Provision must be made for public transport needs like drop off zones and bus stations. In addition a transport system should be devised on the basis of the existing transport infrastructure to provide the labourers with transportation to and from home. The transport costs of the labourers should be subsidised if the applicants do decide to fully rely on the current infrastructure. However, local entrepreneurs should preferably be consulted to provide the applicants with this service.	ESHQ Department	On-going
	It is advised that some effort be made to uplift the surrounding communities by either providing employment opportunities exclusively for these communities, or by providing bursaries and on the job training for those interested in studying an area relevant to mining.	ESHQ Department	On-going
Social Impact	Local materials should be used for construction as far as possible and sustainable.	ESHQ Department	On-going
	The importance of the maintenance of the roads in the area should be emphasised to the relevant authorities. The applicant must also make some contribution to maintaining the main access roads and ensure that the construction phase will do as little damage to the road surface as possible.	Applicant	On-going
	During the construction phase it is advised that contactors, working on the site, must wear visible identification cards/uniforms and that the CLF must work with the police and the Community	ESHQ Department	On-going

	Police Forum to ensure that the community is aware of the newcomers in the area and they should devise a strategy on access, movement and transportation. It is imperative that the applicant must become part of the community police forum.		
	Strict health and safety measures must be implemented during the construction and operation phases. These measures must be enforced, and if someone does not adhere to it a penalty system should be in place. The rules must be enforced on contractors and permanent employees.	ESHQ Department	On-going
	Construction vehicles must be scheduled to travel through towns during off-peak times.	Contractor	On-going
	The mine should ensure that all employees are adequately trained and qualified to perform their duties. Visitors must be familiarised with the safety precautions of the mine. This aspect will most likely be addressed by the Occupational Health and Safety officer employed by the mine.	ESHQ Department	On-going

5.2 OPERATIONAL PHASE

The table only addresses those impacts that may occur on the site during the Operational and associated management measures that may require additional environmental management.

Table: Operational Phase

Issue	Mitigation	Responsible Party	Frequency of Action
Geology			
Objective: To optimise the exploitation of the mineral resource.			
Loss of mineral resource.	Ensure that optimal use is made of the available mineral resource.	ESHQ Department	On-going
Topography			
Objective: To minimise topographic alterations.			
General land disturbance.	Limit all activities to the proposed prospecting footprint area.	ESHQ Department	When necessary
	The stockpiles and tailings dams will be located on the proposed prospecting footprint area.	Applicant	Continuous
Soils			
Objective: To minimise soil degradation and ensure the implementation of effective rehabilitation measures.			
Soil erosion.	Avoid bare, disturbed surfaces for long periods (e.g. re-vegetate stockpiled soils) and undue storm-water concentration (e.g. construct runoff measures according to soil conservation principles).	ESHQ Department	On-going
Soil erosion by wind	Avoid bare, disturbed surfaces.	ESHQ Department	On-going
	Cover exposed soils with brush packs at the earliest point following exposure.	ESHQ Department	When necessary
	Construct windbreaks if necessary.	ESHQ Department	When necessary
Erosion by water and wind	At no point may plant cover be removed outside of the development zone.	ESHQ Department	On-going
	The removal of plant material must be kept to a minimum.	ESHQ Department	On-going
	All plant material removed must be used for the establishment of brush packs.	ESHQ Department	On-going
	Cover exposed soils with brush packs at the earliest point following exposure.	ESHQ Department	When necessary
	Audits must be carried out at regular	ESHQ	As

	intervals to identify areas where erosion is occurring. Appropriate remedial action, including the rehabilitation of the eroded areas, and where necessary, the relocation of the cause of the erosion must be undertaken.	Department	necessary during windy periods and after rain
	Rehabilitation of the erosion channels and gullies must take place.	ESHQ Department	When necessary
	Re-establishment of plant cover on disturbed areas must take place as soon as possible once activities in that area have ceased.	ESHQ Department	When necessary
Dustiness	Limit trafficking to definite road zones.	ESHQ Department	On-going
	Grade and seal road surfaces.	ESHQ Department	On-going
	Re-vegetate and irrigate sources of dust.	ESHQ Department	When necessary
Chemical Soil pollution	Personnel must be trained to be able to prevent chemical and hydrocarbon spills.	ESHQ Department	On-going
	Combat chemical pollution in order to avoid toxic substances entering food chains.	ESHQ Department	On-going
Topsoil degradation.	Use only the A-horizon for topsoil purposes.	ESHQ Department	On-going
	Handle topsoil only when moist to prevent wind erosion but not when moisture exceeds 12 % in order to prevent destruction of soil structure.	ESHQ Department	On-going
Soil pollution through acid mine drainage	Ground exposure should be minimised in terms of the surface area and duration, wherever possible.	ESHQ Department	On-going
	The run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers.	ESHQ Department	On-going
	Audits of Mine Residue Deposits, including water return dams, waste rock dumps, tailings storage facilities must be carried out at regular intervals to ensure that best practices are being followed throughout the operations.	ESHQ Department	Daily inspections, monthly audits.
	Water from mine dewatering must be used wherever possible within the process and not discharged directly into the environment.	ESHQ Department	On-going
Surface Water			
Objective: To minimise negative impacts on the aquatic systems			
Pollution of surface water	Hydrocarbon contamination of the soil by diesel and oil spillage during earthworks	ESHQ Department	On-going

- hydrocarbons	must be prevented		
	Trucks should be inspected and in good working order.	ESHQ Department	On-going
Ground Water			
Objective: To minimise negative impacts on the groundwater systems			
Groundwater pollution – seepage from the slimes dam	The rates of seepage should be determined by means of geotechnical investigations and leachate tests on the tailings material to determine the composition of the possible seepage.	ESHQ Department	On-going
	Monitoring of seepage water quality in the toe drains by means of scheduled sampling for the constituents.	ESHQ Department	Monthly
	Monitoring boreholes down-gradient of slimes dam for water level and water quality. Sampling according to the sampling method and parameters for analysis.	ESHQ Department	Monthly
Groundwater pollution – seepage from the slimes dam	Monitoring of water quality in the penstock by means of sampling.	ESHQ Department	Monthly
	Monitoring of the success of establishment of suitable woodland species to control nitrates, phosphates and sulphates in the slimes dam plume	ESHQ Department	On-going at regular intervals (e.g. six months)
	Monitoring of the success of establishment of suitable wetland species to control heavy metals below the slimes dam.	ESHQ Department	On-going at regular intervals (e.g. six months)
Groundwater pollution – impact on the background and neighbouring users water quality	Monitoring of water quality in neighbouring boreholes should be considered for background water quality identification. The frequency of sampling would be less than for the on-site monitoring boreholes. These boreholes are categorised as off-site boreholes.	ESHQ Department	Monthly
Groundwater level impact - dewatering	Water level monitoring in boreholes sited next to the decline and near the area of operations. Borehole between the non-perennial stream and the operations in the migration corridor would assist in identifying any impacts the activities may have on the non-perennial stream.	ESHQ Department	Monthly
	A water balance for the operations	ESHQ	On-going

	should include a measurement of the water collected in the decline and the underground mine/s as a result of dewatering activities. This volume should be reconciled with the findings from the numerical groundwater model.	Department	
	Water volumes and the water balance should be compiled using actual flows. These flows should be measured using strategically placed, calibrated flow meters.	ESHQ Department	On-going
Groundwater quality impact	Water level monitoring on the site and in neighbouring boreholes must take place to determine water level changes and aquifer storage changes with time. These impacts are not likely to be directly related to a change in recharge, however, as a result of dewatering and the removal of groundwater from the aquifers.	ESHQ Department	Monthly
	Water from the dewatering process must be re-used.	ESHQ Department	Continuous
Monitoring	The site characterisation boreholes with water strikes should be tested for aquifer parameters i.e. transmissivity and storativity,	ESHQ Department	Monthly
Monitoring	The slimes and ore material should be tested with leachate testing. The analyses should include arsenic, selenium, tin and mercury.	ESHQ Department	Monthly
	Seepage tests should be conducted at the site of the proposed slimes dam.	ESHQ Department	Monthly
	The contaminant transport model should be updated with the leachate test results.	ESHQ Department	Monthly
Groundwater pollution – spillage of chemicals and hydrocarbons	All possible measures must be implemented to ensure that groundwater reserves are not polluted, including the following: Prevention of hydrocarbon spills: Correct storage of hydrocarbons underground and above-ground within concrete bunded areas; High standard of maintenance on vehicles to prevent hydrocarbon leaks; Refuelling to take place within a bunded area; High standard of maintenance on refuelling equipment; Availability of spill kits as well as training of personnel in the use thereof; and Implementation of measures to ensure rapid clean-up	ESHQ Department	On-going

	following spill events.		
Flora			
Objective: To minimise the disturbance and/or removal of flora			
Establishment of invasive plant species.	Landscaping must be associated with indigenous species that occur naturally in the area.	ESHQ Department	On-going
	All landscaping must take place with indigenous species occurring in the area.	ESHQ Department	On-going
	All invasive species must be eradicated from the site and prevented from spreading	ESHQ Department	On-going
	All exposed areas must be covered with brush-packs of indigenous species as soon as possible following exposure. These areas must be seeded with seeds of indigenous species collected on-site as described in the Planning phase. These areas must also be watered to a limited degree with water from the dewatering (if fit for the purpose) in order to ensure that the indigenous species establish as soon as possible.	ESHQ Department	On-going
Vegetation clearance.	Storm water management will be implemented to ensure that polluted and clean water will be separated and to reduce the velocity of the storm water.	ESHQ Department	On-going
	Access roads must be kept to a minimum, and where possible existing tracks must be used.	ESHQ Department	On-going
	Vehicles should remain only in the area to be disturbed by the road and other works at all times.	ESHQ Department	On-going
	Experiments using indigenous plant species pre-inoculated with mycorrhizas planted on tailings in experimental plots to test species suitability for decommissioning must continue.	ESHQ Department	On-going
	Herbicides must not be used for vegetation clearance.	ESHQ Department	On-going
Loss of trees due to water extraction.	Water must be piped in, which will prevent the depletion of groundwater reserves and the subsequent negative impact on groundwater.	ESHQ Department	On-going
Fragmentation of natural habitat	Natural corridors must be retained where possible to promote movement of fauna.	ESHQ Department	On-going
Floral disturbance in	No vehicle movement must take place within the buffer zone.	ESHQ Department	On-going

riparian zone.			
Fauna			
Objective: To prevent the disturbance to fauna as far as reasonably practicable			
Faunal displacement and loss of habitat.	All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.	ESHQ Department	On-going
	The Environmental Officer must ensure that all contractors and workers undergo Environmental Induction prior to commencing with work on site.	ESHQ Department	On-going
	The environmental induction should occur in the appropriate languages for the workers who may require translation.	ESHQ Department	When necessary
Air Quality			
Objective: To mitigate negative impacts on the ambient air quality			
Dust entrainment and concomitant PM10 emissions	The following mitigation measures, proposed for implementation by the applicant are acknowledged and supported: • Extraction of dust-laden air from raw materials handling area, final products handling area and the sorting pan.	Design Engineers; Applicant	On-going
	Further mitigation measures that are recommended for implementation are as follows: • Crushing operations, a significant source of particulate should be effectively controlled • The best technology for dust control in this context is by means of extraction hoods and ducting, followed by capture in a collector. Depending on further destinations of captured dust, the decision between wet or dry capture may be made. Dry capture methods include fabric filters (such as the bag house systems currently in operation) and electrostatic precipitation. Wet scrubbing technologies range from the lower efficiency types (e.g. spray chambers) to high efficiency venture type scrubbers.	Design Engineers; Applicant	On-going
Dust entrainment and Ongoing concomitant PM10 emissions.	The following abatement measures are listed to serve as a *guideline* in the mitigation of emissions. • Tailings impoundments – Dust mitigation measures that are logistically feasible given the nature of the environment must be identified and	Design Engineers; Applicant; ESHQ Department	On-going

	implemented. Typical temporary mitigation measures include wet and chemical suppression with more permanent measures comprising, wind sheltering, vegetation and rock cladding. • Unpaved road surfaces - The currently unpaved access road should preferably be paved or treated with a chemical surfactant if necessary. Alternatively, wet suppression could be used depending on the availability of water. Watering represents a commonly used, relatively inexpensive option, but only serves as a temporary form of dust control. Although biodegradable chemical treatment of the exposed surfaces is relatively expensive it provides for longer dust suppression. If a chemical is used it must be ensured that it is carefully administered and is not harmful to the receiving biophysical environment. • Surface Conveyor Belts - The proposed prospecting activities produce ore that would be transported via conveyor belt to the stockpile if necessary. Recommended mitigation measures for implementation are presented below.		
Dust entrainment and Ongoing concomitant PM10 emissions.	Cover all exposed soils with suitable brush packs.	ESHQ Department	When necessary
Dust arising from conveyor usage.	Install sprays at transfer points to wet dust and particles and prevent liberation thereof.	ESHQ Department	When necessary
	Install side wind guards.	ESHQ Department	Once off
	Place covers on high and/or steep parts of the conveyor (where applicable).	ESHQ Department	On-going
	Ensure belt is clean.	ESHQ Department	Once off
	Install dust collection systems, if necessary, (these systems are used to capture, transport and separate dust that has been emitted. Dust collection provides a cost effective means of controlling respirable dust emission while	ESHQ Department	On-going

	wet sprays are effective in suppressing visible dust) (Environment Australia, 1998).		
	Enclosure maintenance.	ESHQ Department	On-going
Noise			
Objective: To minimise the disruption of ambient noise levels and/or increase in continuous noise levels			
The impact of the operations on ambient noise climate	Maintenance of equipment and operational procedures: Proper design and maintenance of silencers on diesel-powered equipment, systematic maintenance of all forms of equipment, training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events.	ESHQ Department	On-going
	Placement of material stockpiles: Where possible material stockpiles should be placed so as to protect the boundaries from noise from individual operations. If a levee is constructed, it should be of such a height as to effectively act as a noise barrier, if line of sight calculations show this to be practicable.	ESHQ Department	When necessary
	Equipment noise audits: Standardised noise measurements should be carried out on individual equipment at the delivery to site to construct a reference data-base and regular checks carried out to ensure that equipment is not deteriorating and to detect increases which could lead to increase in the noise impact over time and increased complaints.	ESHQ Department	Monthly
	Environmental noise monitoring should be carried out at regularly to detect deviations from predicted noise levels and enable corrective measures to be taken where warranted.	ESHQ Department	Monthly
Sites of Archaeological and Cultural Interest			
Objective: To protect and preserve all cultural and heritage resources located within the study area			
Disruption of sites with archaeological and/or cultural interest.	No development must take place within 100 metres of the Vaal River in order to prevent disturbance to heritage sites.	ESHQ Department	On-going
Visual Aspects			

