DRAFT BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME

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

NAME OF APPLICANT: **Tom Berry Trading Enterprise cc**

REFERENCE NUMBER: **GP 30/5/1/1/2/10543 PR**

FARM NAME: Portion 28, RE of the farm Grootfontein 165 IR

MAGISTERIAL DISTRICT: **Nigel**

COMMODITY: **Coal**

DATE: **OCTOBER 2018**

STANDARD DIRECTIVE

In terms of the Mineral and Petroleum Resource Development Act as amended, the Minister must grant Mining or Prospecting right if among others the mining will not result in unacceptable pollution, ecological degradation or damage to the environment''.

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

In terms of section 16(3) (b) of the EIA Regulations, 2017, 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.

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SOURCES

1. Council for Geoscience (C J Vorster),2007
2. Statistics South Africa(census), 2011
3. http://www.samsamwater.com/climate,2016

LIST OF TABLES

1. IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED.

Table 1-1: Details of the applicant

ITEM	COMPANY CONTACT DETAILS
Company Name	Tom Berry Trading Enterprise cc
Full Name and	Beanice Swarts
Mobile no	078 003 4660
Fax no:	086 599 3318
E-mail address	b.swarts@yahoo.com
Postal address	Number 7, Second Street, Jeppe South, Johannesburg 0001

Table 1-2: Details of the EAP

ITEM	CONSULTANT CONTACT DETAILS
Name	TPR Mining Resources (Pty) Ltd
Tel no	079 244 2470
Fax no:	086 599 3318
Cellular no	082 423 4093
E-mail address	info@tprmining-resources.co.za
Physical address	137 Watermeyer street Klipfontein Ext Witbank 1035

Project team

Author EAP Team:

Mr. Thato Ramoraswi

Qualification: BEnvSc (Bachelor of Environmental Science), Cert in Waste Management

Ms. Pheladi Mphahlele

Qualification: BESMEG (Bachelor of Earth Science in Mining & Environmental Geology)

Experience: See Attached **Appendix F**

2. Location of the overall activity

Table 2.1: details of the affected site

	Portion 28 of remaining extent of the farm Grootfontein 165 IR
Application area(Ha)	5 Ha
Magisterial district	Nigel
Distance and direction from nearest town	Approximately 14km southern side of Springs town along the R51 route to Nigel
21 digit Surveyor general code for the portion.	T0IR000000000165028

3. INTRODUCTION

Tom Berry Trading Enterprise cc has applied for an Environmental authorisation for prospecting right on portion 28 of the farm Grootfontein 165 IR. This type of mining generates minimal impacts on the surface area, through drilling of boreholes and desktop studies done on the prospecting area. This activity is contemplated under NEMA ACT (107 of 1998), as amended and section 27 of the Mineral Petroleum Resource Development Act 2002 (Act 28 of 2002) as amended

3.1 Project locality

The proposed prospecting area is located approximately 14km of southern side of Springs town along the R51 route to Nigel, within the jurisdiction of City of Ekurhuleni Metropolitan Municipality, Gauteng Province.

3.1.1 Site Co-ordinates of the application area

A.	26.37012 S	28.46383 E
B	26.35914 S	28.47389 E
C	26.36165 S	28.47762 E
D	26.37394 S	28.46637 E
E	26.37213 S	28.46443 E

4. Locality Map of the proposed farm Uitgevonden 355 JP

See attached Locality **Appendix B**

4.1 Description of the Scope of the proposed overall activity

4.1.1 Listed and specified activities

Table 4.1: listed activities

Name of activity E g. for prospecting drill site, site camp	**Aerial extent of the activity Ha or m^2**	**Listed activity mark with an X where applicable or affected.**	**Applicable listing notice (GNR 983,984.985)**
Drill site (indicated by circular dots)	$9M^2$	X	GNR 327 listing no 1 (Activity 20)
Ablution facility(mobile hired toilets closer to each drill site)	$1M^2$	X	GNR 327 listing no 1 (Activity 20)
Accommodation (camping site for drilling contractor outside prospecting site)	$500m^2$	X	GNR 327 listing no 1 (Activity 20)
Equipment storage (outside prospecting site)	$500m^2$	X	GNR 327 listing no 1 (Activity 20)
Sample storage (outside prospecting site)	not applicable	X	GNR 327 listing no 1 (Activity 20)
Site office (No site office to be established)	not applicable	X	GNR 327 listing no 1 (Activity 20)
Access route(Pre-existing access routes will be used)	Pre-existing route	X	GNR 327 listing no 1 (Activity 20)

4.2 DECRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

4.2.1 Minerals to be prospected

Tom Berry Trading Enterprise cc intends to prospect for Coal utilising geophysical survey, core drilling and ore sampling. Drilling will be conducted on specified drilling points depending on available site within the farm portion.

4.2.2 Methods to be used for prospecting

Invasive methods

Invasive methods will include diamond core drilling which is preferred when prospecting for Coal and associated minerals. Core drilling is done in order to ascertain the stratigraphy and reef horizon of the ore body. However no invasive methods will be utilized for this application, this is due to the fact that previous drilling results have been obtained from previous drilling activities that were conducted on the same affected farm properties

Non-invasive methods

Non-invasive methods includes ground magnetic survey and produces minimal impact on the environment. The ground magnetic survey will assist in identification of plotted sites within the boundary of the farm where drilling will take place, this type of survey is used to determine the required data for mapping of the ore body. Geophysical survey and field reconnaissance will also be undertaken in order to obtain detailed data of the ore to be prospected.

5. Policy and Legislative Context

Table 5.1: listed activities

Applicable legislation and guidelines used to compile these report(	Reference where applicable	How does this development comply with and respond to the legislation and policy
National Environmental Management Act 107 of 1998,GNR 983 Listing Notice 1, Activity 20	Government gazette No: 10328,07 April 2017 No 38282, Department of Environmental Affairs	An application for Environmental authorisation has been lodged in terms of the NEMA ACT (107 of 1998)

National Environmental Management: Biodiversity Act (No 10 of 2004), Sections 57, 65-69, 71, 73 and 75	Department of Environmental Affairs	An application for a permit for removal of indigenous plant has not been lodged, if by any means there is existing indigenous plants within the proposed prospecting area, an application will be lodged with the department of environmental Affairs prior to removal
National Heritage Resources Act (No 25 of 1999), Section 34–36(NHA)	South African Heritage Resource Agency	An application for a permit to demolish old structures that are more than 60 years old or presence of graves has not been lodged, if there is presence of archaeological remains within the proposed prospecting area, such will be done in accordance with prescribed legislation.
Mineral Petroleum Resource Development Act 28 of 2002(MPRDA)	Department of Mineral Resources	An application for a prospecting right has been lodged with the Department of Mineral Resources in terms MPRDA (28 of 2002)section 16
National Water Act(Act 36 of 1996)NWA	Department of Water Affairs	Application for a Water-use licence will be applicable should any water resources is disturbed within the prospecting area.
Conservation of Agricultural Resource Act(Act 43 of 1993)CARA	Department of Agriculture and Fisheries	Protection of agricultural resources from any prospecting activities will

		be practised.

5.1 Need and Desirability of the proposed activities

The portion of portion 28 (Remaining Extent) of the farm Grootfontein 165 IR is situated southern side of Springs town along the R51 to Nigel which is characterised by mining activities and farming approximately 500m from the proposed prospecting area. The type of mining to be conducted has minimal impact on the environment as it will only involve sampling of ore, to determine the quantity and grading of the ore. The current land-use activities involve crop and livestock farming, however adjacent the affected farm area there is also mining activities taking place, thus the establishment of mining activities around the area will boost local economy and decrease unemployment not only around the prospecting area but also to the nearby town region. **See Appendix A**

5.1.1 Socio economic status of the surrounding areas

The current Socio economic status of Tsakane and Nigel which surrounds the Springs town requires urgent intervention through mining establishments and infrastructure development. Lack of job opportunities, poor road networks and dilapidated retail facilities are prevalent around the town. The distribution of Coal reserve is in abundance around the area of Nigel. This has attracted foreign investments to the local towns and nearby communities through mineral processing of Coal. Introduction of mining operations will attract businesses to invest within the surrounding area, there is already mining developments taking place due to the Gold and Coal mines existing around the farm areas.

The town of Springs consist of marginal residential site and few street with retail facilities. Introduction of mining operations will attract businesses to invest within the surrounding area, hence bring development of parks, shopping Malls recreation facilities. This will improve social cohesion for the local communities.

