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DRAFT BASIC ASSESSMENT AND ENVIRONMENTALMANAGEMENT REPORT FOR MODISON MINING (PTY) LTD

REFERENCENO: NW30/5/1/3/2/11180MP

JANUARY 2023

Submitted for environmental authorizations in terms of the National Environmental Management Act, 1998 and the National Environmental Management Waste Act, 2008 inrespect of listed activities that have been triggered by applications in terms of the Mineraland Petroleum Resources Development Act, 2002 (MPRDA) (as amended)

APPLICANT DETAILS

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File reference number SAMRAD:	**NW30/5/1/1/3/2/1/13567PR**

CONSULTANT DETAILS

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IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

(a) To determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) To identify the alternatives considered, including the activity, location, and technology alternatives;

(c) To describe the need and desirability of the proposed alternatives,

(d) Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:

  (i) The nature, significance, consequence, extent, duration, and probability of theimpacts occurring to; and

  (ii) The degree to which these impacts; (aa) Can be reversed;
  (bb) May cause irreplaceable loss of resources;
  and (cc) Can be managed, avoided or mitigated;

(e) Through a ranking of the site sensitivities and possible impacts the activity and technologyalternatives will impose on the sites and location identified through the life of the activityto:

  (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.

ACRONYMS

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
CITIES	Convention on International Trade in Endangered Species
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DWS	Department of Water and Sanitation
DAFF	Department of Agriculture Forestry and Fisheries
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EIR	Environmental Impact Report
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officers
ESA	Ecological support area
EAP	Environmental Assessment Practitioner
GDP	Gross Domestic Product
IAPs	Interested and Affected Parties
IDP	Integrated Development Plan
NWPB	North West Parks Board
MPRDA	Mineral and Petroleum Resources Development Act
MP	Mining Permit
NEMA	National Environmental Management Act
NEMBA	National Environmental Management Biodiversity Act, 10 of 2004
NWA	National Water Act, Act 36 of 1998
SDF	Spatial Development Framework
SAHRA	South African Heritage Resource Agency
SANBI	South African National Biodiversity Institute
SFSD	Strategic Framework for Sustainable Development
RMLM	Ramotshere Moiloa Local Municipality
NMMDM	Ngaka Modiri Molema District Municipality

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PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1.1 Contact details of EAPs

Table 1: Details of EAPs

EAP:	Mukondeleli Makoya
Professional affiliation/registration:	EAPSA
Contact person (if different from EAP):	N/A
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1.2 Expertise and Qualifications of EAPs

Table 2:Expertise and Qualifications of EAP

EAP	Experience
Mukondeleli Makoya	I am a registered EAP professiona [EAPASA] and a SACNAPS candidate scientist with over 8 years of experience in environmental Management services obtained from the construction, mining, and energy sector and sustainable developments. Successful in compiling EIAs and EMP related to energy, oil, gas and mining as well as other licenses for various operations. I'm well experienced in environmental auditing, enforcement, compliance, monitoring, risk assessment. Ability to manage a project from proposal phase until project close out. Knowledgeable in South African environmental legislations and renewable energy legislations. Well-versed in stakeholder engagement and liaison with multi-disciplinaries. Good report writing skills along with the ability to gather and interpret information. I am deadline driven and prioritize delivering high-quality work. She demonstrates knowledge for various environmental legislation such as NEMA (Act 107 of 1998) as amended, NWA (Act No. 36 of 1998), Environmental Impact Assessment (EIA) regulations, 2014 as amended, MPRDA (Act No 28 of 2002), NEMBA, NEMWA, MENPAA, etc. as well EMF's and LUDS for various municipalities

1.3 Location of the activity

The proposed activity is located on portion 06 of the farm Putfontein 02 JP situated in the Ramothsere Moiloa Local Municipality within the Ngaka Modiri Molema District of the North West Province. The proposed area is approximately 65 km north of Zeerust and 16km northeast of Madikwe nature reserve. The site can be accessed through D1789 & D2039 gravel roads that connects the project area with the tarred R49 road which goes to the town of Zeerust, See figure 1 for the locality map.

Table 3: Site Details

Farm Name:	Putfontein 02 JP Portion 06
Proposed Minerals:	Chrome, Nickel, PGM's and General Aggregate
Application area (ha):	The area extent is approximately 05 ha
Magisterial district:	Ramotshere Moiloa Local Municipality, Ngaka Modiri Molema Magisterial District
Distance and direction from nearest town	The proposed area is located approximately 65 km north of Zeerust and 16km northeast of Madikwe nature reserve
21-digit Surveyor General Code for each farm portion	T0JP00000000000200000

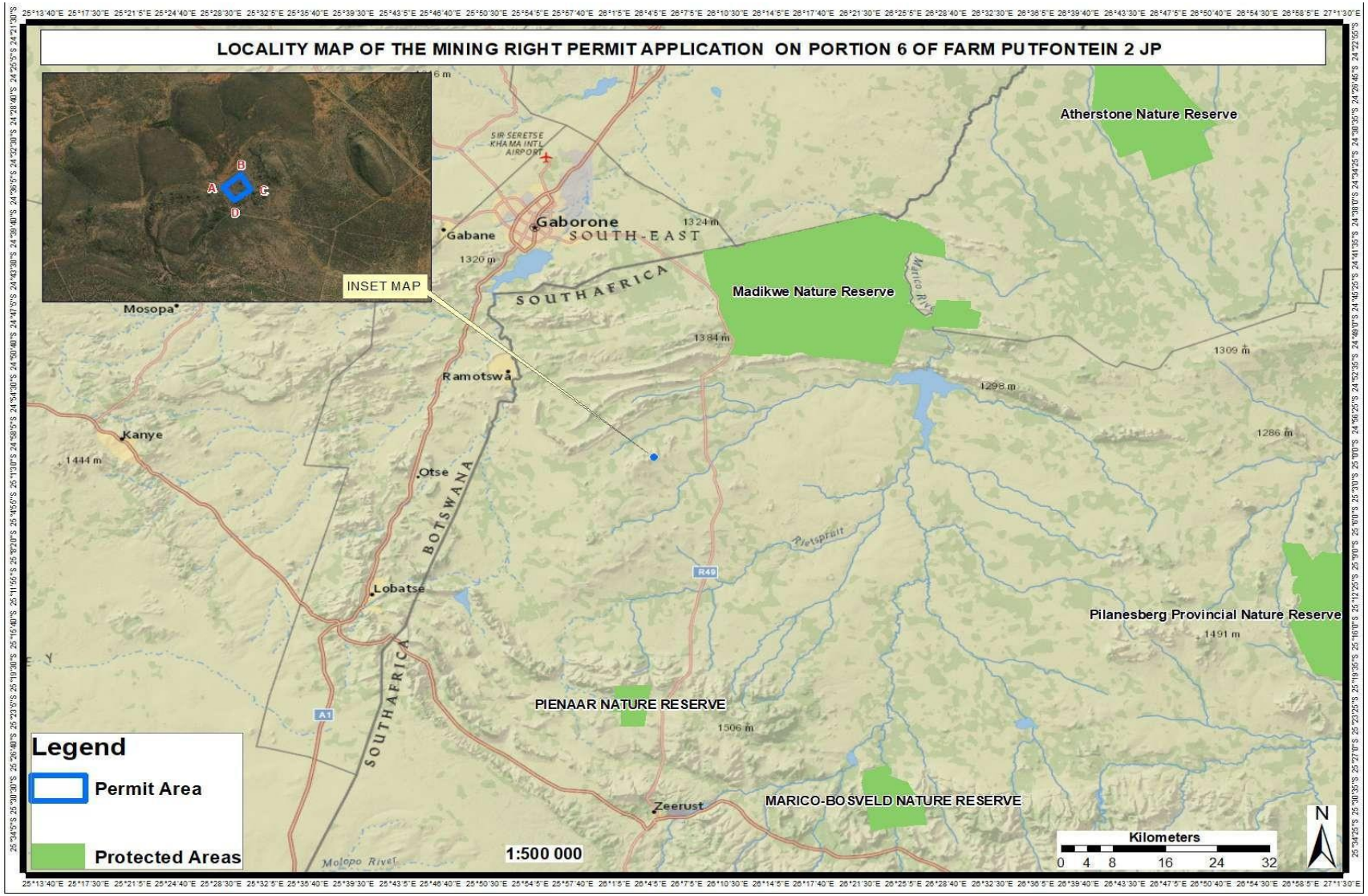

Figure 1:Locality Map of the proposed Mining Permit site.

1.4Description 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) ofall the aforesaid main and listed activities, and infrastructure to be placed on site)*

Figure 2: proposed conceptual site plan for the site

1.4.1 Listed and specified activities

Table 4: NEMA triggered activities

Name of activity	**Aerial extentof the Activity ha or m^2.**	**Listed activity** Mark with an xwhere applicable or affected.	**Applicable listingnotice** (gnr 544, gnr 545 or Gnr 546)	**Waste management authorisation**
• Excavation or pit area • Topsoil stockpile-250m^2 • Crushing, &screening plant • Waste rock dump	3 ha	x	**EIA Regulation Listing Notice 1, 2014 (GN R 983 of 2014) – Activity 21:** Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the mining permit.	N/A
Surface infrastructures • mobile site office • ablution facility • oil storage bay • parking bay, • Access route • Fencing	2000m^2	x	**EIA Regulation Listing Notice 1, 2014 (GN R 983 of 2014) – Activity 27** The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for - (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	N/A

1.4.2 Description of the activities to be undertaken

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

The primary activities that will be carried out as part of the mining activities are detailed below in their respective phases. These phases include:

- Construction phase
- Operational phase
- Decommissioning and Closure phase

Construction phase

Site preparation.

- This phase will include the clearing or removing any vegetation present in the site where mining will be carried out, as well as additional areas where surface infrastructures will be erected (mobile offices and ablution facilities will be utilized).
- Topsoil will be ripped, removed, and stockpiled on a flat area and be covered with a strong sack to prevent erosion.
- Lockable facilities for hazardous substances and bunded areas for small scale maintenance will be used.
- Assembling the crushing & screening plant

Operational Phase

- During the operational phase, all mining activities and processes will commence. The primary mining method that will be adopted is the opencast mining which involves excavation of pits/trenching to remove desired minerals and haul the ore for processing.
- The overburden material with less or no ore content will be stored until mining activities lapses and will be used to fill up the open pit.
- After mining, the ore bearing rock will transported to the washing plant site where it will be processed further, or the ore will be crushed and screened before it is transported to the market.

Decommissioning and Close phase

- Concurrent rehabilitation of areas with less or no ore will be carried out throughout the life of the mine as mining progresses.
- The excavated pits will be backfilled with waste rock and the removed topsoil. Where necessary, the surface will also be graded to establish a safe slope. Backfilled areas will then be revegetated.
- Upon completion of all mining activities, the entire project site will be rehabilitated in full. All the infrastructure will be removed from site and the mining area will be sloped and vegetated where vegetation was removed for mining and infrastructural purposes

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1.5 Policy and Legislative framework

Table 5: Applicable legislations to this application.

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** (i.e., Where in this document has it been explained how the development complies with and responds to the legislation and policy context)	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT?** (E.g.,In terms of the National Water Act: -Water Use Licence has/has not been applied for)
The constitution of the Republic of South Africa.	Mining Permit application	The Bill of Rights, in the Constitution of South Africa (No. 108 of 1996), states that everyone has a right to a non-threatening environment and requires that reasonable measures are applied to protect the environment. This protection encompasses preventing pollution and promoting conservation and environmentally sustainable development. These principles are embraced in NEMA and given further expression. The development will ensure that as little damage as possible will be left on the surrounding environment and local community. This report is drafted to ensure compliance to this piece of legislation.

Minerals and Petroleum Resources Development Act (No 28 of 2002).	Mining Permit Application	Section 27 of the Act and regulation 14 of the Government Notice No, R 526 on the 23rd of April 2004 provides for the procedure for the application, issuing and duration of the mining permit. The procedure was followed in the application of this permit
National Environmental Management Act, 1998 [Act 107 Of 1998], as Amended	Environmental Authorisation Application and BAR	The Mining permit application requires a Basic Assessment to be Conducted in terms of the NEMA Regulations of 2014 as amended in April 2017. The NEMA regulations identify DMR as the Competent Authority and details of the Basic Assessment process to be followed. The Environmental Authorisation application has been lodged and the Basic Assessment report requirement is fulfilled by this report.
Environmental Impact Assessment (EIA) Regulations, 2014	Environmental Authorisation Application and BAR	This regulation gives guidelines in terms of methodology to be followed in terms of the requirement by NEMA and the content of the report thereof. This report forms part of the Basic Assessment of the EIA being undertaken and the EA application is lodged.
National Environmental Management: Biodiversity Act 2004 (ACT NO. 10 OF 2004)	Vegetation clearance	BGIS LUDS has been consulted when determining the baseline environmental conditions for the areas impacted by proposed surface activities.