Target: To avoid extensive scarring of the landscape			
Visual impact	Maintain the site and facility to a high aesthetic level by regularly replacing broken windows, painting blighted facades and maintain the landscape around the facility healthy and neat.	ESHQ Department	On-going
	If practically feasible, keep the tailings stockpile and slimes dam to a maximum height equal or lower than the prevailing vegetation cover, i.e. five (5) m or lower. Alternatively, implement progressive rehabilitation on the side slopes of the tailings stockpile and slimes dam to reduce the exposed surface of contrasting material.	ESHQ Department	On-going
	Avoid the installation of lights on the perimeter of the site in order to limit/eliminate obtrusive lighting and the potential disturbance of adjacent landowners and users.	ESHQ Department	On-going
	Refrain from installing permanent lighting where light is required intermittently. Lighting can be switched on manually or through an automatic time switch, synchronised with the times light is required.	ESHQ Department	On-going
Socio-Economic			
Objective: To avoid detrimental impacts on the communities			
Social impacts	The CLF, if established, must meet on a monthly basis before and during the construction phase and a bimonthly base during the operational phase. If necessary, it can be replaced by the Future Forum as prescribed by the MPRDA, on the condition that the relevant parties remain members of the committee.	ESHQ Department	On-going
	Local people should, as far as possible, be utilised in the operation of the project. This will maximise local economic development and the creation of employment in the area. This will also serve to minimise the risk of negative feelings and behaviour between locals and new comers.	Applicant	On-going
	Provision must be made for public transport needs like drop off zones and bus stations. In addition a transport	Applicant	On-going

	system should be devised on the basis of the existing transport infrastructure to provide the labourers with transportation to the site and back home. The transport costs of the labourers should be subsidised if the applicants do decide to fully rely on the current infrastructure. However, local entrepreneurs should preferably be consulted to provide the applicants with this service.		
	It is advised that some effort be made to uplift the surrounding communities by either providing employment opportunities exclusively for these communities, or by providing bursaries and on the job training for those interested in studying an area relevant to mining.	Applicant	On-going
	Strict health and safety measures must be put in place during the operation phases. These measures must be enforced, and if someone does not adhere to it a penalty system should be in place. The rules must be enforced on contractors and permanent employees.	ESHQ Department	On-going
	The community must be educated about the possible health impacts of these operations. This can be done via the distribution of information pamphlets and lectures from the occupational health professionals in the community. The mine must ensure to have monitoring equipment in place to ensure that records of levels of chemicals, dust and noise are measured before the commencement of the project. This will ensure that a scientific baseline is in place.	ESHQ Department	On-going
	The mine should ensure that all employees are adequately trained and qualified to perform their duties. Visitors must be familiarised with the safety precautions of the mine. This aspect will most likely be addressed by the Occupational Health and Safety officer employed by the mine.	ESHQ Department	On-going

5.3 Financial Provision

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

The preliminary closure plan objectives and principles have been developed against the background of the mine location in the Hebert region of the Northern Cape Province, and include the following:

- that environmental damage is minimised to the extent that it is acceptable to all parties involved;
- that at closure, the land will be rehabilitated to achieve an end use of wilderness and grazing;
- that all surface infrastructure will be removed from site after closure. The open pit will be completely backfilled and the remaining waste rock dumps shaped accordingly;
- that contamination beyond the mine site by wind, surface run-off or groundwater movement will be prevented;
- that closure prospecting operations is achieved efficiently, cost effectively and in compliance with the law; and,
- that the social and economic impacts resulting from closure of operations are managed in such a way that negative socio-economic impacts are minimised.

The closure target outcomes for the site are therefore assumed to be as follows:

- to achieve chemical, physical and biological stability for an indefinite, extended time period over all disturbed landscapes and residual mining infrastructure;
- to protect surrounding surface water, groundwater, soils and other natural resources from loss of current utility value or environmental functioning;
- to limit the rate of emissions to the atmosphere of particulate matter and salts to the extent that degradation of the surrounding areas' land capability or environmental functioning does not occur;
- to maximise visual 'harmony' with the surrounding landscape; and
- to create a final land use that has economic, environmental and social benefits for future generations that outweigh the long term aftercare costs associated with the mine.

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

The consultation process with interested and affected parties (neighbouring farmers and land owners) was completed. Regular contact sessions will be held with neighbouring farmers and land owners which are currently affected by the prospecting operations. Records will be kept of the complaints and the mitigation measures will be implemented. An advert in the DFA (Diamond Fields Advertiser) was also placed in order for other interested parties to come forward and register as interested parties in the project.

5.3.3 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.

Infrastructure Areas

On completion of the prospecting operations, the various surfaces, including the access road, the office area, storage areas and the screening plant site should finally be rehabilitated as follows:

- All remaining material on the surface should be removed to the original topsoil level. This material should then be backfilled into the depressions. Any compacted area should be ripped to a depth of 300 mm, where possible, the topsoil or growth medium returned and landscaped.
- All infrastructures, equipment, screening plant, and other items used during the operational period should be removed from site.
- On completion of operations, all buildings, structures or objects on the office site should be dealt with in accordance with Regulation 44 of the Minerals and Petroleum Resources Development Act, 2002.

Topsoil and Stockpile Deposits

Disposal Facilities: Waste material of all description inclusive of receptacles, scrap, rubble and tyres should be removed entirely from the prospecting area and disposed of at a recognized landfill facility. It should be permitted to be buried or burned on the site.

Ongoing Seepage, Control of Rain Water: It is not foreseen that any monitoring of ground or surface water should take place after mine closure, except if so requested by the DWS – Northern Cape.

Long Term Stability and Safety: It should be the objective of mine management to ensure the long term stability of all rehabilitated areas including the backfilled depressions. This should be done by the monitoring of all areas until a closure certificate has been issued.

Final rehabilitation in respect of erosion and dust control: Self-sustaining vegetation will result in the control of erosion and dust and no further rehabilitation is deemed necessary, unless vegetation growth is not returned to a desirable state by the time of mine closure.

Final Rehabilitation Roads

After rehabilitation has been completed, all roads should be ripped or ploughed, fertilized and seeded, providing the landowner does not want them to remain that way and with written approval from the Director: Mineral Development of the Department of Mineral Resources.

Submission of Information

Reports on rehabilitation and monitoring should be submitted annually to the Department of Mineral Resources – Northern Cape, as described in Regulation 55.

Maintenance (Aftercare)

Maintenance after closure should include the regular inspection and monitoring and/or completion of the re-vegetation programme.

The aim of the Environmental Management Programme is for rehabilitation to be stable and self-sufficient, so that the least possible aftercare is required.

The aim with the closure of the mine should be to create and acceptable post-mine environment and land-use. Therefore all agreed commitments should be implemented by Mine Management.

After-effects Following Closure

Long Term Impact on Ground Water: No after effect on the groundwater yield or quality is expected.

Long Term Stability of Rehabilitated Land: One of the main aims of any rehabilitated ground should be to obtain a self-sustaining and stable end result. The concurrent cleaning of all tailings material and replacement of topsoil where available should be ensured.

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

The ultimate rehabilitation of the prospecting site that involves the sloping, levelling, replacement of topsoil and the seeding of an grass seed mix in areas that does not recover acceptably as agreed to by the land owner will ensure that the site could be regarded as safe for humans and animals and will also ensure that the site is stable from an erosion point of view and also ensuring that the site could be used for grazing again.

The removal of waste material of any description from the prospecting area and the disposal thereof at a recognised landfill facility is going to be facilitated.

- The removal of infrastructure, equipment, plant and other items from the site;
- The ripping of compacted areas to a level of 300 mm and the levelling of such areas in order to re-establish a growth medium for plants (such areas will furthermore be seeded with a vegetation seed mix adapted to reflect the local

indigenous flora that was present prior to the prospecting operation, if the re-establishment of vegetation is unacceptably slow.

The backfilling of the final excavations with subsoil and the covering thereof with previously stored topsoil (where-after this area will also be seeded with a vegetation seed mix adapted to reflect the local indigenous flora that was present prior to the proposed operation, and seedlings protected for a period of one) if the re-establishment of vegetation is unacceptably slow.

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

TABLE: Calculated quantum of financial provision

No.	Description	Unit	A Quantity	B Master Rate	C	D	E=A*B*C*D
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3		12.21	1	1	0
2 (A)	Demolition of steel buildings and structures	m2		170.13	1	1	0
2 (B)	Demolition of reinforced concrete buildings and structures	m2		250.72	1	1	0
3	Rehabilitation of access roads	m2		30.44	1	1	0
4 (A)	Demolition and rehabilitation of electrified railway lines	m2		295.49	1	1	0
4 (B)	Demolition and rehabilitation of non-electrified railway lines	m2		161.18	1	1	0
5	Demolition of housing and/or administration facilities	m2		340.26	1	1	0
6	**Opencast rehabilitation including final voids and ramps**	**Ha**	**0.08**	**173174.97**	**2**	**1**	**27707.9952**
7	Sealing of shafts adits and inclines	m3		91.33	1	1	0
8 (A)	Rehabilitation of overburden and soils	Ha	0.04	118912.29	1	1	4756.4916
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha		148103.1	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha		430161.62	1	1	0
9	Rehabilitation of subsided areas	ha		99571.13	1	1	0
10	General surface rehabilitation	ha		94198.59	1	1	0
11	River diversions	ha		94198.59	1	1	0
12	Fencing	m		107.45	1	1	0
13	Water management	ha		35816.95	1	1	0
14	2 to 3 years of maintenance and aftercare	ha		12535.93	1	1	0
15 (A)	Specialist study	Sum				1	0
15 (B)	Specialist study	Sum				1	0

1	Preliminary and General	3895.738416	weighting factor 2	3895.738416
2	Contingencies	3246.44868		3246.44868
			Subtotal	39606.67
			VAT (15%)	5941.00
			Grand Total	45548.00

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

It is hereby confirmed that financial provisions will be submitted with bank guarantees to the Department of Mineral Resources.

5.4 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.

Table: Monitoring measures

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**
All Prospecting Activities	N/A	Ensure that the prospecting programme is being implemented in line with the approved prospecting works programme	Geologist	Submit an annual prospecting progress report to DMR
	All commitments contained in the EIA Report and accompanying EMP	Ensure commitments made within the approved EIA and EMP are being adhered to.	ESHQ Department	Undertake and submit an environmental performance audit every two years to DMR
Drilling	Cultural	Monitor	Appointed drilling	Weekly

Activities	Heritage Resources	groundwater quality and level	service provider/contractor	inspection and reporting
Drilling Activities	Noise Dust fall Visual Soil & Vegetation Soil, Surface Water & Groundwater Social Housekeeping & maintenance Waste management Rehabilitation	within 500m from a drill site (If any). Weekly inspections will cover the following: - Implementation of effective waste management - Establish and implement a stakeholder compliant register on site and ensure that all complaints are responded to promptly. - Ensure that an oil spill kit is readily available. - Ensure that all chemicals and hydrocarbons are stored within bundwalls - Ensure that the fire brake is maintained. - Rehabilitation of drill pads - Records of water intersections on borehole logs - Control and minimise the development of new access tracks - Appropriate storage and handling of topsoil.	Appointed drilling service provider/contractor	Weekly inspection and reporting
Post Drilling	Groundwater Re-vegetation	Monitor the external	ESHQ Department	Monitoring report

	Stability Soil erosion Alien invasive species	boreholes within 500m from drill post drilling (if any). The Drill site shall be monitored six monthly until closure certificate is obtained.		

