

2023



FOR RECTIFICATION OF UNLAWFUL (S-24G) COMMENCEMENT OF A PROCESSING PLANT AREA ON PORTION OF THE REMAINING EXTENT OF THE FARM GEMSBOK 505 JU, SITUATED IN THE MAGISTERIAL DISTRICT OF NKOMAZI IN MPUMALANGA PROVINCE **REF NUMBER: TO BE ANNOUNCED.**

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DOCUMENT CONTROL

| | |
|----------------------|--|
| Project: | Granites Processing Plant |
| Title: | Basic Assessment and Environmental Management Programme Report for Granite Processing Plant on portion of the remaining extent of the farm Gemsbok 505 Ju, Situated in The Magisterial District of Nkomazi in Mpumalanga Province. |
| Reference No. | To be announced |
| Version 01: | Draft Basic Assessment Report and Environmental Management Programme 18 th of August 2023 to 16 th of September 2023. |

QUALITY CONTROL

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COMPETENT AUTHORITY

| | |
|-----------------------------|--|
| Aspect: | Environmental Authorisation |
| Competent authority: |  <p>agriculture, rural development, land & environmental affairs MPUMALANGA PROVINCE REPUBLIC OF SOUTH AFRICA</p> |

DISCLAIMER

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1 Introduction and Background

Singo Consulting (Pty) Ltd (herein referred to as "Singo Consulting") has been appointed as an independent Environmental Consultant by Mr. Special Mahlalela trading as Elispec Mining (Pty) Ltd to conduct Environmental Impact Assessment (EIA), Compile an Environmental Management Programme report (EMPr) and undertake Public Participation Process (PPP) for S24G Application, this comes after Mr. Mahlalela has commenced the activities prior acquiring an Environmental Authorization from the competent Authority. This process is done to rectify the damages that has been done by the applicant (Mr. Mahlalela) and also to acquiring Environmental Authorization for this Granite Processing Plant located on the Remaining extent of the farm **Gemsbok 505 JU**, under the Magisterial District of **Nkomazi** in Mpumalanga Province. The proposed project is located is in closed proximate to the approved Tondzi filling station with **DARDLEA Ref Number: 1/3/1/16/1E-374**.

The S24G application will be submitted to the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA) and reference number will be announced once it available. The extent of the area applied for covers approximately 5 hectares. This report has been designed to meet the requirements for a Basic Assessment Report and Environmental Management Programme as stipulated in the 2014 Environmental Impact Assessment Regulations (as amended) promulgated under the National Environmental Management Act, 1998 (Act 107 of 1998).

1.1 Objective of the Basic Assessment Process

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

- 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;
- Identify the alternatives considered, including the activity, location, and technology alternatives;
- Describe the need and desirability of the proposed alternatives,
- Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on Processing Plant and 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:

- The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
- The degree to which these impacts can be reversed; may cause irreplaceable loss of resources; and can be managed, avoided or mitigated;
- Identify and motivate a preferred site, activity and technology alternative;
- Identify suitable measures to manage, avoid or mitigate identified impacts; and identify residual risks that need to be managed and monitored.

2 Contact person and correspondence address

2.1 Details of the Environmental Assessment Practitioner (EAP).

The contact details of the consultants who compiled this report are as follows:

- a) **Details of the EAP that prepared the Report.**

| Environmental assessment practitioner | Singo Consulting (Pty) Ltd |
|---------------------------------------|---|
| Contact person(s) | Mr. Ayanda Vilakazi (Compiler & EAP) Mrs. Rudzani Radebe (EAP Manager) 1st Reviewer Dr. Kenneth Singo (EAP Principal) 2nd Reviewer |
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2.1.1 Expertise of the EAP

Details of the Environmental Assessment Practitioner (EAP).



QUALIFICATIONS

- Ph.D. Geology, Applied Environmental Coal Processing Plantology and Geochemistry (UJ)
- MSc Environmental Management (University of South Africa (UNISA))
- BSc (Hons) in Coal Processing Plant and Environmental Geology (UNIVEN).

AFFILIATIONS

- South African Council for Natural Scientific Professions (SACNASP: Earth Science)
- Geological Society of South Africa (GSSA) [Geologist and Hydrogeologist]
- Land Rehabilitation Society of Southern Africa (LaRSSA)
- South African Affiliates of the International Association for Impact Assessment (IAIASa)
- WESSA (People Caring for the Earth)
- Environmental Assessment Practitioners Association of South Africa (EAPASA)

Dr. Singo is a Principal Consultant (Earth Science) and REAP (EAPASA) in the Coal Processing Plant, Agricultural and Construction sector and currently works for Singo Consulting, an advisory firm based in Middleburg. He has over 11 years' experience in diverse areas of natural resources including Geology, Geochemistry and Environmental Geochemistry. He is a coal expert with extensive experience of the Waterberg, Soutpansberg, Middleburg, Highveld, and Springbok flats, as well as the Tete (Moatize) coalfield in Mozambique.

Kenneth holds an MSc in Environmental Geochemistry (University of South Africa (UNISA)), BSc (Hons) in Coal Processing Plant and Environmental Geology (the University of Venda), and Ph.D. (Geology, Applied Environmental Coal Processing Plantology and Geochemistry) at the University of Johannesburg. Dr. Singo has knowledge of Coal Processing Plant Water and Coal Processing Plant Environmental Management (acid Coal Processing Plant drainage, heavy metal assessments and tailings management) in various commodities including coal, gold, magnesite and base metals (Cu, Pb, Zn). He

has extensive knowledge of defunct Coal Processing Plant waste and wastewater impact assessments in communities residing in the vicinity of those Coal Processing Plants. This knowledge was gained through MSc. Kenneth has sound knowledge of risk assessment, both in terms of human health and the environment. He is experienced in the appraisal of potential constraints, as well as devising means of mitigation through remedial strategy development, feasibility and validation.

During his PhD studies, Dr. Singo has learned how to operate within contaminated lands. His PhD largely focused on disused Coal Processing Plants (gold, copper and magnesite) ranging from Phase I and Phase II investigations to development of remedial strategies (i.e. Phase III). His PhD further equipped him to intensively understand waste classification, profiling and understanding of the implications associated with the management of waste, landfill disposal profiling and development of beneficiation strategies.

2.2 Environmental Assessment Practitioner (EAP)

Table 1: Details of the EAP


| | |
|--------------------------------|--|
| Name of the PPP Officer | Ayanda Vilakazi |
| Designation | Candidate EAP |
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| Fax No. | +27 86 514 4103 |
| Email | ayanda@singoconsulting.co.za |

Table 2: Details of the Applicant

| | |
|---------------------------|---|
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| Cellphone: | +27 81 331 8501 |
| Fax no: | +27 86 7501 516 |
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| Physical address: | Mpanganeni, Matabula 701 JU, 1343 |

2.3 Competent Authority

Table 3: Details of the competent Authority and assigned case officer.

| | |
|-----------------------------|--|
| Aspect: | Environmental Authorisation |
| Competent authority: |  agriculture, rural development, land & environmental affairs MPUMALANGA PROVINCE REPUBLIC OF SOUTH AFRICA |
| Contact details: | |

3 Location of the overall activity

Locality Description: The proposed development area lies under the Jurisdiction of the Nkomazi Local Municipality in the Ehlanzeni District Municipality Nkomazi Local municipality. The proponent has seen the disparity between the need for Granite and is used to do numerous exterior projects, including structures, bridges, paving, and monuments. Inside, polished granite tiles and slabs are used for stair treads, tile floors, countertops, and a variety of other useful and adorning features. Granite wash and/or processing required by mines. Additionally, this proposed project is aimed not only at meeting the targets but will assist in easing poverty and unemployment within the Municipality.

Site Accessibility: The project area is easily accessible via the tertiary road from the D2951 and gravel road leading directly to the processing area. Granite will be transported from mining permit area in Mbuzini then to various outside sources via these road networks. Refer to Figure 1-2 depicting the setting for the proposed processing plant.

Table 4: Locality details

| | | | |
|--|---|-----------|------------|
| Farm Name | Remaining extent of the farm Gemsbok 505 JU | | |
| Application Area (Ha) | Approximately 5 hectares (ha) | | |
| Magisterial District | Magisterial District of Nkomazi | | |
| Distance and direction from nearest town | Approximately 1.07 km South of Goba village and 5.51 km east of Figtree (Ka-Hoyi) | | |
| 21-digit Surveyor General Code for each Portion | TOJU00000000050500000 | | |
| Coordinates | ID | X | Y |
| | A | 31.912507 | -25.823821 |
| | B | 31.914285 | -25.824049 |
| | C | 31.913907 | -25.826463 |
| | D | 31.912129 | -25.826235 |
| | E | 31.912507 | -25.823821 |
| Locality map | See Figure 1-2 below | | |

3.1 Locality map

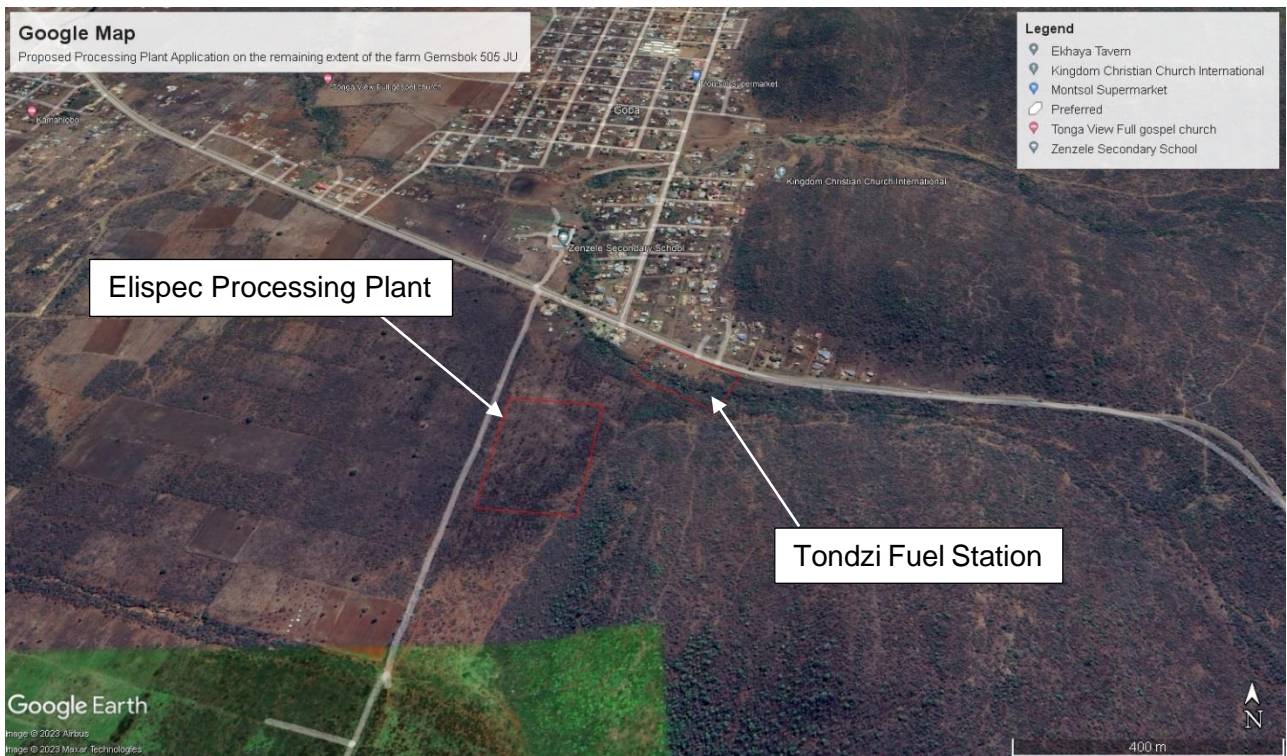


Figure 1: Satellite Image showing Granite Processing Plant location (google earth)

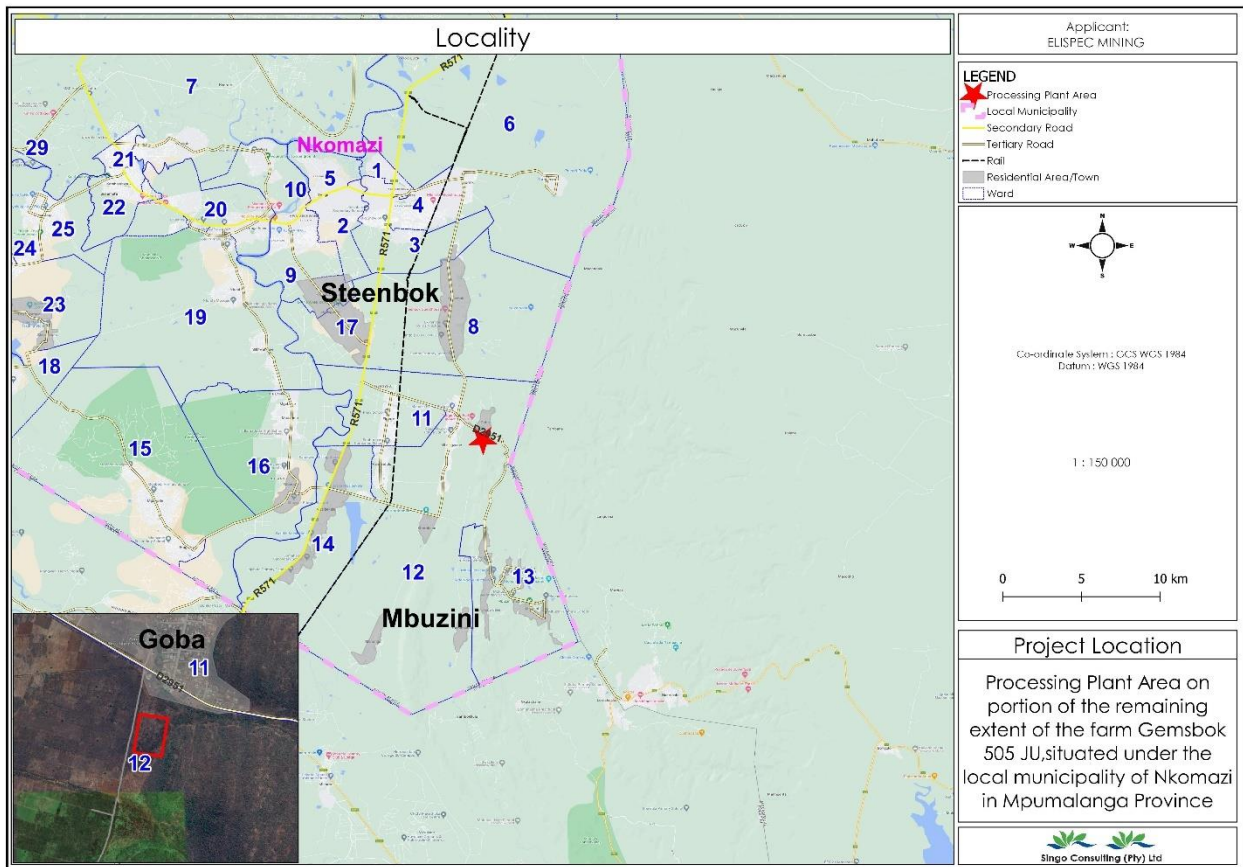


Figure 2: Locality map showing the nearest Towns and Road Networks (Singo Consulting GIS Team, 2023)



Figure 3: Access roads (Site Visit, 2023)

4 Description of the proposed overall activity

Granite preparation, also known as Granite beneficiation or Granite washing, refers to the treatment of RoM Granite to ensure a consistent quality and to enhance its suitability for end-uses. The area to be authorised is about 5 hectares and the main activity is Granite processing where Granite is washed of soil and rock, crushed, screened and transported to the target market. The Granite delivered from the mine that reports to the Granite preparation plant is called run-of-mine, or ROM, Granite. The RoM often contains unwanted impurities like rock and dirt and comes in a mixture of different-sized fragments. Granite users require consistent-quality Granite. The majority of Granite needs to be prepared before use. Preparation may range from simply crushing to provide a size consistent suitable for certain types of boilers to extensive size reduction and cleaning to remove sulfur and ash-forming Mineral matter. To remove impurities, the raw RoM Granite is crushed and then separated into various sizes. Larger material is usually treated using dense-medium separation. In this process, the Granite will be separated from other impurities by being floated in a tank containing a liquid of specific gravity, usually a suspension of finely-ground magnetite. As Granite is lighter, it floats and can be separated, while heavier rock and other impurities sink and are removed. Granite from and/or to various outside sources will be transported via the available road networks.

It is anticipated that the smaller-sized fractions will be treated in several ways (usually based on differences in mass), like centrifuges. A centrifuge is a machine that turns a container around very quickly, causing solids and liquids inside it to separate. Alternative methods use the different surface properties of Granite and waste.



Figure 3: Typical example of machinery to be employed (Singo Consulting)

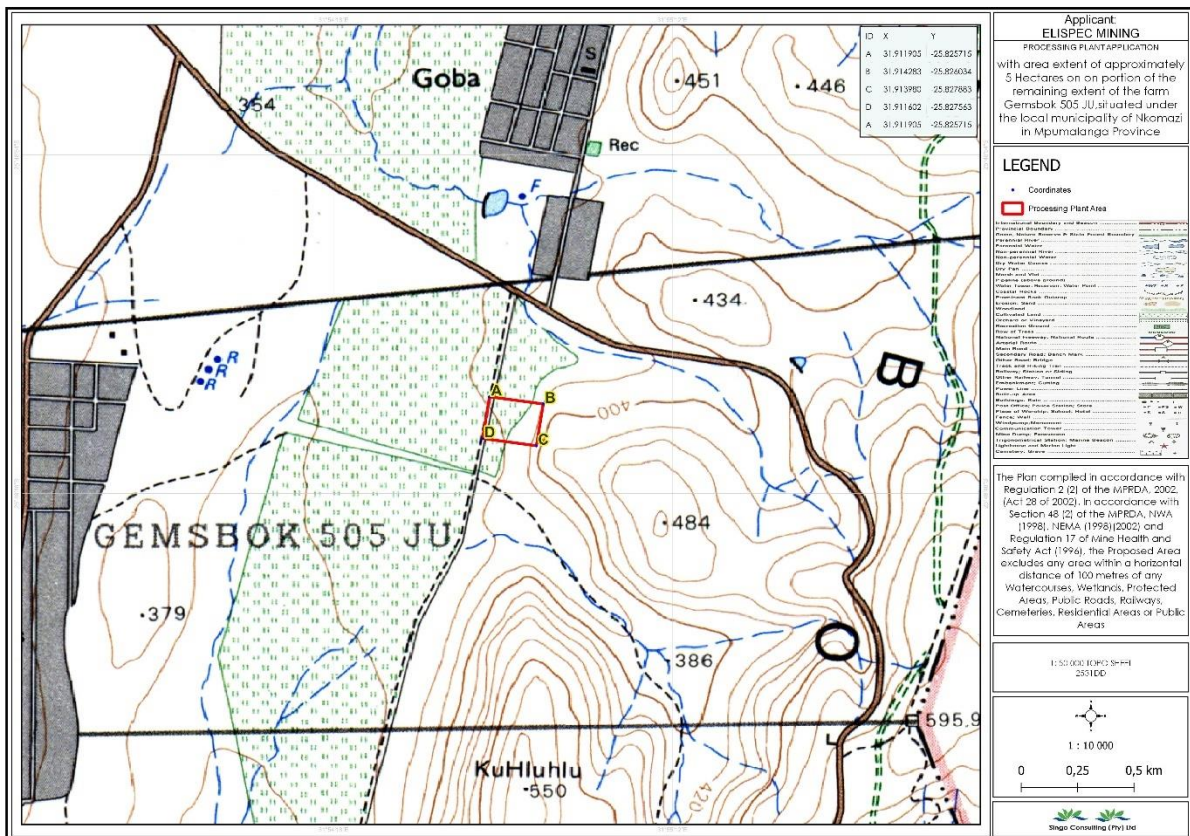


Figure 4: Regulation 2.2 (Singo Consulting GIS Team, 2023)

5 Activities applied for to be authorised.

Only those activities listed below must be considered for authorisation. The responsibility is on the applicant to ensure that all applicable listed activities are included in the application. Environmental Authorisation must be obtained prior to commencement with each applicable listed activity. If a specific listed activity is not included in an Environmental Authorisation, a new/separate application for Environmental Authorisation for such activity will have to be submitted. The commencing of any of the activities before obtaining authorisation by the competent authority concerned is prohibited and it is an offense. Activities at Elispec Mining has already commenced prior acquiring an Environmental Authorization, hence they are undergoing the process acquiring Environmental Authourization through S24G Applivation to rectifies the damaged that they have already done to the environment.

Table 5: Listed and specified activities.

| Government Notice R983 (as amended) Activity No. | Describe the portion of the development as per the project description that relates to the applicable listed activity |
|---|--|
| LN 1 Activity 27 | Approximately 5 Hectares has been cleared. The initial step of the development was land clearance, which included establishing any pertinent infrastructure towards the intended Granite Processing Plant. |

5.1 Description of the Activities to be undertaken

LN 1 Activity 27 and LN 1 Activity 56 - Development: This activity is about clearing of vegetation and this application seek to be authorised for this activity. The primary processing of Granite Mineral resource including screening and crushing will be developed on the proposed area.

Vegetation clearing is a necessary part of most construction activities. Disturbance to vegetation can lead to environmental impacts such as soil degradation, erosion, disturbance and removal of native flora species and loss or fragmentation of habitat for native fauna or weed invasion. Other likely environmental impacts from vegetation clearing may include air emissions, dust, noise and waste. However, it is possible to mitigate and manage many of these impacts though disciplined site management and

appropriate protections. During ground truthing, it was notable that the proposed project area has been heavily modified by previous agricultural activities and the area is under the process of revegetating.

The evaluation of road infrastructure development projects is an important stage in the development process, as it makes it possible to check upon completion whether the designed infrastructure meets the objectives originally set for it. The grading of a soil (gravel, sand) is determined by passing the material through a number of sieves and is an indication of the percentage of coarse and fine material (particles) in the soil (gravel). The physical volume of the different sizes of material making up the sample can be established if a sample of soil, gravel or sand is screened through a standard set of sieves. The percentage of whatever is retained on the various sieves is calculated by weight, for each size, making up 100% of the sample. These percentages can be graphically plotted against the sieve sizes and a graph plotted. The shape of the graph will describe the material e.g. coarse material, fine material, or different combinations of fine and coarse material. Normally the higher the percentage of coarse material in the gravel, the more suitable it is for the construction of the pavement layers in road. Materials containing high percentages (over 50%) of fine material (<0,075 mm) are suspect and could cause problems.