National Water Act, 1998 (ACT NO. 36 OF 1998)	Operational Phase	The principles of the NWA will be applied to all physical activities implemented during operational phase. The purpose of the National Water Act of 1998 (Act no.36 of 1998) is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in a manner that promotes equitability, efficiency and sustainability for present and future generations. To do so, the National Water Act regulates the following water uses: Water Use Authorisation and The Water Use License.
National Heritage Resources Act, 1999 (ACT NO. 25 OF 1999)	Construction and Operational phase	No heritage resource was observed onsite, however all activities covered by this application will avoid any heritage resource (should they be identified during the mining process) to prevent the destruction or unsympathetic alteration of heritage resources that have either Formal or General Protection.
The Mine Health and Safety Act, 1996 (No 26 of 1996)	Construction Operational and closure phase	The Mine Health and Safety Act, 1996 (No 26 of 1996) provides for the protection of health and safety of employees and other persons at mines and serves- • To promote a culture of health and safety; • To provide for the enforcement of health and safety measurements;

		• To provide for appropriate systems for employee, employer and state participating to provide effective monitoring systems and inspections, investigations and inquiries to improve health and safety; • To promote training and human resource of development; To regulate employers' and employees' duties to identify hazards and eliminate, control and minimise the risk to health and safety; • To entrench the right to refuse to work in dangerous conditions. This act will be applied during all phases of the mining permit
Conservation of Agricultural Resources Act 1983(ACT NO. 43 OF 1983)	Operational phase	The Act provides for control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invade plants; and for matters connected therewith. All invader species classified in terms of the Conservation of Agricultural Resources Act 1983 (Act 43 of 1983) within the road reserve should be identified and eradicated in an ecologically sensitive manner during the construction phase.

Screening Tool	Application phase	Compulsory submission of a report generated from the national web- based environmental screening tool, as contemplated in Regulation 16(1)(b)(v) of the Environmental Impact Assessment Regulations, 2014, published under Government Notice No. R982 in Government Gazette No. 38282 of 4 December 2014, was undertaken prior to the application of the EA to advise of the sensitivity of the Area, The screening tool is attached as Appendix B4.

1.6 Need and desirability of the proposed activities

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

The mining industry contribute over 50% to the country's GDP and it is regarded as the critical economic cornerstones. The mining industry is known to employ a lot of people and it contributes to the local economy within which it is located by employing local people and developing infrastructures within the local communities.

The associated mining activities will contribute to the above-mentioned benefits, providing the very much needed jobs (given the high level of unemployment), preferentially to members of the nearest community. Mining contributes to the GDP and foreign exchange earnings through export. The development will therefore positively contribute to reducing the unemployment rate in the region and potentially improve literacy levels.

Chrome, PGM's and Nickel are in high demand because they are widely used all over the world for different things. Chrome is used in chrome plating as an alloy for production of corrosion resistant superalloys, nichrome, and stainless steel. Chromium is used as a pigment for glass, glazes, and paint, and as an oxidizing agent for tanning leather. It is also sometimes used as a gemstone. PGMs are utilized in a number of industrial processes, technologies and commercial applications

1.7 Motivation for the overall preferred site, activities and technology

The selected/preferred site, activities and technology to be used is chosen attributable to the underlying geology of the area.

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

1.8.1 Details of the development footprint alternatives considered.

(The location of the activity, the type of the activity, the design or layout plan and operational aspects of the activity were all determined by the type of the mineral, availability and positioning)

i. The property on which or location where it is proposed to undertake the activity;

The mining activities will be taking place at portion 06 of the farm Putfontein 02 JP farm which is in the Ramothsere Moiloa Local municipality within the Ngaka Modiri District municipality in the North-West Province.

ii. The type of activity to be undertaken

The activities that will be undertaken include stripping of topsoil to expose the ore body, excavating of pits to remove the ore and haulage of ore material for processing. Crushing and screening will be undertaken only if the customer requires the ore crushed and screened.

iii. The design or layout of the activity

Since a Mining Permit is valid for short period of time, the operation will utilize mobile infrastructures like mobile offices, mobile toilets, mobile crushers, mobile conveyors to save on the development costs and reduce impacts on the environment.

iv. The technology to be used in the activity;

The conventional method of excavating/trenching, loading and hauling will be used for this mining permit.

v. The operational aspects of the activity

The operational aspect of the activity alternatives was assessed, but no alternatives for the road, mineral and design were considered. The existing roads will be used to access the site.

vi. The option of not implementing the activity

The option of not undertaking mining activities on the site assumes that the site will remain on its current state, therefore the option of not implementing would result in no impacts on the social and biophysical environment. However, the option of not implementing the activity will result in a missed opportunity of socio-economic benefits to the few members of the community as well as the local business suppliers.

1.8.2 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 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).*

Objectives of the public participation process

- To Provide I&APs with sufficient and accessible information to assist them to raise comments and make recommendations which will be considered during the impact assessment phase;
- The purpose of the public participation process is to notify I&APs of the proposed Project and to provide them with the opportunity to raise issues or concerns regarding the proposed Project;
- To Provides I&APs with the opportunity of suggesting ways of reducing or mitigating negative impacts of an activity and for enhancing positive impacts;

The following steps were followed to meet and satisfy the public participation process;

Identification of interested and affected parties (I&Aps)

The NEMA Regulations requires identification of and consultation with I&APs. The termI&AP generically refers to persons or groups who are directly or indirectly affected by aproject, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. A register of I&APs in terms of Section 42 ofthe EIA Regulations (GN R 982 of 2014) was compiled. The I&AP database includes, amongst others; landowners, communities, regulatory authorities and other specialist interest groups. This regulation requires that a register with full contact details of registered I&APs be submitted to the competent authority.

Notification and registering of all interested and affected parties (I&Aps)

As part of notification process, the land occupants and adjacent farm owners and farm occupants and registered interested and affected parties (I&Aps) were notified via site notices, newspaper advert and notification letters. A draft BAR will be sent to all registered and interested parties. The following notification process will be followed in order to notify I&Aps about the project that will be happening in their

area; email, phonecall, notification letters, newspaper adverts and Site notices.

Availability of BID and Draft Basic Assessment Process.

A Basic Assessment Report and Environmental Management Plan (BAR &EMPr) will be made available to all registered interested and affected parties upon request for a period of 30 days. This will be accompanied by a Background Information Document (BID) which summarizes the application process as well as the impacts associated with the proposed project.

Public Meeting

A public meeting will be scheduled and interested and affected parties, stakeholders will be inited to attend the meeting so that they are informed about the project. All the comments and concerns that will be raised in the meeting will be included on the final BAR and on the minutes of the meeting.

1.8.3 Summary of the issues raised by the interested and affected parties (I&Aps)

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

Table 6: Summary of issues raised by interested and affected parties (I&APs)

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.**
Public participation is still underway				

1.8.4 The environmental attributes associated with the alternatives

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

Baseline Environment

(a) The type of environment affected by the activity

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

This section is intended to provide environmental information which is associated with the proposed site. It will identify all environmental aspects within the site that will need special consideration during all the phases of the projects with the intent to minimize impacts.

Climate

Climate plays an important role in determining the availability of water resources, the nature of the natural landscape and vegetation types. As of late, the number of sun days and the frequency of wind has become a significant consideration in terms of the availability of alternative power. There is a wide variation in climate throughout the North West Province. The general climate around the project area displays warm summers and cold winters, the summer months (from August to March) bring brief but refreshing afternoon thundershowers. The area has an above average rainfall of 498 to 552 mm annually.

Temperatures

The absolute maximum temperatures of Zeerust are more than 40, 6ºC (SoER, 2002). The absolute minimums recorded varies between -3,3ºC and -7, 8ºC.The days with temperatures below freezing is still in the order of 23 to 32, but days with temperatures of less than -2,5º care less than on the Highveld.

- Northwest is notorious for the high temperatures' levels in the **summer.** The northern parts of RMLM experience, on average, temperatures between 30 – 36 ° C during the summer season
- In **wintertime**, most of the municipal area experiences a drop in the mercury as low as 2.1° C on average. The south-western parts of the municipal area experience temperatures that drop to -1.5° C.

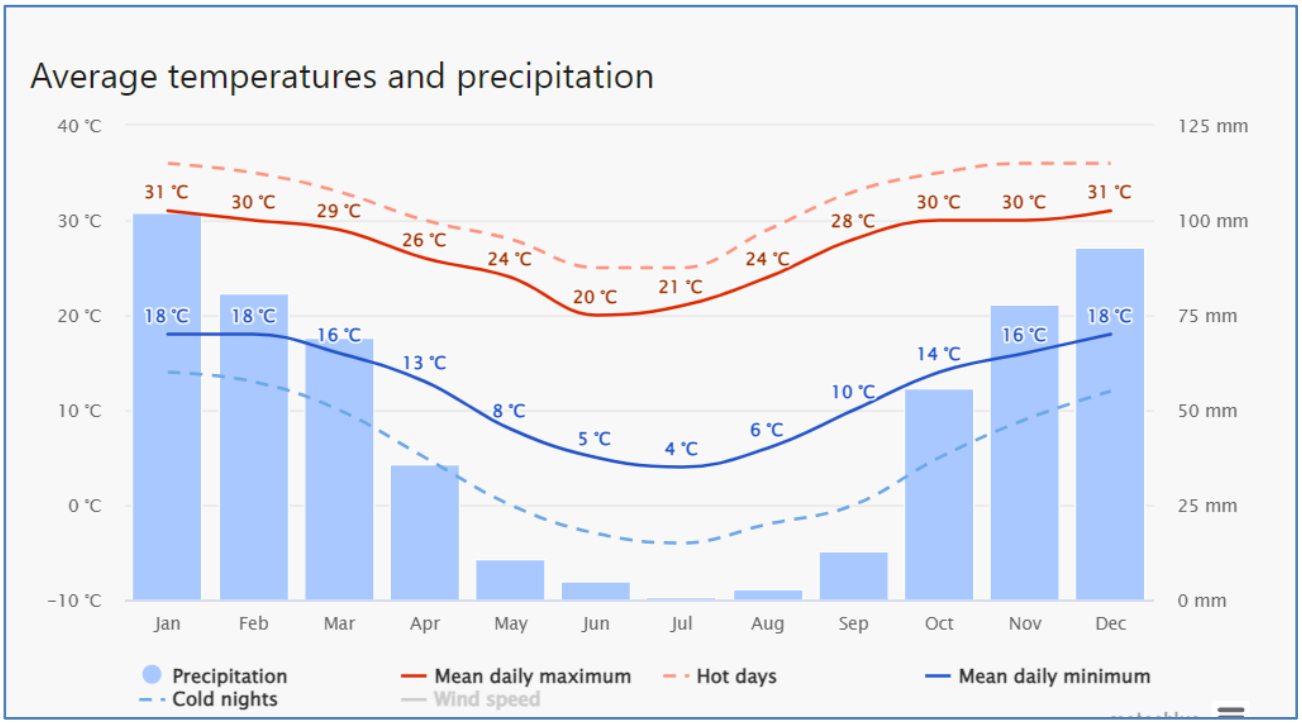

Figure 3: Average temperatures and Precipitation of the Ramotshere Moiloa Local Municipality

Rainfall

Rainfall occurs mainly during late summer (February) and can be highly erratic. Annual rainfall varies from 498 mm to 552 mm, which is the generally accepted average of 500 mm for dry land cropping. The Southern part of the municipality experience an average annual rainfall of 553 mm to 603 mm per annum which is much higher than in the northern parts of the municipality. The prospecting works will be planned to avoid rainy seasons. This will minimize impacts associated with soil compaction and soil erosions.

Water Resources

The The Surface water is dependent on rainfall, soil conditions and land cover. Three primary catchments drain the province: The Limpopo, Vaal and Orange River catchments. The North West Province hosts four Water Management Areas (WMA); namely the Crocodile (West) and Marico, Upper Vaal, Middle Vaal and the Lower Vaal. The Ramothsere Moiloa Local Municipality falls under the Crocodile west and Marico Catchment area.