5.4.1 Indicate the frequency of the submission of the performance assessment/environmental audit report

An environmental audit should be conducted annually and submitted to the DMR annually. The environmental manager will conduct internal management audits against the commitments in the EMPr in accordance with an annual audit plan. In the operational phase, these audits will be conducted on a quarterly basis. The audit findings will be documented for both record keeping purposes and for informing continual improvement.

5.5 Environmental Awareness Plan

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

Environmental conditions will be included in any operational contracts, thereby making contractors aware of the potential environmental risks associated with the project and the necessity to prevent impacts by implementing the proposed mitigation measures. The following principles will apply to the Environmental Awareness Plan (Safety, Health and Environment):

- All personnel will as a minimum undergo general SHE induction and awareness training.
- The Environmental Officer(s) or the responsible personnel from the SHEQ Department will identify the Safely, Health and Environment (SHE) training requirements for all personnel and contractors. The training requirements will be recorded in a training need matrix indicating particular training that must be undertaken by identified personnel and contractors. The training matrix will be administrated by the SHEQ Department.
- Development of a training programme:

➢ General Awareness training. The SHEQ manager will be responsible for adopting and customising the existing SHE induction and awareness training being undertaken at SIOM. It should include a general environmental awareness training module that will need to be integrated into the induction programme. The training manual shall include a review of the Environmental Policy, a review of significant environmental aspects, a description of the EMP and the importance of compliance to its requirements, general responsibilities of personnel with regard to the EMP and a review of the emergency and corrective action procedures.

- Specific environmental training:

➢ Specific environmental training will be in line with the requirements identified in the training matrix;

- People whose work tasks can impact on the environment will be made aware of the requirements of appropriate procedures/ work instructions. The SHE Representative will communicate training requirements to responsible supervisors to ensure that personnel and contractors are trained accordingly.

- Training evaluation and re-training:

- Effectiveness of the environmental training will be reflected by the degree of non-conformance to EMPr requirements, the results of internal audits and the general performance achieved.
- Incidents and non-conformances raised against the EMPr will be assessed by the SHEQ manager and SHE Representative (s) determine the cause. Should it be evident that retraining is required the SHE Representative (s) will take the appropriate actions.

  The Environmental topics to be covered in awareness training should include the following:

RESOURCE MANAGEMENT

- a. The importance of saving water
- i. South Africa is a water scarce country and rivers are polluted
- ii. Do not throw litter into river or water drains
- iii. Do not dispose of oils in sewers
- b. Air pollution - Climate change
- i. The use of fossil fuels is increasing the amount of greenhouse gases that are discharged to the atmosphere. Share transport or use public transport.
- ii. Don’t burn any rubbish, the smoke pollutes the air
- iii. Plant trees, they clean the air, provide us with oxygen and
- remove the greenhouse gas carbon dioxide from the air.
- c. Soil conservation
- i. Prevent overgrazing of farmlands, keep vegetation on the surface of the land to prevent soil erosion

- ii. Plant trees

HAZARDOUS SUBSTANCE USE AND STORAGE

- a. Solvent, petrol, diesel, insecticides, chlorine, detergents, chemical fertilisers are harmful to the environment and to your health. Use them sparingly and do not let them get into the water systems. Containers must be disposed of to a licensed hazardous waste disposal facility.
- b. Hazardous substances must be stored and used correctly.
- c. Ensure that 16 point Material Substances Safety Data Sheets (MSDS) are available at point of store.
- d. Compressed gas storage requirements.
- e. Flammable substances store requirements.

INCIDENT AND EMERGENCY REPORTING

- a. The company must have an emergency/incident reporting system whereby environmental incidents can be reported and actioned to mitigate and follow up on.

OIL / DIESEL / PETROL SPILL CLEAN UP

- a. All employees who work with machines and vehicles must be instructed how to prevent and clean up an oil or diesel spill appropriately. Spill kits must be available on site, drip trays must be used when servicing vehicles.

CONSERVATION OF WATER

- a. Campaign to save water on site.
- b. Clean water is expensive and potable water must be used carefully.
- c. Prevent pollution of water by preventing spills and dispose of wastes properly.

CONSERVATION OF VEGETATION

- Plants, grasses and trees are very important to our existence on the earth, they provide food, fuel, shelter, raw materials and they clean the air. Indigenous plants are especially important for *muti* and the whole ecology of life. Human activities are destroying the natural forests of the earth. The natural forests are the “lungs” of the planet and unfortunately they are being cleared faster than they can be regenerated.
- a. EIA’s are to be done before virgin bush can be cleared.
- b. Vegetation cover reduces water and topsoil loss from the ground, do not clear vegetation unnecessarily.
- c. Indigenous trees provide shade, attract wild birds.
- d. Do not chop down indigenous trees without good reason.
- e. Implement a tree planting programme.
- f. Remove alien invasive trees in the area such Prosopis, Syringa and Pepper trees, cactus plants.

WASTE MANAGEMENT

- a. Employees must be instructed on how to tell the difference between hazardous waste and general waste.
- b. They must know how to separate hazardous and general waste and where to dispose of these wastes in the correct way.
- c. Examples of hazardous waste which must be recycled or sent to Waste Tech for disposal:
- i. Oil, diesel, batteries, acids, paint, thinners, electronic waste.
- ii. Pesticides, Jik and Handy Andy.
- iii. Old oil, old oil filters, old paint is hazardous and must not be disposed of to a general land fill. Oilkol of the Rose Foundation will collect old oil.
- iv. Mercury in fluorescent light bulbs is hazardous, fluorescent lights must be handled with great care so as not to break the glass and release the mercury vapour into the air to breath.
- d. Examples of general wastes which can go to the municipal landfill.
- i. Wood, paper, plastic, glass, old PPE.

- e. Recycle, Reuse, Reduce, and Recover wherever possible.

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

Nyezi Holdings (Pty) Ltd will develop and implement an Environmental Management System (EMS) that complies with the requirements of ISO14001:2004 Environmental Management Systems and is certified by the South African Bureau of Standards. Surveillance audits are conducted annually and recertification audits every third year. The mine's EMS addresses the following elements of the ISO14001 standard and these, in conjunction with the environmental commitments, ensure that potential environmental impacts arising from the mine's activities are managed appropriately:

- An environmental policy that includes commitments to prevent pollution, comply with applicable legal requirements and provides a framework for setting environmental objectives and targets;

- A register of environmental aspects and impacts with a view to implementing operational control measures to limit environmental impacts;
- A register of all applicable legal requirements to ensure legal compliance;
- A register of environmental objectives and targets that is consistent with the environmental policy and takes into account significant environmental impact and the management thereof, together with a program for achieving the identified objectives and targets;
- Resources to ensure implementation of the EMS;
- An environmental training and awareness program to ensure that persons performing tasks that could cause significant environmental impacts are aware of such impacts and are competent to perform such tasks;
- A communication procedure for internal and external communication in respect of significant environmental aspects;
- All Environmental Management System Documentation, as required by the ISO14001 standard, which includes control procedures for documents and records;

- Operational control procedures for activities that could cause significant environmental impact to ensure that correct procedures are implemented to;
- minimise potential environmental impacts;
- An emergency preparedness and response procedure that identifies potential emergency situations and potential accidents that can impact on the environment to ensure that such situations are dealt with in an appropriate manner;
- An environmental monitoring and measurement program to monitor and measure the key characteristics of the operation that can cause significant environmental impact and to gauge the success of implemented mitigation measures;
- A procedure for periodically evaluating compliance with applicable legal requirements;
- A procedure for dealing with non-conformities in terms of their identification, corrective action and preventative action;
- Audit programs and procedures that makes provision for internal and external audits focussing on implementation of the requirements of the EMS and legal requirements;
- Management reviews undertaken at planned intervals to ensure the system's continuing suitability, adequacy and effectiveness; and,
- Within the context of the principles listed above, the long term sustainability objectives of the Mine are:

  - To avoid impacts by effective planning in order to prevent and limit possible impacts;
  - To minimize impacts by implementing decisions or activities that are designed to reduce the undesirable impact on the bio-physical and socio-economic aspects detailed in the previous sections; and,
  - Rectifying impacts by rehabilitating or restoring, where applicable, the affected environment. This will include attempts at habitat re-creation, and restoring the land to the natural pre-mining land uses or to a pre-determine and approved land use

The mine's EMS will be applied to the project.

5.5.3 Specific information required by the Competent Authority

Section 41 of the MPRDA and regulations 53 and 54 promulgated in terms of the MPRDA deal with financial provision for mine rehabilitation and closure.

The holder of a right as described in the relevant sections of the MPRDA and its regulations must provide the Department of Mineral Resources (DMR) with sufficient financial provision. Officials in the DMR Regional Offices are required to assess, review and approve the quantum of financial provision submitted (that is, the monetary value of the financial provision that has been computed by the holder of a prospecting right, mining right or mining permit during the annual review) as being sufficient to cover the environmental liability at that time and for closure of the mine at that time.

The holder of a prospecting right, mining right or mining permit is required to annually assess the total quantum of environmental liability for the mining operation and ensure that financial provision are sufficient to cover the current liability (in the event of premature closure) as well as the end-of-mine liability.

It is hereby confirmed that the financial provision will be reviewed annually.

2) UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports ☐

b) the inclusion of comments and inputs from stakeholders and I&APs ; ☐

c) the inclusion of inputs and recommendations from the specialist reports where relevant; ☐and

d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. parties are correctly reflected herein. ☐

Signature of the environmental assessment practitioner:

Thaya Trading Enterprise CC
Name of company:

Date:

-END-

ANNEXTURE A

ENVIRONMENTAL AUTHORISATION

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

APPLICATION FORM FOR ENVIRONMENTAL AUTHORISATIONS 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).

IMPORTANT NOTICE

Kindly note that:

1. As from 8 December 2014, this document serves as the application form, and incorporates the requisite documents that are to be submitted together with the application for the necessary environmental authorisations in terms of the said Acts.

2. This application form is applicable while the Mineral and Petroleum Resources Development Amendment Act of 2008 is in effect, as the form may require amendment should the Act be further amended.

3. Applicants are required to apply for the necessary water use licence and any other authorisations nor licences to the relevant competent authorities as required by the relevant legislation. Upon acceptance of an application for a right or permit in terms of the MPRDA, applicants will be required to provide evidence to the Regional Manager that a water use licence has been applied for.

4. The Regional Manager will respond to the application and provide the reference and correspondence details of the Competent Authority, and in the event that the application for a right or permit is accepted, together with the date by which the relevant environmental reports must be submitted. Notwithstanding anything that may appear to be stated to the contrary in the acceptance letter, the timeframes are in fact aligned and the prescribed timeframes for the submission of documents as regulated by the NEMA regulations must be strictly adhered to.

5. The application must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.

6. The failure to submit complete information as required in this application form may result in the refusal of the application for an environmental authorisation and consequently of the right or permit applied for.

7. This application must be submitted through the SAMRAD online application system of the Department of Mineral Resources under “Other documents to upload”.

8. Unless protected by law, all information filled in on this application form will become public information on receipt by the competent authority. Any interested and affected party should and shall be provided with the information contained in this application on request, during any stage of the application process.

9. Please note that an application fee is payable in terms of the National Environmental Management Act and the National Waste Management Act, which fees must be paid upon lodgement of the application. Should the said application fees not be paid as prescribed the application for a right or permit in terms of the Mineral and Petroleum Resources Development Act cannot be considered to have been made in the prescribed manner and the said application for a right or permit will have to be rejected. In this regard the type of applications must be identified in the table below.

PLEASE STATE TYPE OF AUTHORISATIONS BEING APPLIED FOR

APPLICATION TYPE	**APPLICABLE FEE**	**Mark with an X where applicable**
NEMA S&EIR application on its own	R10 000.00	X
NEMA BAR application on its own	R 2 000.00	
NEMWA S&EIR application on its own	R10 000.00	
NEMWA BAR application on its own	R 2 000.00	
NEMA S&EIR application combined with NEMWA S&EIR application	R 15 000.00	
NEMA BAR application combined with NEMWA BAR application	R 3 000.00	
NEMA S&EIR application combined with NEMWA BAR application	R 11 000.00	

1. CONSULTATION BASIC ASSESSMENT AND/ OR SCOPING REPORT

- Scoping report is currently being considered for literature review and will be compiled and be submitted once completed and upon DMR request.