The unemployment rate is sitting at 26.7 % and youth unemployment rate at 38.2 %.This rate is amounted from a total population of 3 178 470. More than a third of the population between the ages of 20 and 64 years in the City of Ekurhuleni Metropolitan Municipality and the wards that encompass the areas such as Benoni, Brakpan, Springs and Nigel area are not economically active (Statistics South Africa, 2018).

Mining operation will boots local SMMEs and business, which will in turn reduce unemployment rate around the area and illegal mining which poses a threat to local GDP. Mining operations will also attract retail facilities around the proposed mining area. Geological patterns indicate presence of Coal reserve around the farm

Grootfontein 165 IR, there are also existing mining activities of the same commodity to be prospected taking place on other portions.

5.1.2 Location suitability

The farm area is characterised by mining and farming activities from the eastern side stretching to the western side. There is low–residential concentration within and around the proposed farm area, which provides suitable establishment of mining operations. The commodity which is proposed to be prospected is geologically distributed within and around the farm area stretching towards the western side of the farm.

5.2 Motivation for the overall preferred site, activities and technology alternatives

5.2.1 Preferred site

The Nigel region is situated in the 7000m^2 highveld coalfield which extends into south eastern of Mpumalanga. The Highveld Coalfield is situated immediately south of the Witbank Coalfield and is the second most productive coal field after the Witbank Coalfield in South Africa. The Vryheid Formation contains five coal seams of which the Number 4 Seam is of high economic value in the vicinity of the study area. The coal seams of the Vryheid Formation are separated by layers of shale and mudstone, many of which are fossiliferous (Johnson et al. 2009). These fossiliferous layers contain vast amounts of leaf and stem imprints of plants in places.

See **Appendix A**

5.2.2 Summary of exploration programme to be undertaken. Desktop study:

This programme aims to assess historical data of the property and surrounding properties. Properties and previous work done on the property and will comprise of the following key activities:

- Historical data
- Previous prospecting activities
- Prospecting activity
- Challenges relating to exploration and mining
- Depth
- Thickness of the ore body
- Coal content
- Size of the ore body

5.2.3 Geological Mapping

After conducting a desktop study of the property the next subsequent activity will entail a field mapping the area to determine various rocks and minerals that have an economic potential a detailed mapping programme needs to be undertaken so as to identify the rock and mineral where there is ore (Gold and Coal) mineralization present.

This might include the following mapping techniques such as:

- Identifying various rock and mineral lithologies.
- Mapping geological structures that might be of economic importance.
- Mapping alteration processes that might be of economic importance such as weathering, leaching, dissolution and enrichment processes

5.2.4 Structural Mapping

The programme will determine the dip of the ore body and the strike of the ore body. Furthermore structure such as faulting and folding will be mapped out from the mapping exercise all areas that need to be drilled will be properly sited on site.

5.2.5 Location of Suitable boreholes

Drilling

As we are targeting shallow and open-castable, drilling will be limited to a depth of 50 metres. Exact number of boreholes will be determined after geophysical surveys have been conducted, with consideration of the existing infrastructure, water bodies found within the affected farm area which will be avoided. The orientation and dip of the drill holes will depend mainly on the strike and dip of the rocks. They will be planned in a manner to ensure that the ore body is intersected.

Size of the boreholes

Due to the geological setting of the affected farm, which is characterised by The Coal deposit occurs in the 7000m^2 Highveld Coalfield which extends into south eastern of Mpumalanga. The Highveld Coalfield is situated immediately south of the Witbank Coalfield and is the second most productive coal field after the Witbank Coalfield in South Africa. The Vryheid Formation contains five coal seams of which the Number 4 Seam is of high economic value in the vicinity of the study area.

The proposed drilling diameter that would be suitable to the affected prospecting area is explained on the below table.

- Diameter (0,036mm)

- Depth (50 m)

Table 5-2: calculations of the size (area) of a borehole

A	**∏**	**r^2**	**m**
Area	Pie	radius	metres
$A = \prod r^2$ **$A = \prod \times (0{,}018m)^2$** **$A = 1.01 \times 10^{-3}\ m^2$ (size of each borehole)**			

5.2.6 Types of equipment's that are going to be used during the operation

Drilling of holes- Standard Diesel powered drilling rig will be used for the holes. Site visit - Standard 4x4 Bakkie.

6. Description of the process followed to reach proposed preferred alternatives within the site

6.1.1 Details of the development footprint alternatives considered

ANALYSIS OF ALTERNATIVES

In terms of the NEMA EIA Regulations one of the criteria to be taken into account by the competent authority when considering an application is "any feasible and reasonable alternatives to the activity which is the subject of the application and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment". Alternatives are defined in the Regulations as "different means of meeting the general purpose and requirements of the activity". It is therefore necessary to provide a description of the need and desirability of the proposed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity.

6.1.2 Property alternative

The prospecting sites will be determined by the location of the ore body using dataset collected during geophysical surveys, which will aid in identifying sensitive environments which will be avoided.

6.1.3 Technology alternative

There are available drilling types that are used for prospecting activities namely

- **Percussion drilling**

It is a manual drilling technique in which a heavy cutting or hammering bit is attached to a rope or cable is lowered in the open hole or inside a temporary casing.

- **Rotary core drilling**

It is a drilling technique that uses sharp and rotational drill bits to create holes in the earth's crust.

- **Multi-combination rigs**

It is a drilling technique that uses both the percussion and rotary drilling techniques.

Trenching can also be an alternative prospecting method but at the same time produces significant environmental impact on the site where prospecting will be conducted.it involves excavation of a deep narrow hole as opposed to a drill rig which will utilize about a 100m^2 in size.

6.1.4 No-go alternative

The no-go alternative will hinder development within and around the area and will not provide sufficient evidence of possible mine development within the farm property as it was investigated from previous studies done.

7. Details of the Public Participation process followed

7.1 Confirmation of consultation

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

The interested and affected parties have been confirmed to this matter. We were able to put a site notices during the site visit on the 27th August 2018, a newspaper advertisement will be placed on the Springs advertiser newspaper on the 1st of November 2018 to inform interested and affected parties of the prospecting activities. (See attached **Appendix E**). Discussions have been held with the relevant landowner, lawful occupiers and adjacent landowners to inform them of the proposed prospecting during the consultation site visits. Any possible concerns in terms of possible impacts were communicated directly to the proponent. As

directed on the acceptance letter from the competent authority, the applicant has informed and requested comments from landowners. See **Appendix E**

7.2 Record of the public participation and the results thereof

7.2.1 Identification of interested and affected parties

Landowner and their contact details were identified through a Title Deed search and through the public participation for the properties falling within the proposed prospecting area. Newspaper advert and site notices were placed around the local areas to allow members of the surrounding community to comment on the proposed prospecting application. **See Appendix E**

7.3 The details of the engagement process

7.3.1 Description of the information provided to the community, landowners, and interested and affected parties

During the consultation engagement we were able to meet with Mr. Agrippa Semata from eKurhuleni Metropolitan Municipality,which is the landowner for the affected portion 28 of farm Grootfontein 165 IR. We were able to outline the prospecting application process and their involvement in the process. The following information was provided to the landowner and interested and affected parties through emails and telephones:

Tom Berry Trading Enterprise is planning as part of the prospecting work to conduct drilling operations on the availability of the vacant site provided by the landowner, which will be rehabilitated. The aim of the prospecting is to determine whether there is any viable Coal to be extracted in the long term. Should the prospecting study provide enough information in terms of a feasible long term mining project, an application will be made to the Department of Mineral Resources for a either a Mining permit or right. Should this be the case, the option of purchasing some of the properties can be investigated and negotiated with the various owners. The landowners were informed that should a Mining Right be applied for, it will be for an open-cast mine, and no underground section will be required due to the shallow depth of the coal within the area. Tom Berry Trading Enterprise cc requested the landowners for their co-operation during the prospecting process of which currently only the landowner of the affected farm has been informed of the proposed prospecting activities applied for. **See Appendix E**

7.3.2 List of which parties identified in above that were in fact consulted, and which were not consulted

Table 1.10.1: Landowners and I&APs of the proposed area have been consulted.