The main dams or dams of importance in this catchment are the Roodeplaat and Rietvlei (in the Gauteng Province), Klipvoor, Hartbeespoort, Roodekopjes, Vaalkop, Bospoort, Koster, Swartruggens, Lindley's Poort and Madikwe Dams. Most of these dams, except Klipvoor, Roodekopjes and Lindley's Poort, are use directly for domestic and industrial water supply. Furthermore, the majority of dams, except Vaalkop and Bospoort, are also used for irrigation.

The Groundwater Master Plan for the North West Province addresses groundwater sources in the various geo-hydrological regions, See figure 6. The project area falls under the Western Bankeveld & Marico Bushveld Hydrogeological Region, Region runs north of the Karst Belt, starting in the west (encompasses almost the entire Ramotshere Moiloa LM) with the border of Botswana and continuing to the east through the western half of the Moses Kotane LM, the further south-east towards the Gauteng Province, following the Magaliesberg Mountain range.

Groundwater is utilised for communal, small town and larger town water supply, industries, agriculture (irrigation and livestock) and also for mining. Groundwater is the main source of water for the majority of residents in the Ramotshere Moiloa LM and in the western half of the Moses Kotane LM. It is also the main water source for Derby, and it is used to augment water supply in Swartruggens and Koster and it also used by the

mining sector. The rocks underlying this region are predominantly sedimentary of nature and mostly belonging to the Pretoria Group. The aquifer types are mapped (Johannesburg and Polokwane Hydrogeological maps) as intergranular and fractured with a low to medium development potential.

Due to relatively low rainfall throughout the province, water is a scarce resource in the province as the North West faces a multitude of issues with regards to water availability, since most surface water resources are non-perennial, resulting in water stress thus limiting development. There are few non-perennial rivers running through the project area channeling water in the the groot Marico Dam and buffers zones of 500m must be applied to avoid contamination of the dam during rainy seasons.

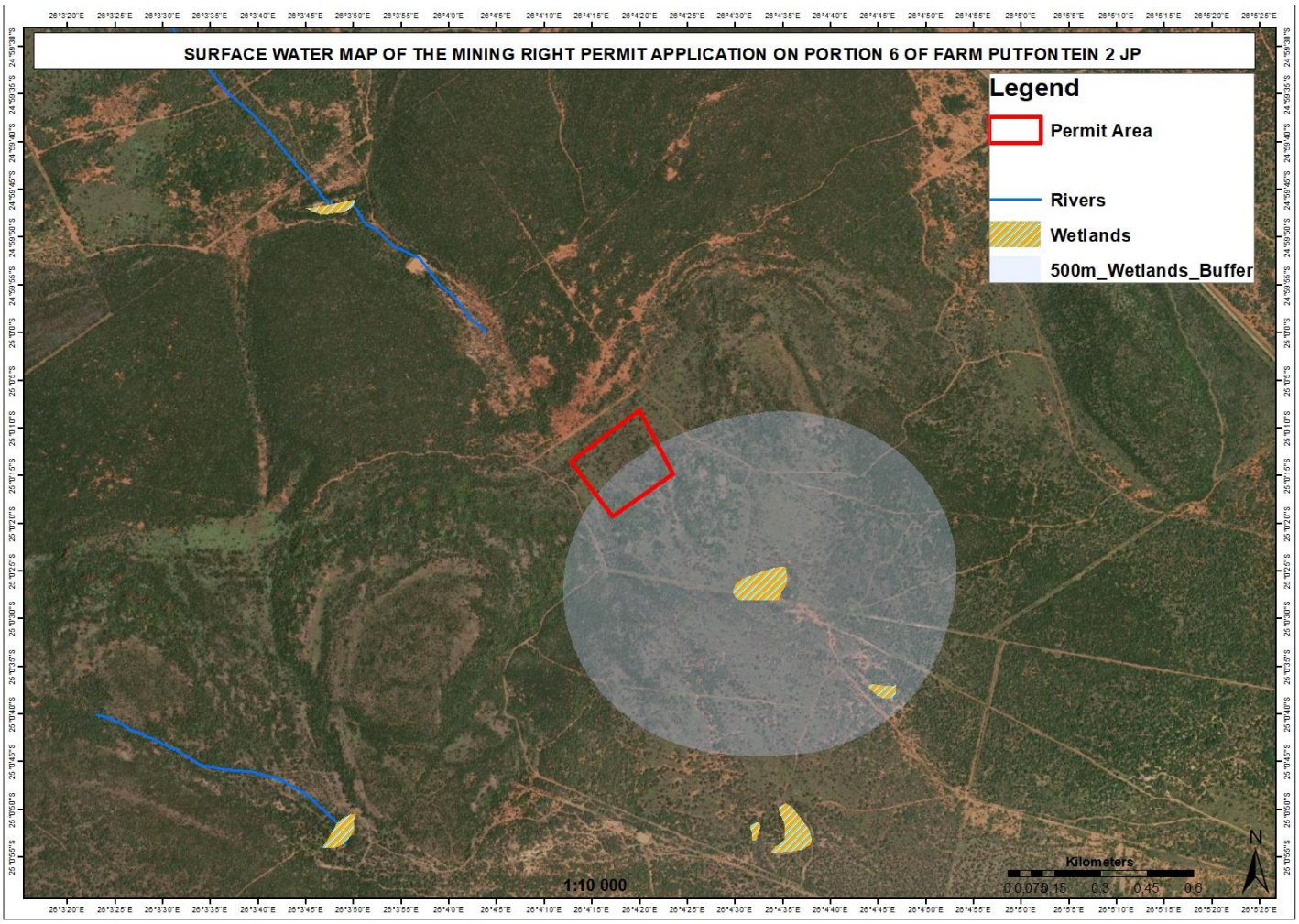

Figure 4: Water Resources map of the proposed site

Air Quality

Air quality is the degree to which the air in a particular place is free from pollution. Currently the main sources of impacts on air quality at site includes that of dust from gravel roads, nearby mine emissions and air pollution in the form of diesel exhaust fumes from vehicles. These impacts are however minimal. To minimise dust, vehicles speed on gravel road will be limited to 20 km/hr and dust suppression must be done on gravel road. All equipment's on site will be maintained in a good working order.

Noise

The sources of noise at the proposed area comes from the vehicle's movement from the surrounding farms and from the operations of the nearby Zeerust Chrome mine. All the noise emanating from various sources will have minimal or no impact on the project.

Cultural and Heritage

Heritage sites and graves are considered to be highly significant. The proposed activities will not change/ alter or result in a significant impact on the area's heritage resources. There are no known cultural or heritage features in the application area. This report will be sent to the South African Heritage Agency for comments and input on the province or area's heritage sites.

Vegetation

The Putfontein project area is located within the Dwaalboom Thornveld vegetation unit (Mucina and Rutherford, 2006) within the Central Bushveld bioregion. The vegetation unit occurs in the Limpopo and North-West Provinces, stretching from the flats north of the Dwarsberge to the Nietverdiend area and Northam. The vegetation unit occurs in altitudes of 900m – 1200m above sea level.

The vegetation unit is in a dry climate with a summer rainfall and very dry winters. The Mean Annual Precipitation (MAP) ranges between 500mm to 600mm. The vegetation unit has the highest mean annual potential evaporation of savanna units outside the two Kalahari bioregions. In winter, frost is highly expected throughout the unit.

The vegetation unit is considered as Least threatened in terms of the conservation status. Approximately 6% of the vegetation unit is statutorily conserved within the Madikwe

Game Reserve with the conservation target set at 19%. An approximate 14% of the vegetation unit has been transformed by cultivation and cattle grazing throughout the unit

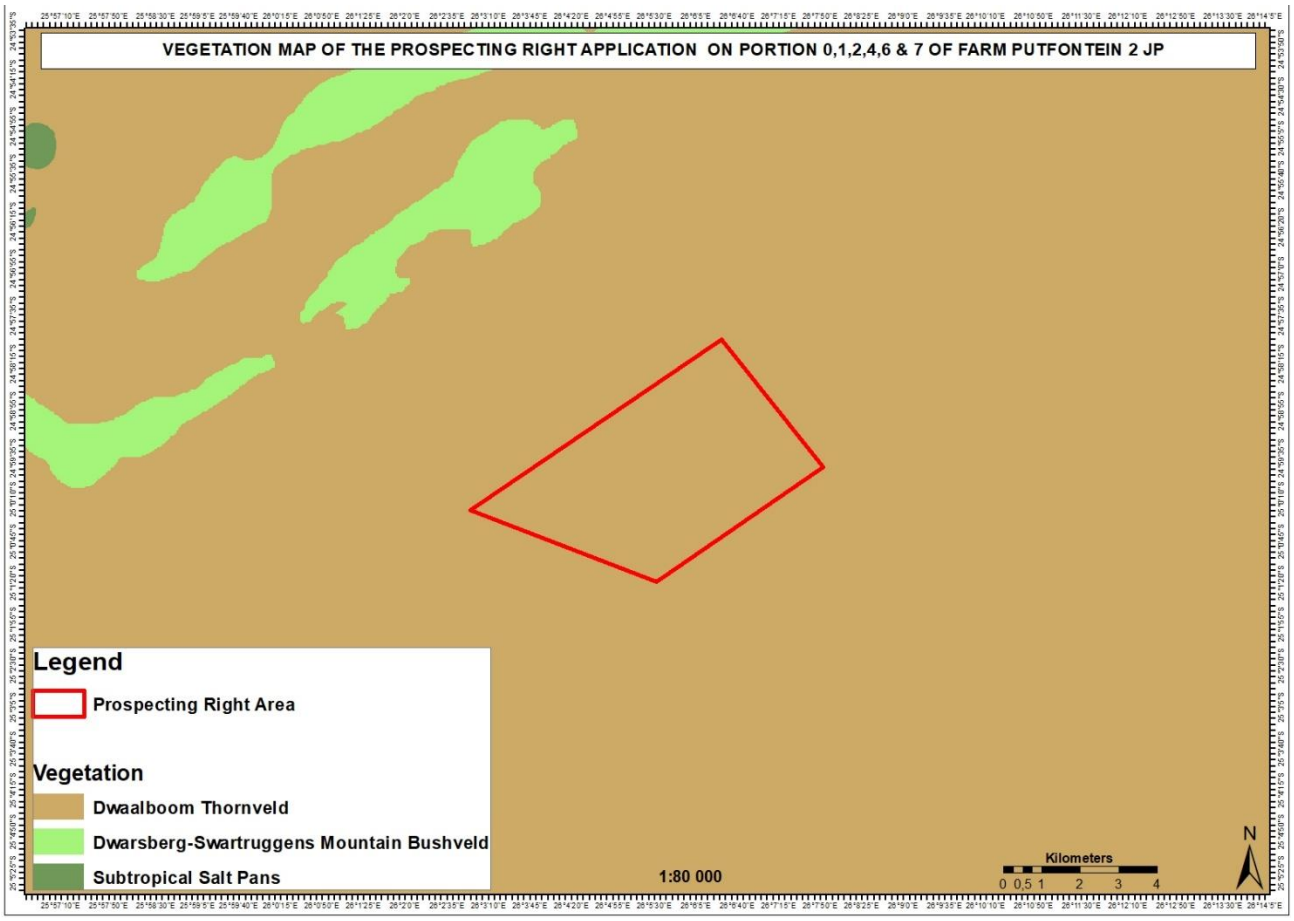

Figure 5: Vegetation map of the proposed site.

Fauna

Most of the animals which were observed onsite and on adjacent portions are Cattle, goats and sheep and a game farm on the east of the MP area. The proposed activities will have impacts on species like birds and other wild animals due to noise and destruction of habitat as a result of vegetation clearing. There will be no hunting and killing of animals on site to ensure preservation of the remainingin the area

Biodiversity

This Critical Biodiversity Areas (CBA's) are terrestrial and aquatic features in the landscape that are critical for retaining biodiversity and supporting continued ecosystem functioning and services (SANBI, 2007). These form the key output of a systematic conservation assessment and are the biodiversity sectors inputs into multi-sectoral planning and decision-making tools.

The primary purpose of CBA's is to inform land-use planning and the land-use guidelines attached to CBA's aim to promote sustainable development by avoiding loss or degradation of important natural habitat and landscapes in these areas and the landscape as a whole. CBA's can also be used to inform protected area expansion and development plans. The use of CBA's here follows the definition laid out in the guideline for publishing bioregional plans (Anon, 2008):

"**Critical biodiversity areas** (CBAs) are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. In other words, if these areas are not maintained in a natural or near- natural state then biodiversity conservation targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity-compatible land uses and resource uses".