1. DETAILS OF THE APPLICANT

Project applicant:	NYEZI HOLDINGS PTY LTD		
Registration no (if any):	201518433107		
Trading name (if any):	NYEZI HOLDINGS		
Responsible Person, (e.g. Director, CEO, etc).:	P. M. MAPHANGA		
Contact person:	P. M. MAPHANGA		
Physical address:	19 WEST BROOKE DRIVE		
Postal address:	SANDTON		
Postal code:	2196	Cell:	0767532362
Telephone:	N/A	Fax:	N/A
E-mail:	nyezi@webmail.co.za		

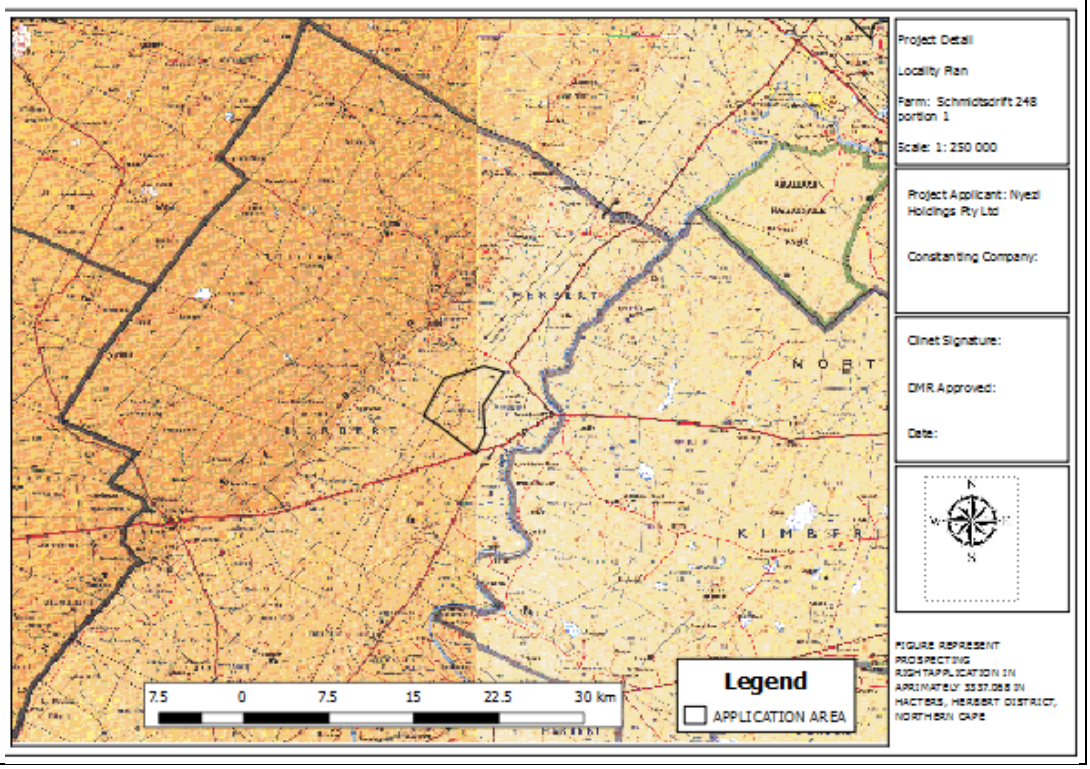
2. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) INFORMATION

EAP:	CAROLINE KGANAKGA		
Professional affiliation/registration:	N/A		
Contact person (if different from EAP):	CAROLINE KGANAKGA		
Company:	CAROLINE PROTECTION SERVICES PTY LTD		
Physical address:	HOUSE NO 1745, POELA SECTION, MODDERKUIL		
Postal address:	HOUSE NO 1745, POELA SECTION, MODDERKUIL		
Postal code:	0318	Cell:	0711237921
Telephone:	0837743268	Fax:	
E-mail:	mtshite@yahoo.com		

If an EAP has not been appointed please ensure that an independent EAP is appointed as stipulated by the NEMA Regulations, prior to the commencement of the process.
The declaration of independence and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the EAP must also be attached as **Appendix 1**.

Appendix 1 attached

4. PROJECT DESCRIPTION

Farm Name:	1. Schmidtsdrift 248 portion 1
Application area (Ha)	3337.068 ha
Magisterial district:	Herbert RD
Distance and direction from nearest town	The property is located approximately 32km North East of Douglas in the Northern Cape Province.
21 digit Surveyor General Code for each farm portion	1. C0320000000000027000000/ C0320000000000248000000
Locality map	Attach a locality map at a **scale not smaller than 1:250000 and attach as Appendix 2** 

Description of the overall activity. **(Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)**	***1.*** **Listing Notice GNR 984, Activity 15**: • About 10 – 30 in hectares of area to be cleared (indigenous vegetation) • Up to but no more than 1000 hectares to be cleared ***2.*** **Listing Notice GNR 984, Activity 19**: • The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resource4s Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource • Prospecting right with bulk samples for the mining of Diamond Alluvial and diamond general, including associated infrastructure, structure and earthworks. ***3.*** **Listing Notice GNR 984, Activity 21:** • The activity related to the operation (primary processing) will include winning, reduction, extraction, concentrating, crushing of the mineral resource

5. ACTIVITIES TO BE AUTHORISED

(Please provide copies of Environmental Authorisations obtained for the same property as **Appendix 3)**.
(For an application for authorisation that involves more than one listed activity that, together, make up one development proposal, all the listed activities pertaining to this application must be indicated. Please note that any authorisation that may result from this application will only cover activities specifically applied for).(Attach a proposed site plan, drawn to a scale acceptable to the competent Authority, showing the location of all the activities to be applied for, as **Appendix 4**)

NAME OF ACTIVITY **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route… **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY** (Mark with an **X** where applicable or affected).	**APPLICABLE LISTING NOTICE** ***(GNR 544, GNR 545 or GNR 546)***	**WASTE MANAGEMENT AUTHORISATION** (Indicate whether an authorisation is required in terms of the Waste Management Act). **(Mark with an X)**

Prospecting Right	**800 ha**	**X**	**GNR. 984**	**-**
Clearance of indigenous vegetation	**800 ha - Only the areas where prospecting takes place, will be cleared. Rehabilitation will occur with concurrent Backfilling.**	**X**	**GNR. 984**	**-**
Processing	**800 Ha**	**X**	**GNR. 984**	**-**

6. PUBLIC PARTICIPATION

(Provide details of the public participation process proposed for the application as required by Regulation.

6.1.1. IDENTIFICATION OF IAP's

IDENTIFICATION CRITERIA	Mark with an X where applicable	
	YES	**NO**
Will the landowner be specifically consulted?	X	
Will the lawful occupier on the property other than the Landowner be consulted?		X
Will a tribal authority or host community that may be affected be consulted?	X	
Will recipients of land claims in respect of the area be consulted?		X
Will the landowners or lawful occupiers of neighbouring properties been identified?	X	
Will the local municipality be consulted?	X	
Will the Authority responsible for power lines within 100 metres of the area be consulted?		X
Will Authorities responsible for public roads or railway lines within 100 metres of the area applied for be consulted?	X	
Will authorities responsible for any other infrastructure within 100 metres of the area applied for be consulted? (Specify)		X
Will the Provincial Department responsible for the environment be consulted?	X	
Will all of the parties identified above be provided with a description of the proposed mining /prospecting operation as referred above?	X	
Will all the parties identified above be requested in writing to provide information as to how their interests (whether it be socio-economic, cultural, heritage or environmental) will be affected by the proposed mining project?	X	
Other, Specify		

6.1.2. CONSULTATION PROCESS

Steps to be taken to notify interested and affected parties (Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultations. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. Photographs of notice boards, and copies of advertisements and notices notifying potentially interested and affected parties of the proposed application must be attached as **Appendix)**	The public participation process will be conducted strictly in accordance with applicable regulations. The following three categories of variables will take into account when deciding the required level of public participation: • The scale of anticipated impacts. • The sensitivity of the affected environment Methods of public participation: • Newspaper advertisement in local newspaper • Site notices • Notification of surrounding land owners and current right owners around • Scoping & Empact studies to be available • Public Meeting with stakeholders involve e.g. community
Information to be provided to Interested and Affected Parties.	**Compulsory** • The site plan (prospecting plan) • List of activities • Scale and extent of activities planned for prospecting • Typical impacts of activities (surface disturbance, dust, noise, drainage, fly rock etc.) • The duration of the activity (five years)
	Other, specify:
Information to be required from Interested and Affected Parties.	**Compulsory** • Information from stakeholders on their response to the proposed activities and how they will impact on them • All the responses will be compiled and the documentation to the official authority (DMR) • Land use information • Analyse the negative impact that may occur on the current infrastructure and how they can be managed or avoided.
	Other, Specify

7. Description of the assessment process to be undertaken

ITEM	DESCRIPTION
Environmental attributes. Describe how the Environmental attributes associated with the development footprint will be determined.	• A desktop studies • Site visit with the expertise of the environmental officer and to determine the impact on the environment • Feedback from public participation will play a major role into the report and the valuation of the proposed activities
Identification of impacts and risks. (Describe the process that will be used to identify impacts and risks**.**	• Long process of evaluating the impacts that will be results of the proposed activity by the expertise of the environmental practitioner • The monitoring of the planned activities and the operational equipments that will be used to the activities. Historical and current evidence will also be taken into consideration to minimise the impact • Use of morden technology that will be available to minimise the negative impact • A team of specialist or experienced in mining environment to create awareness in environmental factor that will affect the community
Consideration of alternatives. Describe how alternatives, and in particular the alternatives to the proposed site layout and possible alternative methods or technology to be applied will be determined.	• The alternative measures will be considered, if the proposed area will negatively impact severe to the environment. An alternative area that will be less severe to the environment will be identified • Use of equipment's that will minimise negative impact will be considered • Detailed studies and research on how best to recover the mineral with minimal impacts will also be considered
Process to assess and rank impacts. Describe the process to be undertaken to identify, assess and rank the impacts and risks each individual activity.	• The matrix analysis (environmental issues, potential impact, the impact scale and the mitigation analysis)
Contribution of specialist reports Describe how specialist reports, if required, will be taken into consideration and inform the impact identification, assessment and remediation process.	• Archaeological reports, ecological report, geological report will be reviewed and further discussed in order to understand various impacts that may occur during the planned activities.

Determination of impact management objectives and outcomes. Describe how impact management objectives will be determined for each activity to address the potential	• Thoroughly investigation on how the proposed activity will impact or further cause environmental degradation. • Employ best environmental management practises
impact at source, and how the impact management outcomes will be aligned with standards.	

8. OTHER AUTHORISATIONS REQUIRED

LEGISLATION	**Mark with an X where applicable**			
	AUTHORISATION REQUIRED		**APPLICATION SUBMITTED**	
	YES	NO	YES	NO
SEMAs				
National Environmental Management: Air Quality Act		X		
National Environmental Management: Biodiversity Act		X		
National Environmental Management: Integrated Coastal Management Act		X		
National Environmental Management: Protected Areas Act		X		
National Environmental Management: Waste Act		X		
National legislation				
Mineral Petroleum Development Resources Act	X			X
National Water Act	X			X
National Heritage Resources Act		X		
Others: Please specify				

Please provide proof of submission of applications in **Appendix 5**.

In the event that an authorization in terms of the National Environmental Waste Management Act is required for any of the activities applied for please state so clearly in order for such an authorisation to be considered as part of this application.

9. DRAFT EMPr

For consultation purposes, provide a high level approach to the management of the potential environmental impacts of each of the activities applied for.

ACTIVITIES **(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.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m²)	**TYPICAL MITIGATION MEASURES** (E.g., storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (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)
Demarcation of mine focus area	Construction	800 ha – area to be cleared on prospecting area	Rehabilitation	-
		backfilling will take place in order to rehabilitate.		
Establishment of proper access road	Construction	+- 10 Km	Noise control	-
Establishment of bunded diesel and/ oil chemical storage facilities, chemical toilets	Construction	Under 80 000 litres	Hydrocarbon waste management	-
Establishment of site workshop, storage area, and parking area.	Construction	50 m^2	Access control	-
Initial vegetation clearance, topsoil removal & stockpiling next to first pit within mine focus area.	Construction	800 ha – 3m x 2m x 4m pit (100 pits), 50m x 30m x 4m trench (30 trenches).	Rehabilitation	-
Provision of storage tanks potable and process water	Construction			-

Provision of waste Handling/disposal facilities	Construction	Construction	Recycle	-
Fencing of active mining site	Construction	Around planned area	Access control	-
Vegetation clearance and topsoil removal.	Operational	800 ha – 3m x 2m x 4m pit (100 pits), 50m x 30m x 4m trench (30 trenches).	Rehabilitation	-
Mechanically excavating overburden material with an excavator and stockpile separately from topsoil dump. Remove gravel with excavator and stockpile on side of trench/pit and load onto truck	Operational	Transformers Front End Loader Dumper Excavator	Rehabilitation	-
Transport with trucks to mineral processing plant (conveyor, screen, and washing pan) for processing and sorting of concentrate at set intervals.	Operational	2 x 12 feet washing pans – 148 500 tons tons to be washed	Noise control	-
Transport with truck to assigned location	Operational	20-40 Tons per truck	Dust control	-
Backfill of excavations (As part of concurrent rehabilitation)	Operational	800 ha – 3m x 2m x 4m pit (100	Rehabilitation	-
		pits), 50m x 30m x 4m trench (30 trenches).		
Final backfilling of all voids / trenches / pits.	Rehabilitation	800 ha – 3m x 2m x 4m pit (100 pits), 50m x 30m x 4m trench (30 trenches).	Rehabilitation	-
Compaction of backfilled sites	Rehabilitation	800 ha – 3m x 2m x 4m pit (100 pits), 50m x 30m x 4m trench (30 trenches).	Rehabilitation	-