Compaction in road construction terminology is essentially the densification or systematic packing closer together of the different sizes and shapes of the gravel or soil particles. This process is assisted/advanced by using optimum water to lubricate the particles to slip/ rearrange themselves into more stable positions, increasing the density and strength of the material. Under controlled conditions of compactive force and moisture content, a specific soil can be densified to a state in which it has increased structural strength and stability and therefore the ability to withstand the forces imposed on it by the vehicles using the road.

Table 6: Processing Plant phases from Construction to Operational

| Phase | Activity no | Activity |
|--------------|-------------|---|
| Construction | 1 | Site clearing vegetation and topsoil grading |
| | 2 | Construction of any surface infrastructure, e.g. Haul roads, pipes, storm water diversion berms (incl. transportation of materials and stockpiling) |
| | 3 | Temporary storage of hazardous products (fuel) and waste |
| Operation | 4 | Crushing and Screening of Granite |

| | | |
|--|---|-------------------------|
| | 5 | Water & Dust monitoring |
|--|---|-------------------------|

5.2 Policy and Legislative context

5.2.1 National Environmental Management Act

The proposed project will trigger listed activities in terms of the Environmental Impact Assessment (EIA) Regulations, Government Regulations (GNR) 983 of December 2014 as amended promulgated under the National Environmental Management Act (Act no 107 of 1998) (NEMA) and this suffice as a precondition for the Basic Assessment. An application for rectification of activities has been submitted to Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA) and **Reference Number will be announced.**

5.2.2 National Water Act

A Water Authorization Application will be lodged for the proposed project as the operation will be using water from the borehole during the operational phase. The project will trigger sections 21 (a) and Section 21 (g) of the National Water Act (NWA), Act 36 of 1998. The operation will use water for dust suppression and storm water will be stored in a clean water trench. Any additional triggered sections that can be discussed during meetings and site visits will be added.

Table 7: Triggered General Authorisation of NWA water uses.

| Section 21 triggered water uses | Applicability |
|---|---|
| Section 21(a): Taking water from a water resource | Abstraction of raw water from the aquifer through a borehole for: <ul style="list-style-type: none"> • Domestic use • Processing Plant Activities |
| Section 21(g)- Disposing of waste in a manner which may detrimentally impact on a water resource. | <ul style="list-style-type: none"> • Dust suppression • Product and ROM Stockpile |

5.2.3 National Heritage Resources Act

During site assessment no graves were on site, however SAHRA was consulted on the 5th of June 2023, in case any heritage features are discovered on site, operation will be stop and Heritage Impact Assessment Study have to be conducted.

Table 8: Summary of findings

| Heritage resource | Status/Findings |
|--|--|
| Buildings, structures, places and equipment of cultural significance | None exist |
| Areas to which oral traditions are attached or which are associated with intangible heritage | None exists on the study area |
| Historical settlements and townscapes | None exist within the study site |
| Landscapes and natural features of cultural significance | None |
| Archaeological and paleontological sites | No significant archaeological remains were recorded within the proposed development site |
| Graves and burial grounds | None exist within the development site |
| Movable objects | None |
| Overall comment | The proposed development site has low heritage significance. |

5.2.4 NEMA Biodiversity Act

National Environmental Management: Biodiversity Act No 10 of 2004 (NEMBA) provides listing threatened or protected ecosystems, in one of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Protected (Government Gazette, 2011). The main purpose of listing threatened ecosystems is to reduce the rate of ecosystem and species extinction and includes the prevention of further degradation and loss of structure, function, and composition of threatened ecosystems. The proposed site has already been heavily modified due to previously cultivation activities. The area is in the process of revegetating, with little or no cover in some areas and perennial grasses in others. Due to the complete transformation of the proposed site, the area has negligible or low ecological function and low conservation importance.

5.2.5 NEMA Waste Act

All waste generated during the operation phase will be disposed of in a responsible legal manner. Proof of legal disposal will be maintained on site in terms of the National Environmental Management: Waste Act, Act 59 of 2008 (NEMWA) (as amended).

5.2.4 South African National Standards (SANS) 10 of 10089: The Petroleum Industry (2008)

Part 1: Storage and distribution of petroleum products in above-ground bulk installations.

The South African National Standards (SANS/SABS), applicable to the Petroleum Industry and the installation of underground storage tanks, pumps/ dispensers and pipework at service stations, would be applicable and must be complied with. These standards should be considered as a minimum.

5.3 Need and desirability of the proposed activities.

| Municipal Plans and Policies | How does this development comply with and respond to the policy and legislative context |
|---|---|
| <p>Municipality By-Laws:</p> <ul style="list-style-type: none"> (i)Waste By-Laws 2006 (ii)Air Quality Management By-Law (iii)Noise control By-Law (iv)Developmental Planning By-Laws (SPLUMA By-Law 2016) | <p>Air quality data will be recorded on a continual basis, with the results published in monthly internal reports. All data collected for the Dust Monitoring Programme will be collated and summarized in the Annual Environmental Performance Assessment report, which will be submitted to DARDLEA. Dust Monitoring and Water monitoring will be implemented before the start of the proposed activities, during and after.</p> |
| <p>Nkomazi Local Municipality 2018/2019 IDP</p> | <p>Nkomazi Local Municipality is one of the municipalities that is experiencing population growth rate, which is higher than its economic growth rate. According to the 2018/2019 IDP the increase in the population size is caused by high birth rate and high influx of immigrants from Mozambique and Swaziland, the Municipality possesses limited ascendancy to the high birth rate and high influx of immigrants from Mozambique and Swaziland which leads to the uncontrollable increase in population size of Nkomazi, this has negative implications from a GDP per capital and on infrastructure, service delivery, job creation point of view.</p> <p>Not implementing the activities will result in a loss of potential economic development and opportunities that comes with the development.</p> <p>The applicant further acknowledges the need to maximize economic benefit from mining, industrial, business, agricultural and tourism development in the area and promote a climate for economic development in line with the municipal development frameworks.</p> |

These areas experience high unemployment rate as a result of lack of job opportunities which results in high levels of poverty. There is a need to enable the environment in developing local economy in these areas. This proposed project will bring opportunities to the nearby communities and will contribute to the municipality GDP and also for a country as whole.

According to the department of Social and Economic Development 2001 & 2010 indicate Gini coefficient invariable from 2001 to 2010, and poverty rate dwindle from 2001 to 2010. In 2001 poverty rate was sitting at 75.9 while in 2010 sitting at 68.8% which leads to a dwindle of 7.1%.

According to the Nkomazi 2018-2019 IDP the stats SA community profiles (census 2011 & CS 2016) evince poverty headcount in 2011 by 10.4% and in 2016 community survey 9.3 which evince a dwindle of 1.1% between poverty headcount of 2011 & 2016 community survey. Poverty is caused by a continuing high unemployment level, higher consumer prices (especially energy & food) and greater household dependency. Nkomazi Local Municipality initiated quite a number of programmes to reduce high level of unemployment and high poverty rate, the programmes include funding for 1st years students to register in any institution where they are accepted, youth development Programme and disabled persons Programme which include youth in any development and decision making etc.

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

5.4.1 Preferred site

Activities in the proposed area has already commenced, hance this application has been lodged to the competent authority to rectify the damages that has been done by the applicant. The available land does not serve any ecological role to the proposed area. Based on the literature review it was stated that no significant long term ecological impacts are expected to occur as a result of the proposed development activities.

5.4.2 Preferred activities

This processing plant have a simple operation, development will be done by trenching, placement of site offices and erecting of Granite processing unit within 5 hectares. ROM will be delivered from Elispec's Mine in Mbuzini to the processing plant where large pieces will be crushed or pulverized to a useful size. First the Granite is crushed in a feeder breaker, which breaks the biggest lumps, and then through a roll crusher, which breaks it down to a smaller size. Screens in screening plant are used to group processed particles into range of sizes using mechanical vibration.

5.4.3 Technology alternatives

A jig plant will be used as an initial entry to the establishment of a processing plant. The wet processing plant will be used to minimise the expected dust from the operation, the activity will employ a roof directly on top of the crusher so that dust can be filtered. In this way more dust will be trapped within the area, thereby minimising air pollution to the surrounding areas.

5.5 Details of the development footprint alternatives considered.

Mr. Mahlalela identified the need for Granite processing plant in the area due to an increasing house construction within 15km radius of the area. In this light, the applicant identified the proposed areas as the preferred and only viable site alternative. From extensive work conducted previously in this area, it is known that this area available for development. Various project alternatives were considered during the planning phase of this project.

5.5.1 No-go alternative

Should this project not proceed ("no-go"), the status quo shall remain. Although the staff compliment will not be large, the surrounding communities would keep benefit from the potential employment opportunities, and potential community projects. The no-go alternative also means that all potential negative impacts associated with the proposed project and its associated infrastructure would not occur. Hence, this process will determine if the project would result in any environmental or social fatal flaws that may result in the project. The no-go alternative being the preferred alternative. The processed Granite from the site will be used for energy and power industries. If the no-go alternative is implemented, the applicant will not be able to process required commodity for different markets. This could have major impacts on aspects such as transporting of material to potential buyers from far off Processing Plant areas, cost-effectiveness of material, impact on roads and road users due to long distance hauling of Granite and loss of income to the Nkomazi business area.

The no-go alternative was not considered the preferred alternative, as:

- The applicant will not be able to supply their potential buyers within Nkomazi Local Municipality and outside of Nkomazi LM.
- The application, if approved, would allow the applicant to utilise the available Granite, as well as provide employment opportunities to local employees. Should

the no-go alternative be followed, these opportunities will be lost to the applicant, potential employees and clients.

- The applicant will not be able to diversify the income of the property.

6 Details of the Public Participation Process followed.

The Public Participation is the basis of any EIA process. The Public Participation Process (PPP) seeks to provide the opportunity for all stakeholders including potential players and all applicable I&APs, state departments, state bodies and the competent authority (CA) to register so that they can raise concerns, contribute to local knowledge, comment on the Draft Basic Assessment Report (DBAR) & Environmental Management Programme report (EMPr) but most importantly provide suggestions for enhanced benefits. Comments received during the Public Participation Process will be incorporated into the Final BAR & EMPr to be submitted to the competent Authority being the Department of Agriculture Rural Development Land and Environmental Affairs for Adjudication.

6.1 Aspects considered during the Public Participation Process

Running a successful PPP necessitates that it be built to accommodate the variety of I&APs and the differences among them in terms of technical proficiency, language, accessibility to multiple forms of communication, and other factors. This necessitates that the PPP manager get a thorough awareness of potential I&APs as soon as possible in the process. The following factors were taken into account in order to determine who might be affected: Spatial influence of the project, nature of the impacts, Impacts associated with different phases of the project, Types of impacts as well as different components of the receiving environment.

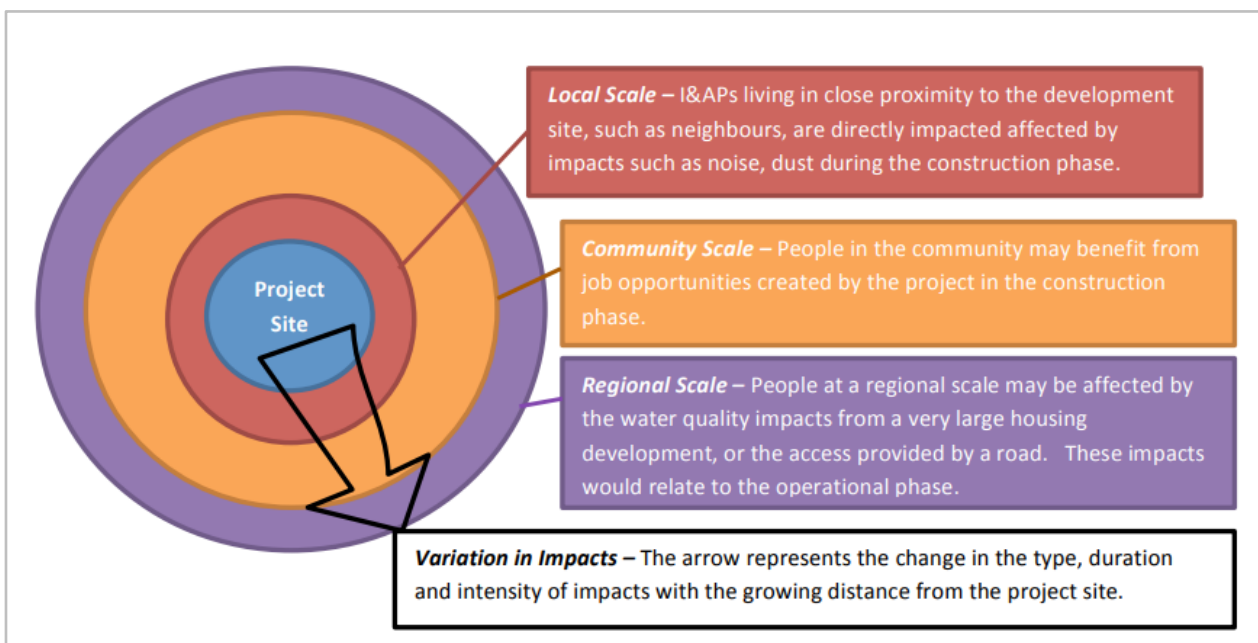


Figure 5: Aspects to consider in identifying the range of I&APs (Microsoft Word - SI Guideline_2013.docx (dffe.gov.za))

6.2 Details of the Public Participation Process Followed

The stakeholder engagement process was initiated in June and employed several techniques to establish contact and raise awareness amongst stakeholders regarding the application.

6.2.1 Interested and Affected Parties Identification Procedure

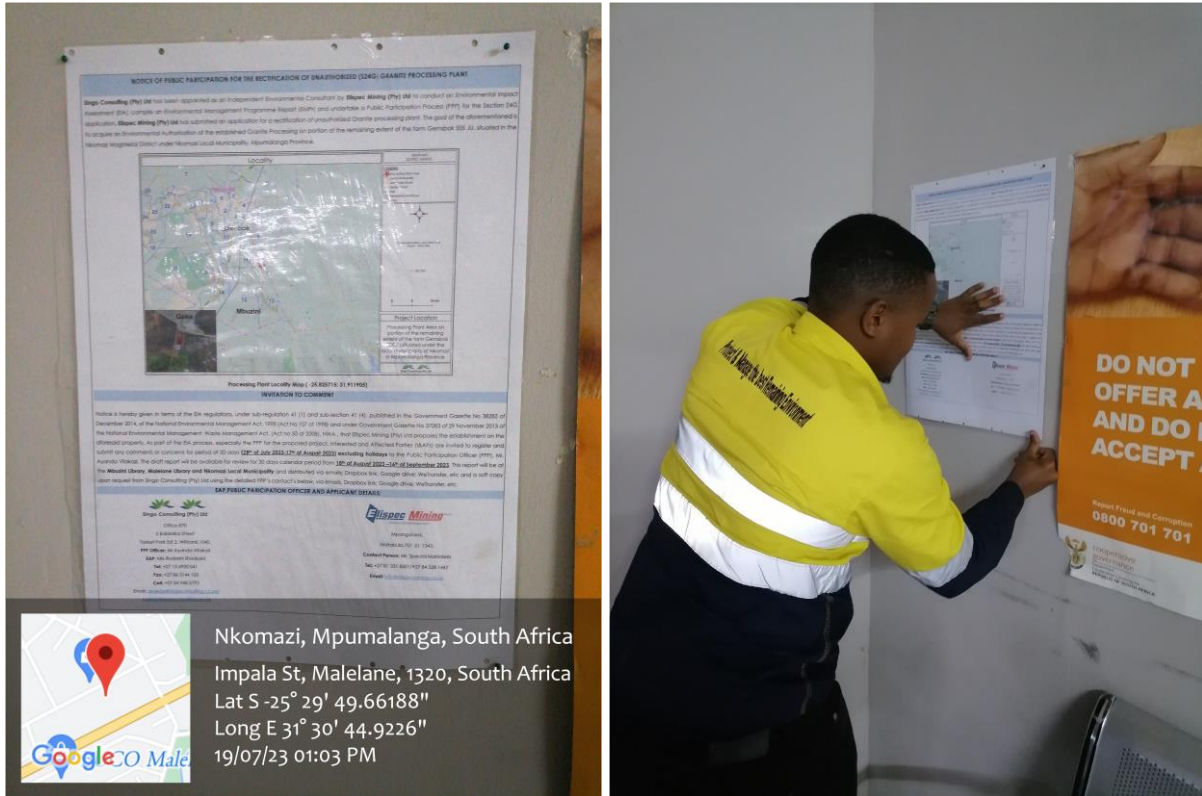
The Interested & Affected Parties for this particular project were identified through telecommuting (via e-mail media communications and telecommunications). Other means of Identification & notification adopted was through the print media in a form of newspaper advert and placement of A3 size notices in prominent spaces.

6.2.2 Newspaper advertisements

A newspaper advertisement was placed and published in the local paper, *Lowvelders News* on 27th of July 2023 to notify all the Interested & Affected Parties of the proposed project. This was accomplished by print media, which was circulated to the area, as well as digital media via Facebook. See below for ease of reference.

6.2.3 Public Space Notices

A3 size notices in English and isiZulu versions were placed in farm Boundaries, adjacent properties and places often frequented by community members such as Nkomazi Local Municipality, Mbuzini Public Library, as well in surrounding communities (i.e Goba village, Mbuzini village, Mbangwane village).

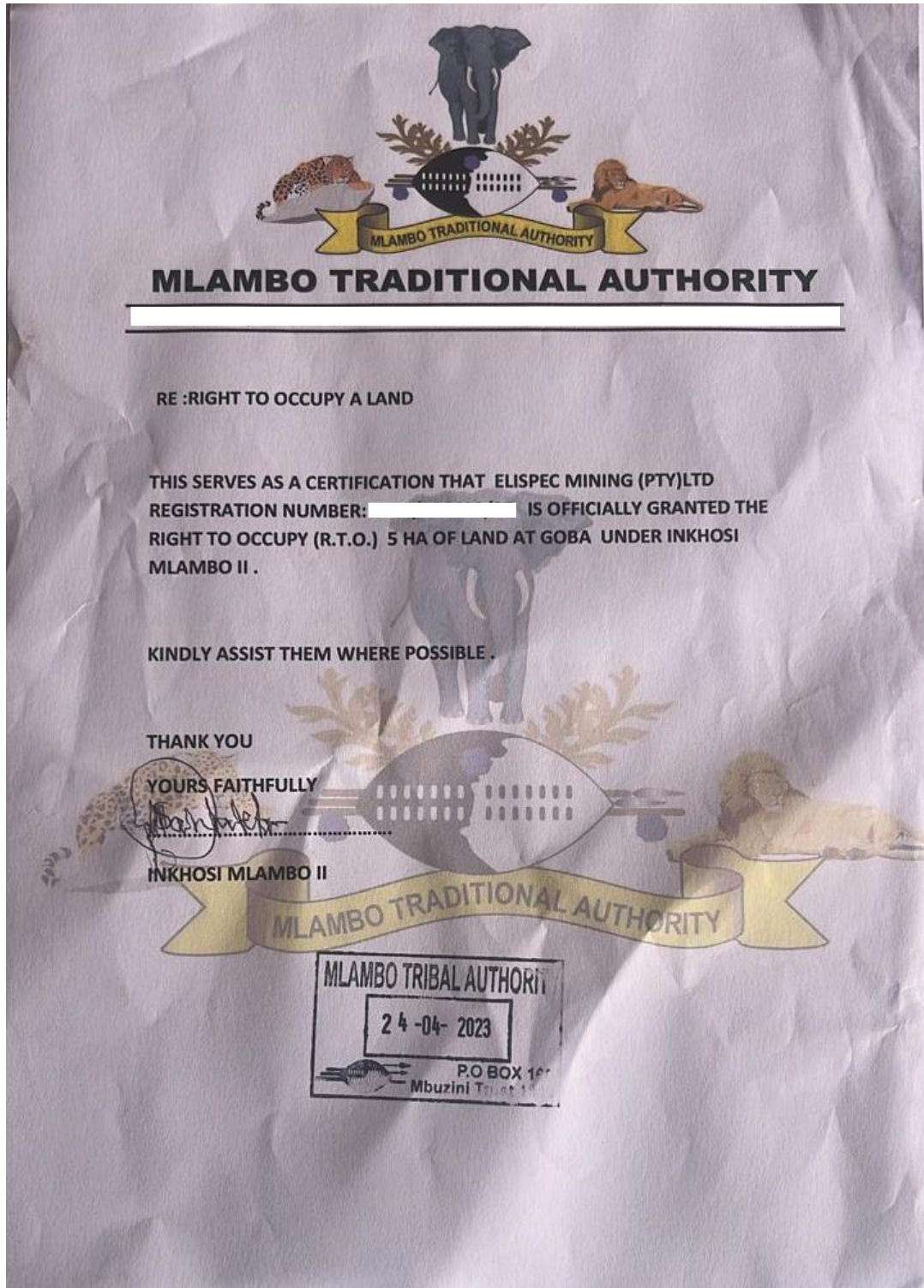


Nkomazi, Mpumalanga, South Africa
 Impala St, Malelane, 1320, South Africa
 Lat S -25° 29' 49.66188"
 Long E 31° 30' 44.9226"
 19/07/23 01:03 PM

Site Notice – Both Language Version

6.2.4 Consultation with the Landowner

The area of interest is owned by Government of KaNgwane as per deed search and it under the authority of Mlambo Traditional Authority. The aforementioned property owners have been consulted and have granted the applicant Mr. Special Mahlalela an R.T.O (Right to Occupies the land).