"**Ecological support areas** (ESA's) are areas that are not essential for meeting biodiversity representation targets/thresholds but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development, such as water provision, flood mitigation or carbon sequestration. The degree of restriction on land use and resource use in these areas may be lower than that recommended for critical biodiversity areas."

The project area lies within a CBA2 and partly on ESA2, meaning the area is near natural, this implies that the landscape is near to natural state and the Ecosystems and species are largely intact and undisturbed. These are areas with intermediate irreplaceability or some flexibility in terms of area required to meet biodiversity targets also there are options for loss of some components of biodiversity in these landscapes without compromising our ability to achieve targets.

Therefore, a Thorough Terrestrial and wetland delineation study is underway and the final

results will be incorporated into the final EIA

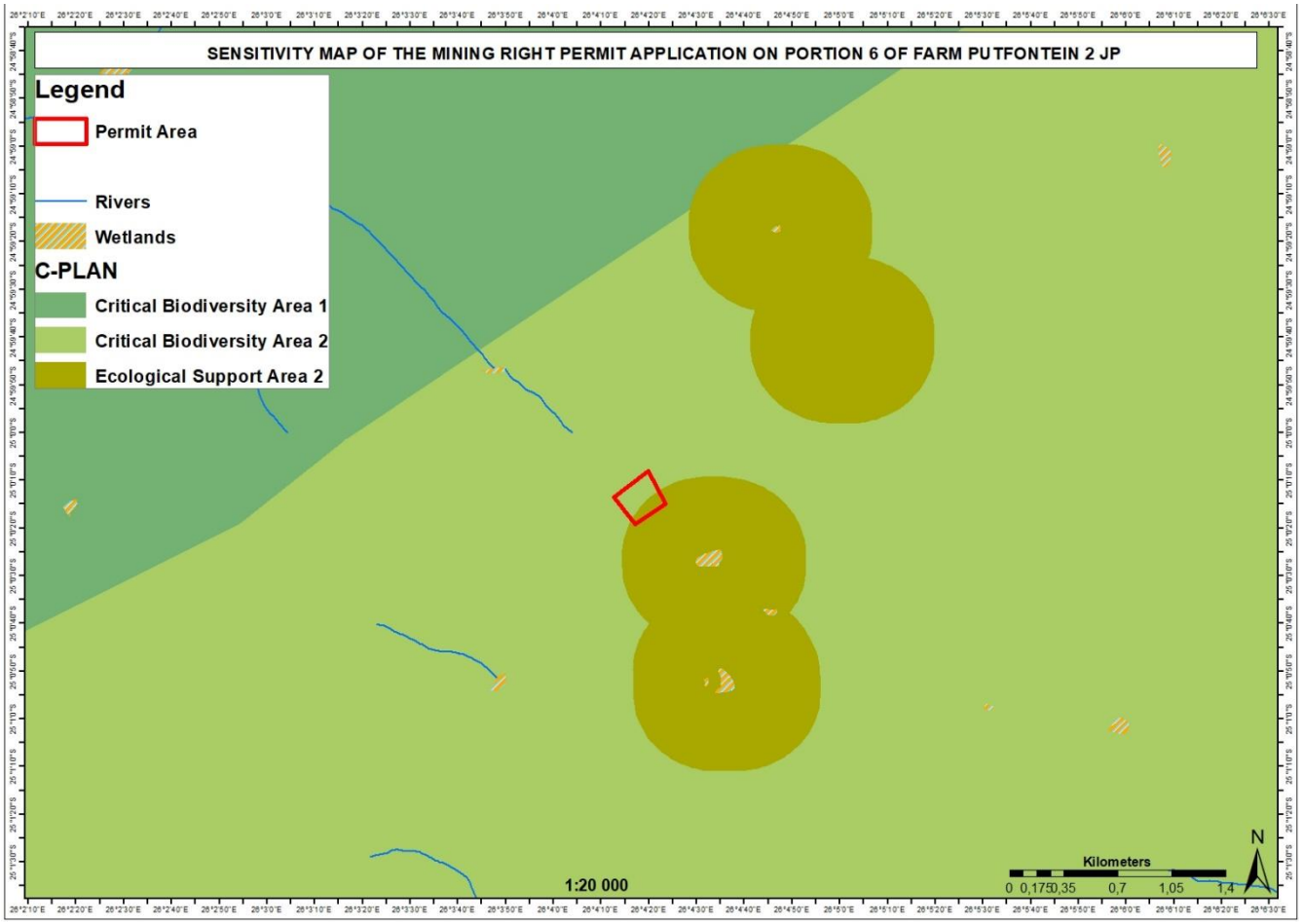

Figure 6: Environmental map showing the terrestrial and aquatic sensitivity of the site

Geology

The site lies within the Bushveld complex which is the host of the Platinum Group Elements (PGEs), chromium and vanadium, and constitute the world's largest known resource of these metals. The Rustenburg Layered Suite is divided into five zones known as the Marginal, Lower, Critical, Main and Upper Zones from the base upwards.

The **Marginal Zone** is comprised of generally finer grained rocks than those of the interior of the Bushveld Complex and contains abundant xenoliths of country rock. It is highly variable in thickness and may be completely absent in some areas and contains no known economic mineralization. The **Lower Zone** is dominated by ortho pyroxenite with associated olivine - rich cumulates in the form of harzburgites and dunites. The **Critical Zone** is characterized by regular andoften fine-scale rhythmic, or cyclic, layering of well-defined layers of cumulus chromite within pyroxenites and olivine-rich rocks. The economically important PGE deposits are part of the Critical Zone.

The well-developed **Main Zone** consists of norites grading upwards into gabbronorites. It includes several mottled anorthosite layers in its lower sector and a distinctive pyroxenitelayer two thirds of the way up, termed the Pyroxenite Marker. Historically and because of active mining activities surrounding the application area falls under areas where the chrome was proven to be economically viable as it is located on the Western limb of the Bushveld Complex consisting of the Lower Critical Zone, which hosts the Lower Group (LG) and Main Group (MG) layers underlies the application area and it comprises layered pyroxenite, harzburgite and dunite. The geological map is attached as figure 6 below.

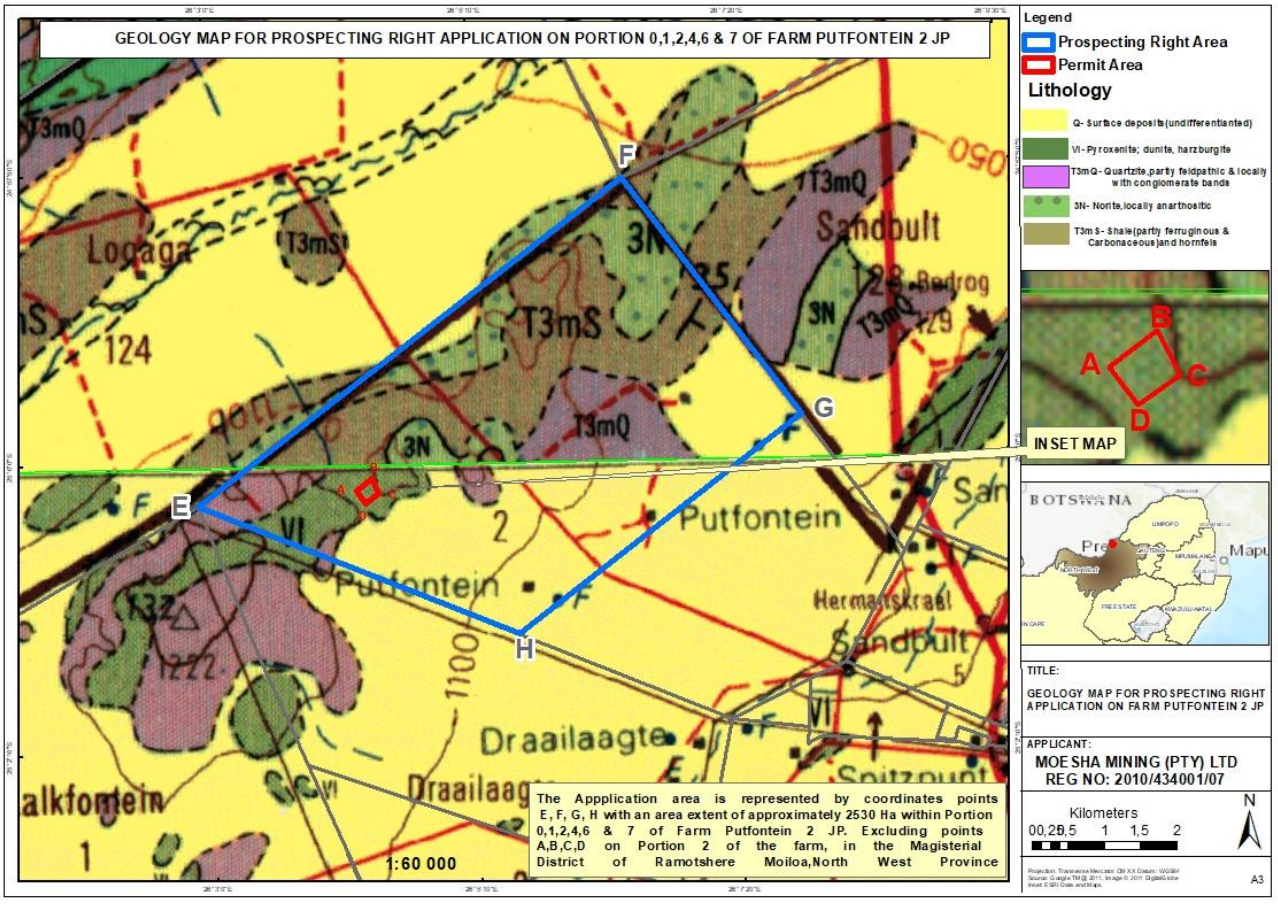

Figure 7: Geological map of the proposed site.

Soil, Land Use and Land capability

The agriculture is by far the most extensive land use in the NW province. It takes many forms, including commercial dry land and irrigated cultivation, livestock farming, game farming, as well as subsistence farming. The strong agricultural character also means that the province is considered to be predominantly rural.

Climatic conditions, water availability and soil conditions dictate the success of agriculture in the province. Of all the various soil characteristics, erodibility is the most critical to understand. The erodibility of soils can be described as their sensitivity to the effects of wind and water on the soil structure. This property is expressed as an erodibility index, where low values indicate high susceptibility to erosion, and high values correspondingly indicate a low susceptibility to erosion.

The Land Capability classification within North West indicates the suitability of soils for most kinds of field crops and divides it into 8 classes. The National Department of

Agriculture considers Class 1- 4 as well as existing arable land as high potential agricultural land. The department is in the process of refining the land capability classes.

Class 1	Soils have slight limitations that restrict their use.
Class 2	Soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.
Class 3	Soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
Class 4	Soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
Class 5	Soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.
Class 6	Soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.
Class 7	Soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.
Class 8	Soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Figure 8: Soil classification table of the North West Province

The project area falls within class 4, meaning they soils have very severe limitations that restrict the choice of plants or that require very careful mitigation or both & class 8 soils that have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed and aesthetic purposes.

The dominant soils in the project area Rubic Arenosols, which are soils that have a low water holding capacity, rapid permeability, and a low nutrient content. They also group together soils that, with little vegetation cover, are highly vulnerable to wind erosion.