Replace and spread all topsoil evenly over backfilled site	Rehabilitation	800 ha – 3m x 2m x 4m pit (100 pits), 50m x 30m x 4m trench (30 trenches).	Rehabilitation	-
Establishment of vegetation cover	Rehabilitation	800 ha	Rehabilitation	-
Removal of all temporary & demolition of all permanent structures.	Rehabilitation	50 m^2	Rehabilitation	-
Rehabilitation of all access roads, compacted areas.	Rehabilitation	+- 10 Km	Rehabilitation	-
Monitoring of all aspects of the environment & EMMPA audit.	Rehabilitation	-	Rehabilitation	-
Compilation of a closure plan & application for closure.	Rehabilitation	-	Rehabilitation	-

10. CLOSURE PLAN

In the space provided under each heading below, please provide a high level description of the plan for closure and the information that will be provided in the draft EMPr accompanying draft basic assessment report or environmental impact reports going forward.	
Baseline environment Describe how the baseline environment will be determined with the input of interested and affected parties and due cognizance of the current land uses and or existing biophysical environment	The Baseline of the environment will be determined by making use of desktop studies, specialist reports • **Use of Desktop studies** Field map interpretation using orthophotos & topographical maps Visible entities within the area of interest will be form part of I&AP's • **Specialist reports** This includes geological background, vegetation report, current land use, ecological reports & water resources report

Closure objectives Describe the closure objectives and the extent to which they will be aligned to the baseline environment	• The proposed activities will be followed by the carefully planned rehabilitation programme aiming at restoring the disturbed area to its natural state. • The area should allow natural vegetation to grow again and to be hazardous free zone to inhabitants.
Rehabilitation Plan Describe the scale and aerial extent of the prospecting or mining listed activities to be authorised, including the anticipated prospecting or mining area at the time of closure, and confirm that a site rehabilitation plan drawn to a suitable scale will be provided in the draft EMPr to be submitted together with the draft EIR or Basic Assessment Report as the case may be.	• The rehabilitation will only occur on the proposed area not more than thousand in hectares. • Continuous rehabilitation will be carried out during operational phase • Proper rehabilitation plan planned before closure certificate is issued will be outlined in the EIA reports
Rehabilitation Cost Describe how the rehabilitation cost will be determined and provide a preliminary estimate thereof	Use of Quantum Financial Calculation System provided by DMR • Calculate cost of removing temporally installed structures • Rehabilitation of access roads, overburden and surface area • The rehabilitation cost will be determined by making use of the Quantum Financial Calculation excel spreadsheet, which is provided by the Department of Minerals and Resources Cost of the above mention process will roughly be hundred and twenty thousand rand (R120 000)
Decommissioning Considering that rehabilitation must take place upon cessation of an activity, describe when each of activities applied for will be rehabilitated in terms of either the cessation of the individual activity or the cessation of the overall prospecting or mining activity.	• This phase will automatically start as the mine activities have come to an end • Decommissioning process will be clearly outline in the EMPr report

Signature of the applicant / Signature on behalf of the applicant:

Name of company (if applicable): NYEZI HOLDINGS PTY LTD

Date: 02/10/2017

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APPENDIX 4 DECLARATION OF THE EAP

I, Caroline kganakga, declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act,

Regulations and any guidelines that have relevance to the proposed activity;

- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the Regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

 I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

Signature of the environmental assessment practitioner:

_____

Name of company:

_____

Date:

ANNEXTURE B
CURRICULUM VITAE OF EAP

SA

Zandile Dwane

1638 zone1, Ezibeleni

Queenstown, 5326

Drivers Licence: Code B

31

YEARSOLD

Nationality: South African

I am a highly motivated, self-disciplined person and driven in achieving my biggest goals in life. I am a skilful communicator and strive to spread positivity. I am flexible, quick to pick up new skills and eager to learn from others. I am a fast learner and looking forward to face new challenges.

PERSONAL SKILLS

- CREATIVE
- INOVATIVE
- EXCELLENT INTERPERSONAL SKILLS
- QUICK THINKER
- PROBLEM SOLVING
- EFFECTIVE COMMUNICATOR
- ANALYTICAL
- GOOD TIME MANAGEMENT

+ 27 83 265 7992

kamvisto@gmail.com

References are available on request

EDUCATION

Masters Degree- Petroleum Geology - University of the Western Cape

12- 12- 2016

Completed short courses and trainings:

>Structural Geology
>Geophysics
>Sedimentology
>Static Modelling
>Reservoir Engineering

BSc Honours Degree – Applied Geology - University of the Western Cape

17-03- 2014

Completed short courses:

Ore deposit modelling
Groundwater modelling
Geological mapping
Exploration geology

Projects Completed:

>Parameters that influence the behaviour of natural Iron ores during the Iron production process
>Application of geophysical methods for monitoring acid mine drainage
>The study of Iron ore prospects using 2-D resistivity and induced polarization

BSc Undergraduate Degree – Applied Geology – University of the Western Cape

CUM LAUDE

22-03-2013

Grade 12: Batandwa Ndondo S.S.S (2003)

SPECIAL ACHIEVEMENTS

>Nominated among the best top 5 students who completed the Reservoir Engineering training courses with Total Professors with a Distinction in 2015.

>Completed Cum Laude graduation in March 2013

>Nominated for the International Scholar Laureate 2012 by Golden Key

>Certificate by golden key for the best academic performance in 2011

>Nominated among the best top 15% academic performances in 2010

PROFESSIONAL AFFILIATIONS

Geological Society of South Africa	(GSSA)
South African Council for Natural Scientific Professions	(SACNASP)
American Association of Petroleum Geologists	(AAPG)

CONFERENCES ATTENDED

Investing in African Mining Indaba	(2017)
23rd Africa Oil Week held at the Cape Town International Convention Centre	(2016)
22nd Africa Oil Week held at the Cape Town International Convention Centre	(2015)

WORK EXPERIENCE

15-02-2017 to date

Institution: THAYA TRADING ENTERPRISE

Position Held: Environmental Consultant

Roles and responsibilities:
Assist with research for a variety of environmental related projects
Assists with EIA application, assessments and report writing for clients
Assists with proposal preparation and costing

Key performance areas:
Supervise and maintain all quality, safety and environmental systems
Willingness to direct implementation of ISO 9001 for quality management and ISO 14001 for environmental management.
Control, monitor and report the budget of the area of responsibility
Provide inputs for database creation and management
Performance management
Implement improvement and change initiatives
Develop and maintain stakeholder relationships

30-03-2015 to 15-12-2016

Institution: University of the Western Cape/ department of Geology

Position Held: Lab Assistant

Roles and responsibilities:
Preparation of sediment samples for analysis
Examine and Analyse minerals, gems and precious stones
Isolate specimen from ore, rocks or matrices
Training and supervising lab users including postdocs and undergraduate students
Develop standard operating procedure for lab instrumentation

01-04-2014 to 23-12-2014

Institution: ERM (Environmental Resource Management)

Position Held: Researcher

Roles and responsibilities included, but not limited, to the following:

Interpretation of geological structures
Soil and Groundwater sampling
Soilbore Logging
Conduct geological Mapping,
Capturer geological data on the system and create maps
Geological, geochemical and geophysical interpretation and modelling
Writing reports and doing presentations
Continuously updating geological data and conducting subsurface mapping
Create Site Drawing / Plan (Generating 2D and 3D drawings)
Supervising Installation of monitoring wells (Drilling).

Skills Developed:

Report-writing and presentation skills, research skills, team working skills
Planning and organizing skills.
Strong oral and written communication Skills
Coaching skills
Commitment to safe work practice
Ability to work to deadlines and under pressure
Creativity and Lateral thinking skills
Analytical and Problem Solving skills
Financial management skills
Attention to details and the ability to record information accurately
Leadership and performance management skills

Technical Competencies:

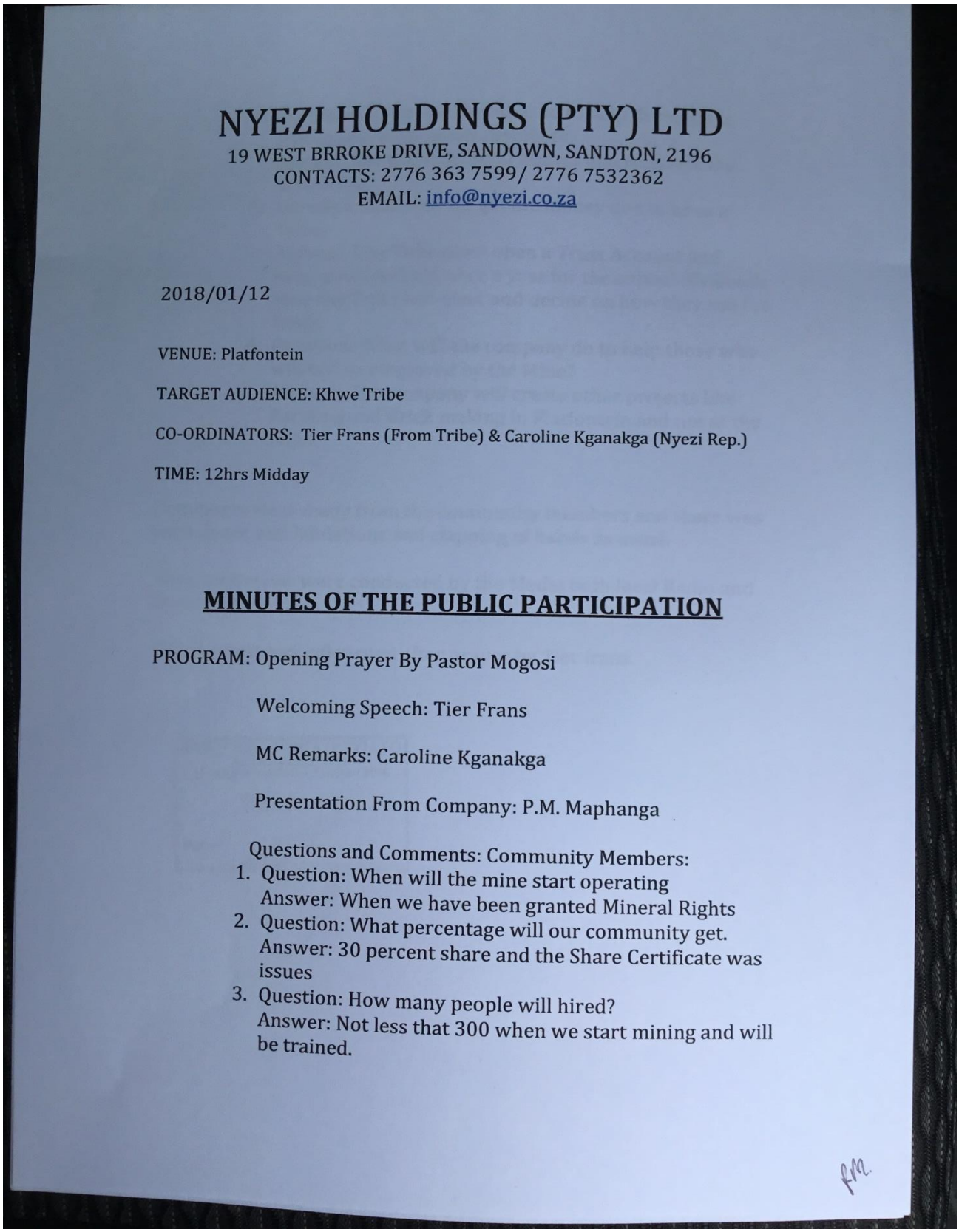
IT skills to process data and produce 3-D models of geophysical features,
Identifying geological formations and rock types
Interpretation of geological models
Groundwater Assessment
Environmental Impact Assessment
Environmental Rehabilitation
Environmental Regulations and Acts

SYSTEM KILLS

Microsoft Office ®
Remote Sensing ENVI ®
MODFLOW®
GEOVIA Surpac ®
MINEX ®
Sharepoint®
Petrel ® (3D Seismic Modelling and Interpretation)
Downhole Explorer ®
Microstation®
VULCAN GeoModeller (Maptek) ®
Surfer ®
ArcGIS ®
Strater 5 ®
S3Graf ®

ANNEXTURE C

PUBLIC PARTICIPATION



NYEZI HOLDINGS (PTY) LTD

19 WEST BRROKE DRIVE, SANDOWN, SANDTON, 2196
CONTACTS: 2776 363 7599/ 2776 7532362
EMAIL: info@nyezi.co.za

2018/01/12

VENUE: Platfontein

TARGET AUDIENCE: Khwe Tribe

CO-ORDINATORS: Tier Frans (From Tribe) & Caroline Kganakga (Nyezi Rep.)

TIME: 12hrs Midday

MINUTES OF THE PUBLIC PARTICIPATION

PROGRAM: Opening Prayer By Pastor Mogosi

Welcoming Speech: Tier Frans

MC Remarks: Caroline Kganakga

Presentation From Company: P.M. Maphanga

Questions and Comments: Community Members:

1. Question: When will the mine start operating
   Answer: When we have been granted Mineral Rights
2. Question: What percentage will our community get.
   Answer: 30 percent share and the Share Certificate was issues
3. Question: How many people will hired?
   Answer: Not less that 300 when we start mining and will be trained.

fm.