Windeed Search Results

WinDeed Database D/O Property
 JU, GEMSBOK, 505, 0, MPUMALANGA

Lexis® WinDeed



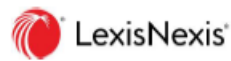
Any personal information obtained from this search will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPI), and shall not be used for marketing purposes.

| SEARCH CRITERIA | | | |
|-------------------|------------------|-----------------------|------------------|
| Search Date | 2023/05/24 15:43 | Farm Number | 505 |
| Reference | - | Registration Division | JU |
| Report Print Date | 2023/05/24 17:48 | Portion Number | - |
| Farm Name | GEMSBOK | Remaining Extent | NO |
| Deeds Office | Mpumalanga | Search Source | WinDeed Database |

| PROPERTY INFORMATION | |
|-----------------------|--|
| Property Type | |
| Farm Name | |
| Farm Number | |
| Registration Division | |
| Portion Number | |
| Previous Description | |

| OWNER INFORMATION (2) | |
|------------------------|--------------|
| GOVERNMENT OF KANGWANE | Owner 1 of 2 |
| Company Type | |
| Registration Number | |
| Name | |
| Multiple Owners | |
| Multiple Properties | |
| Share (%) | |

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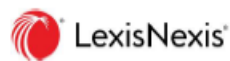
| OWNER INFORMATION (2) | |
|---|--------------|
| NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA | Owner 2 of 2 |
| Company Type | |
| Registration Number | |
| Name | |
| Multiple Owners | |
| Multiple Properties | |
| Share (%) | |

| ENDORSEMENTS (2) | | | | |
|------------------|--------------------------------|-------------|------------|--------------------------|
| # | Document | Institution | Amount (R) | Microfilm / Scanned Date |
| 1 | INFO FROM PRETORIA DEEDS REGIS | - | - | - |
| 2 | KANGWANE | - | - | - |

| HISTORIC DOCUMENTS (1) | | | | |
|------------------------|-----------|-------------|------------|--------------------------|
| # | Document | Institution | Amount (R) | Microfilm / Scanned Date |
| 1 | T201/1906 | | | |

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6.2.5 The following authorities have been identified and notified of the proposed Granite Processing project:

These Authorities were identified and included in the I&AP database from the outset. These are specific IA&Ps that the EIA regulations require the EAP to consult. The representatives of these governmental departments were routinely consulted so that each could designate how the EAP should engage with them, which will influence the manner and structure of the PPP. This also includes the information requirements.

- Nkomazi Local Municipality.
- Ehlanzeni District Municipality
- Mpumalanga Department of Rural, Environmental and Agricultural Development.
- Mpumalanga Department of Water and Sanitation.
- Mpumalanga Department of Rural Development and Land Reform.
- Mpumalanga Department of Agriculture, Forestry and Fisheries.
- Mpumalanga Department of Mineral Resources and Energy.
- Mpumalanga Tourism Parks Agency
- National Department of Forest, Fisheries and the Environment.
- South African National Roads Agency Ltd (SANRAL).
- South African Heritage Resources Agency
- Mpumalanga Heritage Resources Agency
- Sasol
- Eskom SOC Limited.

6.2.6 Conclusion of the consultation process followed.

Background Information Documents (BIDs) were provided to Governmental Departments, to introduce the project and to invite them to forward views, comments and recommendations about the project. Stakeholder engagement & consultation through BID commenced for 20 days from the day of announcement: 28th of July 2023- 17th of August 2023.

The Draft BAR and EMPr will be released for a period of 30 days excluding public holidays declared in terms of Section 2A of the Public Holidays Act of 1994. The review period will be from 18th of August 2023 –16th of September 2023.

Hard copies of the Draft BAR and EMPr will be submitted to organs of state and relevant authorities i.e Mpumalanga Tourism Parks Agency (MTPA), Department of Agriculture,

Land Reform and Rural Development (DALRRD), and South African National Roads Agency Ltd (SANRAL). Additionally, copies will be made available at the following places: at Nkomazi Local Municipality (Environmental and Waste Management Department) Mbuluzi Public Library. Substantially, electronic copies will be made available upon request from Singo Consulting (Pty) Ltd, using the detailed EAP'S contact's below, via emails; Dropbox link; Google drive; WeTransfer, etc.





6.2.7 Consultation and Correspondence with I & AP's and Stakeholders

All comments received from I&APs and Organs of State and EAPs responses to issues raised will be included in the Final BAR and EMPr.




6.3 Summary of issues raised by I&APs

| <p>Interested and Affected Parties</p> <p>List the names of persons consulted in this column, and</p> <p>Mark with an X where those who must be consulted were in fact consulted.</p> | <p>Date</p> <p>Comments</p> <p>Received</p> | <p>Issues raised</p> | <p>EAPs response to issues as mandated by the applicant</p> | <p>Section and paragraph reference in this report where the issues and or response were incorporated.</p> |
|---|---|----------------------|---|---|
| AFFECTED PARTIES | | | | |
| Landowner/s | | | | |
| | | | | |
| Lawful occupier/s of the land | | | | |
| | | | | |
| Landowners or lawful occupiers on adjacent properties | | | | |
| | | | | |
| Municipal councillor | | | | |
| | | | | |
| Traditional Leaders | | | | |
| | | | | |




TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT BAR COMMENT PERIOD

| | | | | |
|---|---|--|--|--|
| Municipality | | | | |
|  | X | | | |
|  | X | | | |
| Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWS) | | | | |
|  | X | | | |
|  Mpumalanga Region | X | | | |

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT BAR COMMENT PERIOD

| | | | | | |
|--|---|--|--|--|--|
|  | X | | | | |
|  | X | | | | |
| Communities | | | | | |
| Mbangwane Community | X | | | | |
| Goba Community | X | | | | |
| Dept. Land Affairs | | | | | |
|  Department of Rural Development and Land Reform | X | | | | |
| Traditional Leaders | | | | | |
| | | | | | |
| Dept. Environmental Affairs | | | | | |

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT BAR COMMENT PERIOD

| | | | | | |
|---|---|--|--|--|--|
|  | X | | | | |
| Other Competent Authorities affected | | | | | |
|  | X | | | | |
|  | | | | | |
| OTHER AFFECTED PARTIES | | | | | |
| | | | | | |

TO BE COMPLETED AFTER THE REVIEW OF THE DRAFT BAR COMMENT PERIOD

7 Baseline environment

This section describes the environmental attributes inclusive of socio-economic, social, heritage, cultural, geographical, physical and biological aspects.

7.1 Geology and Soils

7.2 Regional Geology

The Karoo Igneous Province

The entire Eastern border of South Africa is covered by Lebombo and Drakensberg Groups of the Karoo Supergroup. The two groups form a part of the Karoo Igneous Province which is considered one of the world's Classic Continental Flood basalt (CFB) provinces. This CFB is Mesozoic in age and according to Johnson et.al, 34 2006, the Karoo Igneous Province is one of several others known to contain a significant volume of silicic volcanic rocks. Specific to the Karoo Province however, these units are rhyodacite and rhyolitic in composition outcropping along the Lebombo monocline. Units of rhyolite and rhyodacite alternates and said to have erupted as fissures (eruption from dykes). According to Lock et.al 1974, the base of the Karoo Igneous Province lies conformably on the Clarens formation with each unit extending up to 60 km along strike. Generally, these units have been described to having a massive character and occasionally exhibiting a pyroclastic nature.

The outcrop distribution of the Karoo Igneous Province lavas show that the remnants/erosional remnants are separated from each other by area marked by the intrusion of a series of dykes, sills and discordant sheets having same composition as nearby lavas (Marsh and Mndaweni, 1998). As mentioned before, flood basalts are formed by fissures eruption. The fact that the flood basalt has a same composition as the dykes, sills and sheets means that the same dyke and sill network can be interpreted as the subvolcanic "plumbing. system" of the karoo lavas. This also goes on to convey that much, if not all, of the area between the remnants was also at some point covered by lava (Cox, 1970).

The Lebombo Group (Karoo Volcanism)

The Lebombo group, formerly known as the Lebombo volcanic rocks, consists of a variety of rock types and a systematic succession that facilitates the subdivision into different formations Mashikiri, Letaba, Sabie River, Jozini, Mbuluzi and Movene are formations from the oldest to the youngest. The formations of the Mashikiri, Letaba, Movene and Sabie

River are mafic basaltic in composition, while the Jozini and Mbuluzi are felsic in composition. The formation of mashikiri is considered to contain nephelinites that conform to the sandstones of the Jurassic Clarens Formation.

These Nephelinites are conformably overlain by Picritic basalts of the Letaba Formation. Basalts of the Sabie River overlies these Picritic Basalts. The Mbuluzi Rhyolite Formation overlies the Jozini Rhyolite/Rhyodacite Formation. The rocks are characterized as being pale grey with quartz and white felspar phenocrysts cemented in a fine-grained matrix (Cleverly, 1979). Generally, these rhyolites show a massive texture that rarely indicates any flow banding or lamination. The younger formation of Movene consists of basaltic flows.

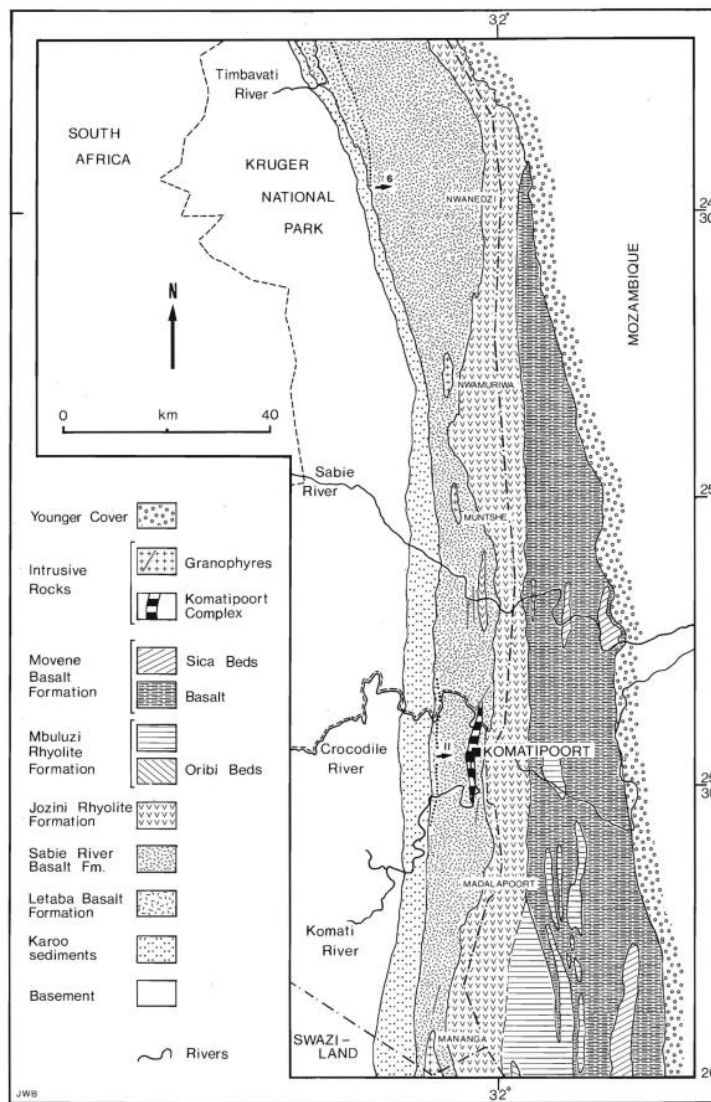


Figure 6: Geological map of the central Lebombo (Data sources: field mapping, air photo interpretation, Logan, 1979; Van der Schijf, 1968).

7.3 Local geology

Jozini Formation

Eastwardly dipping rhyolitic flows, designated as the Jozini Formation (Cleverly and Bristow, 1979) overlie the Sabie River Basalt Formation with slight angular unconformity. They are generally poorly exposed and crop out in a narrow belt, 3 to 15 km wide straddling the Mozambique border, attaining a maximum thickness of approximately 2,5 km in the southernmost area. As noted previously the rhyolites form the high ground of the Lebombo Mountain Range and extend as far north as Shingomeni, whereupon they deviate into Mozambique and become buried under recent Cretaceous sediments. To the south the rhyolites are continuous through Swaziland to the town of Hluhluwe in the southern Lebombo area. The rhyolites of the Jozini Rhyolite Formation in the central and northern Lebombo are petrographically and geochemically similar to those found in Swaziland (with the exception of the Mbuluzi River Formation) and southern Lebombo (Cleverly et al., 1983).

They are invariably porphyritic and consist of phenocrysts of plagioclase feldspar, ferro-augite, titanomagnetite and zircon set in a fine-grained, devitrified matrix; rare phenocrysts of quartz and K-feldspar occur in some rocks. In the central Lebombo the rhyolite succession is constructed from a series of flow units characterized by volcanological relationships similar to those noted in Swaziland and southern Lebombo (see Bristow and Cleverly, 1979). The flows of Swaziland and the southern Lebombo have been studied in much detail by Cleverly (1977, 1980) and Bristow (1976) respectively and both authors have concluded that they represent the products of high temperature pyroclastic-type eruptions. On the basis of the volcanological and compositional similarity shown by the central Lebombo rhyolite flows to those of Swaziland and the southern Lebombo it is concluded that a similar eruptive mechanism was operative during the emplacement of the rhyolites in all three of these areas.

Letaba Formation

The lavas of the Letaba Basalt Formation are characterized by an abundance of olivine phenocrysts in a finegrained or glassy matrix. They typically show dark brown or reddish weathered surfaces which, since the olivine weathers more readily than the groundmass, are frequently pitted. Glassy rocks tend to be hackly in appearance. They are rarely amygdaloidal and were found to be devoid of flow structures. Because of the poor

exposure throughout the area underlain by the Letaba Formation no accurate estimate could be made of flow thicknesses though somewhat equivocal field evidence suggests that the olivine-rich lavas are generally thicker than the olivine-poor flows of the Sabie River Basalt Formation.

Tshokwane Granopyrite

Three major granophyre bodies and numerous smaller domes and dykes crop out in the central and northern Lebombo. Mananga Ridge in the south, Muntshe Ridge approximately 10 km north of the Sabie River, and the Nwamuriwa dome 4 km north-east of Tshokwana, represent the three main bodies, all of which form prominent topographical features. They all crop out as north-south elongated bodies, intruding the basalt very close to the base of the Jozini Formation.

Granophyre dykes form prominent north-south-trending ridges in the central Lebombo, in particular in the Komatipoort and Sabie River areas. They vary considerably in width ranging from a few metres up to a maximum of about 10 m and may extend over considerable distances. For example Logan (1979) has traced the Causeway dyke of the Komatipoort area for approximately 12 km. Smaller dykes are also common around the major granophyre bodies. They tend to radiate from the main bodies though generally retain a dominant north-south trend. The dykes are petrographically and chemically similar to the main intrusions but are usually finer-grained.

Granite

Granite is a light-colored igneous rock with grains large enough to be visible with the unaided eye. It forms from the slow crystallization of magma below Earth's surface. Granite is composed mainly of quartz and feldspar with minor amounts of mica, amphiboles, and other minerals. This mineral composition usually gives granite a red, pink, gray, or white color with dark mineral grains visible throughout the rock.

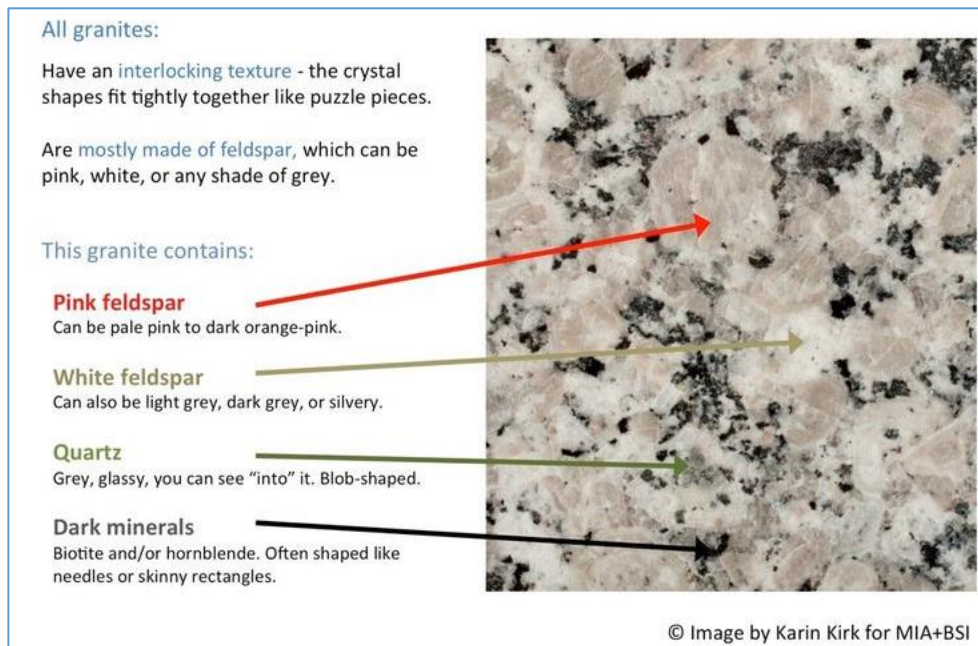


Figure 7: Granite constituents

Granite is the most abundant rock in the continental crust. At the surface, granite is exposed in the cores of many mountain ranges, within large areas known as "batholiths," and in the core areas of continents known as "shields." The large mineral crystals in granite are evidence that it cooled slowly from molten rock material. That slow cooling had to have occurred beneath Earth's surface and required a long period of time to occur. If these granites are exposed at the surface today, the only way that could have happened is if the granite rocks were uplifted and the overlying rocks were eroded. Most parts of Earth's continents are covered with sediments or sedimentary rocks. The rocks below are usually granites, metamorphosed granites, or closely related rocks. These deep granites are often referred to as "basement rocks."

Because of its use as paving block and as a building stone, the quarrying of granite was, at one time, a major industrial activity. Except for tombstones, however, for which there is a continuing demand, the present production of granite is geared to the fluctuating market for curbing in highway construction and veneer used in the facing of large industrial and commercial buildings.

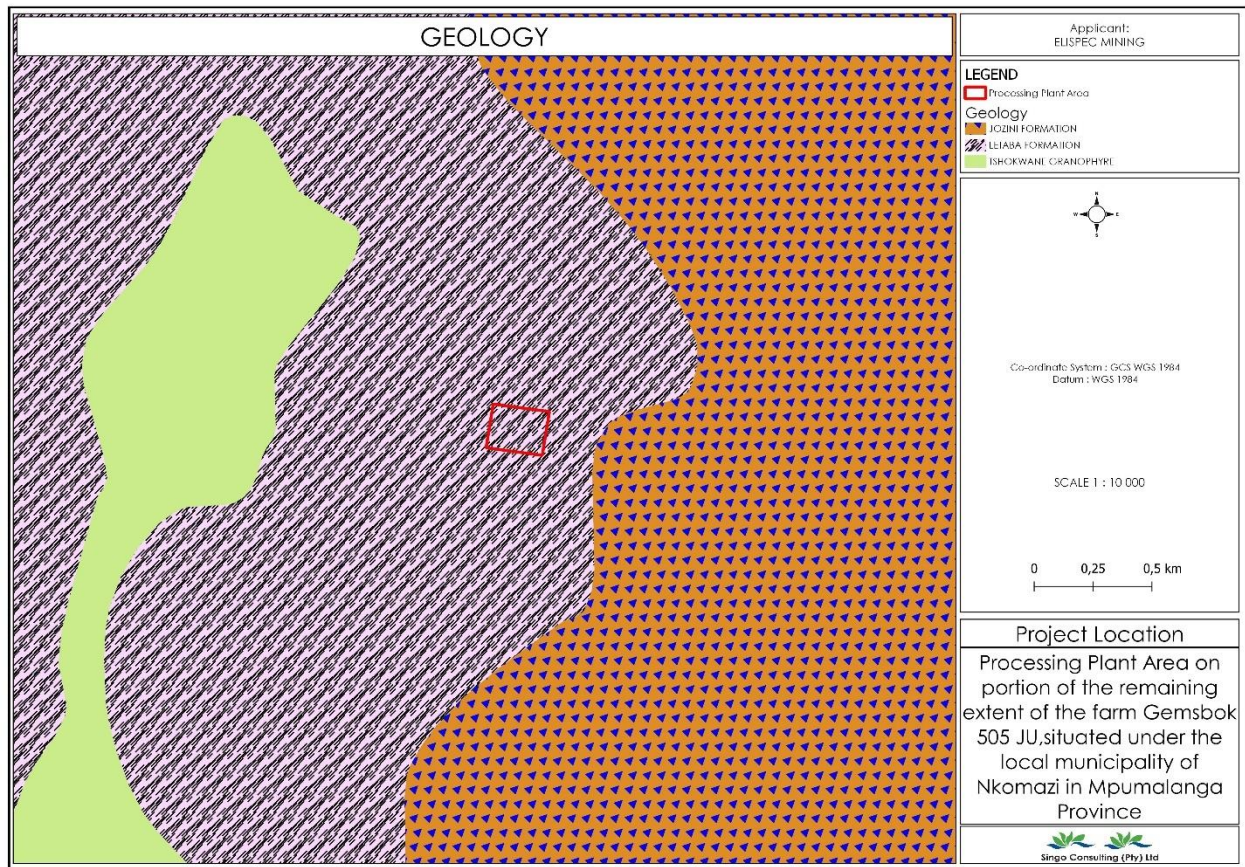


Figure 8: Geology of the project area (Singo Consulting GIS Team, 2022)

7.4 Soils

With reference to the baseline soil, land use and land capability study conducted by Singo Consulting, it was found that the proposed Granite processing plant development area is essentially covered with freely drained, structureless soils.

7.4.1 Soil classes of the project area

The soil classes map in Figure 4 below, shows that the Granite Processing Plant area is largely covered with Association of Classes 5, 6, 10, 11, 12: Undifferentiated clays.

7.4.2 Association of Classes 5, 6, 10, 11, 12: Undifferentiated clays.

The Association of Classes 5, 6, 10, 11, 12: Undifferentiated clays are characterized by their One or more of: high swell-shrink potential, plastic and sticky, restricted effective depth, wetness.

These soils are fine-grained clay minerals comprised of illites, kaolinites, or montmorillonites. The net effect of their constituency is such that they have the unique ability to absorb relatively large volumes of water and therefore expand. The extent of

expansion is influenced by the percentage and type of clay mineral present and the amount of water available for absorption.