Name of Interested /affected parties	Contact Details	How did the Consultations take place?	What were His /her concerns about the Operation?
eKurhuleni Metropolitan Municipality	Mr.Agrippa Semata Property division	meetings	The report will be presented at the council meeting about your proposed activity, a response will be provided in due course.
Department of Agriculture and Rural development		Documents submitted	
Department of Rural,Development and land reform & Agricultural Development	Email: Solomon.marumа@drdlr.gov.za	Email were sent	We are waiting for responses
Department of Water & Sanitation		Documents submitted	We are waiting for responses
Adjacent landowners		Site notices placed on site	

7.3.3 List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.

The drilling plan will avoid areas such as graves, buildings and indigenous or endangered species flora and fauna. According to the information provided by the landowner and lawful occupiers of the farm, The department of Rural Development have been notified of our application with regard to any land claims that might be pending, we are still awaiting a response from the Land Restitution section of the department, but if a claimant arise during the application phase the competent authority will be informed due course. The department of Rural Development and Land Reform has been notified of the application on the said farm, local people and businesses with appropriate skills will be identified and included in the project tender process by Tom Berry Trading Enterprise cc. It is committed to employ local people and businesses during the project, where possible.

Due to the nature of prospecting, employment opportunities will be minimal. The prospecting crew is small (5 people) with specialized skills. Were possible, local people will however be employed during the project. Compensation for damages will be negotiated with the lawful occupiers (in accordance with the Arbitration Act of 1965 (Act No.42 of 1965) the before any drilling can be initiated on the farm. This will be based on the merits of each case.

7.3.4 List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation

Waiting for comments from I&APs

7.3.5 Other concerns raised by the aforesaid parties

7.3.6 Confirmation that minutes and records of the consultations are appended.

See attached **Appendix E.**

7.3.7 Information regarding objections received.

No objections have registered to date.

7.4 The manner in which the issues raised were addressed

The interested and affected parties were given an opportunity to raise their concerns and consultation was done through telephonic conversation and information was provided over site visit within the prescribed timeframes to allow the landowner sufficient time to respond and raise issues. See attached emails **Appendix E**

8.

9. Summary of issues raised by I&APs

Interested and Affected parties List the names of persons consulted in this column Mark with an X where who must be consulted were in fact consulted		Date comments received	Issued raised	Eap 's response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues or responses were incorporated
Affected parties					
Landowner/s	**X**				
eKurhuleni Metropolitan Municipality			Waiting for comments		**Appendix D**
Lawful occupier/s of the land					
		N/A			
Landowners or lawful occupiers of adjacent properties					

Municipal Councillor	X				
					Appendix D
Municipality					
eKurhuleni Metropolitan Municipality	X		Still waiting for response		**Appendix D**
Organ of state(Responsible for infrastructure that may be affected Roads department, Eskom, Telkom, DWA					
N/A					
Communities					
N/A					
Department of Land Affairs					
1. **Department of**			Still waiting for response		**Appendix D**

Rural Development and Land reform(Land Restitution support)	X				
Traditional Leaders					
N/A	X				
Department of Environmental Affairs					
Department of Agriculture and Rural Development	X		Still waiting for response		**Appendix D**
Other Competent authorities affected					
Department of Water & Sanitation			Still waiting for response		**Appendix D**
Other affected parties					
	X				**Appendix D**

Interested parties	N/A				

10. Environmental Attributes associated with the alternatives

10.1 Baseline environment

10.1.1 Type of environmental affected by the proposed activity

The proposed prospecting area is dominated by shrubs and few acacia trees covering majority of the affected area. A portion of the farm area is composed of power lines, water pipes, and buildings of factories.

Climate

The project area is at a subtropical latitude and comprises of mild temperatures that ranges above 30℃. It experiences wet summers from October to April while cool, windy and dry winters start from May to August. The average rainfall normally occur in wet summer in between 715 mm to 735 mm annually hence can smoothes the drilling process due to average content of water underground (EMM EMF, 2007). Severe frost occurs frequently from mid-April to September. Temperatures below freezing are common in winter. Winds are usually gentle, while moderately high-speed winds can occur from late winter to early spring (EMMBR, 2008).

Topography

The study area is characterized by a generally flat and at places gently undulating landscape consistent with the erosion of the almost horizontally orientated underlying sandstone and mudstone layers of the Ecca Group. It is dominated by sedimentary rocks consisting mostly of shale (metamorphosed mudstone), shaly sandstone, sandstone, grit, gravel and conglomerate of the 280 Ma Vryheid Formation of the Ecca Group of the Karoo Supergroup. The major watershed between the rivers drain west towards the Atlantic Ocean and those that drain east towards the Indian Ocean (EMMBR. 2008).

10.1.2 Description of the current land uses

The proposed farm area is characterised by shrubs suitable for grazing of livestock and scattered tall trees (Acacia). A portion of the farm area is composed of power lines, water pipes, and buildings of factories. Below is the indication of such land-uses.

Fig 9.1 Existing vegetation and land-use activities on the farm area

10.1.3 Description of specific environmental features and infrastructure on the site

Fauna and Flora

The entire study area falls within the Grassland Biome in which grass dominates and geophytes occurs abundantly. The sub-type of the vegetation that occur in the Nigel area is Tsakane Highveld Grassland. Trees are usually absent, except along river courses and on koppies. Establishment of trees is curtailed by frost, veld fires and grazing. Only approximately 34% of the total area remains under natural vegetation in various states. The dominant grass is red grass (Themeda triandra) and. It grows on sandstones and shales with deep sandy loam soil.

There is an existing pond that human might have constructed on site for animals to drink water while grazing. During prospecting process the pond will not be affected.

10.1.4 Environmental and Current land use Maps

See attached **Appendix A**

11. Impacts and risks identified including the nature, significance, consequences, extent, duration and probability of the impacts, including the degree to which these

11.1 POTENTIAL IMPACTS OF THE PROPOSED PROSPECTING OR MINING OPERATION ON THE ENVIRONMENT, SOCIO-ECONOMIC CONDITIONS AND CULTURAL HERITAGE.

11.1.1 The main prospecting activities (e.g. access roads, topsoil storage sites and any other basic prospecting design features)

Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur. Topsoil is to be replaced by direct return where feasible (i.e. replaced immediately on the area where construction is completed, rather than stockpiling it for extended periods. Topsoil shall be adequately protected from being blown away or being eroded.

Land Capability

Land capability will be negatively impacted on an area where soil is disturbed. The significance is low, the disturbance of grazing land will be restricted (kept to a minimum) to the planned prospecting site only and useful infrastructure needs to be identified.

Management action is required to ensure the rehabilitation plan is expanded to include mitigation measures. Develop closure documentation to record the rehabilitation plan and post-closure features. Will identify and negotiate with the post-closure land user, which useful post-closure structures must remain. All unsafe area to be safe as designs and approved rehabilitation closure plan.

Surface Water

Surface water is likely to be impacted on during this phases, despite stringent precautions. This would also be the case during the prospecting activities in most cases however; the nature of pollutants/ spillage would not lead to toxicity just soils (Suspended solids) and vegetative waste.

Ground Water

It is not expected that the prospecting activity will impact on the groundwater quality. The drilling machine that we will use is a reverse circulation rig that does not contaminate ground water.

Air Quality

It is not expected that amount of dust will be generated during the drilling phase. The impact will be insignificant and will be controlled with water carts where needed. The majority of the processing is undertaken in a wet state with little possibility of dust or air quality impacts.

11.1.2 Plan of the main activities with dimensions

Please refer to the Prospecting Work Programme for a plan depicting all possible activities that will take place as part of the prospecting.

11.1.3 Description of construction, operational, and decommissioning phases.

- **Construction Phase**

No construction will be taking place on site.

- **Operation Phase**

Prospecting phases are designed to be completed in annual periods allowing for compilation of results in statutory reporting. Each part of each phase is dependent on the success of the previous set of work (Please refer to the Prospecting Works Programme for details on these various phases). Programmes are by their nature not rigid and may be varied in response to results, which would result in an adjustment of expenditure as set out in the proposed budget.

- **Decommissioning Phase**

Decommissioning of an area commences after the cessation of prospecting in the area and terminates with closure. In the intervening period between the commencement of decommissioning and closure of aftercare and or maintenance may be imposed. A closured certificate will be applied for, once the primary decommissioning activities of demolition, rehabilitation and re-vegetation have been completed. The re-vegetation area must be self- sustaining. The drill sites are rehabilitated. Drilling material, liquid spills and refuse are cleared and transported to the relevant municipal dump site.