4. Question: What will the Mine do to help develop the platfontein community residence.
   Answer: We will help build houses and renovate the school etc.
5. Question: How will we get the money due to us as a Tribe.
   Answer: The Tribe must open a Trust Account and money will be paid once a year for the annual dividends then the Tribe will meet and decide on how they use the funds.
6. Question: What will the company do to help those who will not be employed by the Mine?
   Answer: The company will create other projects like Farming and Brick making in Platfontein and not at the Mine.

Comments were many from the community members and there was excitement and lululations and clapping of hands as usual.

Then interviews were conducted by the Media both local Radio and News paper.

The meeting was adjourned after prayer by Tier frans.

NYEZI HOLDINGS (PTY) LTD
VAT No: 4490271709
19 Westbrooke Drive, Sandton 2196
2018 -01- 12
Signed:

DATE	NAME	IDENTITY NUMBER	CAPACITY	SIGNATURE
			COMMUNITY MEMBER	
12/07/17	Matumbo Ndumba	650505 1100 083	COMMUNITY MEMBER	
12/07/17	S. Tjikimba	731010 0421 086	COMMUNITY MEMBER	
12/07/17	A. Sibongo	861012 0211 089	COMMUNITY MEMBER	
12/07/17	M. Muhera	671012 0695 083	COMMUNITY MEMBER	
12/07/12	M. Kamuti	601212 6082 089	COMMUNITY MEMBER	
12/07/17	E. Kamama	821212 0237 089	COMMUNITY MEMBER	
12/07/17	M. CUTENTA.	941003 0167 086	COMMUNITY MEMBER	
12/07/17	J. SPAKER	770606 7630 082	COMMUNITY MEMBER	
12/07/17	G. MBOMA	400104 5505 082	COMMUNITY MEMBER	G-M
12/07/17	K. MBAMBI	840311 5259 085	COMMUNITY MEMBER	
12/07/17	M. MBASUKA	680909 0954 080	COMMUNITY MEMBER	M.M
12/07/17	M. KASHANGA	791103 1094 080	COMMUNITY MEMBER	
12/07/17	M. KATIMO	871212 1342 085	COMMUNITY MEMBER	
12/07/17	S. SHIMBOLIGO	930403 1265 082	COMMUNITY MEMBER	S.S
12/07/17	J. KAMBATHI	831210 5278 080	COMMUNITY MEMBER	
12/07/17	KS. ENDA	840325 5297 085	COMMUNITY MEMBER	K.S. Tanda
12/07/17	J. DREBEN	880627 5278 085	COMMUNITY MEMBER	
12/07/17	R. WOLF	930801 5463 084	COMMUNITY MEMBER	
12/07/17	I. GARINGO	940528 1106080	COMMUNITY MEMBER	I. Garingo
12/07/17	R. MASHEKA	920113 1211 083	COMMUNITY MEMBER	Rectho
12/07/17	A. BAMBO	980914 1424080	COMMUNITY MEMBER	
12/07/17	R. GARINGO	980109 1162 083	COMMUNITY MEMBER	
12/07/17	K. CUTENTA	831129 0271 083	COMMUNITY MEMBER	M. C

Classifieds

DFA phone: 053 832 6261 fax: 053 832 5881

012 Deaths

La Vita
Arthur
My dearest husband passed away 12 January 2018. You're gone and all that is left is nothing but precious memories. Your loving wife Annette

014 Memorial Services

La Vita
Arthur
A Requiem service for the late Arthur La Vita will be held on **Wednesday 17 January 2018** at St Cyprians Cathedral at 10h00.

Pets

073 Dogs

CROSSBREED Rottweiler and Boerboel. 3 months old. Tel 072-179-4253.

Personal

122 Personal Services

126 Herbalist

To advertise in the classifieds call **053 832 6261**

126 Herbalist

Miscellaneous

223 Miscellaneous Sales

UTILITY rubberstamps. Phone/fax 832-1951.

126 Herbalist

Motors

316 Used Cars

FORD Figo, silwer, 2014. Lae kilos. Tel 071-686-7200.

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LONG STREET LODGE
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CARTERS GLEN: 1

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083-661-8251

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Classifieds Service Guide

Service Guide

801 Building Material

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805 Carpets/Curtains/Upholstery

DEEP cleaning. Morgan 082-055-8855.

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Stump digging and rubble removal. Affordable price.
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081-393-6598 / 082-855-0680
E-mail: admin@skyworx2015.co.za

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fridges, regas, wash machines, stoves etc.

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083-487-1062

822 Plumbing

Umilé
Plumbing & Construction
Plumbing Construction & Renovation
076-040-3654

Legals & Tenders

DFA Diamond Fields Advertiser

711 Public Notices

NOTICE OF INTENDING PROSPECTING ACTIVITY

DMR Reference:
NC 30/5/1/1/2/11750 PR

Notification of the public participation as required in terms of Section 16(4)(b) of the MPRDA Act (Act 28 of 2002) (as amended, 2008) and Regulation 40 to 43 of the National Environmental Act, 1998 and the Environmental Impact Assessment Regulation 2014 (as amended, 2017).

Nyezi Holdings (Pty) Ltd has submitted a prospecting application for diamonds alluvial and general on the Portion 1 of the ... The application was submitted ... office, Kimberley.

The relevant environmental reports must be submitted on or before ***15 February 2018****, and will be available in the Kimberley Public Library for any inputs or comments.*

All interested and affected parties are hereby welcomed to provide comments or concerns in writing before **12 February 2018.**

Contact:
Kwindla Nobaza (Thaya Trading Enterprise CC)
Cell: 078-956-6507 or fax: 086-522-1335
Address: 9705 Eerste Laan, Rooisand, Kathu, 8446
E-mail: khnobaza@gmail.com

QUARTERLY UPDATE

SOL PLAATJE MUNICIPALITY
WE SERVE

LIST OF ACCREDITED PROSPECTIVE PROVIDERS

Sol Plaatje Local Municipal Electronic Procurement System and Central Suppliers Database

In compliance with section 14(2) of the Municipal Supply Chain Policy, and the relevant regulation, all prospective service providers are invited to update their current information including new commodities or types of services on our electronic procurement system ... an accredited service provider on Sol Plaatje Local Municipality ... database.

All suppliers are requested to register or upload only the following documents on the system: (webportunities).

1. Listing criteria and declaration of interest MBD 4 (available on our website)
2. Municipal rates and service account or letter from landlord or body corporate stating that the account is not in arrears
3. B-BBEE or sworn affidavit
4. SARS pin number tax clearance certificate

All suppliers are further reminded that they have to be registered on the National Central Suppliers Database —www.csd.gov.za, to be able to engage in any business with an organ of state.

For more information or assistance in terms of updating or registration you can visit our offices at:
Municipal Workshop Complex,
Abbattoir Road, Kimdustria

or phone

Ms Betty Nkoe (053) 830-6172,
Abigail van Kratenburg (053) 830-6176,
Tshepiso Taku (053) 830-6174,
Tebogo Ntimang (053) 830-6175 or
Cynthia Thage (053) 830-6173.

ZL MAHLOKO
Chief Financial Officer

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: Nyezi Holdings (Pty) Ltd

REFERENCE NUMBER: NC 30/5/1/1/2/12076 PR

PUBLIC PARTICIPATION REPORT

SUBMITTED WITH DUE REGARD TO

CONSULTATION WITH COMMUNITIES AND INTERESTED AND AFFECTED PARTIES

AS REQUIRED IN TERMS OF REGULATION 49 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (ACT 28 of 2002), AND IN ACCORDANCE WITH THE STANDARD DIRECTIVE FOR THE COMPILATION THEREOF AS PUBLISHED ON THE OFFICIAL WEBSITE OF THE DEPARTMENT OF MINERAL RESOURCES.

A. Definitions

'consultation' means a two way communication process between the applicant and the community or interested and affected party wherein the former is seeking, listening to, and considering the latter's response, which allows openness in the decision making process.

'community' means a group of historically disadvantaged persons with interest or rights in a particular area of land on which the members have or exercise communal rights in terms of an agreement, custom or law: Provided that, where as a consequence of the provisions of the Act negotiations or consultations with the community are required, the community shall include the members or part of the community, directly affected by prospecting or mining, on land occupied by such members or part of the community.

'Interested and affected' parties include, but are not limited to; –

(i) Host Communities
(ii) Landowners (Traditional and Title Deed owners)
(iii) Traditional Authority
(iv) Land Claimants
(v) Lawful land occupier
(vi) The Department of Land Affairs,
(vii) Any other person (including on adjacent and non-adjacent properties) whose socio-economic conditions may be directly affected by the proposed prospecting or mining operation
(viii) The Local Municipality,
(ix) The relevant Government Departments, agencies and institutions responsible for the various aspects of the environment and for infrastructure which may be affected by the proposed project.

STANDARD DIRECTIVE

All applicants for, mining rights, in terms of the provisions of Section 29 (a) and in terms of Regulation 49 (4) of the Mineral and Petroleum Resources Development Act, directed to submit report strictly in accordance with the following format and subject headings, and as informed by the guideline posted on the Departments Official Website, within 30 days of notification by the Regional Manager of the acceptance of such application.

1. **The methodology applied to conduct scoping**,

1.1. Name the communities as defined in the guideline, or explain why no such community was identified.

The Khwe Tribe was identified as part of the community identified within close proximity of the prospecting right application area. This was also been confirmed by visiting Portion 1 of Schmidtsdrift 248 in the Herbert Region, Northern Cape.

1.2. State whether or not the Community is also the landowner.

The Khwe community was reported to be the owner of the properties applied for.

1.3. State whether or not the Department of Land Affairs been identified as an interested and affected party

Yes, the department of Rural Development and Land Reform was identified and the I & AP letter was sent to the department. No formal response in possession of consultants has been received to date.

1.4. State specifically whether or not a land claim is involved

Yes, the office of the Regional Land Claims Commissioner was identified and the I & AP letter was sent to the office. No formal response in possession of consultants has been received to date.

1.5. Name the Traditional Authority identified by the applicant.

King Tier Frans of the Khwe community was consulted by the applicant in respect of the proposed project.

1.6. List the landowners identified by the applicant. (Traditional and Title Deed owners)

The Khwe community is the owner of the properties applied for.

1.7. List the lawful occupiers of the land concerned

Herbert Region

1.8. Explain whether or not other persons' (including on adjacent and non-adjacent properties) socio-economic conditions will be directly affected by the proposed prospecting or mining operation and if not, explain why not.

The property is surrounded by mining operations and farming activities. Some of the surrounding farms are either mined by the landowners or the occupiers of the farms.

1.9. Name the Local Municipality identified by the applicant.

Herbert Region

1.10. Name the relevant Government Departments, agencies and institutions responsible for the various aspects of the environment, land and infrastructure which may be affected by the proposed project.

Departments:
Water and Sanitation, SAHRA (Consulted with the Mc Gregor Musuem), Agriculture, Environment and Nature Conservation, Eskom, Transnet, Herbert Municipality, Public Works, Rural Development, Land Commission & SANRAL

1.11. Confirm that evidence that the landowner or lawful occupier of the land in question, and any other interested and affected parties including all those listed above, were notified, and has been appended hereto.

Copy attached of Advertisement placed in the DFA newspaper dated 16 January 2017. See Proof attached.

2. **A description of the existing status of the cultural, socio-economic and biophysical environment,** as the case may be, prior to the proposed mining operation; which description must include:-

See below

2.1. Confirm that the identified and consulted interested and affected parties agree on the description of the existing status of the environment.

The applicant hereby confirms that the interested and affected parties Khwe Tribe agreed on the description of the existing status of the environment.

2.2. Describe the existing status of the cultural environment that may be affected

Please see the Heritage Impact Assessment Report herewith attached.

2.3. Describe the existing status of any heritage environment that may be affected

According to the SAHRA's Palaeo Sensitivity map depicts that the area of interest is of high sensitivity in orange colour (Desktop studies is required and based on the outcomes, the field assessment is likely to be conducted) and of low sensitivity in blue colour (no studies required)

2.4. Describe the existing status of any current land uses and the socio-economic environment that may be directly affected

The land in the properties are being used for farming.

2.5. Describe the existing status of any infrastructure that may be affected.

The existing infrastructure in the area wind pumps, small reservoirs, powerline. Access through public road.

2.6. Describe the existing status of the biophysical environment that will be affected, including the main aspects such as water resources, flora, fauna, air, soil, topography etc.