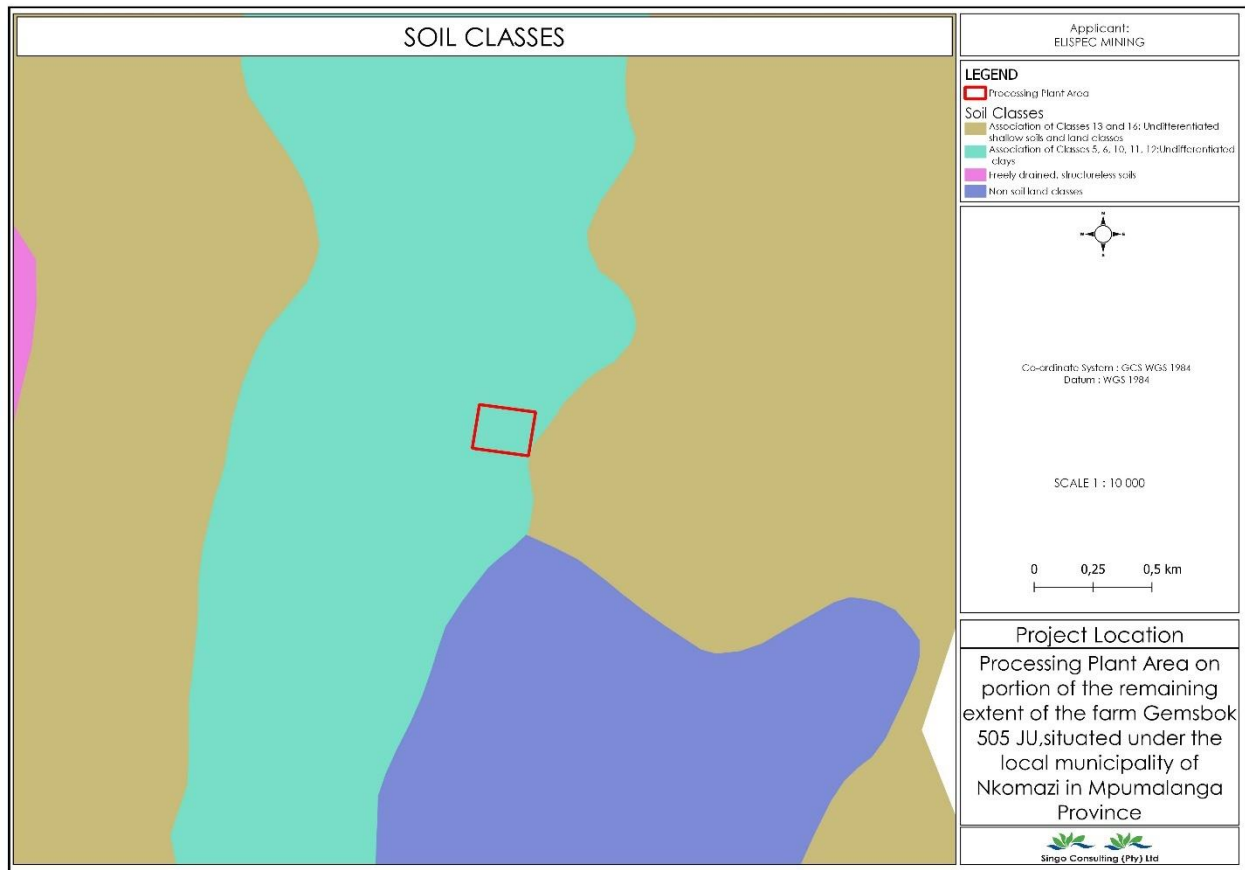


Figure 9: Soil classes map for the (Singo Consulting GIS Team, 2022)

7.4.3 Land Capability

The Land capability categorization is one of several agricultural interpretation groupings. The land capability categorization, like the other interpretation groups, begins with a single soil-mapping unit, which serves as the system's foundation.

Land capability is divided into three categories: grazing, arable, and wilderness. The potentialities and limitations of arable soils for sustained production of typical farmed crops that do not require specialist site conditioning or site treatment are classified in this categorization. Nonarable soils (soils that cannot be used for cultivated crops over an extended period of time) are classified according to their potential and limitations for sustained production of the common cultivated crops that do not require specialized site conditioning or site treatment. Nonarable soils (soils unsuited for long-term sustained cultivation of cultivated crops) are classified based on their ability to generate permanent vegetation and the risk of soil damage if improperly managed. The projected area's land capability is designated as arable land. Any ground that can be ploughed and utilized

to raise crops is referred to as arable land. Figure 9 depicts the possibilities for grazing in the planned area. The capability grouping of soils is designed:

0. to help landowners and others use and interpret the soil maps,
1. to introduce users to the detail of the soil map itself, and
2. to make possible broad generalizations based on soil potentialities, limitations in use, and management problems.

The capability classification provides three major categories of soil groupings:

0. Capability unit,
1. capability subclass, and
2. capability class.

The first type, capacity unit, is a grouping of soils with similar reactions to conventional cultivated crop and pasture plant management systems. Soils in each capability unit are adapted to the same types of cultivated and pasture plants, and these crops demand similar alternative management approaches. Long-term estimates of adapted crop yields for individual soils within the unit under comparable management don't differ by more than 25%.

The second type, the subclass, is a group of capacity units with similar types of restrictions and dangers. Four types of limitations or general hazards are recognized: (1) erosion risk, (2) moisture, (3) root zone limitation, and (4) climate.

The third and broadest category of competence classifies all the eight classes of abilities. The risks of damaging the floor or restricting use gradually increase from class I to class VIII. The soil of the first four layers is well managed and can produce suitable crops, such as woodland or arable land, field crops[^] and vegetation. Soils V, VI and VII are suitable for the use of suitable native plants. Some soils of categories V and VI are also capable of producing specialized crops, such as certain fruits and ornamental plants, and even field crops and vegetables under very intensive management. related to land conservation and country conservation practices. Class VIII soils do not provide on-site benefits for crop, grass or tree management inputs without major reclamation.

The grouping of soils into volume units, subclasses and layers is done primarily on the basis of their ability to produce common crops and pastures without degradation over a long period of time. To represent the suitability of land for land and forest uses, land mapping units are grouped into suitable forest and forestland groups.

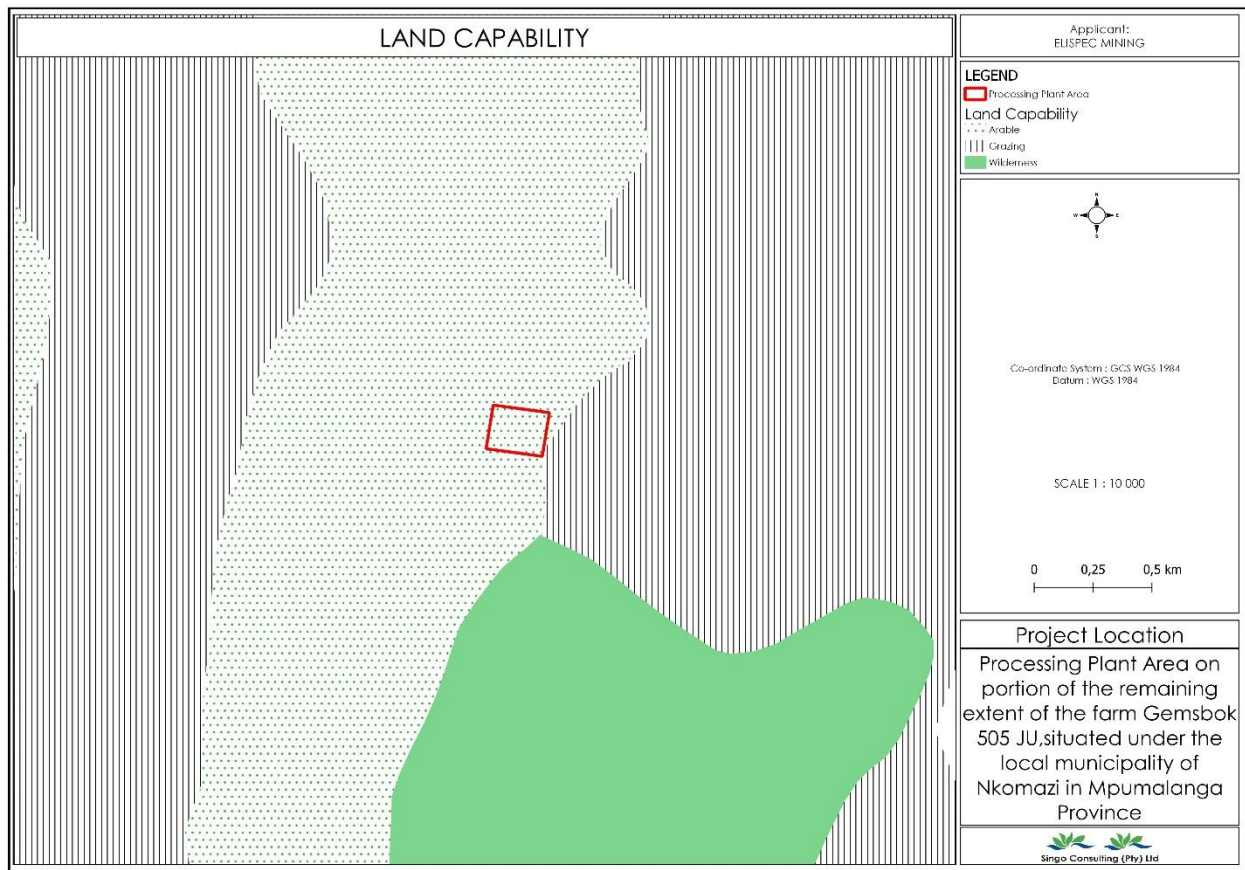


Figure 10: Land Capability Map (Singo Consulting (Pty) Ltd)

Table 12: Relationship of soil-mapping unit to capability classification (Source: (KELLOGO, 1961))

| Soil-mapping unit | Capability unit | Capability subclass | Capability class |
|--|--|--|---|
| <p>A land mapping unit is a part of a landscape of the same quality and whose characteristics and boundaries are static by exact definitions. Within the boundaries of cartography and taking into account the purpose of cartography, the soil mapping unit is the one that can make the greatest number of accurate statements and forecasts.</p> <p>The Soil Mapping Unit provides more detailed information about the land. The basis of any interpretation are basic cartographic units. They provide the information needed for the development of capacity units, forest site groups, crop suitability groups, range site groups,</p> | <p>A group of one or more individual land mapping units with similar potential and continuing limitations or threats is called a competency unit. Land of a unit volume homogeneous enough to (1) produce similar crops and pastures with similar management practices, (2) require similar conservation management and treatment within the same of the same type and cover conditions, (3) has the same yield potential.</p> <p>Capacity units condense and simplify land information for cell-by-field planning. Competency units with classes and subclasses provide information on the extent of the restriction, the type of</p> | <p>are groups of power units with the same main conservation problem called classification. Issues include—</p> <ol style="list-style-type: none"> 1. e> Erosion and runoff. 2. w> Excess water. 3. s> Limits of the rhizosphere. 4. c> Climate limitation. <p>Information about related restrictions and retention problem types is provided by the capability subclass.</p> <p>Map user information regarding the extent and type of problems associated with general program planning, conservation needs studies, and similar goals is</p> | <p>Capability classes are groups of ability subclasses or units of ability with the same relative danger or limitation. Limitations and risks of soil damage during use are further reduced from level I to level VIII.</p> <p>Ability classes are useful for providing map users with more detailed information about the land map. The classes indicate the location, quantity, and general suitability of soils for agricultural use. Information on the general limitations of agriculture in land use is available only at the capacity level.</p> |

| | | | |
|--|--|--------------------------------------|--|
| technical groups and other interpretive groups. The most specific management methods and yield estimates involve individual map units. | conservation problem, and the required management practices. | provided by the class. and subclass. | |
|--|--|--------------------------------------|--|

7.4.4 Land Use

The area is currently used for processing granite, it is zoned for agricultural activities. Vegetation in some part of the area has already been cleared, hence this application has been lodged to rectify the environmental damages that has been caused by the applicant. Within 500m from the boundaries there are Eskom power lines, tar road, School (Zenzele Secondary School), and residential area.

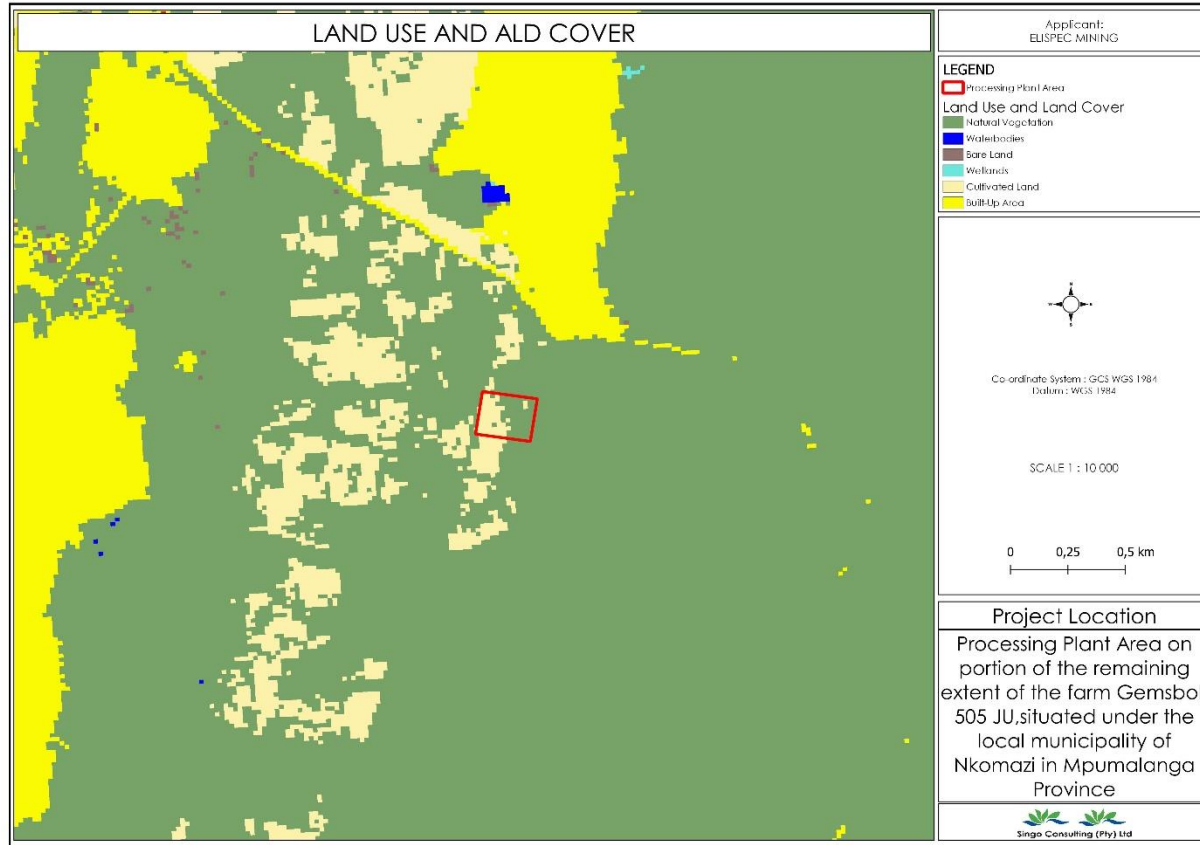


Figure 11: Land Capability Map (Singo Consulting (Pty) Ltd)

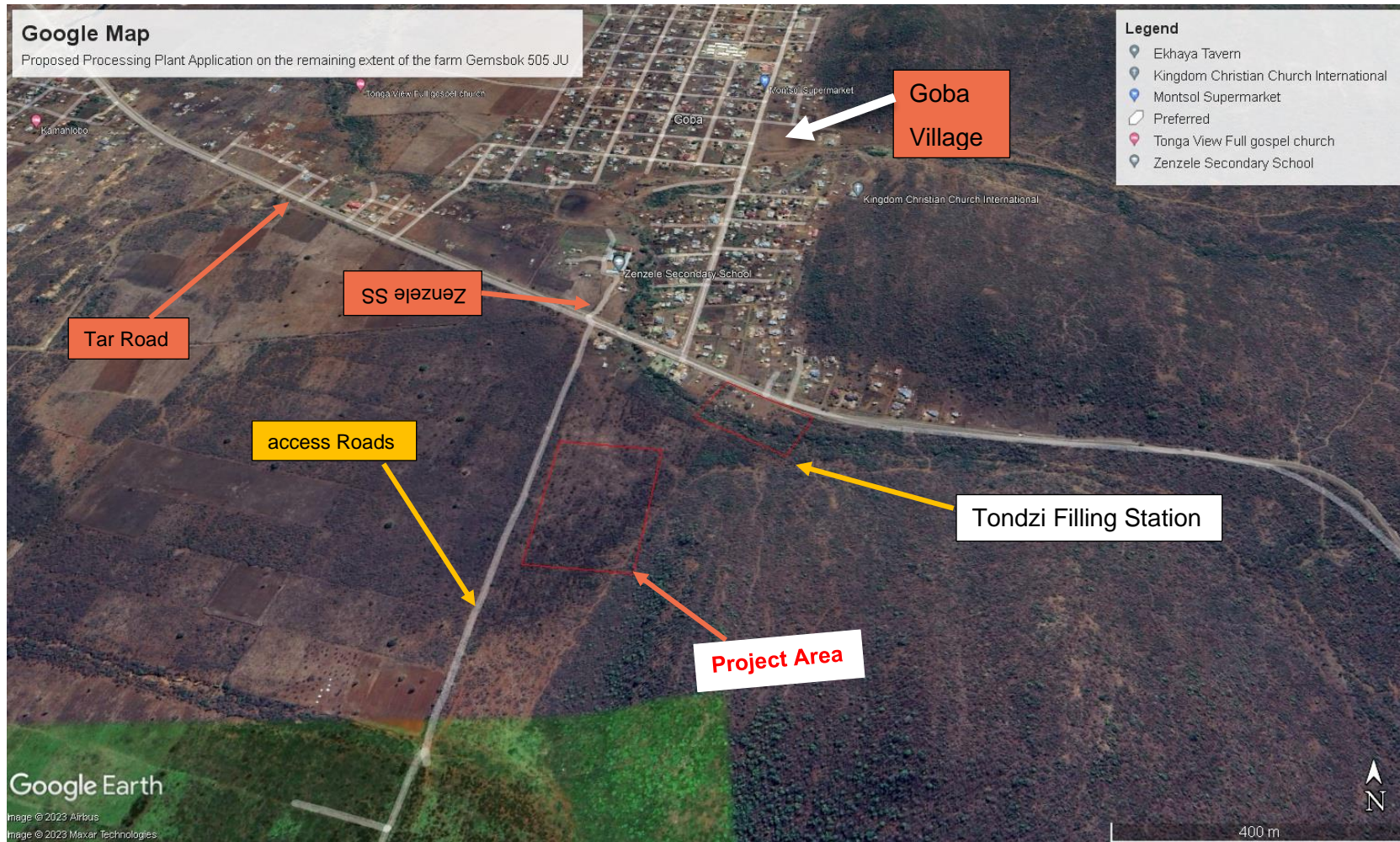


Figure 12: Land use map (google earth)







Figure 13: Land use images for rectification (Site Visit, 2023)

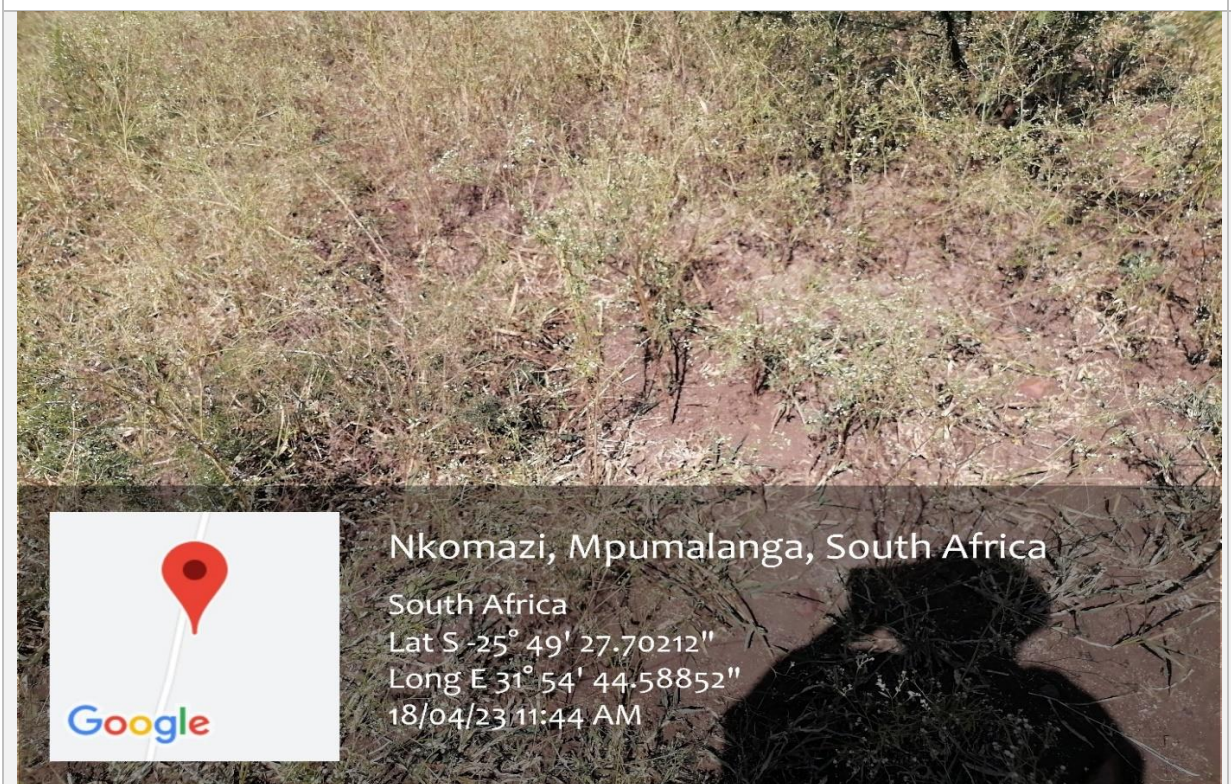


Figure 14: Surrounding land usage (Site Visit, 2023)

7.5 Climatic Conditions

According to a hydrogeology study conducted by Singo Consulting (pty) Ltd, Climate, amongst other factors, influences soil-water processes and water availability in open to air systems in a water balance. The most influential climatic parameter is rainfall and evaporation. Rainfall intensity, duration, evaporative demand, and runoff were considered in this study to indicate rainfall partitioning within the project area.