11.2 Listed activities (in terms of the NEMA EIA regulations)

The proposed prospecting of coal

Activity 20"***Any activity the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resource Development Act, 2002 (Act 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 MPRDA''***, listing notice 1 of the NEMA EIA regulations 2017, 07 April as amended.

11.2.1 Identification of potential impacts

(Refer to the guideline)

Table 3-1 below shows potential impacts per activity and listed activities.

Table 11-1: Potential Impacts

Activity	Impact
• Drilling programmes	• Loss of Topsoil • Impact on vegetation • Dust from roads and land • Waste Disposal • Noise

Site of geological importance will be avoided. Sensitive grassland, dusters of indigenous trees and shrubs or similar climbing that may contain a large biodiversity of threatened and endangered species will be avoided. Farmlands actively used for crop farming preferably are avoided especially where the drilling would be located in land. Access road to and around the farm regarded as preferential drilling sites where the drilling position must be structured in manner that will still allow traffic to continue normally. Heritage resources, including archaeological or paleontological site may not be disturbed without a permit from the heritage specialist.

11.2.2 Potential cumulative impacts

Loss of wetlands, but the impact on wetland has only been identified through online research as we were not given access to investigate the farm area significant since the prospecting area does not consist of wetlands within the application area and any wildlife value will be avoided in consultation with the landowners.

11.2.3 Potential impact on heritage resources

Potential heritage sites will be identified during the planning phase to ensure that such areas are avoided. Each prospecting site will be visited prior to any work starting to identify possible heritage sites. Local knowledge will be used to identify and confirm heritage sites. Where boreholes are sited in proximity to heritage sites and depending on the proximity to the drilling site, appropriate measures such as flagging, pegging or installation of temporary fencing will be undertaken to ensure that the site is not impacted on during prospecting. The prospecting programme will be designed to avoid disturbance of heritage sites.

Potential impacts on communities, individuals or competing land uses in close proximity

There are no impacts on communities, individuals or competing land uses in close proximity to the prospecting areas, due to the limited impact of the drilling machines at any specific point in time.

We will make sure that during the prospecting activities we do not disturb the heritage site, trees, vegetation and other sensitive area in the property applied for. The interested and affected parties have identified that access roads should be the site were the drilling of hole will take place. The land used for farming will be avoided. Animals should be kept protected at all times.

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case)

11.2.4 Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties,

According to the information collected from the deed search, there is one landowner to be affected by the proposed project, namely Ekurhuleni Metropolitan Municipality being the owner of portion 28 of farm Grootfontein 165 IR. We are still in the process of engagement with the said landowners with regard to the proposed prospecting activities.

11.2.5 Confirmation of specialist report appended.

(Refer to guideline)

There are no individual specialist reports that were conducted as part of the Prospecting period of the project but if they will be any, confirmation will be sent as soon as it is available.

12. Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of environmental impacts and risks

12.1.1 Potential impact of each main activity in each phase, and corresponding significance assessment

The undertaking of a screening level environmental risk assessment consist of the identification of all possible environmental risks, including those which appear to be insignificant based on the input from existing data, and the qualitative ranking of the impacts identified.

The significance of the identified impacts on the various environmental components as part of the closure phase will be determined using the approach outlined below. This incorporates two aspects for assessing the potential significance of impacts (terminology from the Department of Environmental Affairs Guideline document on EIA Regulations, April 1998), namely occurrence and severity, which are further sub-divided as on table 3.2 below:

Table 12-1: Occurrence and Severity

Occurrence		Severity	
Probability of occurrence	Duration of occurrence	Magnitude (severity) of impact	Scale / extent of impact

In order to assess each of these factors for each impact, the following four ranking scales will be used:

Table 12-2: Methodology for Impact Assessment

Probability		Duration	
5	Definite/don't know	5	Permanent
4	Highly probable	4	Long-term
3	Medium probability	3	Medium-term
2	Low probability	2	Short-term
1	Improbable / None	1	Immediate
Scale		**Magnitude**	
5	International National Regional	10	Very high/don't know
4	Local	8	High Moderate Low
3	Site only	6	Minor
2		4	
1		2	

Once these factors have been ranked for each impact, the significance of the two aspects, occurrence and severity, will be assessed using the following formula:

SP (Significance points) = (Magnitude + Duration + Scale) x Probability

The maximum value is 100 significance points (SP). Risks are identified as potentially significant (High, >60 SP), Moderate (30 – 60 SP) or insignificant (Low, <30 SP).

In some instances risks can be rated as uncertain or unknown. Risk management strategies will be identified for the potentially significant risks, while the uncertain risks will be re-evaluated after a data collection and analysis programme.

Table 12-3: Impact 1 – Loss of top soil

Activity			Impact	
Drilling Programmes			Loss of Topsoil	
Magnitude	Duration	Scale	Probability	Significance
2	1	1	5	Low (30)

Table 12-4: Impact 2 – Impact on vegetation

Activity			Impact	
Drilling Programmes			Impact on vegetation	
Magnitude	Duration	Scale	Probability	Significance
2	1	1	2	Low(8)

Table 12-5: Impact 3 – Dust from Road

Activity			Impact	
Drilling Programmes			Dust from Road and Land	
Magnitude	Duration	Scale	Probability	Significance
2	2	2	3	Low (18)

Table 12-6: Impact 4 – Waste Disposal

Activity			Impact	
Drilling Programmes			Waste Disposal	
Magnitude	Duration	Scale	Probability	Significance
2	2	2	4	Low (24)

Table 12-7: Impact 5 – Noise

Activity			Impact	
Drilling Programmes			Noise	
Magnitude	Duration	Scale	Probability	Significance
2	2	2	4	Low (24)

Table 12-8: Impact 6 – Water uses

Activity	Impact
Drilling Programmes	Water Uses

Magnitude	Duration	Scale	Probability	Significance
2	2	2	4	Low (24)

Assessment of potential cumulative impacts

Table 12-9: Impact 1 – Dust from road and land

Activity		Impact	
Drilling Programmes		Dust from Road and Land	
Magnitude	Duration	Scale	Probability
2	2	2	3
Significance			
Low (18)			

Table 12-10: Impact 2 – Noise from drilling programme

Activity		Impact	
Drilling Programmes		Noise from Drilling Programme	
Magnitude	Duration	Scale	Probability
2	2	2	3
Significance			
Low (18)			

Review or assessment of cumulative impact analysis will be done early in the process. Information that will be presented will be commensurate with the impact of the project. Greater detail will be provided for potentially serious impact, in all phases.

Proposed mitigation measures to minimise adverse impacts.

Significant cumulative impacts will be identified that may affect resources of concern and suggest measures that will avoid and minimize adverse effect to the environment.

List of actions, activities, or processes that have sufficiently significant impacts to require mitigation

Table 3-12 overleaf shows the List of actions, activities, or processes that have sufficiently significant impacts to require mitigation.

Table 12-11: List of actions, activities, or processes that have sufficiently significant impacts to require mitigation

Significant Impact	measures	Negative impacts on the environment be mitigated or managed
Dust	Low	Vehicle will be instructed to drive at low speeds Access roads will be swept regularly; Prospect
Noise pollution	Low	All rigs are fitted with silencers to minimize noise Rigs will not be allowed to operate at night close to communities
Minor Exhaust Smoke	Medium	The machine will be services regularly to avoid minor smoke
Topsoil disturbance	Low	Topsoil is normally not disturbed in the process. Where topsoil is removed it is stored for later replacement i.e. for digging of drill sumps
Oil spills	Low	Any spillage onto the ground will be dug and disposed of in designated landfill operation

Associated list of appropriate technical or management options

The best technical option is rehabilitation and the best management option to rehabilitation is adherences to a couple of important aspects by management to ensure concurrent rehabilitation to take place and the plan is continuously to reflect the latest development.

The following management options will be taking place on site, irrespective of the significance of the ratings above:

Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur. The topsoil removed, shall be stored in a bund wall on the high ground side of the mining/prospecting area outside the 1:50 flood level within the boundaries of the prospecting area.
The topsoil stored in the bund wall shall be adequately protected from being blown away or being eroded.

Dust control on the access roads

The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents

The speed of trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.