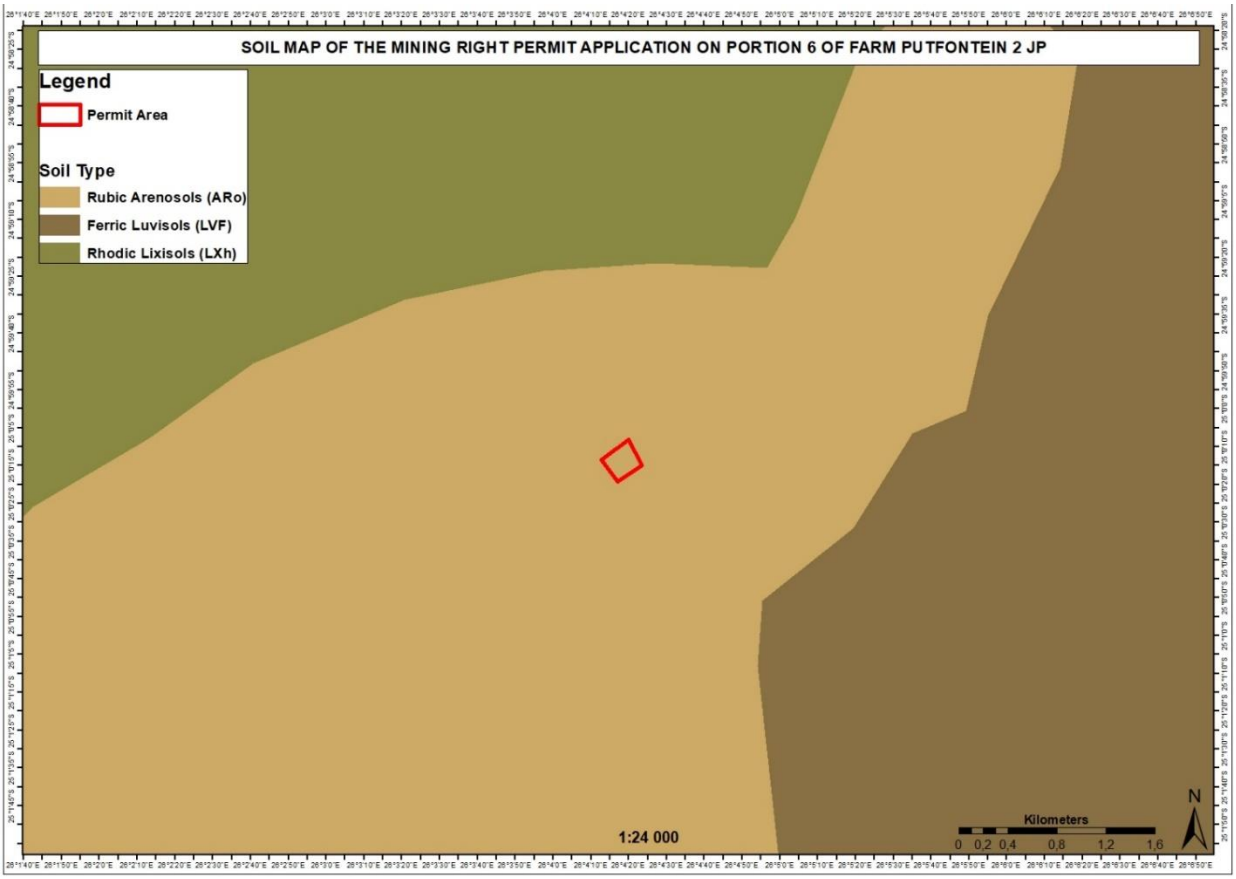

Figure 9: Soil type map of the proposed site

Socio-economic conditions.

The Ramotshele Moiloa Local Municipality (RMLM) is situated within the Ngaka Modiri Molema District in the North West Province and it covers a total area of 7 191.6 km^2,it shares borders with Botswana in the north, Moses Kotane and Kgetleng Rivier Local Municipalities in the east and Ditsobotla and Mafikeng Local Municipalities in the south.

The vast majority of the population lives in a rural or peri-urban environment, which for most part is unplanned and poorly serviced. The rural part of the municipality is estimated at 70% of its total area with a considerable amount of land under traditional authorities (around 35% of the total area). The natural environment is primarily characterized by turf thorn veldt and mixed bush veldt areas.

The Municipality is characterized by a few urban areas including Zeerust Town (the main town in the RMLM) as well as some formal settlement at Ikageleng, Henryville, Olienhout Park, Shalimar Park, Welbedacht (Lehurutshe Town) and Groot Marico. The town of Zeerust is recognised as a regional node located on the Platinum Corridor within the Northwest Province and plays a prominent role of economic development for

Ramotshere Moiloa Local Municipality.

Population

According to Census 2011, RMLM has a total population of 155 513 people of which the majority 51, 4% of the population are female, the population age distributions indicates that 32,9% of the RMLM population is aged between (0-14) years of age, 69,7% area within the working age of (15-64) and 7,5% are Elderly (56+)

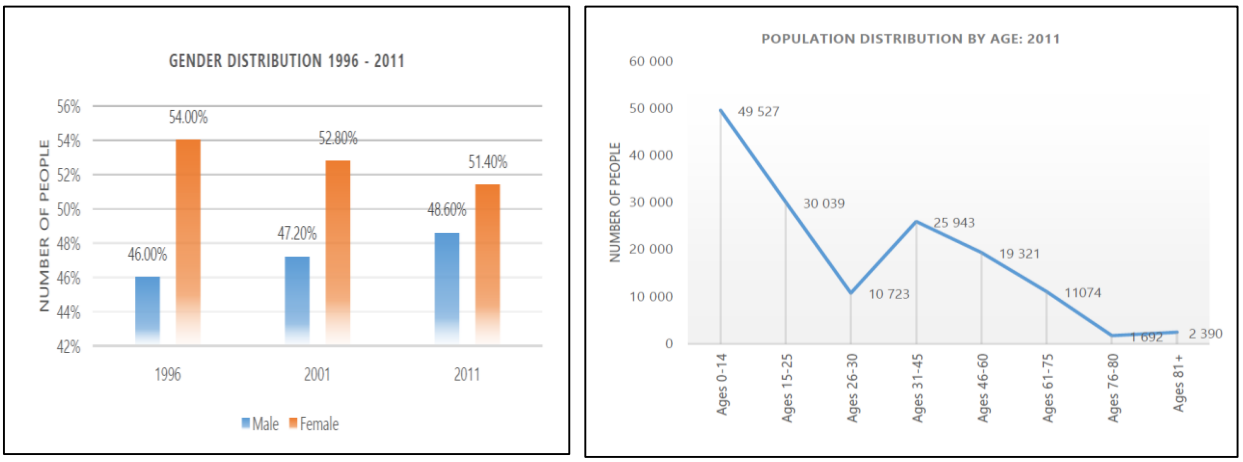

Figure 10::Gender distribution and population distribution by age in RMLM

Education

According to Census 2011, 5,0% people who are aged 20 years and older have completed primary school, 27,5% have some secondary education, 21,1% have completed matric and 6,4% have some form of higher education. The figures also showed that 20,7% have no form of schooling.

It is recorded that 6,5% people who are aged 20 years and older have completed primary school, 9,2% have some secondary education and 0,8% have some form of higher education. The figures also showed that 4,5% have no form of schooling. In terms of schooling, skills levels remain low but the percentage of people above 20 years of age with no schooling has decreased from 34,7% in 2001 to 20,7% in 2011. There is a possibility that the lack of higher-level education is due to a lack of access to school or other educational institutions.

Annual household income

Annual household income represents the dominant demand indicator for goods and

services and thus indirectly determines the possible sustainability of new businesses within the municipal area. Households in RMLM are relatively poor with almost 14,66% earning no income at all. 93,90% of the households earn less than R12 800/month.

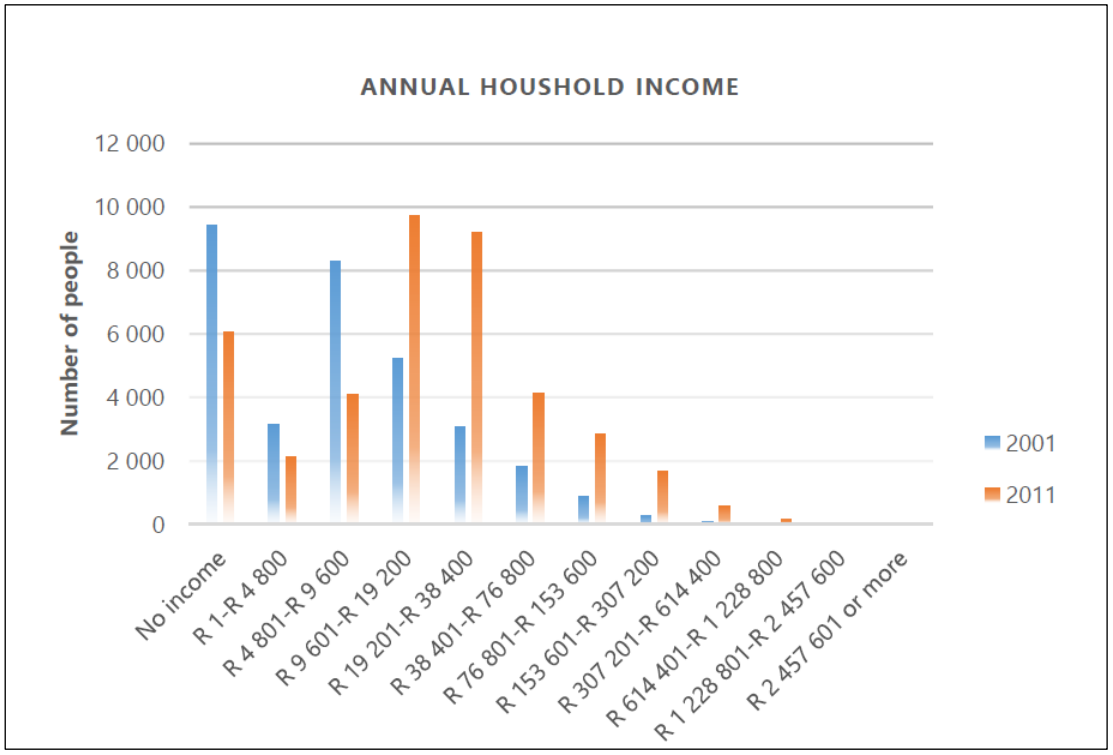

Figure 11: Annual Household income for RMLM

Employment creation is vital in the rural areas and rural towns of the province. It goes without saying that the main task of government is to facilitate business investment, growth and development to create these jobs. The economic sectors of growth and opportunity in the province should be targeted, namely: agriculture, mining, manufacturing, trade, finance and business services, general government services and construction. The success of this exploration campaign will definitely assist the social condition of this municipality provided that this project leads to an economical viable mining project

(b) Site Accessibility

The proposed area is located approximately 65 km north of Zeerust and 16km north east of Madikwe nature reserve. The site can be accessed through D1789 & D2039 gravel roads that connects the project area with the tarred R49 road which goes to the town of Zeerust, Due to the availability of road networks on site, there will be no road construction for this proposed project.

(c) Description of current land uses.

Land use is defined as the operations carried out by humans on the land surface, with the intention to obtain products or benefits through using land resources. This can be simplified as the purpose the land serves. Land uses varies according to places and according to zoning. Some of the land uses includes settlement, agriculture, mining, retail etc. The mainland-use on site is the grazing land, natural grassland, open woodland and low shrubland covering a bigger area for the site. Few farmhouses used for settlement where observed during site visit. Most of the land adjacent to the proposed site is used for game farming,

(d) Description of specific environmental features and infrastructures on the site.

The only prominent infrastructures noted on site during site visit are;

- gravel road networks;
- Farm houses & fences
- Game farm (Pamaenons) & Tsa Naga Game Ranch
- Windmills
- Boreholes
- Cattle's kraals

1.8.5 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).

This section provides the detailed methodology used for the assessment of the significance of potential environmental impacts in the study. This methodology allows for the identified potential impacts to be analysed in a systematic manner, with significance rating (from insignificant to very high) assigned to each potential impact. The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur. The criteria used to determine impact consequence include extent, intensity and duration of the impact and are presented below.

Table 7: Criteria used to determine the consequence of the impacts

Nature of the Impact (N)		
Positive	**+ (ve)**	Impact will be beneficial to the environment (a benefit).
Negative	**- (ve)**	Impact will not be beneficial to the environment (a cost).
Neutral	**0**	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
Magnitude (M)		
Minor	2	Negligible effects on biophysical or social functions/processes. Includes areas/environmental aspects which have already been altered significantly, and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions/processes. Includes areas/environmental aspects which have been largely modified, and/or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions/processes. Includes areas/environmental aspects which have already been moderately modified, and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions/processes. Includes areas/environmental aspects which have been slightlymodified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions/processes. Includes areas/environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3 - 5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.
Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.

Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span thatthe impact can be considered transient.
Probability of Occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impactswill be calculated using the following formula:

Significance Points (SP) = (Magnitude + Extent + Duration) x Probability

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (Points). The significance for each impact is rated asHigh (SP ≥ 60), Medium (SP = 31 - 60) and Low (SP < 30) significance as shown in the below.

Table 8:Significance rating of positive and negative impacts.

Significance of Predicted NEGATIVE Impacts		
Low	0 - 30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision.
Medium	31 - 60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on thedecision unless it is mitigated.
High	61 - 100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.