The monthly distribution of average daily maximum temperatures (Figure 12) shows that the average midday temperatures range from 22°C in June to 35°C in December. The region is the coldest during June and July when the mercury drops to 4°C on average during the night.

Figure 13 shows the average rainfall values for the general area per month. The area receives approximate 28mm of rain per year, with most rainfall only occurring during summer months. This area receives its lowest rainfall during July (5mm) and the most rainfall during December (56mm). The Köppen Climate Classification suggests that the site is situated in a subtropical highland climate with dry winter that receives rainfall in the summer months (Kottek, et al., 2006).

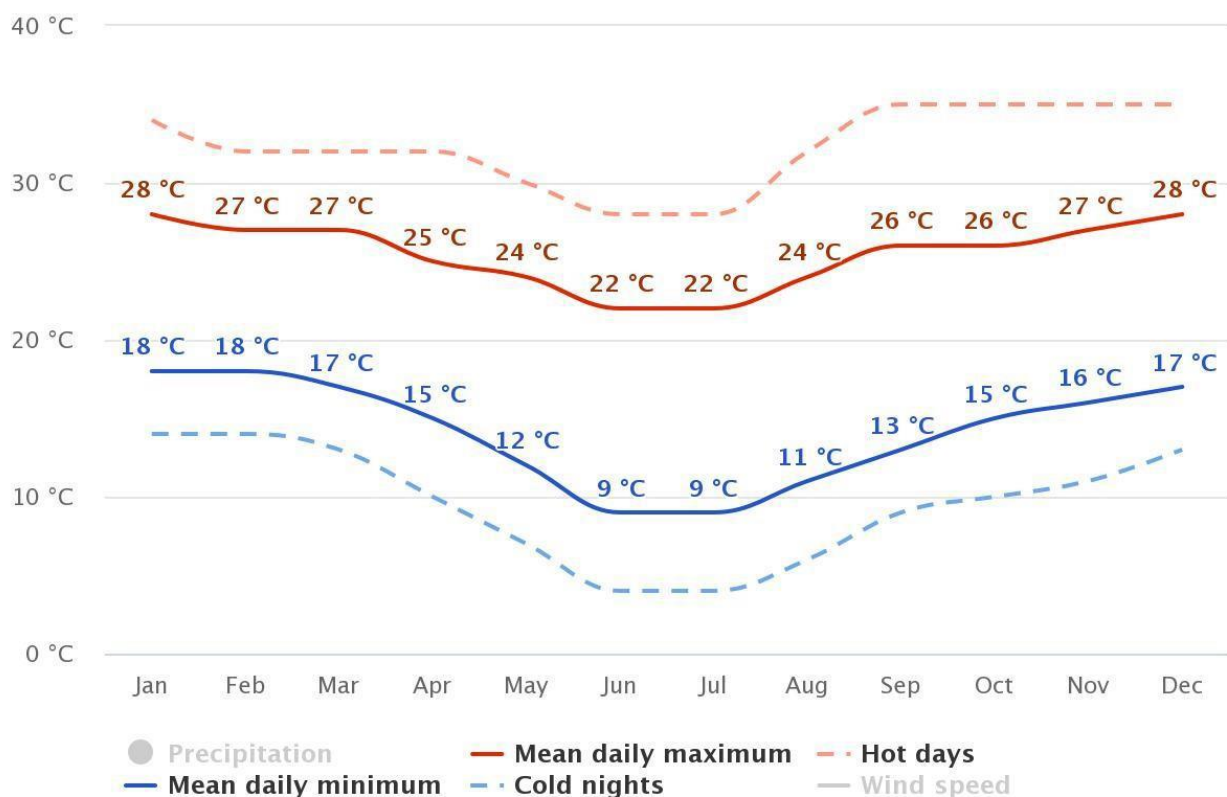


Figure 15: Average Monthly Temperatures Map

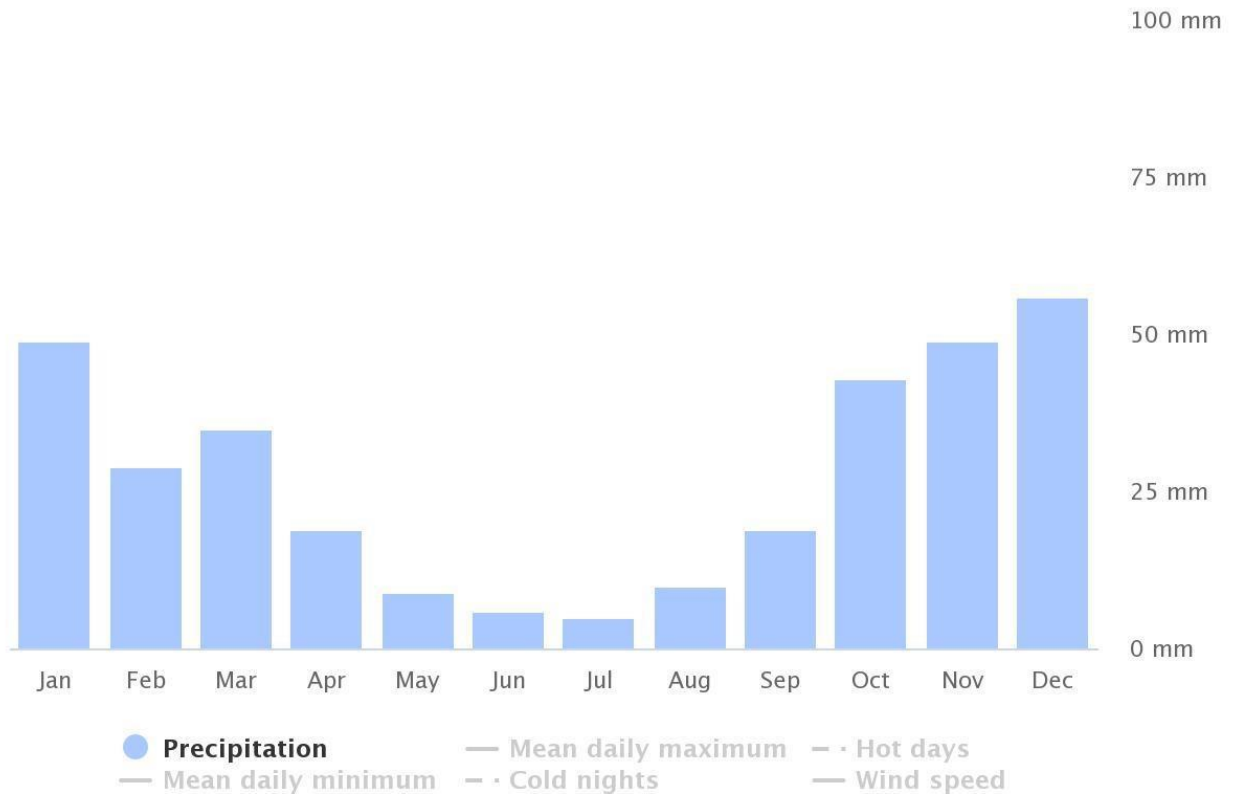


Figure 16: Average Monthly rainfall of the study area

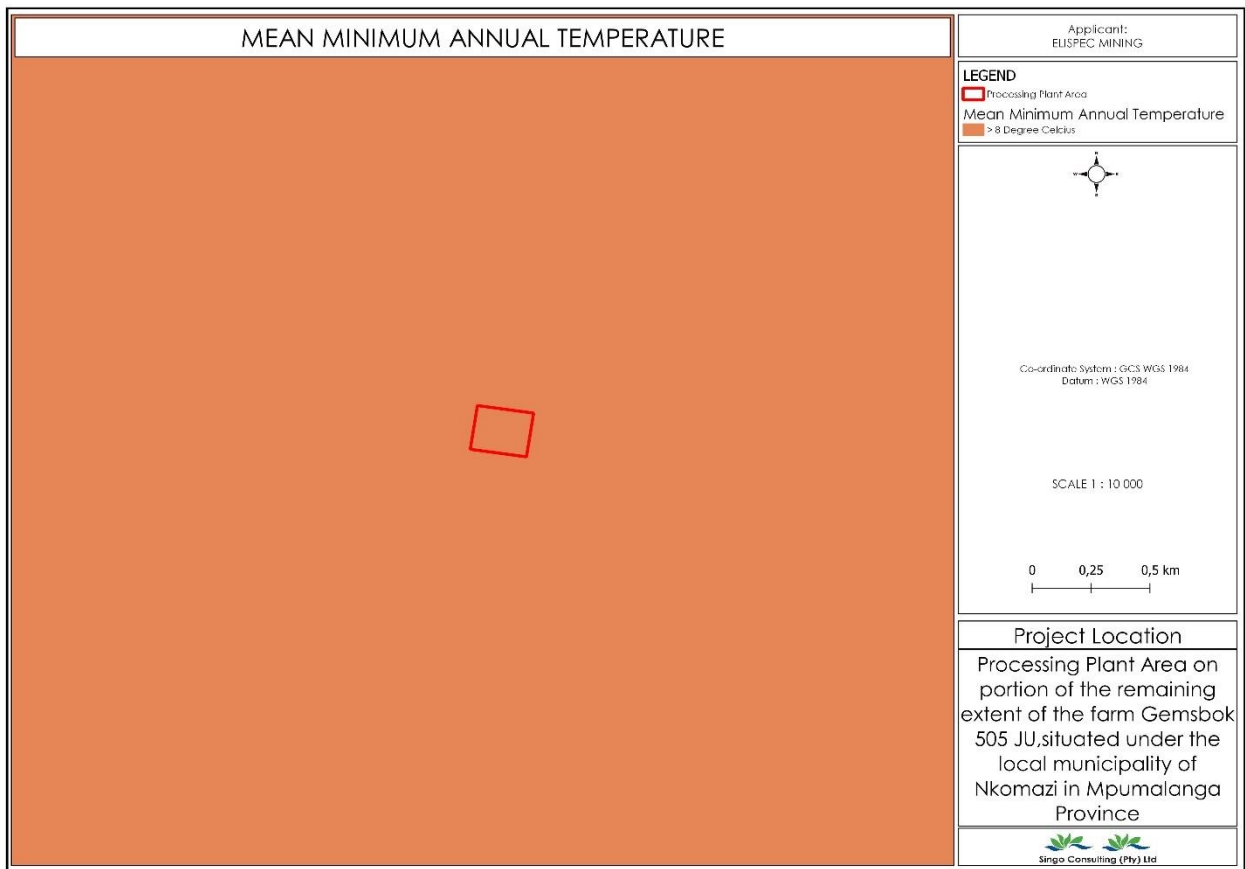


Figure 17: Mean Minimum Annual Temperature Map (Singo Consulting GIS Team, 2023)

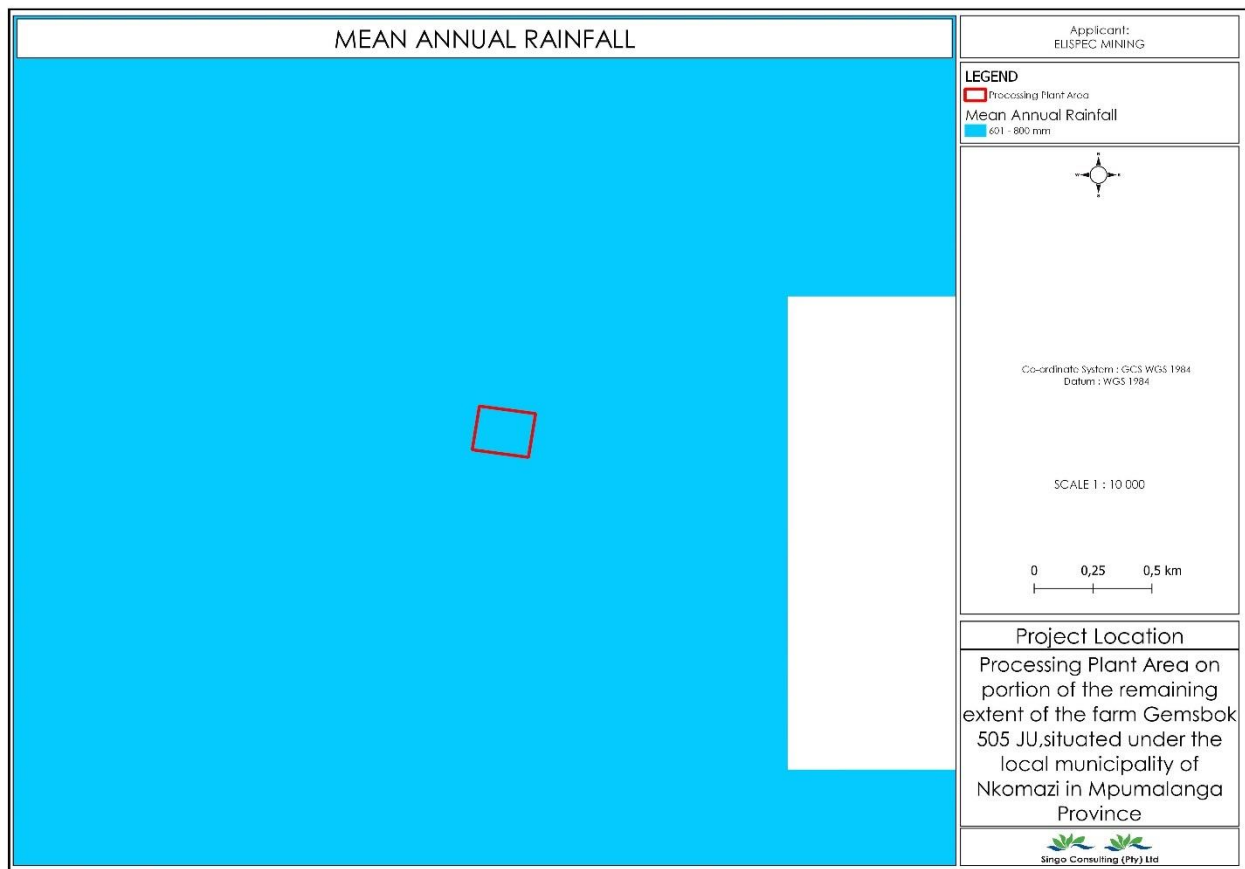


Figure 18: Mean Annual Rainfall map (Singo Consulting GIS Team, 2023)

7.6 Surface and Underground Water

Singo Consulting was retained to conduct a baseline hydrogeological study for the proposed project in order to assess the presence and/or absence of water resources on the proposed Granite processing plant development footprint. The study was designed to ensure that any significant water resources are identified, recorded, and the significance of the site is assessed in order to determine the nature and extent of potential impacts from the proposed development. The assessment includes recommendations to manage the potential/ expected impact of the proposed development. Baseline hydrogeological study has been attached as *Appendix 6*.

7.7 Hydrology

According to hydrology study compiled by Singo Consulting (Pty) Ltd, The hydrology surrounding the proposed area is of vital importance. In this context hydrology is all the surface waters appearing within and nearby the proposed project area, where a

potential to be impacted upon by the project existence. The hydrology map, illustrates that the following water bodies exists nearby the project area:

- **Non-perennial River:** are defined as rivers that flows only on rainy/wet seasons.

The above-mentioned water bodies are situated around the site and are situated approximately 150 m north of the project area.

The identification of these water bodies allows for better mitigation measures which will have to be put in place to prevent any impacts occurring to the afore mentioned water bodies. This is because the water bodies not only serve as habitat for the local ecosystems, but also as a source of water for the local communities for domestic use. Water samples were collected and taken to regen water for analysis.

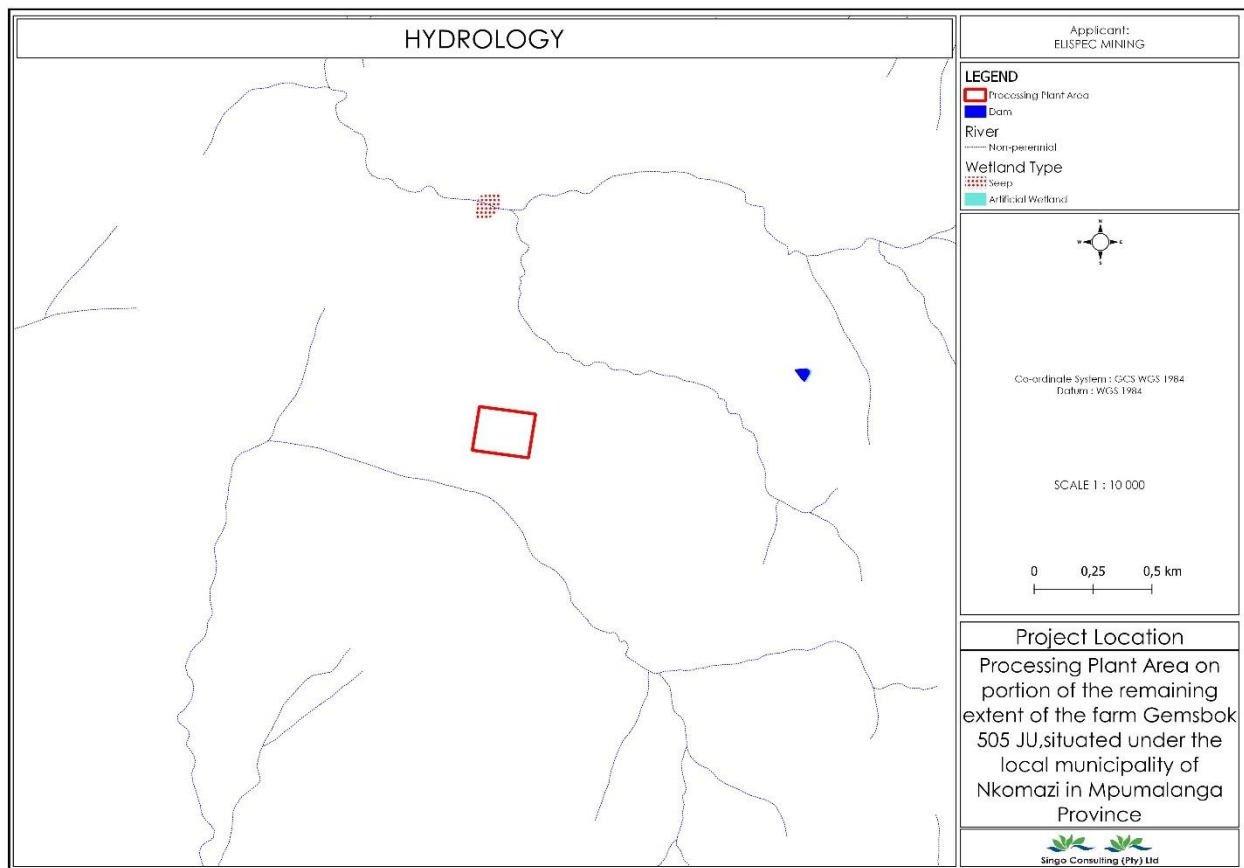


Figure 19: Hydrology map (Singo Consulting GIS Team, 2023)

7.7.1 Catchment Information

South Africa's water resources are divided into quaternary catchments, which are the country's primary water management units (DWAF 2011). In a hierarchical classification system, a quaternary catchment is a fourth order catchment below the primary

catchments. The primary drainages are further classified as Water Management Areas (WMA) and Catchment Management Agencies (CMA) (CMA). In accordance with Section 5 subsection 5(1) of the National Water Act, 1998, the Department of Water and Sanitation (DWS) has established nine WMAs and nine CMAs as outlined in the National Water Resource Strategy 2 (2013). (Act No. 36 of 1998). The purpose of establishing these WMAs and CMAs is to improve water governance in various regions of the country, ensuring a fair and equal distribution of the Nation's water resources while ensuring resource quality is maintained.

The proposed application is in the Inkomati-Usutu Water Management Area (WMA) within the main quaternary catchment X13J and X13K. The WR2012 study, presents hydrological parameters for each quaternary catchment including area, mean annual precipitation (MAP). The regional hydrological setting of the project site is indicated in Figure 8.

Table 9: Water Management Area, QC, Catchment area and MAP

| Quaternary Catchment | Water Management Area | Total Area (km²) | MAP (mm) | MAE (mm/a) |
|-----------------------------|------------------------------|------------------------------------|-----------------|-------------------|
| X13J | Inkomati-Usuthu | 789.3 | 676.3 | 1500 |
| X13K | Inkomati-Usuthu | 620.6 | 608.5 | 1500 |

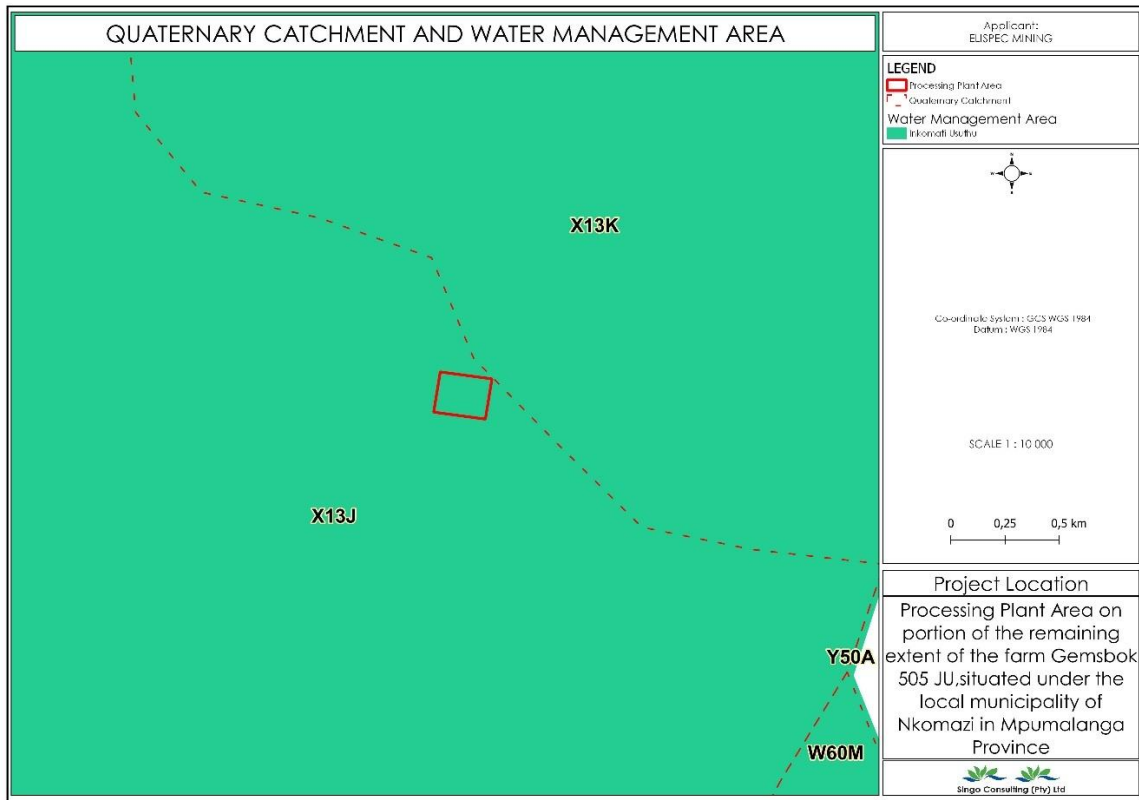


Figure 20: Quaternary catchment and water management area map (Singo Consulting GIS Team, 2023)

In order to mitigate the potential impact on the watercourse, storm water management will have to be implemented on-site. Storm water will have to be channelled around the Processing Plant area to prevent possible contamination of clean water flowing over dirty areas. If this is implemented, the proposed activity is not expected to have a negative effect on the surface water.