Geology of the Area

Local Geology

The geology of the area of interest is described as that of outcrops of the andesitic lavas of the Ventersdorp Supergroup, which are mostly overlain by calcrete that occurs in isolated patches as rocky hills. Outcrops of tillite of the Dwyka Formation and shale of the Prince Albert Formation

(Karoo Sequence) occur in the North-Western part of the area of interest. The largest part of the study area is underlain by Aeolian sand and sometimes alluvial gravels of tertiary to recent age covering Dwyka tillite. Surface limestones occur sporadically in the area. During the 1920's relatively rich diamond deposits were found in the ancient gravel filled water course of the Vaal River within area. The heaps of mixed gravel still present in the area attest to the disturbance to which it was subjected. The larvas are green to grey-green in colour. The non-amygdaloidal varieties occur within the study area. The amygdaloidal, which comprise quartz, agate, chalcedony and carnelian are a major source of the Vaal Rover agates. Stratigraphically the larvas belong to the Allenridge formation and represents the uppermost volcanic stage of the Ventersdorp Supergroup. Quartzites of the Bothaville formation which underlies the ilenridge formation, rarely outcrop within the area of interest and are usually exposed where alluvial diggings have removed the surficial deposits.

The older gravels within the study area occur in channels or so-called "sluits". One prominent "sluit" is found within the study area, however there exists no evidence in the literature to suggest that the channels are sites of eroded kimberlite dykes.

The area forms further part of the old Palaeo River Valley which flowed from north to south and the Vaal River. The country rocks are lavas of the Ventersdorp supergroup and remnants of the Dwyka Tillite and Shale. The anticipated deposits are situated in channels and are covered in calcrete in some places. The deposits normally consist of thick medium to coarse grained fluvial gravels of mixed lithological composition. (Lava, Dolomite, Fe-shale, Chert, Quartzite, Agate, Quartz etc)

The deposit is further an alluvial gravel deposit situated on bedrock of shale and greywacke of the Dwyka formation. The gravel is underlain by quartzite and shale of the schmidtsdrif formation of the Transvaal Sequence, as well as carboniferous shale and tillite of the Dwyka Formation of the Karoo Sequence Rock Sequence. Rock types of both sequences found on the deposit are horizontally or near horizontally bedded, and are not conductive to pothole formation. Outcrops of rocks of the Transvaal sequence occur along the western and southern boundaries of the deposit. Deflation Gravel, Sand, Scree, Pebbly sand, Sandy Gravel, Gravel, Boulder gravel and Bedrock are found.

Land Use

The land use and land cover of the area is grazing and bushveld land. Most of the area is bare land, with thin soil layer between fractures and also covered by thin vegetation which was used for grazing by the farmers. The grazing land is on the flat land, which covers most of the project area.

Soil Type

The vaal rivers in the area meanders through various geological structures which give rise to a variety of soil types and textures. Based on the soil textural classification method, the soil that is found in the study area is grouped into different soil classes. Namely: gravel, sandy loam, clayey sand and sandy clay loam. Loam is a soil composed of a relatively even a mixture of three mineral particle size groups: sand, silt and clay. Loams are plastic when moist, and retain water easily. The proportions of sand sized particles are also prominent in sandy clay loam and sandy loam soil types. Sand loam, clayey sand and sandy clay loam have 12.5%, 8.3%, 7.7% aerial coverage, respectively.

Climate

Schmidtsdrift normally receives about 400 mm of rain per year, with most rainfall occurring mainly during autumn. It receives the lowest rainfall (1mm) in June and the highest (64mm) in March. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Schmidtsdrift range from 18.4°C in June to 41.2°C in January. The region is the coldest during July when the mercury drops to 1°C on average during the night.

Topography

The topography is flat with irregular plains and less than 1° slopes running from east to west. The landscape is broken in places by a series of ridges which cover about 5% of the area. The elevation is approximately 2 km. The area lies at an altitude of 1030 meters above sea level, with the highest elevations occurring in the east. Vaal river flows eastward between the Project areas.

Ecology

The information below was obtained from Mucina & Rutherford, 2006.

Flora

The region is dominated by the Savanna biome vegetation. This biome is species rich and contains many threatened flora and fauna. The project area is situated within the North Eastern shrubveld grass which is characterised by bushveld. The shrubveld grass also occurs approximately 900m to the south east of the study area. The regional vegetation of the area is, however, used for grazing, mainly by cattle, goat and pigs. A major factor delimiting the biome is the lack of sufficient rainfall which prevents the upper layer from dominating, coupled with

fires and grazing, which keep the grass layer dominant. This ensures a sustained supply of low quality water into the rivers. The west side of the study area is used for goat, pig and cattle-farming, it can thus be considered as effectively preserved.

The most distinctive trees in the area are the Camel Thorn (*Acacia mellifera*) and the *A. tortilis*. Other prominent trees are the Portly Baobab (*Adansonia digitata*) and the Candelabra tree (*Euphorbia ingens*).

Air Quality

The air quality of the pre-mining period is expected to have been of a better quality; however, the existing mines in the surrounding areas also contribute to the air quality degradation. The main concern in this regard would however be dust from the proposed diamond mining settling on surrounding areas. However, a dust control plan will be implemented for the proposed project in order to control any possible nuisance dust that might give rise from the surrounding.

Wetlands

A wetland as defined by the National Water Act refers to land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water and which under normal circumstances supports or would support vegetation typically adapted to life in water saturated soil. However, there are no wetlands in the region surrounding the project area.

The proposed Project area is in a low rainfall area at about 211 mm per annum and Sandstone and conglomerate are a prominent feature of the geology and result in considerable linkage between surface and ground water systems.

Hydrogeology

According to the Hydrogeological Map of the Republic of South Africa (Sheets 2722 – Kimberly 1:50 000) the main water bearing strata in the area is an intergranular and fractured aquifer made up of sandstone and conglomerate rocks.

According to the map, groundwater resources are generally limited, with sustainable borehole yields ranging from 0.5 – 1.9 l/s. The groundwater quality is thought to be good, with total dissolved solids (TDS) of less than 300mg/l. In intergranular and fractured aquifers, the water occurs in both

the upper weathered rock zone and the fractured but fresh rock formation below. These zones are in hydraulic contact. The regional aquifer system is defined as a Minor Aquifer System (Parsons, 2005) with low to moderate vulnerability to contamination. Minor Aquifer Systems can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability. The aquifer extent may be limited and water quality may be variable. Although these aquifers seldom produce large quantities of water, they are important both for local supplies and in supplying base flow to rivers.

Local Hydrogeology - Two types of aquifer systems have been recognized in the Project area, represented by:

- **Weathered Aquifer - The Dwyka sediments are weathered to depths between 5 – 10 metres below surface throughout the area. The upper aquifer, typically perched, is associated with this weathered zone and water is often found within a few metres of the surface (Hodgson, 2001). This aquifer is recharged by rainfall which infiltrates into the weathered rock and soon reaches an impermeable layer of shale, underneath the weathered zone. The movement of groundwater on top of this layer is lateral and in the direction of the surface slope (Hodgson, 2001).**
- **Fractured Aquifer - The pores within the Dwyka sediments are too well cemented to allow any significant permeation of water. All groundwater movement is therefore along secondary structures, such as fractures, cracks and joints. These structures are better developed in competent rocks such as sandstone, hence the better water-yielding properties of the latter rock type (Hodgson, 2001). It should, however, be emphasised that not all of the secondary structures are water-bearing. Many of these structures are closed due to compressional forces and the chances of intersecting a water-bearing fracture by drilling therefore decreases rapidly with depth. Water-bearing fractures with significant yields have been observed at depths of approximately 30m; these boreholes would, however, have insufficient yields for organised irrigation (Hodgson, 2001).**

Groundwater Levels and Flow Direction – Groundwater depths range from 15 to 30 mbgl. In general, groundwater follows the topographical setting of the area.

The regional groundwater flow direction appears to be to the south-west towards the vaal River. However, locally and on a small scale, flow directions can vary largely depending on topographic features.
• Groundwater Recharge - According to the Groundwater Resources of the Republic of South Africa Map aquifer recharge in the area is between 50 - 75mm/a.

2.7. Provide any relevant additional information.

None

3. **Identification of the anticipated environmental, social or cultural impacts**, **including the cumulative impacts, where applicable.**

3.1. Provide a description of the proposed project including a map showing the spatial locality of infrastructure, extraction area, and any associated activities.

Please see the Heritage Impact Assessment Report herewith attached.

3.2. Describe any listed activities (in terms of the NEMA EIA regulations) which will be occurring within the proposed project.

None

3.3. Specifically confirm that the community and identified interested and affected parties have been consulted and that they agree that the potential impacts identified include those identified by them.

None

3.4. Provide a list and description of potential impacts identified on the cultural environment.

3.4.1. Provide a list and description of potential impacts identified on the heritage environment, if applicable.

Please see the Heritage Impact Assessment Report herewith attached.

3.4.2. Provide a list and description of potential impacts identified on the socio-economic conditions of any person on the property and on any adjacent or non-adjacent property who may be affected by the proposed prospecting or mining operation.

Employment opportunities will be created for the local communities.

3.4.3. Provide a list of potential impacts (positive & negative) on: employment opportunities, community health, community proximity, and links to the Social and Labour Plan.

Potential impacts expected include:

• Availability of employment opportunities.

• The proposed project will aim to enhance the positive impacts resulting from this Project and minimise any negative social impacts which may arise as a result of the Project.

3.4.4. Provide a list and description of potential impacts identified on the biophysical environment including but not be limited to impacts on: flora, fauna, water resources, air, noise, soil etc.

NAME OF ACTIVITY **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. For mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**POTENTIAL IMPACT** (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	**SIGNIFICANCE** if not mitigated	**MITIGATION TYPE** (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation..	**SIGNIFICANCE** if mitigated
ROADS	Air Quality	Nuisance dust will be created by the mining equipment hauling material between the open excavation areas and the plant area.	Construction	High	Dust control Water spraying. Well maintained equipment	Medium
	Ground water	No impact to groundwater is expected from the roads that	Construction	No significance	Pollution control and good Housekeeping practise	No significance

		will be used by the planned prospecting operation.				
	Flora	Where new haulage roads will be created the vegetation will be disturbed and/or destroyed.	Construction	High	Stripping of topsoil and concurrent rehabilitation	High
	Fauna	Where new haulage roads will be created the natural habitat of the animals will be disturbed and/or destroyed.	Construction	High	Speed limits Environmental Awareness	High
	Noise	Noise from the mining equipment on the haulage roads will be created.	Construction	Medium	Noise control Well maintained equipment	Low
	Surface water	No impact to surface water is expected from roads that will be used by the planned prospecting	Construction	No significance	Pollution control and on-going housekeeping	No significance
		activities				

	Visibility	The haulage roads will be visible to some extent from the immediate surroundings.	Construction	No significance	Concurrent Rehabilitation	No significance
	Soil	No impact to soil is expected from the roads that will be used by the planned mining operation.	Construction	No significance	Stripping of topsoil and concurrent rehabilitation	No significance
	Topography	No impact to topography is expected from the roads that will be used by the planned prospecting operation.	Construction	No significance	Concurrent Rehabilitation	No significance
Pitting/Excavating	Air Quality	Nuisance dust will be created by the mining equipment excavating	Operational	High	Dust control Water spraying. Well maintained equipment.	Medium
		material the mining pits				

	Ground water	No impact to groundwater is expected from the roads that will be used by the planned prospecting operation.	Operational	No significance	Pollution control and good housekeeping practice	No significance
	Flora	Where new haulage roads will be created the vegetation will be disturbed and/or destroyed.	Operational	High	Stripping of topsoil and concurrent rehabilitation	High
	Fauna	Where new haulage roads will be created the natural habitat of the animals will be disturbed and/or destroyed.	Operational	High	Speed limits Environmental Awareness	High
	Noise	Noise from the mining equipment will be created.	Operational	High	Noise control Well maintained equipment.	Medium
	Surface water	No impact to surface water is expected from roads that will be used by the planned prospecting	Operational	No significance	Pollution control and on-going housekeeping	No significance

		activities				
	Visibility	The haulage roads will be visible to some extent from the immediate surroundings.	Operational	No significance	Concurrent Rehabilitation	No significance
	Soil	The disturbance of the soil structure during excavating activities.	Operational	High	Stripping of topsoil and concurrent rehabilitation	High
	Topography	Changing of natural slopes by mining pitting activities.	Operational	Medium	Concurrent Rehabilitation	Low
Temporary waste dump area & topsoil storage area	Air Quality	Nuisance dust will be created by the mining equipment when the material is dumped/stockpiled in these areas.	Commissioning	High	Dust control Well maintained equipment	Medium

	Ground water	No impact is expected.	Commissioning	No significance	Pollution control and good housekeeping practice	No significance
	Flora	The vegetation will be disturbed and/or destroyed in these areas.	Commissioning	High	Stripping of topsoil and concurrent rehabilitation	High
	Fauna	The natural habitat of animals will be disturbed and/or destroyed when the mine is created.	Commissioning	High	Speed limits Environmental Awareness	High
	Noise	Noise impact from the mining equipment on the haulage roads will be created.	Commissioning	High	Noise control Well maintained equipment	Medium
	Surface water	No impact to surface water is expected.	Commissioning	No significance	Pollution control and on-going housekeeping	No significance