Significance of Predicted POSITIVE Impacts		
Low	0 - 30	Where the impact will have a relatively small positive effect on the environment.
Medium	31 - 60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61 - 100	Where the positive impact will improve the environment relative to baseline conditions.

1.8.1 Impacts and risk identified including the nature, significance consequence, extent, duration and probability of the impacts, including the degree of these impacts.

Table 9: Impact assessment and rating table

Activity	Aspect	Impacts	Nature of the Impact (N)	Magnitude (N)	Extent (E)	Duration (D)	Probability (P)	Significance before mitigation	Mitigation Measures	Magnitude (M)	Extent (E)	Duration (D)	Probability (P)	Significance After Mitigation
CONSTRUCTION PHASE														
Site Clearing	Fauna	Habitat loss and destruction due to the clearing of vegetation.	-(ve)	6	2	3	5	55	Areas to be cleared must be clearly marked and clearing of vegetation must only take place within the demarcated areas. (Operation footprint)	4	2	2	3	24
	Flora	Site clearing leads to the introduction of invasive species on site and the loss of indigenous plants.	-(ve)	6	2	3	5	55	• control alien invasive plant species during all phases of the operation. • Avoid removal of indigenous tree species.	2	1	2	4	20

	Visual impacts	Stockpiles which will be made will disturb/alter the overall perception of the site.	-(ve)	6	2	2	5	50	Stockpiles should be keptto a minimum height of >3m.	2	1	2	3	15
	Soil and Land	Soil erosion may occur due to loss of vegetation	-(ve)	6	2	2	5	50	Clearing of vegetation must only be done within demarcated areas to minimise soil erosion area	2	1	4	4	28
	Air Quality	Dust will be generated due to the movement of heavy machineries and vehicles working on site.	-(ve)	6	2	2	5	50	Dust suppression must be done on site to reduce or minimise the generation of dust.	2	1	4	4	28
Movement of machinerie s and Vehicles in and around the site.	Air Quality	• Dust will be generated due to the movement of heavy machineries and vehicles working on site. • Emissions of gases like carbon	-(ve)	6	2	2	5	50	• Dust suppression must be done on siteto reduce or minimise the generation of dust • Vehicles & machineries should be serviced regularly to minimise the release of carbon monoxide or any harmful gases.	2	1	4	4	28

		monoxide from vehicles and machineries will cause air pollution.												
	Soil and Land	Potential Soil contamination due to oil and diesel spillages from vehicles.	-(ve)	6	2	2	5	50	Drip trays should beplaced under parked vehicles at all times to contain potential oil drips /spills. Vehicles should be serviced regularly to minimise leaking of oils.	2	1	4	4	28
	Surface and Groundwater	Groundwater, surface water contamination from oil and diesel spillages from machineries and vehicles.	-(ve)	6	2	2	3	30	Place drip trays under parked vehicles and machineries to avoid soil contamination by potential oil and diesel leakages.	2	1	2	3	15
	Fauna	Accidental killings of smallanimals on site.	-(ve)	6	2	2	5	50	Vehicles should utilise designated/existing roadson site.	2	1	4	4	28

									• Work during daytimeto minimise thedisruption animal life. • Do not attempt to kill or capture snakes unless directly threatening the safety of employees.					
OPERATIONAL PHASE														
Mining (including drilling), crushing and screening	Dust	Dust during mining, crushing and screening	-(ve)	6	2	2	5	55	• Dust suppression must be undertaken • Provide dust mask to employees working on site.	2	2	2	3	18
	Noise	The mining, crushing and screening plants will produce noise on site which can be a problem to the land occupants and animals within the vicinity.	-(ve)	6	2	2	5	50	• Work during day time only. Sound is louder during the night than during the day. Thiswill minimise disruption to people and to animal life • Service equipment, machineries, and vehicles regularly to minimise noise.	2	2	2	4	24

									• Where required, Place silencers on equipment to reduce noise levels.					
	Soil (Erosion & contamination) and (reduction in) land capability.	Mining disrupts the natural soil profile which the affect the fertility and structure of the soil. Improper storage of hydrocarbons.	-(ve)	6	2	3	5	45	• Carry out concurrent rehabilitation throughout the life of the mine (LoM). Areas that are mined should be rehabilitated upon completion and vegetated during the course of the mine lifeto reduce exposure ofthe exposed and denuded areas to erosion mechanisms. • Back filling must bedone according to the soil horizon to ensure that the subsoil and the topsoil are properly replaced to support revegetation.	2	2	2	4	24
	Immigration of job seekers	Usually during mining, a lot of people migrate to stay next to	-(ve)	6	2	1	1	9	The mine must employ people from nearest community and provide	1	2	1	1	4

		where mining is taking place as part of looking for job opportunities.							transport for those peopleto come to work.					
	Waste management	Improper waste management and disposal may cause soil contamination, littering (visual impact), and ground water contamination	-(ve)	6	2	3	5	45	• Separate and store waste according to their classifications (hazardous and general waste) • General wate must further separated by providing marked or color-coded bins for paper, plastic, PPE, steel, food bins, etc). • The hazardous waste such as used oil and grease must be contained in bunded containments with a capacity of at least110% capacity of the substance stored • Place bins around the site to encourage employees not to litter • Place "No Littering" signs around the site	2	2	2	4	24

									• Dispose the general waste at a registered municipal site • Keep a disposal certificate of any hazardous waste or contaminated soil disposed of.					
Top soil, overburden and Waste rock stockpiling	Soil erosion from stockpiles	During heavyrains or strong winds, soil erosion may occur	-(ve)	6	2	2	5	50	Avoid erosion by stockpiling topsoil properly (right slope and height) and keep stockpile damp during windy period to reduce erosion by wind.	2	2	2	4	24
	Visual Impacts	Stockpiles alter the overall perception of the site.		6	2	2	4	40	• Stockpile height mustnot exceed 3m • The stockpiles mustbe used to backfill thepits to reduce during concurrent rehabilitation to reduce visual impacts	2	2	2	4	24

Erection of surface infrastructures	Soil and Land	Loss of topsoil and nutrients in an area where the surface infrastructures will be erected.	-(ve)	4	2	2	4	32	Where soil nutrients and/or fertility has been lost, the soil should be fertilised to recovercultivation capacity during rehabilitation.	2	1	2	2	10
REHABILITATION/CLOSURE PHASE														
Rehabilitation of the disturbed and contaminated areas.	Flora	Revegetation ofareas where vegetation was disturbed to restore ecosystem function and integrity.	+(ve)	6	1	2	3	27	All areas that have been damaged by mining activities should be rehabilitated immediately after activities ceases to aid revegetation and restore ecosystem function and integrity. Reap the surface to encourage revegetation, where required fertilizethe soil.	8	2	3	5	65
	Visual Impact	• Removal of all infrastructures onsite.	+(ve)	6	1	2	4	36	• Remove all things which were not there prior mining (vehicles, equipment, waste, etc) from the site.	8	2	4	5	70

		• Removal of stockpiles.							• The stockpiles must be used to close up all pits on the site.					
	Soil and Land	Oil spills should be cleaned up and disturbed area rehabilitated and monitored. Closing of excavated pits onsite.	+(ve)	6	1	2	3	27	• Clean up and remove any spills and contaminated soil on site. • All excavated pits must be closed post all mining activities to encourage revegetation	8	2	3	5	65
	Ecosystem function and visualaspect	Lack of or improper rehabilitation may lead to impact on ecosystem functionality and visual impacts.	-(ve)	4	2	2	4	32	• Provide for financial provision as required • Revised and providefor financial provision shortfall annually.	2	1	2	2	10

1.8.6 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)

Table 10:Positive and negative impacts of the project.

Positive Impacts from the proposed activity	**Negative Impacts from the proposed activity**
Local Market Boost: new market to local suppliers of different goods will be opened to local business people.	**Noise**: will be generated from the movementof vehicles and operation of machineries.
Good environmental management: All potential impacts that will be generated from the development of the project will be managed through the implementation of the EMP.	**Removal of vegetation:** for the purpose of siteestablishment and mining
Employment opportunities both from the mine as well as local market	**Habitat destruction:** by removing the vegetation in the mining area.
	Change in land capability: Mining activities will have impact on the land capability; however, mitigation measures are in place to reduce the intensity of the impact.
	Generation of Dust: due to the nature of the road that will be used (gravel) and the openpit mine activity, there will be dust generation.
	Groundwater Contamination; Potential oil and diesel spillages may lead to the contamination of groundwater.

1.8.7 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).

Please refer table 9 above for a full description of the Impact Assessment including mitigation measures.

1.8.8 Motivation where alternatives sites were used.

The selected/preferred site, activities and technology to be used is chosen based on the activity planned (mining), attributes of the underlying geology of the area and the type of mineral to be mined.

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

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

The preferred site is based on the desktop analysis of the geology of the area. The site is potentially underlain by reserves of the ore bearing Bushveld Igneous Complex rock which is known to be the host rock for chrome, PGM's, Nickel and general aggregate. It is for this reason why this mining permit is being applied in the farm portion of interest.

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

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

The potential impacts were identified during the site visit and through literature review ofthe same activities. The receiving environment and its surroundings were assessed and studied to understand all natural (and social) features that would be affected by the proposed development. The generic criteria and systematic approach used to identify, describe and assess impacts as outlined in this report is stated in section 1.8.5, this was done in order to determine the significance of each activity rated.

Interested and affected parties as well as landowners are consulted and notified of the proposed project to ensure that they exchange any information pertaining to the environment that may be of great importance to the attention of the EAP compiling the report.

1.10 Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (includingthose that could or should have been identified by knowledgeable persons) and not only those that wereraised by registered interested and affected parties).

Refer to **table 9** above for the Identified Potential Significant Impacts and Risks.

1.11 Summary of specialist reports

The screening tool has provided that the terrestrial biodiversity, agricultural and aquatic specialist studies be undertaken, however, during site assessment the proposed site is not being used for any agricultural activity and the hydrology map shows that there are no wetlands or rivers within or close to the proposed site which necessitate aquatic assessment. In addition, since the operation will not involve processing and chemical use as well as the results of the impact rating no specialist studies were deemed necessary.

1.12 Environmental Impact statement

1.12.1 Summary of the key findings of the environmental impact assessment.

The basic assessment illustrates that there are various potential negative and positive impacts that may arise as a result of the proposed project. As per the impact assessment, the negative impact ratings are low after application of the mitigation measures and there are also socio-economic positive impacts that will come with the project. This is a positive impact that will help improve the livelihoods of the members of the nearest community around the project site by providing an additional means of generating income.

The pre-mitigation Medium-significance rated negative impacts include the destruction and disruption of the natural environment, dust generation and noise generation. Dust generation needs to be strictly managed as the site is surrounded by cultivated land and homesteads, therefore the deposition of dust on the cultivation could have serious implications on the agricultural produce on the neighbouring farm portions. In addition to that, dust and noise can have negative impacts (nuisance to medical) on the land occupiers near the site, and need to be managed accordingly as well.

It is also important that concurrent rehabilitation is practiced during the operation of the mine so as to reduce the chances of erosion (especially during the rainy season when there are great chances of exposed and loosened soil to be washed off by runoff). Overall, the project will have minimal negative impacts on the environment and the surrounding land occupiers if all impacts are managed properly, and will instead positively impact the livelihood and economy of local communities.

1.12.2 Site Map

The proposed site plan is attached as figure 2

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

The significant positive potential impacts identified include job creation. The negative impacts include dust emission, noise generation, habitat disruption, animal life disruption, removal of vegetation, possible contamination of soil &water, immigration of job seekers,and soil erosion. All these impacts were assessed and rated for their significance, impactsand mitigation measures are outlined on table 9 above.

1.13 Proposed mitigation management objectives and the impact management outcomes for inclusion in the EMPr;

(Based on the assessment and where applicable the recommendations from the specialist, the recordingof proposed impact management objectives, and the impact management outcomes for the developmentfor inclusion in the EMPr as well as for inclusion as conditions of authorisation)

The objective of the identified mitigation measures is to ensure that the impacts are minimised or avoided as much as possible. Where impacts cannot be avoided, mitigation or rehabilitation measures are to be implemented during operational and closure phase respectively. All the potential (negative) impacts identified have been assessed and foundto be of medium to low significance and after applying the mitigation measures, the impacts get even lower.