7.8 Biodiversity

Terrestrial Biodiversity

According to the DFFE Screening tool report, approximately 60% of the proposed processing plant area is located in an area that is very highly sensitive in term of Terrestrial Biodiversity with the feature CBA 1, CBA 2 and National Protected Area Expansion Strategy (NPAES). As much the falls under critical areas but It has already been compromised by previous activities such as agricultural activities. According to the terrestrial biodiversity map developed from Mpumalanga Biodiversity Sector Plan (MBSP) Terrestrial Biodiversity Assessment (2019) database by or GIS specialist shows

approximately 80% of the area fall under Heavily modified and moderately modified-Old lands.

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| X | | | |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|--|
| Low | Low Sensitivity |
| Very High | CBA 1 |
| Very High | CBA 2 |
| Very High | National Protected Area Expansion Strategy (NPAES) |

Figure 21: map of relative terrestrial biodiversity theme sensitivity (screening tool)

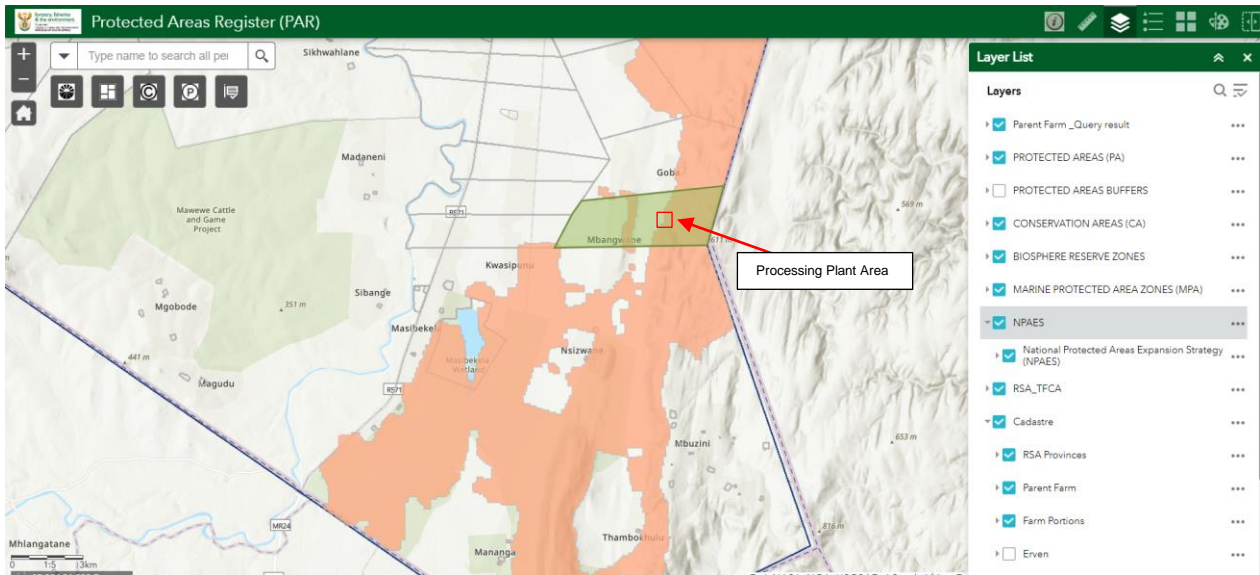


Figure 22: Protected Area Register (<https://dffportal.environment.gov.za>)

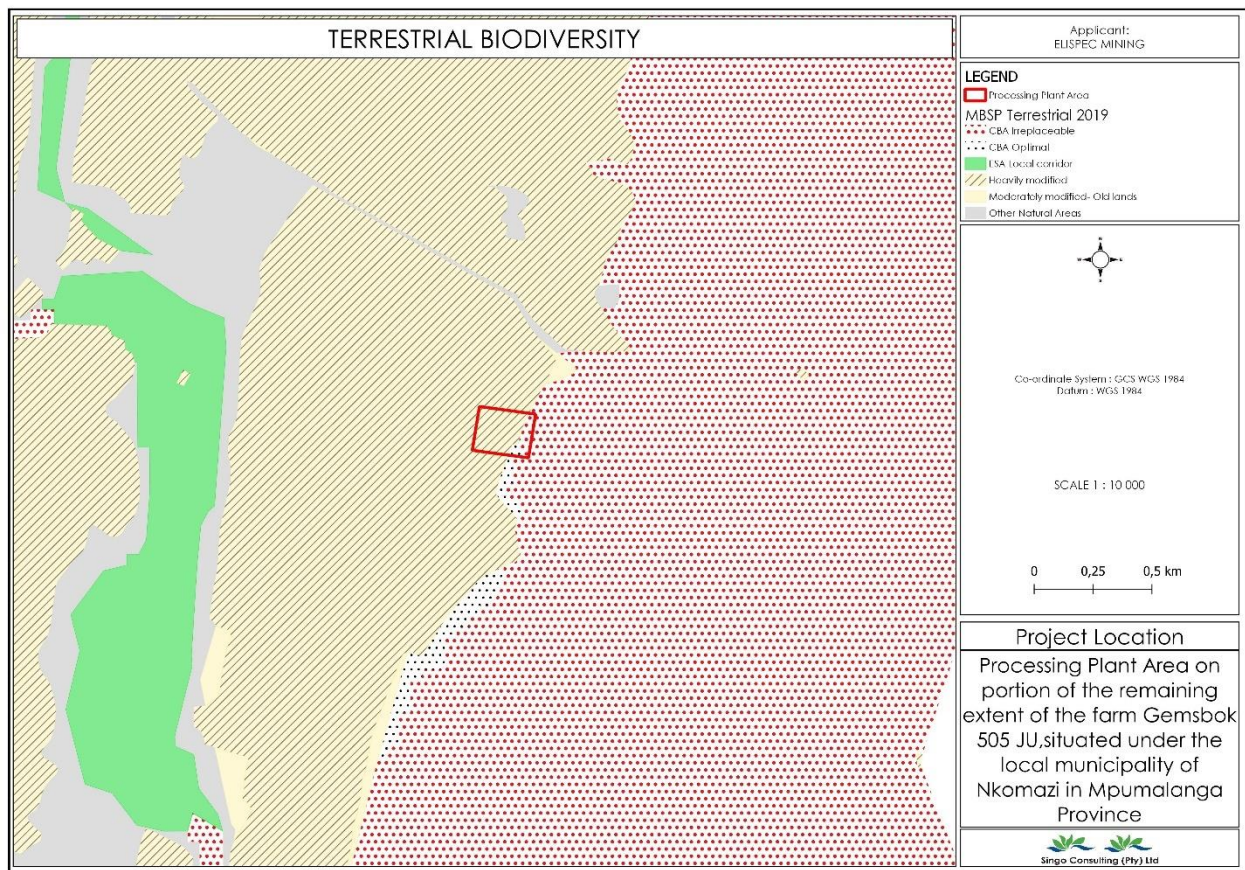


Figure 23: Terrestrial Biodiversity map (Singo Consulting GIS Team, 2023)

7.8.1 Site Vegetation

According to DFFE (https://www.dffe.gov.za/sites/default/files/docs/olifant_vegetation.pdf) the area the Lebombo Bushveld is an open bushveld dominated by Combretaceae on rocky slopes and ridges of a linear range of hills reaching about 100 m (and higher in places) above its surrounding basalt plains towards the west. Tree succulents such as Euphorbia

confinalis and *E. cooperi* are typical on steep, stony slopes. There has been virtually no transformation. Important taxa include:

- Tall tree: *Sclerocarya birrea* subsp. *caffra*;
- small trees: *Combretum apiculatum* (d), *Acacia erubescens*, *A. exuvialis*, *Albizia harveyi*, *Boscia albitrunca*, *Combretum molle*, *Commiphora mallis*, *Croton gratissimus*, *Kirkia acuminata*, *Lannea schweinfurthii* var. *stuhlmannii*, *Manilkara mochisia*, *Newtonia hildebrandtii* var. *hildebrandtii*, *Ozoroa engleri*, *Pappea capensis*, *Sterculia rogersii*, *Strychnos decussata*, *Terminalia sericea*, *Ximenia caffra*;
- succulent trees: *Euphorbia confinalis* (d), *E. cooperi*;
- tall shrubs: *Dichrostachys cinerea* (d), *Croton madan densis*, *Flueggea virosa*, *Grewia bicolor*, *Karomia speciosa*;
- low shrubs: *Barleria affinis*, *Commiphora africana*, *Pavetta catophylla*, *Tragia dioica*, *Tricalysia junodii*;
- succulent shrubs: *Aloe chabaudii*, *A. spicata*, *Kalanchoe rotundifolia*;
- woody climbers: *Adenia digitata*, *A. spinosa*, *Capparis sepiaria*, *Cardiospermum halicacabum*, *Cissus rotundifolia*, *Helinus integrifolius*; herbaceous climber: *Cyphostemma subciliatum*;
- graminoids: *Aristida congesta* (d), *Digitaria eriantha* subsp. *eriantha* (d), *Enneapogon cenchroides* (d), *Heteropogon contortus* (d), *Panicum maximum* (d), *Andropogon gayanus*, *Bothriochloa radicans*, *Brachiaria nigropedata*, *B. xantholeuca*, *Cymbosetaria sagittifolia*, *Panicum deustum*, *Pogonarthria squarrosa*, *Schmidtia pappophoroides*,
- *Themeda trilandra*; herbs: *Achyranthes aspera*, *Cleome maculata*, *Crabbea velutina*, *Heliotropium steudneri*; and
- geophytic herbs: *Actiniopteris radiata*, *Pellaea calomelanos*, *P. viridis*, *Sansevieria pearsonii*.



Figure 24: Vegetation condition onsite (Site Assessment,2023)

The proposed area is fully dominated by *Acacia Mearnsii* which is the invasive plant species. This plant species originates from South-eastern Australia and Tasmania. It is invasive in South Africa and it is widespread throughout the Western Cape, Eastern Cape, Kwa-Zulu Natal, Mpumalanga and Gauteng, it spreads through seed dispersal and competes with and replaces indigenous grassland and riverine species. Grasslands are invaded by dense thickets of black wattle, which reduced the grazing area for domestic and wild animals. Its invasive status in South Africa is under existing legislation: CARA 2002 - Category 2 NEMBA - Category 2.



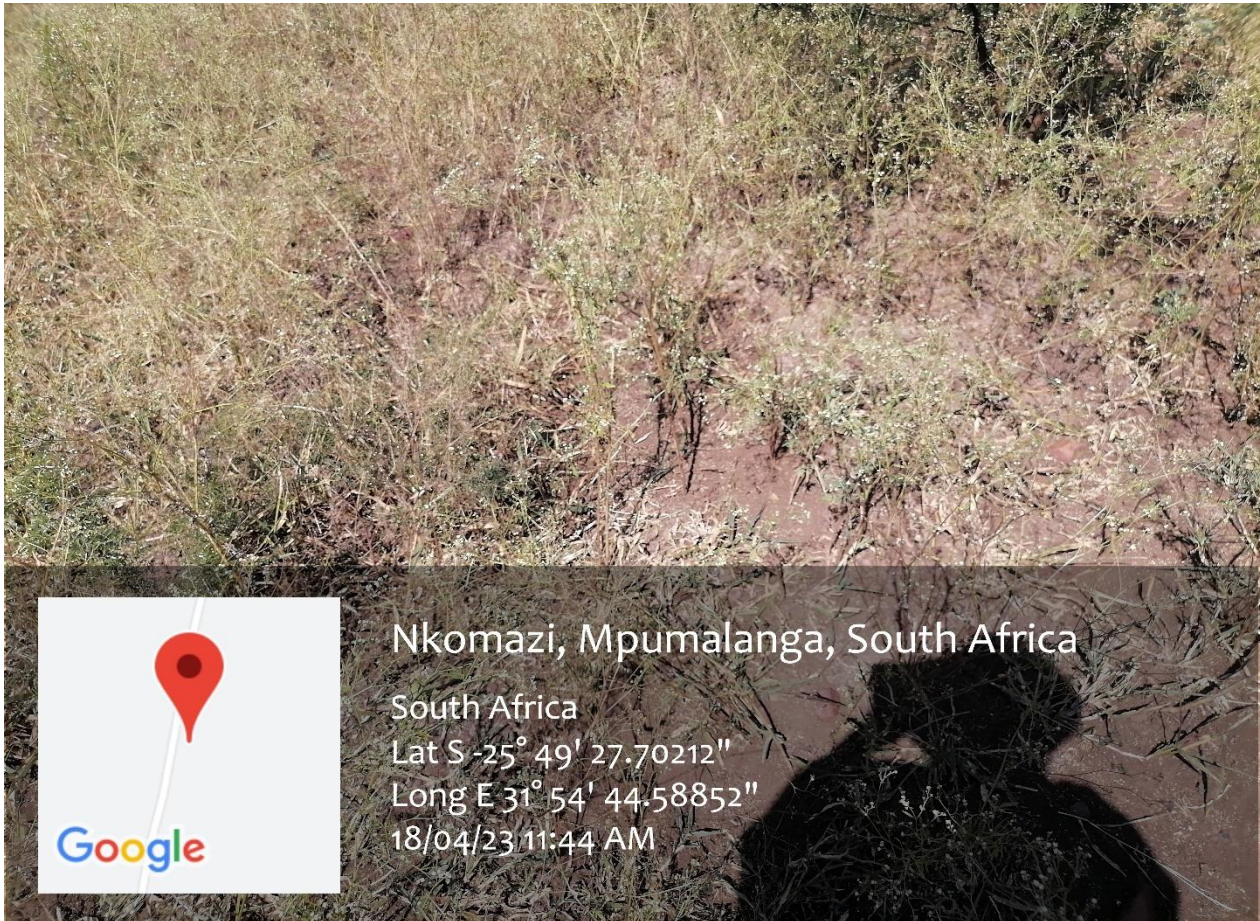


Figure 25: floral species observed onsite.

7.8.2 Plant species of conservation concern

During desktop study, the Species Status Report from the Mpumalanga Tourism and Parks Agency shows that the proposed site has *Breviceps sopranus*, plant species of conservation concern which is dominating throughout the whole of RSA. The screening report shows that the proposed project area is located under low sensitivity areas with no floral species of conservation concern (see 21). During ground truthing, no floral species of conservation concern observed onsite.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Figure 26: Map of Relative Plant Species theme sensitivity (source: screening report)

7.8.3 Alien and Invaders species

During ground truthing, only invader plants species not listed under NEMBA categories were recorded onsite, and one species NEMBA Category 2 was observed outside the proposed area. lists exotic floral species identified during ground truthing. Figure 10 depicts invaders species observed onsite, namely **(A)** *Solanum sisymbriifolium* Lam **(B)** *Solanum elaeagnifolium* Cav.

7.9 Fauna

According to Screening tool report the area is characterized as medium sensitive and the following is one of animal species were identified as medium sensitive:



Figure 27: Aves-Aquila rapax which commonly known as Tawny Eagle. (Tawny eagle (pale form)). [photo [Johann du Preez](#) ©]

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

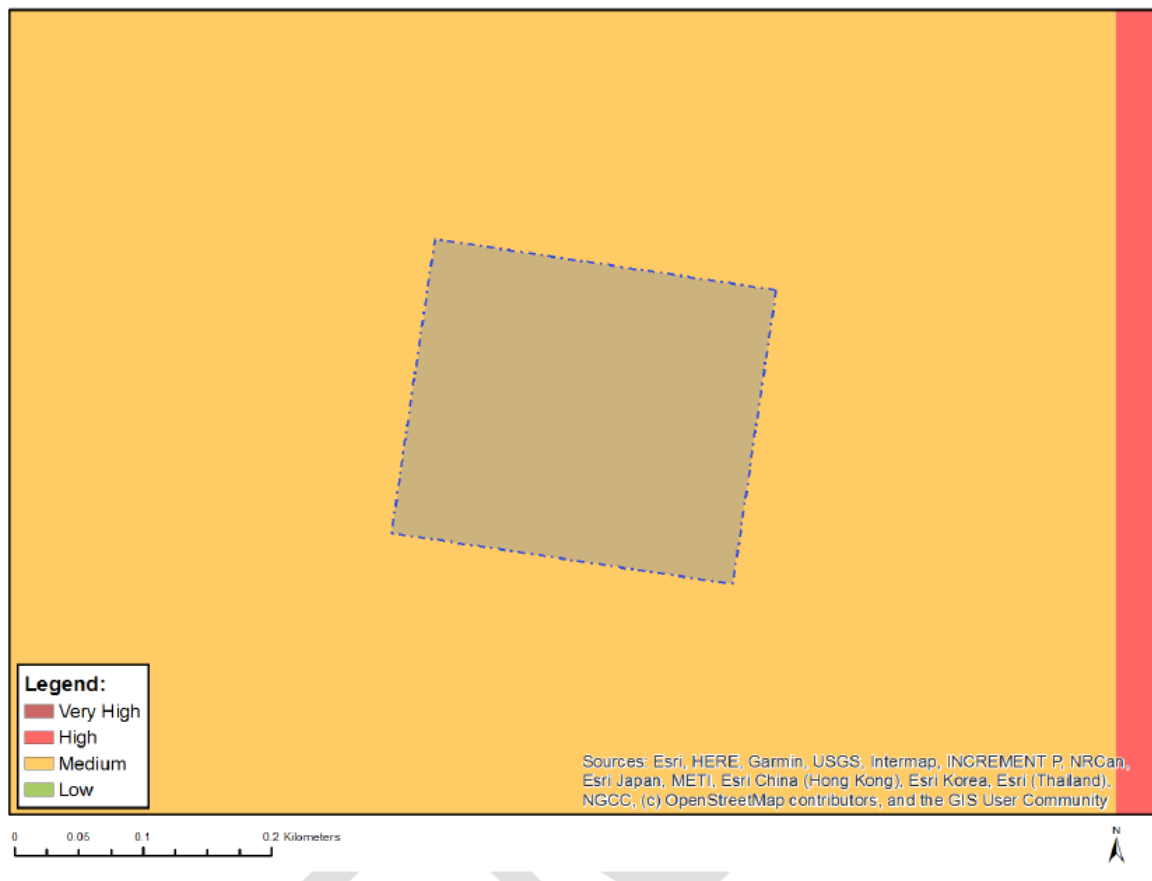


Figure 28: Map of relative animal species theme sensitivity (source: screening report)

During site assessment no sign of the medium sensitive animal species were observed on site, however domestic animals like cows were observe on during site assessment.



Figure 29: mammal species observed onsite.

7.9.1 Herpetofauna

The diversity of herpetofauna onsite is considered low, with no reptile or amphibian species observed during ground truthing. This is most likely due to the naturally secretive nature of reptile species, as well as seasonality.

7.10 Site Sensitivity

According to the MBSP terrestrial CBA map of 2019 sourced from MTPA approximately 95% of the area fall in the other Natural Areas and according to the terrestrial biodiversity map produced by our GIS specialist shows that the proposed site falls in the Heavily modified areas. However, during ground truthing, it was identified that the proposed site falls in the Other Natural Areas.

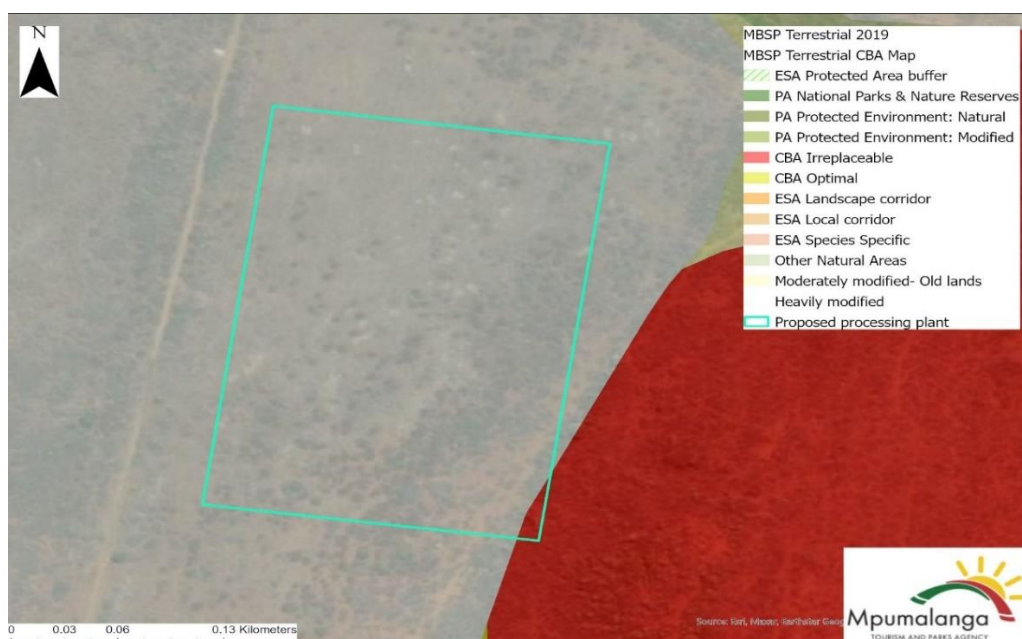


Figure 30: MBSP Terrestrial CBA Map (source: MTPA)

8 Heritage

No graves or heritage features were observed on site and according to screening tool report the area falls within low sensitivity of Archaeological and Cultural Heritage theme sensitivity.