	Visibility	These temporary storage areas will be visible to the immediate surroundings.	Commissioning	No significance	Concurrent Rehabilitation	No significance
	Soil	The disturbance of the soil structure.	Commissioning	High	Stripping of topsoil and concurrent rehabilitation	High
	Topography	Changes of natural slopes.	Commissioning	Medium	Concurrent Rehabilitation	Low
Mine residue disposal dam	Air Quality	No impact to air quality is expected.	Commissioning	No significance	Dust control and well maintained equipment	No significance
	Ground water	No impact to air quality is expected.	Commissioning	No significance	Pollution control and good housekeeping practice	No significance
	Flora	The vegetation will be disturbed and/or destroyed when the mine residue dam is created.	Commissioning	High	Stripping of topsoil and concurrent rehabilitation	High
	Fauna	The natural habitat of animals	Commissioning	High	Speed limits Environmental Awareness	High

		will be disturbed and/or destroyed when the mine is created.				
	Noise	No noise is expected.	Commissioning	No significance	Noise control Well maintained equipment	No significance
	Surface water	No impact to air quality is expected.	Commissioning	No significance	Pollution control and on-going housekeeping	No significance
	Visibility	The mine residue dam will be visible to the immediate surroundings.	Commissioning	No significance	Concurrent Rehabilitation	No significance
	Soil	The disturbance of soil structure during excavation activities.	Commissioning	No significance	Stripping of topsoil and concurrent rehabilitation	No significance
	Topography	Changing of natural slopes	Commissioning	Medium	Concurrent Rehabilitation	Low

Plant & processing area	Air Quality	Nuisance dust will be created by the mining equipment.	Operational	High	Dust control Water spraying. Well maintained equipment	Medium
	Ground water	No impact to groundwater is expected.	Operational	No significance	Pollution control and good housekeeping practice	No significance
	Flora	Where the plant and processing area will be created the vegetation will be disturbed and/or destroyed.	Operational	High	Stripping of topsoil and concurrent rehabilitation	High
	Fauna	Where new haulage roads will be created the natural habitat of the animals will be disturbed and/or destroyed.	Operational	High	Speed limits Environmental Awareness	High
	Noise	Noise from the plant and processing equipment will be created.	Operational	High	Noise control Well maintained equipment	Medium

	Surface water	The utilization of water from boreholes for the washing of diamond material.	Operational	High	Pollution control and on-going housekeeping	Medium
	Visibility	The plant and processing area will be visible to some extent from the immediate surroundings.	Operational	No significance	Concurrent Rehabilitation	No significance
	Soil	The disturbance of the soil structure when the plant and processing area is created. mining operation.	Operational	High	Stripping of topsoil and concurrent rehabilitation	High
	Topography	No impact to the topography is expected from the plant and processing area.	Operational	No significance	Concurrent Rehabilitation	No significance

3.4.5. Provide a description of potential cumulative impacts that the proposed operation may contribute to considering other identified land uses which may have potential environmental linkages to the land concerned.

Cumulative impacts and effects are those that arise as a result of an impact and effect from the project interacting with those from another activity to create an additional impact and effect. Other activities in the area that could result in cumulative impacts include other mining Projects and future developments in the area.

The impact assessment process will predict any cumulative impacts/effects to which the Project may contribute. The approach for assessing cumulative impacts and effects resulting from the Project and another activity affecting the same resource/receptor is based on a consideration of the approval/existence status of the 'other' activity and the nature of information available to aid in predicting the magnitude of impact from the other activity. At this stage cumulative impacts are likely to be associated with hydrogeological, ecological and social aspects.

4. **Land use or development alternatives, alternative means of carrying out the proposed operation, and the consequences of not proceeding with the proposed operation.**

4.1. Provide a list of and describe any alternative land uses that exist on the property or on adjacent or non-adjacent properties that may be affected by the proposed mining operation.

At this stage the only known alternative land uses existing on the Project area include farming. Other alternative land uses may become apparent during the impact assessment phase of the Project. Currently, the adjacent farmers practise mining and farming

4.2. Provide a list of and describe any land developments identified by the community or interested and affected parties that are in progress and which may be affected by the proposed mining operation.

There are currently no known land developments by communities or I&APs

4.3. Provide a list of and describe any proposals made in the consultation process to adjust the operational plans of the mine to accommodate the needs of the community, landowners and interested and affected parties.

No alternative proposals were made

4.4. Provide information in relation to the consequences of not proceeding with proposed operation

There will be lost opportunity to provide jobs to the local community through the proposed project.

4.5. **a description of the most appropriate procedure to plan and develop the proposed mining operation** The applicant must:-

This will be an objective and outcome of the Impact Assessment phase of the Project. A generic procedure is given below:

1) Description of Planned Non-Invasive Activities

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

Phase 1

Imagery Analysis and Geological Mapping

High resolution satellite images will be studied and used to geologically map the application area. Contacts between various lithologies will be mapped and specific attention will be given to delineate and define areas underlain by alluvial gravels or Kimberlites.

A site investigation of the target areas will be undertaken to identify infrastructure and determine any potential problems that may need to be addressed.

2) Description of Planned Invasive Activities

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

Phase 2

Trenches Sampling

Discussed herein after, Section 3.

3) Description of Pre-feasibility Studies

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

Phase 3

Analytical Desktop Study

The project Geologist monitors the programme, consolidates and processes the data and amends the programme depending on the results. This is a continuous process throughout the programme and continues even when no prospecting is done on the ground.

Each physical phase of prospecting is followed by desktop studies involving interpretation and modelling of all data gathered. These studies will determine the manner in which the work programme is to

proceed in terms of activity, quantity, resources, expenditure and duration.

A GIS based database will be constructed to capture all exploration data.

4) Description of Bulk Sampling Activities

Bulk sampling is a sampling technique.

Volumes of the mineral to be tested

About 50 Trenches will be excavated with the following dimensions that prove to contain gravels. It is estimated that an average 3m of overburden (calcrete and soil) will be removed before accessing the gravel layer (average width 2 – 4m) which is host to the diamonds. The trenches will be 25m x 15m x 0.5 – 7m deep. We calculated the volume of gravel on 2m and if all 50 trenches are going to be excavated an average of 37 500m³ will be tested.

Why will they be tested?

The gravel will be tested to determine a grade (carats per hundred tonne) and value (US$ per carat). The closest alluvial operation is next to these farms on all sides of the river which necessitates bulk sampling for this project.

Where will they be tested?

All bulk sampling activities will take place on site or out of site. Herewith follows a description of the process:-

The planned bulk sampling technique is that of a typical South African alluvial diamond operation and may have to include mining of kimberlite. The planned prospecting method is a strip mining process with oversize material from the gravel scalping and the tailings from the plant, being used as a backfill material prior to final rehabilitation. Gravels are excavated, loaded and transported to the nearby treatment facility using articulated dump trucks. The access to the various gravel trenches will be provided by a haul road to the screening and processing plants. The operation is to be conducted using conventional open pit mining equipment comprising two articulated dump trucks supported by appropriate excavators and a front-end loader. The vegetated soil overlying the planned trenches is stripped prior to excavation of the gravel and stockpiled on a dedicated dump to be used for rehabilitation purposes at a later stage. The gravel is loaded with a 60-t excavator into ADT's. Ore is hauled to the screening plant. As an integral part of the bulk sampling processes, backfilling will take place continuously. The operation is to be conducted using conventional open pit mining equipment:

Earthmoving and ancillary equipment

1 x Excavator

1 x Front-end Loader

2 x Articulated Dump Trucks

1 x Water Truck

1 x 16ft-Rotary Pan

Screen

Utility vehicles and small tools

Diamond recovery unit with Flow sort Machines, Plant, and recovery, crushing and screening equipment

Gravels are loaded onto a vibrating grizzly and the +85mm oversize material is discarded back into the open pit (about 25% reduction). The remaining -85mm fraction is loaded into a 16-foot rotary pan with a treatment capacity of 50 tph. A magnetic separator is used to extract some of the heavy banded iron stones. Tracer tests are done regularly to ensure that the pans are operating at the correct density. Approximately 2.5 tonne of concentrate is tapped from the pan every hour and transported in locked containers to the final recovery unit. The final recovery unit consists of a holding bin, sizing screen, sizing bins and one state of the art Flowsort X-ray recovery unit which recover diamonds from the +2mm to -32mm size fraction. Final sorting of the X-ray concentrate will be done manually. Rehabilitation will take place continuously and at any stage only one trench will be open.

If kimberlite is found to be present in any of the farms in question, the application to the DMR will be dealt with accordingly.

To whom they will be disposed of:

At an expected grade of 0.5 carats per hundred tonnes, 8 800 carats could be recovered from the gravels. Diamonds will be sold at a reputable diamond tender house in Kimberley to determine an average US$ carat value for the diamonds.

4.5.1. Provide information on its response to the findings of the consultation process and the possible options to adjust the mining project proposal to avoid potential impacts identified in the consultation process.

None

4.5.2. Describe accordingly the most appropriate procedure to plan and develop the proposed mining operation with due consideration of the issues raised in the consultation process.

The procedure given in section 4.5 will remain unchanged.

5. A description of the process of engagement of identified interested and affected parties, including their views and concerns

5.1. Provide a description of the information provided to the community, landowners, and interested and affected parties to inform them in sufficient detail of what the prospecting or mining operation will entail on the land, in order for them to assess what impact the prospecting will have on them or on the use of their land.

No comments received to date.

5.2. Provide a list of which of the identified communities, landowners, lawful occupiers, and other interested and affected parties were in fact consulted.

Landowner, Adjacent farmer/miner, EA and PWP provided to Departments for comments, Agriculture, Water and Sanitation, Mc Gregor Musuem, Environment and Nature Conservation, Eskom, Transnet & Public Works.

5.3. Provide a list of their views in regard to the existing cultural, socio-economic or biophysical environment, as the case may be,

No comments received to date

5.4. Provide a list of their views raised on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation;

None

5.5. Provide a list of any other concerns raised by the aforesaid parties.

None

5.6. Provide the applicable minutes and records of the consultations.

Please see attached

5.7. Provide information with regard to any objections received.

None

6. Describe the nature and extent of further investigations required in the environmental impact assessment report, including any specialist reports that may be required.

The following potential negative impacts associated with the proposed project are deemed to be the most significant:

- **Impacts associated with groundwater drawdown on local boreholes**

In addition to the above, the following positive potential impacts have been identified for the Project:

- **Employment opportunities for the surrounding areas.**

Specialist involvement in the EIA Phase to assess the above mentioned impacts will need to include the following:

- **Hydrology Specialist Study**

The proposed Project is situated on the eastern and western side of the Harts River, therefore surface water from this source will be used by the proposed Project.

Hydrological specialist input into the EIA phase will therefore include:

- **The identification of potentially impacted rivers**
- **Baseline surface water quality and the design of a surface water quality monitoring programme;**
- **The determination of normal dry weather flows:**

The intrusive studies and hydrocensus will be used to characterise the groundwater regime and to refine the groundwater conceptual model of the baseline groundwater conditions.

The conceptual site model will describe the following:

- **The type of aquifer/s present and its relationship with the surface topography**

- **Depth to the aquifer and aquifer parameters such as transmissivities and storability;**
- **Borehole yields;**
- **Description of the groundwater chemistry;**
- **Groundwater use within the study area;**
- **Subsurface extent and thickness of aquifers and confining units hydrogeological framework);**
- **Groundwater flow direction**
- **Natural groundwater flow boundaries (also referred to as boundary conditions), which control the rate and direction of movement of groundwater**
- **Yields and hydraulic properties of the aquifers;**
- **Estimation of groundwater recharge;**
- **Seasonal variations of the above stresses; and**
- **Aquifer classification and vulnerability.**

The groundwater model will be based on the conceptual site model, and include a complete steady state model as well as a transient state model for the operational phase. The model should be used to evaluate:

- **Mine dewatering and resultant groundwater drawdown**
- **Future groundwater contaminant plumes from plant and mine waste areas; and**
- **Potential mine decant.**

The results of the numerical modelling will be used to make informed management decisions regarding all phases of the mine life cycle, and will be incorporated into a detailed Water Management and Monitoring Plan.

Topography and Land Use

- **The proposed mining operation may alter the topography and land use of the area.**

Soil and Land Capability

- **The proposed mining may affect the soils and land capability due to topsoil stripping, soil stockpiling and resultant weathering and erosion of the soils.**
- **Hydro-carbon spills from the mine vehicles may occur during handling and transportation of diamonds, as well as from the maintenance of these vehicles.**

Air Quality

- **Stripping, loading and dumping activities may generate dust.**
- **Carbon emissions from vehicles may occur.**

Flora

- **The proposed mining project will result in vegetation clearing.**

Fauna

The proposed mining activity in the area may cause a disturbance to the fauna of the area--noise, traffic, disturbance of nesting sites / breeding grounds and interruption of migration routes may all contribute to this disturbance.

Geohydrology

Groundwater resources may be affected by the proposed project by means of localised dewatering and water quality deterioration.

Socio-Economic Environment

Construction and operational activities may negatively impact on the ambient noise levels in the area.

A report from an Archeologist is important.

B. IDENTIFICATIONOF THE REPORT

The report on the results of consultation must, at the end of the report include a certificate of identification as follows;

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises the results of consultation as contemplated in Section 16 (4) (b) or 27 (5) (b) of the Act, as the case may be.	
Full Names and Surname	**Zandile Dwane**
Identity Number	**8604260586087**

- END -