Noise

Work will only be performed during daylight hours. Proper design and maintenance of equipment, including silencers and mufflers. Regular checks on the noise emissions of equipment in operation should be performed. All equipment to be used during the construction and operational phases is to be kept in good working condition. This is of particular importance for the exhaust systems of the diesel earthmoving equipment. Should complaints about the noise be received from the community, the mine needs to assess the situation and make appropriate recommendations to reduce the noise impacts on nearby residents and, where necessary, a noise specialist.

Establishing the drilling site

Drilling sites shall be sited on a practical basis after consultation with the landowner. The area required for long-term drilling sites shall also be determined after consultation with the landowner and kept to a minimum. Activities shall be restricted to the agreed area. In order to contain non-biodegradable oil and fuel spills, drip pans or PVC lining shall be provided for mobile drills and drip pans or a thin concrete slab and/or with a PVC lining shall be installed before stationary drill rigs (long term) are erected. In the case of a need for a water supply pipeline to be laid to a site, it shall be done in consultation with the landowner and in such a manner that the surface and natural vegetation are not unduly disturbed.

Proper and frequent maintenance shall be done to minimize unnecessary spillage. In the case of long-term drilling operations, each drill hole shall have adequate measures to prevent pollution of groundwater, drainage systems or topsoil by effluent during the drilling operation. Separate pits shall be excavated and constructed for waste water and grease and oil polluted fluid. When excavating these pits, the topsoil and the subsoil shall be stored separately. These pits shall be lined with an impermeable layer of concrete or PVC to prevent pollution. The pit shall be surrounded by an earth wall of at least 50mm in height and be constructed to withstand the impact of heavy rainfall. The contents of pits and drip pans must be disposed of at a recognized facility. Any spill should be cleaned up immediately by removing the spill together with the polluted soil and disposing of it at a recognized dumping facility. On completion of prospecting, the drilling site shall be rehabilitated. Pits shall be pumped dry and the contents disposed of as described above. Linings must be removed and disposed of in the same manner. After all foreign matter has been removed from the pits, the excavations shall be backfilled

with subsoil, compacted and levelled with previously stored topsoil. No foreign matter such as cement or other rubble shall be introduced into such backfilling.

All boreholes shall be covered and made safe by means of a concrete cap, unless otherwise determined. On cultivated land, where practicable, a concrete cap shall be installed at least 1 metre below the surface. Boreholes shall be backfilled and compacted with appropriate inert material and soil. No foreign matter such as rubble or waste material shall be introduced into the hole. Where drilling sites (long-term operation) have been denuded of vegetation/grass or where soils have been compacted or crusts formed, the surface shall be ripped or ploughed and if necessary appropriately fertilized to allow vegetation to grow rapidly. If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, it may be required that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation, be corrected and the area be seeded with a seed mix to a certain specification.

Waste disposal

Designated areas will be planned and established for the disposal and temporary storage of all wastes on site. The necessary bins will be provided for the collection of waste. Domestic waste will be removed form site weekly by an independent waste disposal contractor to a registered or licensed disposal facility. Any hazardous waste will be stored separately in approved waste containers and removed from the site by an independent waste disposal contractor to a registered or licensed disposal facility. Waste from the drilling operation will be place within the dumping area as indicated on the plan and removed by subcontractors for further utilisation. Responsible waste management practices will be implemented.

Surface Water

A 100m buffer zone will be placed around the existing Pan passing through from southern boundary of the farm of the affected property. No drilling or any other activity will take place within this buffer zone. The surface water resource will only be crossed at designated established crossing areas. No run-off water from the drilling programme will be allowed to run into the surface water resource.

Review the significance of the identified impacts

(After bringing the proposed mitigation measures into consideration)

All the significance impact identified has a low rating.

13. The positive and negative impacts that the proposed activity and alternatives will have on the environment and the community that may be affected

13.1 Positive impacts

13.1.1 Job Creation

- If the prospecting is granted ,the applicant will lodge an application for a mining right or permit which will stimulate the following
- Communities will benefit from the selection, appointment of casual employment that will take place as a result of construction of the project.
- This employment will be executed in line with the necessary skills required during construction, from the beginning to the completion of construction. Labour-force requirements include (artisans, engineers, builders, plumbers, construction engineers, electricians, various trades men, etc.).

Permanent jobs shall be available at the completion of the Project, when the township is operational such as domestic work within households

13.2 Negative impacts

There are minimal negative impacts that will be envisaged at this phase, due to the nature of the activity to be conducted.

For drilling phase

- Loss of Topsoil
- Impact on vegetation
- Dust from roads and land
- Waste Disposal
- Noise
- Water use

- Reduction of arable land for agricultural activities

14. Mitigation measures that could be applied and the level of risk

Significant potential impacts that were identified for the prospecting phase includes the following

- Loss of vegetation
- Soil erosion
- Spillage of drill fluid
- Disturbance of daily farming activities affecting production yield of the farm.

Mitigation measures that could be applied

- Dust suppression
- Revegetation to prevent soil erosion
- Avoiding watercourse and wetlands using buffer zones
- Conduct drilling on duration provided by the landowner.

15. Motivation where no alternative sites were considered

The prospecting methods to be used will minimize potential impacts to the preferred site. It is only the specified drilling points that will be disturbed. Some of the prospecting methods will provide that drip pans be used in order to contain non-biodegradable oil and fuel spills for mobile drills to reduce spillages. The locations of the prospecting sites will be determined through non-invasive prospecting methods. As a result of the above, there will be limited alternatives available for consideration. Sensitive areas, such as watercourse and wetlands, will be avoided and a 100 m buffer zone implemented

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

Based on the statements discussed as to how the drilling the three phases will take place. The prospecting sites are small and exact locations will be determined based on non-invasive prospecting methods. All watercourses and wetlands will be avoided with buffers. The project site will also not require any infrastructure to be constructed, with only temporary access routes being utilised.

17. Description of the process undertaken to identify, assess, and rank the impacts and risks the activity will impose on the preferred site.

The prospecting methods that will be applied for drilling are non-invasive as such, there is minimal expectations of impacts for the proposed activity on the preferred site. Prospecting phase due its nature of operation provides impacts on a small scale and dose impacts identified will be adhered to and monitored during and after the project phase.

18. Assessment of each identified significant impact and risks

Table 1.1

Name of Activity	Potential impact	Aspects affected	Phase	Significance	Mitigation type	Significance (if mitigated)
Site Clearance	Dust generation	Air quality	Establishment phase	Minimal negative impact	Dust suppression	Negligible negative
	Loss of topsoil	Soils	Establishment phase	Minimal negative impact	Soil stripping	Negligible negative
	Loss of fauna & flora	Fauna & flora	Establishment phase	Minimal negative impact	Limited infrastructure footprint	Negligible negative
	Sedimentation of wetlands	Wetlands	Establishment phase Operational phase	Minimal negative impact	Buffer zones	Negligible negative
	Sedimentation & contamination of surface watercourses	Surface water	Operational phase	Minimal negative impact	Limited infrastructure footprint	Negligible negative
	Groundwater contamination	Groundwater	Operational phase	Minimal negative impact	Avoidance and spillage attention	Negligible negative
	Noise generation	Noise	Decommission phase	Minimal negative impact	Adhering to operating hours	Negligible negative
	Soil compaction and erosion	soils	Decommission phase	Minimal negative impact	Vegetation, restrict access	Negligible negative

Drilling of prospecting boreholes	Sedimentation of wetlands	wetlands	Decommission phase	Minimal negative impact	Buffer zones	Negligible negative
	Contamination of groundwater	Groundwater	Decommission phase	Minimal negative impact	Consent from landowners from water usage	Negligible negative
	Sedimentation of surface watercourses	Surface water	Decommission phase	Minimal negative impact	Rehabilitation of sumps	Negligible negative
Rehabilitation	Soil compaction & erosion	Soils	Decommission phase	Minimal negative impact		Negligible negative
	Dust generation	Air quality	Decommission phase	Minimal negative impact	Dust management plan, vegetation	Negligible negative

19. Summary of specialists reports

Table 1.2

List of studies undertaken	Recommendations of specialists reports	Specialists recommendations that have been included in the EIA report	Reference to applicable sections where specialists recommendation shave been included in the EIA report
Soil Impact Assessment	N/A	N/A	Individual specialist reports were not conducted due to the minimal impacts of the proposed activities
Fauna & flora	N/A	N/A	Individual specialist reports were not conducted due to the minimal impacts of the proposed activities
Wetlands Impact Assessment	N/A	N/A	Individual specialist reports were not conducted due to the minimal impacts of the proposed activities
Surface water impact assessment	N/A	N/A	Individual specialist reports were not conducted due to the minimal impacts of the proposed activities