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

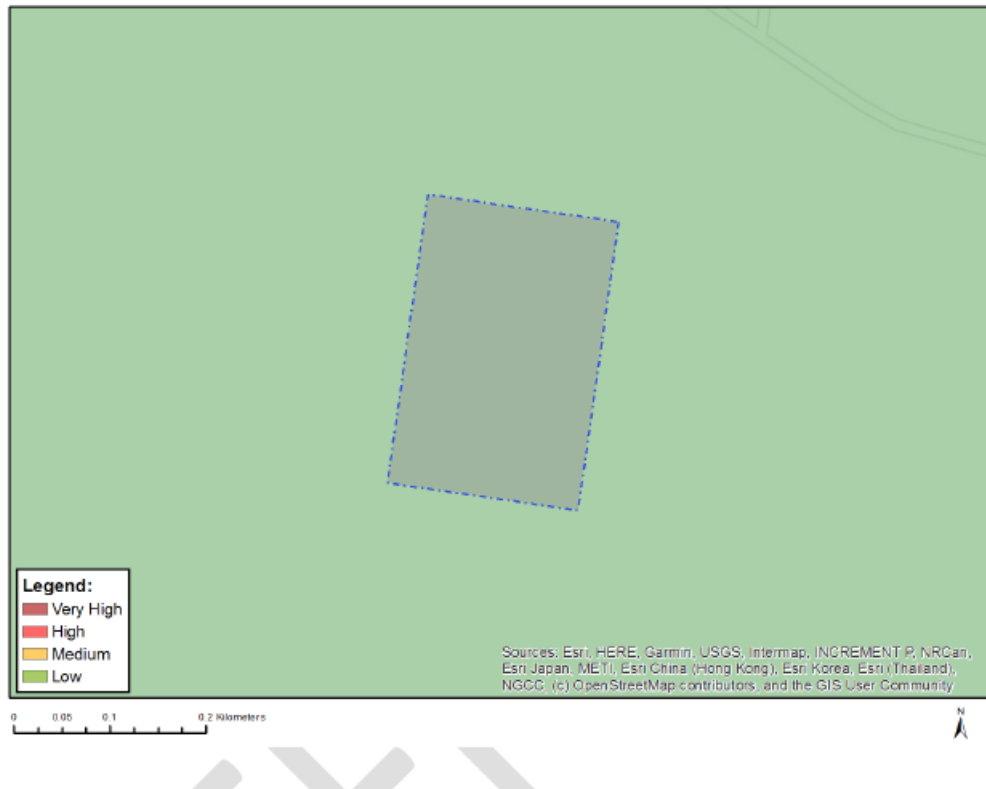


Figure 31: Map of relative Archaeological and Cultural Heritage theme sensitivity (source: screening report)



Figure 32: Site Overview (Singo Consulting (Pty) Ltd

9 Socio Economic Analysis

This section is with reference to the Nkomazi Local Municipality 2022/2023 – 2026/2027 Integrated Development Plan (IDP).

9.1 Demographic Trends

According to Census 2011 the Nkomazi Local Municipality has a total population estimated at 393 030, of which 97,7% are black African, 1,6% are white, with other population groups making up the remaining 0,4%. Of those aged 20 years and older 4,6% have completed primary school, 25,6% have some secondary education, 25,6% have completed matric, 6,7% have some form of higher education. More than a third (34,2%) of the 110 469 economically active (employed or unemployed but looking for work) population in the municipality is unemployed. Amongst the 64 497 economically active youth (15 – 34 years) in the area, 42,3% are unemployed. (https://www.statssa.gov.za/?page_id=993&id=nkomazi-municipality)

| Group | Percentage |
|---------------|------------|
| Black African | 97,7% |
| Coloured | 0,2% |
| Indian/Asian | 0,3% |
| White | 1,6% |
| Other | 0,1% |

Table 10 : Population Growth of Nkomazi LM (Stats SA)

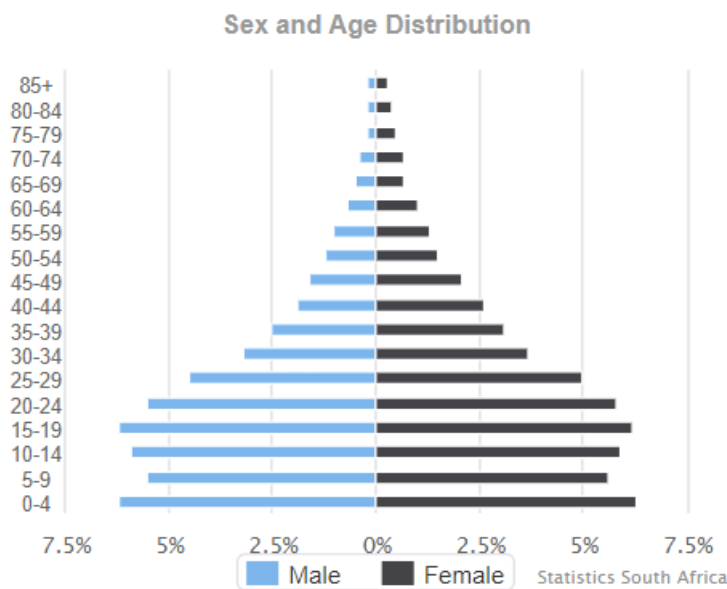


Figure 33: Sex and Age Distribution Nkomazi LM (Stats SA)

9.2 Concluding Remarks

Socio-economic information detailed in this section of the report provides an understanding of the need for economic development which is to create employment opportunities. The people most affected by the proposed project is the community residing near/around the project area. Although there no mining related operations near the proposed area or within 10 km radius other than Elispec Mining (Pty) Ltd, most of the people residing in the villages near the proposed area, like Goba, Mbangwane, Mbusini and they unemployment rate is so high and underprivileged. A community of Mbangwane held a meeting regard the processing plant and how they will benefit from Elispec Mining's processing plant. Elispec pledge to create more employment opportunities to the nearby communities, Not implementing the activities will result in a

loss of potential economic development and opportunities that comes with the development.

10 Infrastructure

10.1 Power Supply

There existing infrastructure includes observed high standard electrical power lines (supplied by Eskom) at approximately 223.24m away from the project area. Eskom has relatively been consulted and awaiting conditions inferred to the Applicant and Contractors.



Figure 34: Eskom Power Lines (Site Visit, 2023)

10.2 Road Networks

The proposed project will utilize the current road networks, which were previously covered in section 3. When necessary, grading will be used to maintain the unpaved road leading to the proposed project area while ensuring environmental compliance.

10.3 Railway Line

No Railway lines were observed on site and in close parameters from the proposed projects area.

11 Environmental significance

The concept of significance is at the core of impact identification, evaluation and decision making. The concept remains largely undefined and there is no international consensus on a single definition. The following common elements are recognised from the various interpretations:

- Environmental significance is a value judgement.
- The degree of environmental significance depends on the nature of the impact.
- The importance is rated in terms of both biophysical and socio-economic values.
- Determine significance involves the amount of change to the environment perceived to be acceptable to affected communities.

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of acceptability) (DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5).

The concept of risk has two dimensions, namely the consequence of an event or set of circumstances, and the likelihood of particular consequences being realised (Environment Australia (1999) Environmental Risk Management).

11.1 Impact

The positive or negative effects on human well-being and/or the environment.

11.2 Consequence

The intermediate or final outcome of an event or situation, or the result on the environment of an event.

11.3 Likelihood

A qualitative term covering both probability and frequency.

11.4 Frequency

The number of occurrences of a defined event in a given time or rate.

11.5 Probability

The likelihood of a specific outcome measured by the ratio of a specific outcome to the total number of possible outcomes.

11.6 Environment

Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation (ISO 14004, 1996).

11.7 Methodology that will be used

The environmental significance assessment methodology is based on the following determination:

ENVIRONMENTAL SIGNIFICANCE = OVERALL CONSEQUENCE X OVERALL LIKELIHOOD

Determination of overall consequence

Consequence analysis is a mixture of quantitative and qualitative information; the outcome can be positive or negative. Several factors determine consequence. For the purpose of determine Plant the environmental significance in terms of consequence, the following factors were chosen **Severity/Intensity, Duration and Extent/Spatial Scale**. Each factor is assigned a rating of 1 to 5, as described in the following tables.

Determination of severity/intensity

Severity relates to the nature of the event, aspect or impact on the environment and describes how severe the aspects impact the biophysical and socio-economic environment. The following section indicates the overall rating for severity, taking into consideration the various criteria.

11.7.1 Severity rating

| Type of criteria | Rating | | | | |
|-----------------------------------|----------------------------|--|----------------------------------|-------------------------------------|---|
| | 1 | 2 | 3 | 4 | 5 |
| Quantitative | 0-20% | 21-40% | 41-60% | 61-80% | 81-100% |
| Qualitative | Insignificant/ No harmful | Small / Potentially harmful | Significant/ harmful | Great/very harmful | Disastrous, extremely harmful |
| Social/ community response | Acceptable/ I&AP satisfied | Slightly tolerable / Possible objections | Intolerable/ sporadic complaints | Unacceptable/ widespread complaints | Totally unacceptable/ possible legal action |

| | | | | | |
|---|---|--|--|--|--|
| Irreversibility | Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance/ easily reversible | Low cost to mitigate | Substantial cost to mitigate/ potential to mitigate impacts/ potential to reverse impact | High cost to mitigate | Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact Irreversible |
| Biophysical (air quality, water quantity and quality, waste production, fauna and flora) | Insignificant change/ deterioration or disturbance | Moderate change/ deterioration or disturbance | Significant change/ deterioration or disturbance | Very significant change/ deterioration or disturbance | Disastrous change/ deterioration or disturbance |

Determination of duration

Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g., remedial action takes place.

Rating of duration

| Rating | Description |
|--------|----------------------|
| 1 | Up to 1 month |
| 2 | 1-3 months (quarter) |
| 3 | 3-12 months |
| 4 | 1-10 years |
| 5 | Beyond 10 years |

Determination of extent/spatial scale

Extent or spatial scale is the area affected by the event, aspect or impact.

Rating of extent/spatial scale

| Rating | Description |
|--------|---|
| 1 | Immediate, fully contained area |
| 2 | Surrounding area |
| 3 | Within business unit area of responsibility |
| 4 | Within the farm/neighboring farm area |
| 5 | Regional, national, international |

Determination of overall consequence

Overall consequence is determined by adding the factors determined above and summarised below and dividing the sum by 3.

Example of calculating overall consequence

| Consequence | Rating |
|---|------------|
| Severity | Example 4 |
| Duration | Example 2 |
| Extent | Example 4 |
| Subtotal | 10 |
| Total consequence (subtotal divided by 3) | 3.3 |

DETERMINATION OF LIKELIHOOD

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described in the following.

Determination of frequency

Frequency refers to how often the specific activity, related to the event, aspect or impact, is undertaken.

Rating of frequency

| Rating | Description |
|--------|---|
| 1 | Once a year or once/more during operation |
| 2 | Once/more in 6 months |
| 3 | Once/more a month |
| 4 | Once/more a week |
| 5 | Daily |

Determination of probability

Probability refers to how often the activity or aspect has an impact on the environment.

Rating of probability

| Rating | Description |
|--------|---------------------------------|
| 1 | Almost never/almost impossible |
| 2 | Very seldom/highly unlikely |
| 3 | Infrequent/unlikely/seldom |
| 4 | Often/regularly/likely/possible |
| 5 | Daily/highly likely/definitely |

Overall likelihood

Overall likelihood is calculated by adding the factors determined above and summarised below and dividing the sum by 2.

Example of calculating overall Likelihood

| Consequence | Rating |
|---|-----------|
| Frequency | Example 4 |
| Probability | Example 2 |
| Subtotal | 6 |
| Total likelihood (subtotal divided by 2) | 3 |

11.7.2 Determination of overall environmental significance

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will fall into a range of low, low-medium, medium, medium-high or high, as shown in the table below.

11.7.3 Determination of overall environmental significance

| Significance or risk | Low | Low-medium | Medium | Medium-high | High |
|--|-------|------------|---------|-------------|-------|
| Overall consequence X overall likelihood | 1-4.9 | 5-9.9 | 10-14.9 | 15-19.9 | 20-25 |

11.7.3.1 Qualitative description or magnitude of environmental significance

| Significance or risk | Low | Low-medium | Medium | Medium-high | High |
|----------------------|---|--|---|--|--|
| Impact magnitude | Impact is of very low order and therefore likely to have very little real effect. Acceptable. | Impact is of low order and therefore likely to have little real effect. Acceptable. | Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company. | Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable. | Impact is of the highest order possible. Unacceptable. Fatal flaw. |
| Action required | Maintain current management measures. Where possible improve. | Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve. | Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible. | Improve management measures to reduce risk. | Implement significant mitigation measures or implement alternatives. |

This description is qualitative and an indication of the nature or magnitude environmental significance. It guides the prioritisations and decision-making process associated with this event, aspect or impact.

11.7.4 Description of environmental significance and related action required

Based on the above, the significance rating scale has been determined as follows:

| | |
|--------------------|---|
| High | Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit. |
| Medium-high | Impacts of a substantial order. In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of |

| | |
|---------------------------------------|---|
| | these. |
| Medium | Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and/or remedial activity would be both feasible and fairly easily possible. In case of positive impacts, other means of achieving these benefits would be about equal in time, cost and effort. |
| Low-medium | Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these. |
| Low impact would be negligible | In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of positive impacts, alternative means would almost all likely be better, in one or a number of ways, than this means of achieving the benefit. |
| Insignificant | There would be a no impact at all – not even a very low impact on the system or any of its parts. |

11.8 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

There are four possible impacts that are expected, and they are also raised by the I&As. Road degradation, Noise, Air, water pollution. These impacts are of concern and this section aims to address each matter.

■ Traffic Management plan

In terms of road, traffic and damage of road. Before the development of the site the traffic counts/ Traffic Management plan will be conducted to check the volume that is common and the impacts that can results when new transport system comes in. this will

help in better planning of the total volume that will have less impact to the traffic. It is proposed that the unpaved road leading to the site be used as this is the same road that is utilised by the adjacent to and from the Crushing & Screening plant.

■ **Noise Pollution**

Noise pollution is expected during the day as the operation are active. The impacts will be on the nearby school and residential areas observed within 500m away. The screening and crushing won't be conducted at night to avoid noise. Noise levels will be monitored to ensure that the levels comply with the national norms and not exceed the acceptable noise levels. All Processing Plant vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act.

■ **Storm management plan**

Storm management plan will be put in place to prevent water from the operation to leave the premise before treatment.

■ **Air pollution**

Air pollution is a major concern and more especially where the development will be established as this process generate huge amount of dust. Dust from the processing plant will be properly managed as a wet processing will be initiated and a roof will be installed to trap dust. Water bowsers will be used often to supress dust.

11.9 The possible mitigation measures that could be applied and the level of risk

Visual mitigation

The risk of the proposed Processing Plant activities having a negative impact on the aesthetic quality of the surrounding environment can be reduced to medium risk through the implementation of the following mitigation measures:

- The site must be kept neat and in good condition at all times.
- Upon closure, the site must be rehabilitated and sloped to ensure that the visual impact on the aesthetic value of the area is minimal.

Dust handling

The risk of dust generated from the proposed Processing Plant activities having a negative impact on the surrounding environment can be reduced to low-medium through the implementation of the following mitigation measures:

- Dust liberation into the surrounding environment must be effectively controlled using *inter alia*, water spraying and/or other dust-allaying agents.
- The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- Access road speeds must be limited to 40km/h to prevent excessive dust generation.
- Roads must be sprayed with water or an environmentally friendly dust allaying agent, that contains no Polychlorinated Biphenyl (PCBs) (e.g. DAS products), if dust is generated above acceptable limits.
- The plant must have operational water sprayers to alleviate dust generation from the conveyor belts.

Noise handling

The risk of noise, generated from the proposed Processing Plant activities, having a negative impact on the surrounding environment can be reduced to low-medium through the implementation of the following mitigation measures:

- The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.
- No loud music may be permitted at the Processing Plant area.
- All Processing Plant vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act.

Management of weed or invader plants.

The risk of weeds or invader plants invading the disturbed area can be reduced to low through the implementation of the following mitigation measures:

- A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).
- Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
 - The plants can be uprooted, felled or cut off and destroyed completely.
 - The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of

such an herbicide.

- The temporary topsoil stockpiles must be kept free of weeds.

Storm water handling

The risk of contamination through dirty storm water escaping from work areas, or erosion or loss of material caused by uncontrolled storm water flowing through the Processing Plant area, can be reduced to low by implementing the following mitigation measures:

- Storm water must be diverted around the topsoil heaps, stockpile areas and access roads to prevent erosion and loss of material.
- Runoff water must also be diverted around the stockpile areas with trenches and contour structures to prevent erosion of the work areas.
- Processing Plant must be conducted in accordance with the Best Practice Guideline for small scale Processing Plant that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions the DWS may impose:
 - Clean water (e.g. rainwater) must be kept clean and routed to a natural watercourse by a system separate from the dirty water system. Clean water must be prevented from running or spilling into dirty water systems.
 - Dirty water must be collected and contained in a system separate from the clean water system.
 - Dirty water must be prevented from spilling/seeping into clean water systems.
 - The storm water management plan must apply for the entire life cycle of the Plant and over different hydrological cycles (rainfall patterns).
 - The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into the storm water management plan.

Management of health and safety risks

The health and safety risk posed by the proposed Processing Plant activities can be reduced to low through the implementation of the following mitigation measures:

- Workers must have access to the correct PPE, as required by law.

- All operations must comply with the Occupational Health and Safety Act (OHSA).

Waste management

The risk of waste generation having a negative impact on the surrounding environment can be reduced to low through by implementing the following mitigation measures:

- No processing area or waste pile may be established within 100 m of the edge of any river channel or other water bodies.
- Regular vehicle maintenance may only take place within the service bay area of the off-site workshop. If emergency repairs are needed on equipment unable to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200 L closed container/bin to be removed from the emergency service area to the workshop to ensure proper disposal.
- Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility.
- Spills must be cleaned up immediately to satisfaction by removing the spillage and the polluted soil and disposing of it at a recognised facility. Proof hereof should be filed.
- Suitable covered receptacles should be available always and conveniently placed for waste disposal.
- Non-biodegradable refuse, such as glass bottles, plastic bags, metal scrap, etc., should be stored in a container with a closable lid at a collecting point, collected on a regular basis and disposed of at a recognised landfill site. Specific precautions should be taken to prevent refuse from being dumped on or near the plant. Biodegradable refuse generated should be handled as indicated above.

Management of access roads

The risk on the condition of the roads, as a result of the proposed Processing Plant activities, can be reduced to low-medium by implementing the following mitigation measures:

- Storm water must be diverted around the access roads to prevent erosion.
- Erosion of access road: Vehicular movement must be restricted to existing access

routes to prevent criss-crossing of tracks through undisturbed areas. Rutting and erosion of the access road as a result of the Processing Plant activities should be repaired by the applicant.

Protection of fauna and flora

The risk on the fauna and flora of the footprint area, as well as the surrounding environment, as a result of the proposed Processing Plant activities, can be reduced to low by implementing the following mitigation measures:

- The site manager must ensure that no fauna is caught, killed, harmed, sold or played with.
- Workers must be instructed to report any animals that may be trapped in the working area.
- No snares may be set or nests raided for eggs or young.
- No plants or trees may be removed without the approval of the Environmental Control Officer (ECO).

11.10 Motivation where no alternative sites were considered

This area of Nkomazi Local Municipality is still one of the developing municipalities in Mpumalanga. More houses and roads infrastructure(N4) are being built currently within the Municipality of Nkomazi. The proponent has seen the disparity between the need for Granite produce concrete stone for local market and external buyers, and Granite wash and/or processing required by mines. Additionally, this proposed project is aimed not only at meeting the targets but will assist in alleviating poverty and unemployment within the Municipality.