1.14 Aspects for inclusion as conditions of authorisation.

- Existing access routes must be used to access the site. The access routes should be maintained to ensure that other users are not affected by the use of the routes for thedevelopment.
- The project area and access routes must be sprayed with water to manage dust anddust mask provided to the employees.
- Ensure there is rehabilitation and re-vegetation upon cessation of mining activities.
- Concurrent rehabilitation has to be carried out throughout the life of the mine toensure that erosion of the exposed and denuded mined areas is minimised.
- Ensure that steep slopes area is graded for safety after mining.

- Ensure that the mining activities cause minimal disturbance to the neighbouring farmers. This is a very sensitive issue as some of the farmers live within close proximity.
- Provide complaints register to record and manage complaints from neighbours.

1.15 Description of any assumptions, uncertainties and gaps of knowledge.

(Which relate to the assessment and mitigation measures proposed)

It is assumed that the all the aspects of the environment were observed during the site assessment and that the desktop information is correct.

1.16 Reasoned Opinions as to whether the proposed activity should or should not be authorized.

1.16.1 Reason why the activity should be authorized or not.

The project must be authorized because

- Chrome, PGM's and Nickel are very important minerals in the economy and in high demand
- The proposed project will create few jobs for the local people for the duration of the project (Two (2) years with a potential renewal period of Three (3) years making it atotal of Five (5) years.
- The impact rating is medium low with the application of the mitigation measures
- Concurrent rehabilitation will aid in vegetation establishment while the other area is still being mined and ultimately aid in ensuring success of final rehabilitation and closure.

1.16.2 Conditions that must be included in the authorization

- See item 1.14 above

1.17 Period for which the Environmental Authorisation is required.

The Environmental Authorisation is required for the period of the mining permit validitywhich is normally Two (2) years and an additional Three (3) years for the renewal period.

1.18 Undertaking

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report.

The undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment report and the Environmental Management Plan. And has been put in the EMPr section below.

1.19 Financial Provision

The financial provision estimated for year one (1) is **R 246,396.83**

1.19.1 Explain how the foresaid amount was derived

The amount was calculated using the 2022 DMRE rates for quantum calculation.

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

(Confirm that the amount, is anticipated to be an operating cost and is provided for as such in theMining work programme, Financial and Technical Competence Report).

It is confirmed that the amount is provided from operating expenditure.

1.20 Specific information required by the competent authority.

No spciacific information required by the competent authority

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

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

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

There are land occupiers close to the proposed site, but measures have been put in placeto mitigate impacts that might arise due to the activities on site.

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

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

No archaeological features have been recorded in the area applied for, however, should anything of archaeological or cultural value be identified, should any heritage important artifact be identified on site, work will stop immediately and heritage specialist will be appoint the conduct the assessment.

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

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

No other matters required in terms of sections 24(4) (a) and (b) of the Act.

PART B: ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT (EMPR)

2.1 Details of EAP

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

It is confirmed that the requirements for the provision of the details and expertise of the EAP are already included in PART A, section 1.1-1.2.

2.2 Description of the aspects of the activity

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

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

2.3 Composite Map

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

The composite map is attached as figure 8 below.

Figure 12:Composite map of the proposed site

2.4 Description of impacts management objectives including management statements

2.4.1 Determination of closure objectives

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

The main objective of closure is to rehabilitate and return the affected areas/land to a state that it can be useful again, as close to the current state as possible. This will involve closingof pits and revegetation of affected areas to allow the natural state of the land to occur.

The overall goal for closure of the mining site is to ensure that the land is stable and safein the long-term. For post closure, the disturbed area will be rehabilitated. All waste typeswill be removed and disposed properly. No rubble or domestic waste will be left lying in and around the site.

This objective and goal will be realised by:

- Ensuring that all temporary infrastructure left on-site are removed and ensureenvironmental and safety risks are minimised;
- Rehabilitating areas disturbed by mining activities;
- Ensuring that rehabilitated areas do not pose safety hazard to humans and animals;
- Establishing a self-sustaining and stable vegetation cover over the area disturbedby the mining activities;
- Control the establishment of alien vegetation during all phases of the proposedproject;
- Ensuring that the rehabilitated landform is free draining; Protecting the drainage lines; and
- Ensuring adherence to local, provincial and national regulatory requirements.

2.4.2 Volume and rate of water use required for the operation

Water will be bought from a registered water supplier and delivered onsite. If buying is not sustainable, the applicant/holder of the mining permit will obtain a general authorisation from the Department of Water and Sanitation for obtaining water from theborehole onsite.

2.4.3 Has a water use license been applied for?

The water use license will not be applied for this operation. Water will be bought from a registered water supplier and delivered onsite. If buying is not sustainable, the applicant/holder of the mining permit will obtain a general authorisation from the Department of Water and Sanitation for obtaining water from the borehole onsite.

2.5Impacts to be mitigated in their respective phases

Table 11:Measures to rehabilitate the environment affected by undertaking the activity

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
Clearing of vegetation and movement of vehicles for site establishment	Generation of Dust	Air quality-dust	Construction	0.5 ha	Dust suppression using water will be under taken tomanage dust emitting fromvegetation removal.	Compliance with Ambient airquality Standards	Throughout the life cycle of the mine.	To remain within air quality ambient level
	Increased noise levels from movement of vehicles	Noise	Construction	0.5 ha	Trucks, machinery, and equipment must be regularly serviced to reduce noise levels	Compliance with Ambient Noise Standards	Throughout the life cycle of the mine	To remain within ambient noise level
	Destruction of archaeological remains and unidentified graves.	Cultural Heritage	Construction	0.5 ha	Burial sites must be plotted, clearly marked andmust be protected/barricaded to avoid accidental damage	Compliance with cultural heritage standards	During construction phase	Protection of cultural heritage sites

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
					During prospectingactivities Custodians must be involved in any mitigation work to their family burial sites			
	Disruption and destruction of animal life	Fauna	Construction	0.5 ha	No wild animal may under any circumstance be handled, removed or beinterfered with. No wild animal may under any circumstance be hunted, snared, captured, injured or killed. No wild animal may under any circumstance be	Compliance with conservatio n of wild life Standards	Throughout the life cycle of the mine	Prevent and protect and conserve the lives of fauna

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
					hunted, snared, captured, injured or killed. Remove and dispose of any snares or traps found on or adjacent to the site.			
Clearing of vegetation and movement of vehicles for site establishment	Disruption and destruction of vegetation	Flora	Construction	0.5 ha	Do not disturb, deface, destroy or remove plants or natural features outside the demarcated area. No open fires are permitted under trees and novegetative matter may be removed for firewood. Locate construction camps on the outside fringe of the riparian vegetation zone.	Compliance with conservatio n of wild life Standards	Throughout the life cycle of the mine	Prevent and protect and conserve the lives of flora

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
					Where damage to protected plants and natural featuresis a problem, then these should be fenced for protection.			
Clearing of vegetation and movement of vehicles for site establishment.	Loss of fertile topsoil	Soil, Land Use and Land Capability	Construction	0.5 ha	The construction footprint should be kept as small as possible; Keep as much original land cover as possible; Stripped soils should be stockpiled surrounding the disturbed area	Compliance with measures outlined on this EMP and soil quality standard	During Construction phase	Prevent fertile soil. implementation of Monitoring programme
	Soil Compaction	Soil, Land Use and Land Capability	Construction	0.5	Avoid creating many access routes. Keep the speed limit to minimum to reduce the tire contractions on the soil.	Compliance with measures outlined on this EMP and soil	During Construction phase	Prevent compaction of soil and land. implementation of

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
						quality standard		Monitoring programme
Clearing of vegetation and movement of vehicles for site establishment	Soil contamination from hydrocarbon spills	Soil, LandUse and Land Capability	Construction	0.5 ha	Clean all hydrocarbon spills from machinery immediately, and Dispose contaminated soilsat a permitted site. Drip trays are to be watertight, and must be emptied regularly and before rain events. The contents of drip trays are to be treated as hazardous waste. Only emergency and essential repairs of vehicles	Compliance with measures outlined on this EMP and soil quality standard	During Construction phase	Prevent pollution of soil and land. implementation of Monitoring programme

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
					and equipment may take place on site.			
Clearing of vegetation and movement of vehicles for site establishment	Uncontrolled soil erosion and change in the area topography.	Topography	Construction	0.5 ha	Demarcate construction footprint and limit activities to within this footprint as far as possible; Keep the clearance area as small as possible; and Keep as much original land cover as possible	Compliance with measures outlined on this EMP.	During Construction phase	To conform to the natural surroundings of the area
	Increased sedimentation surface runoff and Soil Erosion	Surface Water resources	Construction	0.5 ha	Limit the development footprint to reduce high-sediment runoff; Avoid clearing the site during the rainy seasons. Rehabilitate the area by re-using stockpiled soil within as short a period of time.	Compliance with water quality Standards	Throughout the life cycle of the mine	Prevent pollution of surface water.

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
Clearing of vegetation and movement of vehicles for site establishment.	Surface water contamination from hydrocarbon spills	Surface Water resources	Construction	0.5 ha	Clean all hydrocarbon spills from machinery immediately, and Dispose contaminated soilsat a permitted site. Drip trays are to be watertight, and must be emptied regularly and before rain events. The contents of drip trays are to be treated as hazardous waste.	Compliance with water quality Standards	Throughout the life cycle of the mine	Prevent pollution of surface water.
	Increased visual levels such as dust and infrastructures	Visual Aspect	Construction	0.5 ha	The development footprints and disturbed areas should be kept as small as possible Construction activities should be restricted to	Compliance with measures outlined on this EMP	During Construction phase	To conform to the natural surroundings of the area

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
					daylight hours to limit the need to bright floodlighting and the potential for skyglow. Dust suppression should be carried throughout, whenever dust emanates			
Excavation of pit/ Trenching	Generation of dust	Dust	Construction	0.5 ha	Dust suppression using water will be under taken tomanage dust emitting fromvegetation removal.	Compliance with Ambient air quality Standards	Throughout the life cycle of the mine	Reduction of dust on site.
Excavation of the pit/ Trenching	Increased noise levels from movement of vehicles	Noise	Construction	0.5 ha	Trucks, machinery, and equipment must be regularly serviced to reduce noise levels	Compliance with Ambient noise quality Standards	Throughout the life cycle of the mine	Reduction of noise levels

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
Excavation of the pit/ trenching	Soil erosion and reductionin land capability	Soil and Land	Operational	0.5 ha	Carry out concurrent rehabilitation throughout the life of the mine.	Compliance with measures outlined on this EMP and soil quality standard	Throughout the life cycle of the mine	Prevent compaction of soil and land. implementation of Monitoring programme
Decommissioning/closure	Dust generated from removalof site infrastructure s and from spreading of topsoil	Air Quality	Decommissioning	0.5 ha	Topsoil must be spread during less windy days; Vegetation cover must be introduced as soon as possible to avoid soil erosion. Implement dust suppression measures to minimize dust; Revegetation must be done during rainy season.	Compliance with Ambient airquality Standards	Throughout the life cycle of the mine	To remain withinair quality ambient level

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
Decommissioning	Hydrocarbons spillages and wildlife deaths from Vehicles	Fauna and Flora	Decommissioning	0.5 ha	Protect vegetation and soil by avoiding hydrocarbonspillages; Vehicles must make use of existing roads to avoid destruction of vegetation;	Compliance with conservatio n of wild life Standards	Throughout the life cycle of the mine	Prevent and protect and conserve the lives of fauna and flora
Decommissioning	Rehabilitation activities (spreading of topsoil, removal of infrastructures and rehabilitation of access roads) will assist to reduce the	Visual	Decommissioning	0.5	All unnecessary infrastructure must be removed from the site; Spread topsoil over the rehabilitated area; Surface water and drainage lines must be rehabilitated to create a free-draining topography; Re-vegetate the	Compliance with measures outlined on this EMP	During Operational phase	To conform to the natural surroundings of the area

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
	negative visual impactof mining onthe receiving environment.				Rehabilitate areas;Ensure that the all boreholes are closed with asteel cap.			
Decommissioning	Increase of ambient noise levels from vehicles movements	Noise	Decommissioning	0.5 ha	Trucks, machinery, and equipment must be regularly serviced to ensure noise levels are notexceeded; Reduce the vehicles speed limits; Switch off equipment when not in use.	Compliance with Ambient Noise Standards	Throughout the life cycle of the mine	To remain within ambient noise level
Decommissioning	Restoration of the surrounding	Soil, land use and land capabilities	Decommissioning	0.5 ha	No mitigation measure is required for this impact as is positive and land is	Compliance with measures outlined on	Decommissioning phase	Land restoration

Activity	Impact	Aspect	Phase	Size and scale	Mitigation measures	Compliance with standards	Time period for implementation	Standard to be Achieved
	land and itsland use				reinstated back to the state prior prospecting activities	this EMP and soil quality standard		
	Soil and Land contamination from Hydrocarbons spillages	Soil, land use and land capabilities	Decommissio ning	0.5 ha	Protect vegetation and soil by avoiding hydrocarbonspillages; Vehicles must make use of existing roads to avoid destruction of vegetation.	Compliance with measures outlined on this EMP and soil quality standard	Decommissioning phase	Land restoration

2.6 Impact management outcomes

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

All the above requirements are addressed in **Table 11** above.