Groundwater impact assessment	N/A	N/A	Individual specialist reports were not conducted due to the minimal impacts of the proposed activities
Heritage impact assessment	N/A	N/A	Individual specialist reports were not conducted due to the minimal impacts of the proposed activities

20. Environmental impact statement

20.1 Summary of the key finding of the environmental impact assessment

Table 1.3

Project phase	Receiving environment	Impact description	Pre-mitigation significance	Post-significance
Establishment phase	social	Nuisance impacts due to heavy vehicles	Insignificant negative	Insignificant negative
	Soil, land capability	Loss of topsoil resources and capability	Minor negative	
	Fauna & flora	Loss of fauna & flora	Minor negative	
	Surface water	Sedimentation& contamination of surface water	Minor negative	
	Groundwater	Groundwater contamination	Negligible negative	
Operational phase	social	Nuisance impact due to drilling, earthworks, heavy vehicles	Minor negative	
	Soil ,land-use& capability	Soil compaction	Minor negative	
	wetland	Contamination of wetlands	Minor negative	
	Surface water	Contamination of surface watercourses	Minor negative	
Decommission phase	Air quality	Elusive dust generation	Minor negative	
	Soil ,land-use &land capability	Soil contamination, restoration of land capability		
	Fauna & flora	Destruction of suitable habitat		
	Surface water	Contamination & sedimentation of surface watercourse		

20.2 Final site Map

See attached final site Map **Appendix A**

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

Impacts resulting from establishment phase

- Clearance of site through removal of vegetation and topsoil
- Exposed area become prone to soil erosion
- Wetland deterioration

Impacts resulting from operation phase

- Nuisance of heavy vehicles
- Dust generation by heavy vehicles

21. Proposed impact management objectives and impact management outcomes

Compilation of the Draft EMPr assist in determining the manner in which impact realised and suggest mitigation, monitoring and management strategies in turn developing greater outcomes of the proposed project

Recommendations that derived from the impact management

- Avoidance of detrimental negative impacts of the sensitive areas
- Prevention of long term effect/impacts from the proposed project
- Restore the proposed areas of interest to its natural form

22. Aspect for inclusion as conditions of authorisation

The proposed strategies ranging from mitigation measures, monitoring and management systems should be part of the conditions of the authorisation.

23. Description of any assumption, uncertainties and gaps in knowledge

The prospecting phase which largely involves a minimal impact approach to the environment, having said that the information provided in this report will assist the competent authority to arrive with an appropriate conclusion to the proposed activity in question.

24. Opinion as to whether the proposed activity should or should not be authorised

24.1 Reasons why the activity should be authorized or not

The proposed activity should be authorised considering the need and desirability of the activity relevant to the location of the area where the proposed activity is to be conducted on. The end result of the proposed activity is to determine type, amount and value of the commodity applied for due to the demand of that commodity to the global market and the economic benefits notwithstanding the recommendations and measures to be put in place to monitor impact response and minimisation.

24.2 Conditions that must include in the authorisation

As discussed above the recommendations, mitigation measures proposed in the draft EMPr will suffice as conditions.

25. Period for which the environmental authorisation is required

The prospecting right will expire in five years' time, similarly the authorisation should active until the right expires, as contents of the authorisation will no longer serve value when prospecting phase has ended that is after including rehabilitation has been concluded.

26. Undertaking

Project team confirms that the undertaking that is applicable to the basic assessment report and draft EMPr is made available at the last section of the report.

27. Financial provision

In accordance with the requirements of regulation 54(i) of the Mineral and Petroleum Resource Development Act, 2002 (Act 28 of 2002) Tom Berry Trading Enterprise has calculated the environmental closure liability for the proposed project according to the DMR latest master rates

27.1 Explain how the aforesaid amount was derived

27.2 Quantum calculations

(Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation54 (1) in respect of each of the phases referred to)

The Guidelines as prescribed by the Department indicates that a rate per hectare is required in terms of the class of mine (C class) as well as the environmental sensitivity of the mine.

27.2.1 Commodity type and saleable mineral by-product

According to Tables B.12, B.13 and B.14

Commodity type	Coal
Saleable mineral by-product	Coal

27.2.2 Risk ranking

According to Tables B.12, B.13 and B.14

Primary risk ranking (either Table B.12 or B.13	C (Low risk)
Revised risk ranking (B.14)	N/A

27.2.3 Environmental sensitivity of the prospecting area

According to Table B.4

Environmental sensitivity of the prospecting area	Low

27.2.4 Level of information

According to Step 4.2:

Level of information available	Limited

27.2.5 Identify closure components

According to Table B.5 and site-specific conditions

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)		No
2(A)	Demolition of steel buildings and structures		No
2(B)	Demolition of reinforced concrete buildings and structures		No
3	Rehabilitation of access roads	Yes	
4(A)	Demolition and rehabilitation of electrified railway		No
4(B)	Demolition and rehabilitation of non-electrified railway lines		No
5	Demolition of housing and facilities		No
6	Open rehabilitation including final voids and ramps	Yes	
7	Sealing of shafts, adits and inclines		No
8(A)	Rehabilitation of overburden and spoils	Yes	
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)		No
8©	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)		No
9	Rehabilitation of subsided areas		No
10	General surface rehabilitation, including grassing of all denuded areas	Yes	
11	River diversions		No
12	Fencing		No
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)		No
14	2 to 3 years of maintenance and aftercare		No

27.2.6 Unit rates for closure components

According to Table B.6 master and multiplication factors for applicable closure components.

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)		
2(A)	Demolition of steel buildings and structures		
2(B)	Demolition of reinforced concrete buildings and structures		
3	Rehabilitation of access roads	32,27	1
4(A)	Demolition and rehabilitation of electrified railway		
4(B)	Demolition and rehabilitation of non-electrified railway lines		
5	Demolition of housing and facilities		
6	Open rehabilitation including final voids and ramps	189 070,54	0.04
7	Sealing of shafts, adits and inclines		
8(A)	Rehabilitation of overburden and spoils	105 831,51	1
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)		
8©	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)		
9	Rehabilitation of subsided areas		
10	General surface rehabilitation, including grassing of all denuded areas	99 850,50	1
11	River diversions		
12	Fencing		
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)		
14	2 to 3 years of maintenance and aftercare		

27.2.7 Determine weighting factors

According to Tables B.7 and B.8

Weighting factor 1: Nature of terrain/accessibility	1.1
Weighting factor 2: Proximity of urban area where goods and service are to be supplied	1.05

27.2.8 Calculation of closure costs

Table B.10 Template for level 2: "Rules-based" assessment of the quantum for financial provision (see attached calculation)

The amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum total of **R 48 161,62 (see Appendix E)**

27.3 Confirm that this amount can be provided for from the operating expenditure

The amount of financial provision will be paid by Tom Berry Trading Enterprise cc immediately after the Environmental Management Plan has been approved.

28. Specific information required by the competent authority

28.1 Compliance with the provision of section 24(4)a and b read with section 24(3) and 7 of the National Environmental Management Act(107 of 1998).The EIA report must include

28.1.1 Impact on the socio-economic conditions of any directly affected persons

There will be minimal impact on the socio-economic status of the persons directly affected as the prospecting phase consist of fairly marginal labour to complete the project. Potential negative impacts will be addressed in consultation with the I&APs to avoid violation of any person rights.

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

Heritage sites within the proposed prospecting area have been identified in consultation with the landowners and appropriate measures have been proposed to protect such sites from the impact arising from the project

28.1.3 Other matters required in terms of section 24(4)a and b of the Act

The report compiled together with the information provided is attached as proof of consultations, site visits etc.

PART B

Environmental Management Programme Report

29. Details of EAP

Details of the Environmental Assessment Practitioner has been included in **Part A (section 1)**

30. Description of the aspect of the activity

Description of the aspect of the activity has been included in **Part A (section 1)**

31. Composite Map

A Map containing all the required information regarding the proposed prospecting site. **See Appendix A**

32. Description of the impact management objectives including management statement

32.1 Determination of closure objectives

The closure objectives for the proposed prospecting activity include the following:

- Rehabilitation of the prospecting sites
- Reduction of the visual impact of the prospecting sites
- Information provision to the competent authority
- Submit monitoring results to the relevant competent authority

32.2 Volume and rate of water use required

Water usage will be limited to the following activities

- For drill bits to control overheating
- Dust suppression for heavy vehicles

Rate will be determined during the operation depending on the source of water available.

32.3 Has a water use licence been applied for?

Water use licence has not been applied for due to the fact that site specific drill points are still to be determined .At a given point that a water use is triggered a

licence will be applied for in terms of section 21 of the National Water Act,1998(Act 36 of 1998)

33. Impact to be mitigated in their respective phase

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

Table 1.5

Activities	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation
Site Clearance	Dust generation	Air quality	Establishment phase	Minimal negative impact	Dust suppression
	Loss of topsoil	Soils	Establishment phase	Minimal negative impact	Soil stripping
	Loss of fauna & flora	Fauna & flora	Establishment phase	Minimal negative impact	Limited infrastructure footprint
	Sedimentation of wetlands	Wetlands	Establishment phase Operational phase	Minimal negative impact	Buffer zones
	Sedimentation & contamination of surface watercourses	Surface water	Operational phase	Minimal negative impact	Limited infrastructure footprint
	Groundwater contamination	Groundwater	Operational phase	Minimal negative impact	Avoidance and spillage attention
	Noise generation	Noise	Decommission phase	Minimal negative impact	Adhering to operating hours
Drilling of prospecting boreholes	Soil compaction and erosion	Soils	Decommission phase	Minimal negative impact	Vegetation, restrict access
	Sedimentation of wetlands	Wetlands	Decommission phase	Minimal negative impact	Buffer zones

Rehabilitation	Contamination of groundwater	Groundwater	Decommission phase	Minimal negative impact	Consent from landowners from water usage

33.2 Impacts to be mitigated in their respective phases

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

Table 1.6

Activity	Aspects Affected	Phase	Size and Scale of Disturbance	Mitigation Measure
Column 1	**Column 2**	**Column 3**	**Column 4**	**Column 5**
Site Clearance	Social Nuisance	Establishment Phase	Limited to the prospecting site ▪	Keep soils moist to suppress possibility of dust; ▪ Site clearing to take place during daylight hours only Vehicles and machinery will be properly maintained to minimise operating noise Ensure that dust suppressants are applied to gravel or unpaved roads that are in use;

	Soils	. Establishment Phase	100 m2	Ensure topsoil is stored in one dedicated stockpile, less than 1 m high, and within the demarcated prospecting site; and ▪
				Topsoil stockpiles will be covered with a plastic liner during windy and rain conditions so as to prevent erosion (October to March). ▪
				Only remove vegetation when and where necessary;
	Fauna and Flora	Establishment Phase	100 m2	▪ Minimise the size of the prospecting drill sites as far as possible
				Indigenous trees will not be removed

				Drainage lines, and indigenous vegetation will be avoided
				Use existing access roads
	Wetlands	Establishment Phase	Local	Ensure site clearing is limited to the designated areas
				All watercourses will be avoided and the stipulated buffer will be implemented
	Surface water	Establishment Phase	Local	Berms must be constructed around the periphery of the prospecting site to separate clean and dirty water
				Water within the prospecting site must be diverted to the water sump

				All watercourses will be avoided and the stipulated buffer will be implemented
	Groundwater	Establishment Phase	Local	All potential hydrocarbon spillages and leaks must be cleaned up immediately and the soils remediated;
				Spillage control kits will be readily available on site to contain the mobilisation of contaminants and clean up spills;
				All vehicles and machinery to be serviced in a hard park area or at an offsite location
	Noise	Establishment Phase	Site Specific	Site clearing to take place during daylight hours only
				Vehicles and machinery will be properly

				maintained to minimise operating noise
				Vehicles will obey speed limits
Drilling of Prospecting Boreholes	Social Nuisance	Operational Phase	Limited	Maintain drilling equipment and, if possible, fit silencing equipment
				Drilling will only take place during daylight hours
				Use a dust suppressant and keep access roads moist
				Cover stockpiles with a plastic liner in windy and rain conditions so as to prevent topsoil from eroding
	Noise	Operational Phase	Site Specific	Maintain drilling equipment and, if possible, fit silencing equipment

	Fauna and Flora	Operational Phase	100 m2	Remove alien invasive species as and when they occur
				Maintain drilling equipment and, if possible, fit silencing equipment
				All personnel are to remain on the prospecting drill site only
				to prevent the footprint of the site expanding and further vegetation loss
	Soil	Operational Phase Decommissioning Phase	Site Specific	Immediately cease drilling and contain and cleanup any hydrocarbon spillages as they occur
				Ensure the spill cleanup kits are readily available in the event of a spillage
				Machinery and vehicles must be serviced and maintained off site at a workshop and

				drip trays must be in place to capture the spillage
	Surface Water	Operational Phase	Local	Topsoil stockpiles will be covered with a plastic liner during windy and rain conditions
				Berms on the periphery of the prospecting site will be inspected daily and maintained to ensure runoff from within the
				prospecting site does not report to the catchment
	Groundwater	Operational Phase	Local	Emergency spill response plan required to handle any unplanned spillages
				Daily inspection of the drill rig must be undertaken prior to the commencement of drilling and routine maintenance▪ must be

				undertaken to prevent the likelihood of fluid dispersing and breakdowns
Decommission phase	Surface Water	Operational Phase Decommission phase	Local	The site and access roads will be kept moist to avoid the creation and disturbance of dust
				The sumps must be pumped empty and the oil and sludge must be disposed of at a registered waste facility
	Soil	Operational Phase Decommissioning Phase	100 m2	Sumps will be backfilled and the site levelled immediately after drilling has concluded
				All compacted areas will be ripped to loosen the soils during rehabilitation
	Fauna and Flora	Decommissioning Phase	100 m2	Remove alien invasive species as and when they occur
				An alien invasive management

				plan must be established
				All compacted areas will be ripped to loosen the soils during rehabilitation and seeded with an appropriate seed mixture

34. Impact management outcomes

Table 1.7

Activity	Potential Impact	Aspects Affected	Phase
Column 1	**Column 2**	**Column 3**	**Column 4**
Establishment Phase			
	Fugitive dust generation	Air Quality	Establishment Phase
	Loss of topsoil resources and	Soils	Establishment

	land capability		Phase
	Loss of fauna and flora species	Fauna and Flora	Establishment Phase
	Sedimentation of wetlands	Wetlands	Establishment Phase
Operational Phase			
	Sedimentation and contamination of surface water resources	Surface water	Establishment Phase , Operational Phase
	Groundwater contamination	Groundwater	Establishment Phase
	Noise generation	Noise	Establishment Phase, Decommissioning Phase
	Soil contamination and degradation	Soil	Operational Phase, Decommissioning Phase
Drilling of Prospecting Boreholes	Alternation of visual environment	Topography and Visual Environment	Operational Phase
	Soil compaction	Soils	Operational Phase
	Sedimentation of wetlands	Wetlands	Operational Phase
	Sedimentation of surface water resources	Surface Water	Operational Phase
	Contamination of groundwater and reduction in groundwater quantity	Groundwater	Operational Phase, Decommissioning Phase

	Elusive dust generation	Air Quality	Decommissioning Phase

35. Impact management actions

Table 1.8

Activities	Potential Impacts	Aspects Affected	Mitigation Type	Time Period for Implementation	Compliance with Standards
The list of activities for the Project are displayed in Table 1.1	The potential impacts associated with each activity are outlined in Table 1.3	The aspects affected as a result of the potential impact are outlined in Table 1.5	The mitigation types of each of the potential impacts are outlined Table 1.4	The time periods for each of the potential impacts are outlines in Table 1.4	The compliance with the standards for the potential impacts are outlined in Table 1.1

36. Financial provision

36.1 Determination of the amount of financial provision

36.1.1 Alignment of rehabilitation with the closure objectives

(Describe and ensure that the rehabilitation plan is compatible with the closure objectives determined in accordance with the baseline study as prescribed).

The following closure objectives will be applicable for rehabilitation:

- Land disturbed will be rehabilitated to a stable and permanent form suitable for subsequent land use. The final land use will be agriculture, forestry or subsistence farming, depending on where the prospecting site is located within the project area.
- There will be no adverse environmental effect outside the disturbed area and the affected area will be shaped to ensure effective drainage.
- The disturbed area will not require greater maintenance than that in or on surrounding land after closure.
- It is required that all exploration holes be re- habilitated, which is conducted on an ongoing basis.
- Boreholes sunk in agricultural lands will have the casings removed, or cut to a minimum depth of 2m below surface, then a plug inserted at a minimum of 5m below surface and filled with concrete to 2m below surface.
- The remainder of the hole will be filled with top soil.
- Boreholes outside agricultural lands will be rehabilitated similarly and marked with a concrete beacon.