2.7 Impacts management actions

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

All the above requirements are addressed in **Table 11** above.

2.8 Financial Provision

2.8.1 Determination of the amount of Financial Provision.

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

Closure and rehabilitation will be done with reference to the closure objectives listed in item 2.4.1.

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

The closure objectives will be discussed with the land occupants and interested and affected parties during the public meeting

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

Table 12: Rehabilitation measures

Activity	**Extent before closure**	**Area After Rehabilitation and Closure.**
Pit area	3 ha	Backfilled and sloped to cater for not totally closing the pit and for safety.
Stockpile	500 m^2	Completely removed and used to backfill and for revegetation.
Surface infrastructures (Mobile office, mobile	1000 m^2	Area completely rehabilitated- all infrastructure removed.

ablution facilities, crushingand screening)		
Waste rock dump	1500m^2	It can be used to backfill the pits.

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

The closure objectives are aligned with the site and the rehabilitation that must be done.The closure objectives are aimed at leaving the project site as far as possible, in the statewhich is safe, which will allow natural succession and as close as possible to the pre- mining state.

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

Financial Provision for Rehabilitation for year 1 is calculated on table below. The financial provision will be revised annually to cater for any additional liability. Table below shows the area of pit on year one and the following years.

Year	Size of the excavation	Total size (considering concurrent rehabilitation
1	0,5ha	0,5ha
2	+0,5ha(-0,5ha of concurrent rehab)	0,5ha
3	+0,5ha(-0,5ha of concurrent rehab)	0,5ha
4	+0,5ha(-0,5ha of concurrent rehab)	0,5ha
5	+1ha	1,5ha

Note: should concurrent rehabilitation be delayed during any year, the additional liability will be catered for the annual revision of the financial provision.

Table 13:Financial Provision

Applicant:	**Modison Mining (Pty) Ltd**				**Ref: LP30/5/1/3/2/11180MP**		
Evaluator:	**Mukondeleli Mmakoya**				**Date: February 2023**		
No.	**Description**	**Unit**	**A**	**B**	**C**	**D**	**E=A*B*C*D**
			Quantity	**Master**	**Multiplication**	**Weighting**	**Amount**
				Rate 2022	**factor**	**factor 1**	**(Rands)**
1	Dismantling of processing plant and related structures (includingoverland conveyors and power lines)	m^3	0	19.46	1	1	0.00
2 (A)	Demolition of steel buildings andstructures	m^2	0	271.16	1	1	0.00
2(B)	Demolition of reinforced concretebuildings and structures	m^2	0	399.15	1	1	0.00
3	Rehabilitation of access roads	m^2	0	48.52	1	1	0.00
4 (A)	Demolition and rehabilitation ofelectrified railway lines	m	0	470.97	1	1	0.00
4 (B)	Demolition and rehabilitation ofnon-electrified railway lines	m	0	256.89	1	1	0.00
5	Demolition of housing and/oradministration facilities	m^2	0	542.33	1	1	0.00
6	Opencast rehabilitation includingfinal voids and ramps	ha	0,5ha	276,014.60	1	1	138, 007.30
7	Sealing of shafts adits andinclines	m^3	0	145, 57	1	1	0.00
8 (A)	Rehabilitation of overburden andspoils	ha	0	189,528.13	1	1	0.00

8 (B)	Rehabilitation of processing waste deposits and evaporationponds (basic salt producing waste)	ha	0	236,053.85	1	1	0.00
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic metal-rich waste)	ha	0	685,612.26	1	1	0.00
9	Rehabilitation of subsided areas	ha	0	158,701.25	1	1	0.00
10	General surface rehabilitation	ha	0.275	150,138.23	1	1	41,288.01
11	River diversions	ha	0	150,138.23	1	1	0.00
12	Fencing	m	0	171,26	1	1	0.00
13	Water management	ha	0	57,086.78	1	1	
14	2 to 3 years of maintenance andaftercare	ha	0.775	19,980.38	1	1	15,484.79
15 (A)	Specialist study	Sum	1	0.00	1	1	0.00
15 (B)	Specialist study	Sum	1	0.00	1	1	0.00
					sum		**194,780.10**
			Subtotal 1	**weighting factor 2**	1		194,780.10
1	Preliminary & General		10%				19,478.01
1	Contingencies		10%				19,478.01
			Subtotal 2				214,258.11
			VAT (15%)		15%		32 138,72
					Grand Total		**246,396.83**

The total area to be disturbed by the proposed mining activities in year 1 is 0.775ha. The financial provision will be reviewed annually.

i. Confirmation that the financial provision will be provided as determined.

The financial provision will be provided as determined upon request by the competentauthority.

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

2.9.1 Monitoring of Impact Management Actions

Monitoring of the impact management actions will be done by the Environmental Control Officer and the project manager. The ECO will be based on site to ensure that all management actions are implemented where required. Should, under any circumstance, the contractor's activities pose any damage on the environment and not comply with measures and impact management actions as stipulated in the EMP, the contractor will be held responsible for any such non-compliance. It is therefore the responsibility of the contractor to ensure that all relevant measures are taken to rectify such damage, at the contractor's expense. It is the duty of the ECO to monitor compliance with the EMP, and report and notify the contractor of any non-compliance, highlighting the following:

- Details of the nature of the non-conformance;
- The actions to be taken to correct the situation; and
- The date by which each corrective action should be executed.

The contractor will also be liable to produce a Corrective Action Plan, within which he/she will detail how the required corrective actions will be implemented. This plan will be submitted to the ECO and Project Manager for approval prior to implementation and the corrective measures have been carried out, the ECO will then be required to sanction the success or failure of the corrective action.

2.9.2 Monitoring and reporting frequency

Monitoring will be done monthly and the reporting to the competent authority will be done annually. Any non-compliances will be recorded and plans of actions documented

2.9.3 Responsible Person's

For this EMP to be implemented effectively, all role players involved in this project need to comply with the directives set out. A concise description of impacts and their mitigation/management measures will be provided and understood by all role players responsible for the implementation and monitoring of the mitigation measures.

This project will comprise of the following responsible role players:

- Lead Authority (DMR- North West Regional Office)
- The Environmental Control Officer;
- The Contractor;
- The project manager and
- The Developer (Permit holder).

These parties will ensure that all conditions stated on the right are adhered to and that all environmental management requirements are met. Each person's responsibility is detailed in the Table below;

Table 14: Roles and Responsibilities of each persons involved

Functions	Responsibility
Permit Holder	Ensuring compliance to the EMP and conditions contained in the Environmental Authorisation (EA). Contracting the Environmental Control Officer as an independent appointment to objectively monitor and implement the applicable environmental legislation.

Project Manager	Complete responsibility of the whole project and any contracted parties and ensuring that all environmental management facets are adhered to. The Project Manager will be supported by the ECO, with the following roles and responsibilities during the operations; • Review the annual reports compiled by the Environmental Control Officer (ECO); • Identify the need for remedial measures with regard to proposed works; • Communicate directly with the Contractors; and Issue non-conformance notifications to Contractors that do not comply with the requirements as set out in the EMP
Environmental Control Officer	• Objectively monitor, implement applicable environmental legislation, conditions of Environmental Authorisations (EA's) and the EMP. • Conduct audits on compliance to applicable environmental legislation, conditions of EA's and the EMP. Including size and sensitivity of the development (on grounds of the EIA). • Liaison between the relevant authorities and project team. Any changes in environmental conditions, registration and updating of all EMP documentation should be communicated and carried out by the ECO • Develop environmental awareness training for all new site personnel (e.g., posters, tool box talks, signage); • Undertake visual inspections of the activities of employees with regard to implementation of the requirements outlined in the EMP; • Immediately notify the Project Manager of any non-compliance with the EMP, or any other complaints or issuesof environmental concern; and ensure that all environmental monitoring programmes (sampling, measuring, recording etc.) are carried out according to protocols and schedules.

Lead Authority (DMRE Limpopo Regional Office)	The department responsible for approving the Environmental Authorisation application. Ensuring that the monitoring and adherence to EMPs is carried out, by going through/reviewing audit reports submitted by the ECO and conducting regular site visits.
Contractor	A Contractor will be employed by the developer for different components of the project. The Contractor's primary responsibilities are to construct the works and ensure compliance with the EMP whilst carrying out the work.

2.9.4 Time period for implementing impact management actions

The impact management actions must be implemented immediately or within a day of being approved.

2.9.5 Mechanisms for monitoring compliance

Table 15: Mechanisms for monitoring compliance

Associated Potential Impacts	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementing Impact Management Actions
CONSTRUCTION & OPERATIONAL PHASE			
Noise Generation	Maintain a complaint registerthat is made accessible to the local community and local farmers.	ECO and Project Manager	Monitor Monthly
	Safety inspection to ensure all workers are wearing protective ear plugs during operational phase	ECO and Project Manager	Reporting Daily
Soil contamination by oil spills from vehicles and machinery.	• Daily inspection of operational equipment • Service vehicles timeously	ECO and Project Manager	• Daily Inspection • Weekly Reporting
Dust	• Safety inspections to ensure all workers are wearing protective gears (dust mask) during operation	• ECO and Occupational Hygienist • Project Manager	• Monthly Monitoring • Monthly Reporting • Monthly reporting/ Daily Monitoring

	• Dust suppression inspection on the access roads • Maintain a complaint register that is made accessible to the local community members.		
Safety and hazards	Maintain an incident register for any accidents or safety incidences.	ECO & Project Manager	Monthly Reporting
Soil erosion	Ensure concurrent rehabilitation (backfilling, fertilization, and or re-vegetation) is implemented throughout the life of the project	ECO and Project Manager	Monthly Reporting
Safety and hazards	Maintain an incident register for any accidents or safety incidences	ECO and Project Manager	Monthly Reporting
Solid waste such as debris and litter may be generated and deposited in and around the site. This may attract nuisance and affect the natural	Inspection of waste storage and ablution facilities	ECO and Project Manager	• Weekly Monitoring • Monthly Reporting

scenery/aesthetic quality of the site.			
Contamination of soil and underground water by spills from mobile ablution facilities.		ECO and Project Manager	• Weekly Monitoring • Monthly Reporting
REHABILITATION PHASE			
Recovery and restoration of the Natural Habitat Dust dispersal Rehabilitation of the disturbed and contaminated areas Re-vegetation Removal of all mobile infrastructure on site	• annually revise financial provision and pay the shortfall • Inspection of rehabilitation on site and comparison of rehabilitation progress against the rehabilitation plan • Continuous monitoring of rehabilitation process and objectives.	• ECO & Competent Authority • Safety Officer/Occupational Hygienist	Monthly, quarterly & annual inspection and reporting

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

The Environmental Management (EMP) audit report will be done and submitted annually.

2.11 Environmental Awareness Plan

An environmental control officer will undertake awareness of different environmental aspect and will train the employees on how to deal with emergency situations and how toremediate such emergencies.

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

The environmental control officer will have monthly meetings to conduct environmental awareness with all the employees. There will also be a monthly environmental topic of which the notices will be pasted at the site office for the employees to see every morning as they report to work.

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

The EMP details commitments in order to avoid pollution or the degradation of the environment. Compliance with the EMP commitments will form part of the contractors' contract. Employees will also be briefed regarding the EMP commitments prior to the commencement of operations. The ECO will monitor that the commitments are being adhered to by the contractors and employees.

2.12 Specific information required by the Competent Authority.

(Among others, confirm that the financial provision will be reviewed annually).

The financial provision will be reviewed annually as per the requirements of Section 24(P)(3) of NEMA. The Applicant commits to conduct EMP audit as required in terms of Regulation 55 of the MPRDA on a biennial basis and external environmental audits of theEMP and Environmental Authorisation as per the NEMA EIA Regulations.

2.13 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 whererelevant; ☒and;
- 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 EAP

Ergy Investment (Pty) Ltd

Name of company

Febuary 2023

Date

Appendices