36.1.2 Confirm specifically that the environmental objectives in relation to closure have been consulted with the landowners

The landowners together with the I&APs have been consulted with regard to the closure objectives as they initially requested the closure objectives before allowing access to the proposed site, which will be provided to them on request.

36.1.3 Provide a rehabilitation plan that describes and shows the aerial extent of the main mining activities

The prospecting sites will be rehabilitated immediately following the commencement of the drilling activities. The rehabilitation process in summarised as follows:

- The drill rig and core will be removed from site
- The sumps will be pumped empty and the oil and sludge disposed of at a registered disposal facility
- The waste water will be removed from site and treated at a registered water treatment facility;
- All waste will be removed from site and disposed of accordingly;
- The sump liner will be removed and reused at another site, following the inspecting of the liner, or disposed of at a registered disposal facility;
- The sumps will be backfilled and levels;
- The site will be levelled and ripped to ensure there is no compaction.
- The topsoil will be spread over the site and the site vegetated with indigenous
- Vegetation and;
- The site will be monitored for the success of the rehabilitation;

36.1.4 Explain why the rehabilitation is compatible with the closure objectives

The rehabilitation plan has been compiled in support of the primary closure objective which is to rehabilitate the prospecting sites to their natural or predetermined state, or to land use that conforms to the generally accepted principles of sustainable development through restoration, remediation, rehabilitation and stabilisation remediation of the impact land to a post-mining land use capable of supporting grazing activities.

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

Quantum calculations

(Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation54 (1) in respect of each of the phases referred to)

The Guidelines as prescribed by the Department indicates that a rate per hectare is required in terms of the class of mine (C class) as well as the environmental sensitivity of the mine.

In terms of the area where the prospecting will be taking place, the land can be classified as:

- Biophysical: Low – Medium
- Social: Medium
- Economic: Medium

In accordance with the above, the rate per hectare is therefore prescribed as indicated.

Table 1.9: Environmental sensitivity of mine area

	Low	Medium	High
Rate per hectare to determine the quantum (rands)	200 0	500 0	800 0
Minimum amount	10 000.00		

Provision to be made

The calculation of financial as stated above is based on the exploration to be conducted as part of the exploration work programme. The exploration will be conducted with a phased approach. After the desktop study and geological analysis of phase 1 of the exploration work programme, one borehole will be drilled. Upon notice of successful results from the drilling of the first borehole, we will make the decision to commence with the rest of the exploration work programme. The EMP as well as the financial provision for the rehabilitation of the Project area will be adjusted accordingly.

Exploration work programme will commence with Phase 1 which does not involve drilling or any other invasive exploration activities. There will be significantly less requirements for rehabilitation in the first year of the exploration programme, and financial provision that should be made is there less. It is recommended that the financial provision to cover the first year of exploration be set out at R10 000.

36.1.6 Confirm that the financial provision will be provided as determined

The amount of financial provision will be paid by Tom Berry Trading Enterprise immediately after the Final BAR and Environmental Management Plan has been approved.

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

36.1.7 Monitoring of Impact Management Actions

List of Identified Impacts Requiring Monitoring Programmes

The identified impacts that require monitoring programmes includes the following:

- Site clearing and establishment:
- Removal of vegetation; and
- Soil erosion.
- Drilling:
- Soil erosion;
- Dust and noise;
- Water generated; and
- Groundwater levels and quality.
- Heritage landscape;
- Hydrocarbon spillages;
- Domestic waste; and Fires.
- Wetlands, pans and dams will be avoided during the prospecting activities

Roles and Responsibilities for the Execution of the Monitoring Programmes

Supervisors must be appointed to monitor the potential impacts of the above mentioned activities and Project Managers will foresee that all of the management plans are implemented. Once the prospecting activities have been completed, Tom Berry Trading Enterprise will appoint an independent environmental officer to conduct a site visit to audit the rehabilitation and a report will be compiled and submitted to the DMR.

36.1.8 Monitoring and reporting frequency

Monitoring and reporting frequency were discussed on the monitoring sections.

36.1.9 Responsible Persons

Roles and responsibilities with respecting to the monitoring programme were discussed on the monitoring section.

36.1.10 Time Period for Implementing Impact Management Actions

This was discussed on the impact management action section table

36.1.11 Mechanism for Monitoring Compliance

The method of monitoring the implementation of the impact management actions, the frequency of monitoring the implementation of the impact management actions were discussed on the monitoring phase, an indication of the person who will be responsible for the implementation of the impact management actions, the time periods within which the impact management actions must be implemented and the mechanism for monitoring compliance with the identified impact management actions.

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

A performance assessment report for the Project will be submitted on an annual basis to the DMR during proposed prospecting phase and on a two yearly basis during operation.

38. Environmental Awareness Plan

38.1 Employee communication process

(Describe how the applicant intends to inform his or her employees of any environmental risk which may result from their work).

Alarms will be set at all time to ensure that if there is any risk on site, it should prevent employees to be endangered. The applicant will inform his or her employees of any risk on a daily basis should any such risk be identified. This will include Health and Safety as well as Environmental Risks.

38.2 Description of solutions to risks

(Describe the manner in which the risk must be dealt with in order to avoid pollution or degradation of the environment).

The table 8-1 overleaf shows general prospecting activity risk table.

Table 1.10: General prospecting activity risks table

Risk	Cause	Controls / Mitigation
Veld fires	Smoking and discarding matches in the field	Maintain visual awareness of surroundings; smoking
Property damage	Reckless driving; driving over bushes and shrubs;	Follow existing roads and / or tracks; maintain
Damage to field equipment and tools	Vehicles getting stuck in loose sands	Follow existing roads and / or tracks; maintain
Stock / agricultural produce theft / hunting	Trespassing of employees onto	Staff will not live on site, will be supervised at all
Erosion of site	Trampling by employees and vehicles	Personnel will be restricted to 25 metre radius of each borehole, away from gullies.
Damage to vegetation	Off-road driving to borehole sites	Where off-road driving is necessary, attempts to follow fence lines and animal tracks will be
Erosion of existing roads	More frequent use of roads	Speed limits of 40km/h will be maintained at all
Noise disturbance to residents and indigenous fauna	Drilling operations and vehicle traffic	Drilling times will be minimised and kept to working hours when residents are at work /

38.3 Environmental awareness training

(Describe the general environmental awareness training and training on dealing with emergency situations and remediation measures for such emergencies).

As part of the construction phase for the project, induction training will be conducted on all people involved in the prospecting project including geologists, drilling crew and relevant technical services, prior to the commencement of any work. Training will involve all the relevant components of the EMP including:

- Access, including use of roads, tracks, gates, etc.
- Control measures required to manage excluded and exempted areas.

- The handling, storage and disposal of waste.
- Weed control.
- Fire prevention.
- Sediment and erosion control.
- Control measures to be implemented with regards to the management of water, noise and dust.
- Rehabilitation of borehole sites and access tracks.

39. Specific information required by the competent authority

The financial provision for the environmental rehabilitation and closure requirements of Mining operations is governed by National Environmental Management Act, 1998, Act 107 of 1998), as amended, (NEMA) which provides in Section 24P that the holder of a mining right must make financial provision for rehabilitation of negative environmental impacts. The financial provision will be reviewed annually.

40. Undertaking

The EAP herewith confirms

- The correctness of the information provided in the reports
- The inclusion of comments and inputs from stakeholders and I&APs ;
- The inclusion of inputs and recommendations from the specialist reports where
- relevant; and
- The acceptability of the Project in relation to the finding of the assessment and level of mitigation proposed.

_____

Signature of the Environmental Assessment Practitioner:

Mr. Thato Jimmy Ramoraswi (IAIAsa member)

Name of Company**:**

TPR Mining Resources (Pty) Ltd

Date: _____

40.1 The following Appendixes are attached

- **Appendix A- Site Map**
- **Appendix B- Photographs**
- **Appendix C-Facility illustrations**
- **Appendix D- Consultation Report**
- **Appendix E- Quantum Calculation**
- **Appendix F- Other information**