11.11 Process undertaken to identify, assess and rank impacts and risk of site activities

During the impact assessment process, several potential impacts were identified of each main activity in each phase (11.12). An initial significance rating was determined for each potential impact, should the mitigation measures proposed in this document not be implemented on-site. The impact assessment process continued to identify mitigation measures to address the impact that the proposed Processing Plant activity may have on the surrounding environment. A significance rating was again determined

for each impact using a relevant methodology. The impact ratings listed in the following section was determined for each impact after bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

11.12 Assessment of each identified potentially significant impact and risk

This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons and not only those that were raised by registered I&APs).

| NAME OF ACTIVITY | POTENTIAL IMPACT | ASPECTS AFFECTED | PHASE | SIGNIFICANCE | MITIGATION TYPE | SIGNIFICANCE |
|---|--|--|---|------------------|--|-------------------|
| E.g. for prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office and access route. E.g. for Processing Plant - excavations, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams, boreholes, accommodation, offices, ablution, stores workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc. | Including the potential impacts for cumulative impacts, e.g. dust, noise, drainage, surface disturbance and surface water contamination, groundwater contamination, and air pollution. | | In which impact is anticipated, e.g. construction, commissioning, operational decommissioning, closure, post-closure. | if not mitigated | Modify, remedy, control, or stop through, e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, controls, avoidance, relocation and alternative activity. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation. | if mitigated |
| Wash Area | -Loss of material due to ineffective storm water handling. | Contamination may cause surface or ground water contamination if not addressed | Operational phase | Medium | -Washery effluent must be re-circulated through thickener and PCD. -This water must be treated and used for dust suppression. -For reducing air pollution, water spraying and sprinkling must be done on the haul /transport roads to | Low-medium |

| NAME OF ACTIVITY | POTENTIAL IMPACT | ASPECTS AFFECTED | PHASE | SIGNIFICANCE | MITIGATION TYPE | SIGNIFICANCE |
|-------------------------------------|---|--|-------------------|-------------------|--|-------------------|
| | | | | | suppress the dust generation. | |
| Crushing | Dust nuisance due to the crushing activities | Dust will be contained in property boundaries and therefore the immediate occupants | Operational phase | Medium | Control: Dust suppression | Low-medium |
| | Noise nuisance generated by the crushing activities | The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the closest residents of the Nkomazi | | Medium | Control: Noise control measures | Low-medium |
| | Contamination of area with hydrocarbons or hazardous waste materials | Contamination may cause surface or ground water contamination if not addressed | | Medium | Control: Implementation of waste management | Low |
| Stockpiling and transporting | Visual intrusion associated with the stockpiled material and vehicles transporting the material | The visual impact may affect the residents of the immediate area. | Operational phase | Medium | Control: Implementation of proper housekeeping | Low-medium |
| | Loss of material due to ineffective storm water handling | Impact will affect income of applicant. | | Low-medium | Control: Storm water control measures | Low |

| NAME OF ACTIVITY | POTENTIAL IMPACT | ASPECTS AFFECTED | PHASE | SIGNIFICANCE | MITIGATION TYPE | SIGNIFICANCE |
|------------------|---|--|-------|--------------|---|--------------|
| | Weed and invader plant infestation of the area due to soil disturbance | Biodiversity | | Low-medium | Control and remedy: Implementation of weed control | Low |
| | Dust nuisance from stockpiled material and vehicles transporting the material | Dust will be contained within the property boundaries and will therefore affect immediate occupants | | Medium | Control: Dust suppression | Low |
| | Degradation of access roads | All road users will be affected. | | Medium | Control and remedy: Road management | Low-medium |
| | Noise nuisance caused by vehicles | The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the closest residents. | | Medium | Control: Noise management monitoring and management | Low |
| | Contamination of area with hydrocarbons or hazardous waste | Contamination may cause surface or ground water contamination if not addressed | | Medium | Control: Implementation of waste management | Low |

11.13 Summary of specialist reports

| List of studies undertaken | ➤ Recommendations of specialist reports | Specialist recommendations included in the EIA report Mark with an X where applicable | Reference to applicable report section Where specialist recommendations have been included |
|------------------------------------|--|--|---|
| BASELINE GEOHYDROLOGY STUDY | <ul style="list-style-type: none"> Based on the information made available for this assessment and the recognised study limitations, it is predicted that the proposed activities will pose a low risk to the groundwater environment. The authorisation of the proposed activities should be considered, based on the findings of this report and provided that the recommended mitigation measures outlined above, and the proposed monitoring network outlined above are implemented. However, it is recommended that the risk assessment is updated when a detailed site plan is available. The following should also be considered during the construction phase of the site: All waste generated at the site (this is temporary solid and domestic waste) must be stored in designated areas that are isolated from surface drains and drainage servitudes. Waste storage facilities should be covered to prevent dust and litter from leaving the containment area and rainwater accumulation. Ensure a stormwater management plan is implemented, and that all stormwater systems are kept clean of any debris to reduce flooding risks. | X | Section 7 |

| List of studies undertaken | ➤ Recommendations of specialist reports | Specialist recommendations included in the EIA report Mark with an X where applicable | Reference to applicable report section Where specialist recommendations have been included |
|----------------------------|--|--|---|
| | <ul style="list-style-type: none"> • Ensure that eroded areas are re-vegetated, to ensure reduced sedimentation risk and reduced runoff volumes to the streams. • To prevent erosion and deposition use: <ul style="list-style-type: none"> o Straw bales at kerb inlets. o Geotextiles, mulching etc. • Visual inspections of the stormwater systems should be adequate to determine if there are flow obstructions, which could lead to ponding and flooding. | | |
| BASELINE SOIL STUDY | <ul style="list-style-type: none"> • The proposed Processing plant area land should be returned to its original state prior to Granite Processing activities, and a soil specialist should assess the rehabilitation performance of the proposed land on an annual basis during the operational phase. • All affected areas during Granite Processing activity should be rehabilitated on the surface. Once the time is right, unneeded water management facilities will be rehabilitated. • During the entire Granite Processing, specialists should be engaged to assess erosion and other potential repercussions. • To keep physical consequences to a minimum, limit impacts to footprints. Road areas, site layout, and dust creation should all be limited. | X | Section 7 |

| List of studies undertaken | ➤ Recommendations of specialist reports | Specialist recommendations included in the EIA report Mark with an X where applicable | Reference to applicable report section Where specialist recommendations have been included |
|---------------------------------|---|--|---|
| BASELINE HYDROLOGY STUDY | <ul style="list-style-type: none"> • During the existence of the plant, regular monitoring of the infrastructures and machines to be used during treatment is recommended, to avoid leakage of chemicals which could potentially infiltrate the ground. • Waste management bins will be available; this is to ensure that waste around the plant is properly managed and none of it ends up in the surface water bodies or covered up with soil which could influence soil contamination. • Drainage channels will be made available around the plant. • Parking bays will have stormwater harvesting measures in place, this is to reduce the amount of stormwater in contact with any liquid matter from the plant which will enhance contamination. • Hydrocarbon spill absorbent kit will be made available, to quickly remove any spillage from vehicles which will be within the plant. • The waste generated will be dumped in a designated area, to prevent it from getting into contact with the natural environment. • Machinery no longer in good condition, metallic machinery will be taken to a scrapyard and not be disposed off in the natural environment. There will not be metallic scraps or machinery not in use within the plant. • No vehicle maintenance will be done around the development area. • No dirty water should be released into the ecosystem. Excess water in the plant water circuit must be dealt with properly in accordance with the DWS. | X | Section 7 |

| List of studies undertaken | ➤ Recommendations of specialist reports | Specialist recommendations included in the EIA report Mark with an X where applicable | Reference to applicable report section Where specialist recommendations have been included |
|----------------------------|---|--|---|
| | With all the mitigation and management measures in place, this project will not pose any threat into the natural surface water resources and should therefore go ahead. | | |

Copy of specialist reports/Baseline reports attached as *Appendix 5*.

11.14 Environmental impact statement

11.14.1 Summary of the key findings of the EIA

The key findings of the EIA are as follows:

- The area is zoned for agricultural activities and activities like deforestation by local community members take place adjacent to the Processing plant.
- The proposed development site is significantly altered by previous cultural activities (agricultural activity) and retains low heritage significance.
- Dust pollution are of high concern.
- The area does not serve any ecological role.
- There are no environmental sensitive features observed.

11.14.2 Final site map

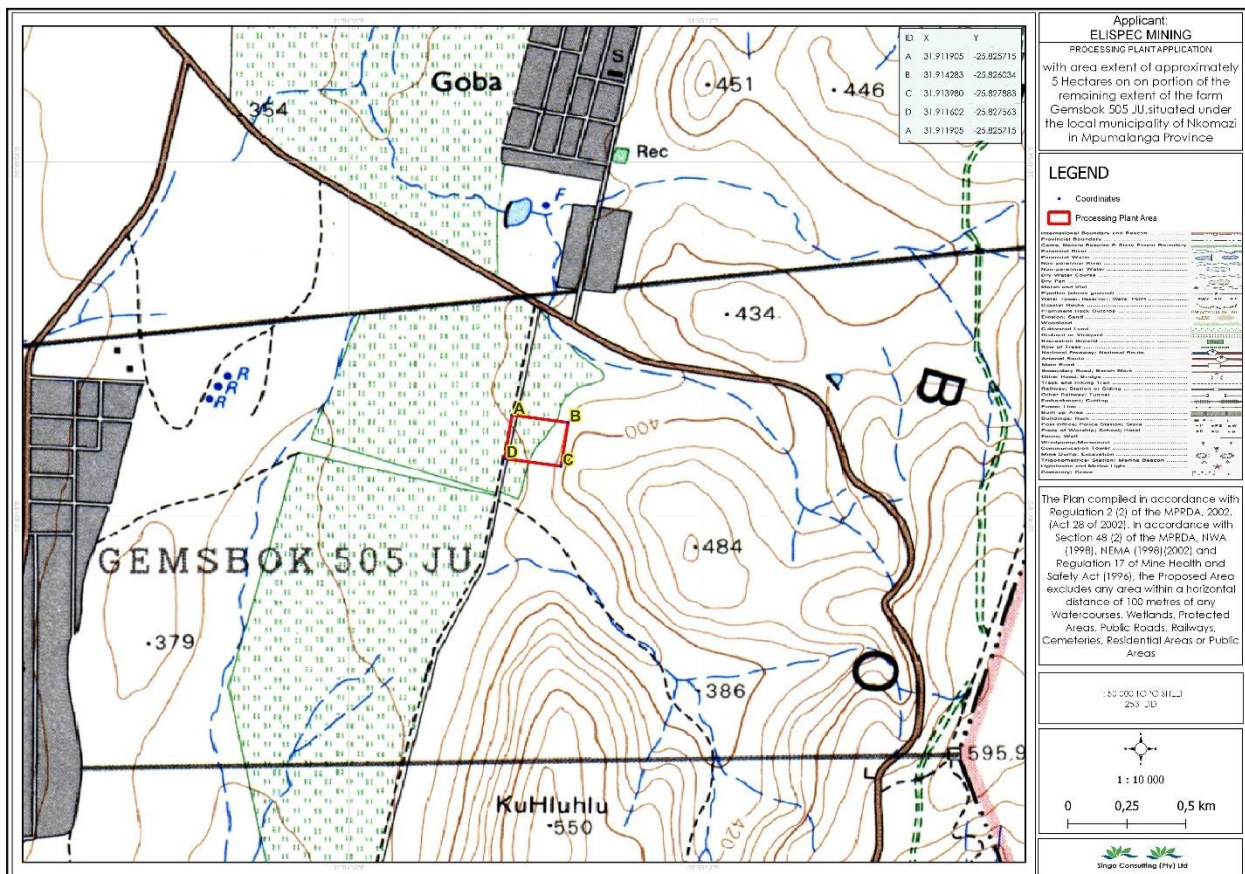


Figure 35: The map indicating proposed site activities.

11.14.3 Positive and negative impacts of the proposed activity and alternatives

The positive impacts associated with the project include:

- Job creation, although a fixed number of jobs to be created cannot be stated at this stage, will include multiple job opportunities for skilled, semi-skilled and unskilled personnel will be created by this project. This will contribute to the socio-economic status of the Nkomazi Local Municipality.
- The Granite to be processed will be supplied to the community of Mbuzini, Goba, Mbangwane and neighbouring communities and to potential clients across the country.

The negative impacts associated with the project and that was considered to be of Low-Medium or Medium significance includes:

| | |
|---|------------|
| Visual intrusion associated with the establishment of the Processing Plant area | Medium |
| Visual intrusion associated with the stockpiled material and vehicles transporting the material | Low-medium |
| Dust nuisance due to the crushing activities | Low-medium |
| Noise nuisance generated by excavation equipment | Low-medium |
| Noise nuisance generated by the crushing activities | Low-medium |
| Degradation of access road | Low-medium |

11.15 Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr

| Management objectives | Role | Management outcomes |
|-----------------------|---|---|
| Dust handling | Site Manager to ensure compliance with BAR & EMPr guidelines. Compliance to be monitored by the Environmental Control Officer. | Control dust liberation into the surrounding environment by using water spraying and/or other dust allaying agents. Limit speed on the access roads to 40km/h to prevent the generation of excess dust. Spray roads with water or an environmentally friendly dust-allaying agent that contains no PCB's (e.g. DAS products) if dust is generated above acceptable limits. Assess effectiveness of dust suppression equipment. Ensure the crusher plant has operational water sprayer to alleviate dust generation from the conveyor belts. |
| Noise handling | Site Manager to ensure | Ensure that employees and staff conduct themselves in |

| Management objectives | Role | Management outcomes |
|---|--|---|
| | <p>compliance with BAR & EMPr guidelines.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <p>an acceptable manner while on site.</p> <p>No loud music may be permitted at the Processing Plant area.</p> <p>Ensure that all Processing Plant vehicles are equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.</p> <p>Procedures with due cognizance of other land users and structures in the vicinity.</p> |
| <p>Management of weed/ invader plants</p> | <p>Site Manager to ensure compliance with BAR & EMPr guidelines.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <p>Implement a weed and invader plant control management plan.</p> <p>Control declared invader or exotic species on the rehabilitated areas.</p> <p>Keep the temporary topsoil stockpiles free of weeds.</p> |
| <p>Surface and storm water handling</p> | <p>Site Manager to ensure compliance with BAR & EMPr guidelines.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <p>Divert storm water around topsoil heaps, stockpile areas and access roads to prevent erosion and material loss.</p> <p>Divert runoff water around stockpile areas with trenches and contour structures to prevent erosion of work areas.</p> <p>Conduct Processing Plant in accordance with the Best Practice Guideline for small scale Processing Plant that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose.</p> |
| <p>Waste management</p> | <p>Site Manager to ensure compliance with BAR & EMPr guidelines.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p> | <p>Ensure no waste pile is established within 100 m of the edge of any river channel or other water bodies.</p> <p>Ensure regular vehicle maintenance take place within the service bay area of the off-site workshop. If emergency repairs are needed on site, ensure drip trays is present. Ensure all waste products are disposed of in a 200 l closed container/bin inside the emergency service area.</p> <p>Collect effluents containing oil, grease or other industrial substances in a suitable receptacle and remove from site, for resale or appropriate disposal at a recognised facility.</p> <p>Clean spills immediately to satisfaction by removing the spillage and polluted soil and disposing thereof at a recognised facility. File proof.</p> <p>Ensure availability of suitable covered, conveniently</p> |

| Management objectives | Role | Management outcomes |
|----------------------------|--|---|
| | | <p>placed receptacles at all times for waste disposal.</p> <p>Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Collection should take place on a regular basis and disposed of at the recognised landfill site at Middelburg. Prevent refuse from being dumped on or in the vicinity of the Plant area.</p> <p>Biodegradable refuse to be handled as indicated above.</p> |
| Management of access roads | Site Manager to ensure compliance with BAR & EMPr guidelines. Compliance to be monitored by the Environmental Control Officer. | <p>Divert storm water around access roads to prevent erosion.</p> <p>Erosion of access road: Restrict vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas.</p> |
| Fauna and flora | Site Manager to ensure compliance with BAR & EMPr guidelines. Compliance to be monitored by the Environmental Control Officer. | <p>Ensure no fauna is caught, killed, harmed, sold, or played with.</p> <p>Instruct workers to report any animals that may be trapped in the working area. Ensure no snares are set or nests raided for eggs or young.</p> <p>Do not remove plants/trees without ECO approval.</p> |

11.16 Aspects for inclusion as conditions of authorisation

The management objectives listed in this report should be considered for inclusion in the environmental authorisation.

11.17 Description of any assumptions, uncertainties and gaps in knowledge

The assumptions made in this document, which relate to the assessment and mitigation measures proposed, stem from site-specific information gathered from the property owner, as well as site inspections and background information gathering.

11.18 Reasoned opinion as to whether the proposed activity should be authorised

No fatal flaws could be identified that were deemed severe enough to prevent the

activity from continuing, should the mitigation measures and monitoring programmes proposed in this document be implemented on site. The management objectives listed in this report should be considered for inclusion in the Environmental Authorisation.

11.19 Undertaking

The undertaking required to meet the requirements of this section is provided at the end of the BAR & EMPr and is applicable to the Basic Assessment Report and the Environmental Management Programme report.

PART B: ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1 Environmental management programme

1.1 Details of the EAP

Details of the EAP are included in Part A, section 1 of this report.

1.2 Description of the aspects of the activity

The aspects of the activity that are covered by the environmental management programme has been described and included in Part A, 4.

1.3 Composite map

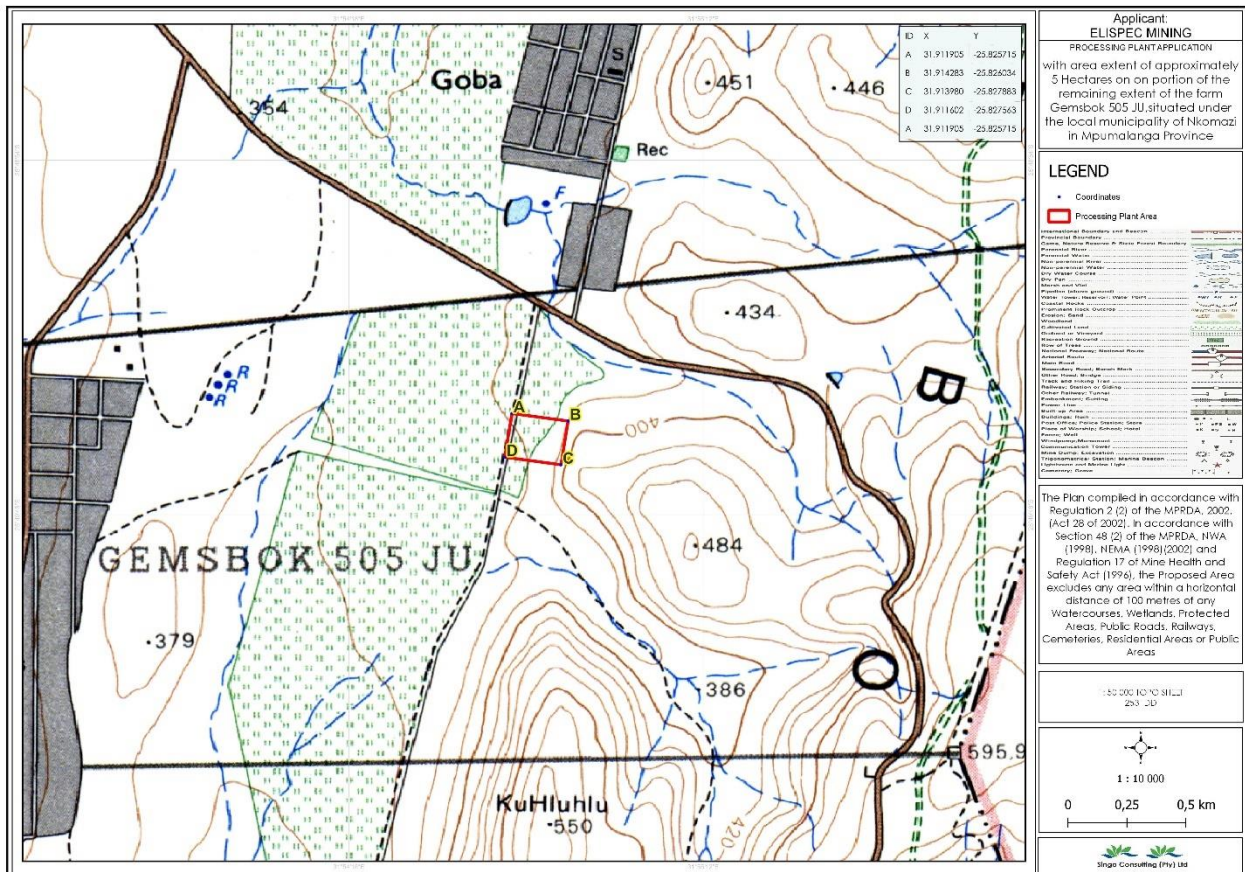


Figure 36: Development area (Singo Consulting GIS Team, 2023)

1.4 Has a water use licence has been applied for? How much water required for the operation?

A Water Use License Application has been lodged (WU23646)27/2/2/X913/15/1 for the proposed project. The project will trigger sections 21 (a) and Section 21 (g) of the National Water Act (NWA), Act 36 of 1998. The operation will use water for dust suppression and storm water will be stored in clean water trench. Any additional triggered sections that can be discussed during meetings and site visits will be added. Total Volume (Cubic Meters/Year) 20 000m³ /year will be utilised.

1.5 Impacts to be mitigated in their respective phases

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

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|--|--|--|--|--|---|
| E.g. for prospecting – drill site, site camp, ablution, facilities, accommodation, equipment storage, sample storage, site office, access route, etc. E.g. for Processing Plant – excavations stockpiles, discard dumps/dams, loading, hauling and transport. Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc. | Of operation in which activity will take place. State: Planning and design, pre-construction, construction operational, rehabilitation, closure, post-closure | Volumes, tonnages and hectares or m ² | Describe how recommendations herein will remedy the cause of pollution or degradation | Description of how each recommendation herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities | Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to rehabilitation specifically this must take place at the earliest opportunity. With regard to rehabilitation, therefore state either: Upon cessation of the individual activity or, upon cessation of Processing Plant, bulk sampling or alluvial diamond prospecting as the case may be. |
| Topsoil Grading | Site establishment/ construction phase | 5 ha | Visual mitigation -The site must be neat and kept in good condition at all times. -Upon closure, the site must be rehabilitated and sloped to ensure | Dust and Noise: NEMAQA, 2004 Regulation | Throughout the site establishment phase. |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|--|--------------------------------|
| | | | <p>that visual impact on the aesthetic value of the area is minimal.</p> <p>Dust handling</p> <ul style="list-style-type: none"> -Dust liberation into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. -The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness. -Speed on the access roads must be limited to 40km/h to prevent excess dust generation. -Roads must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCBs (e.g. DAS products) if dust is generated above acceptable limits. <p>Noise handling</p> <ul style="list-style-type: none"> -The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours. | <p>6(1)</p> <p>Weeds: CARA, 1983</p> <p>Storm Water: NWA, 1998</p> <p>Waste: NEM: WA, 2008</p> | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>-No loud music permitted at the Processing Plant area.</p> <p>-All Processing Plant vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act.</p> <p>Weed and invader plant management</p> <p>-A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of CORA (Act No 43 1983).</p> <p>-Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:</p> <ul style="list-style-type: none"> o The plants can be uprooted, felled or cut off and can be destroyed completely. o The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide. o The temporary topsoil stockpiles | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|--|---------------------------|--------------------------------|
| | | | <p>must be kept free of weeds.</p> <p>Storm water handling</p> <ul style="list-style-type: none"> -Storm water must be diverted around the topsoil heaps, stockpile areas and access roads to prevent erosion and material loss. -Runoff water must be diverted around the stockpile areas with trenches and contour structures to prevent erosion of the work areas. <p>Waste management</p> <ul style="list-style-type: none"> -No processing area or waste pile may be established within 100 m of the edge of any river channel or other water bodies. -Regular vehicle maintenance may only take place in the service bay area of the off-site workshop. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200 l closed container/bin to be removed from the emergency service area to the workshop to ensure proper disposal. -Any effluents containing oil, | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>grease or other industrial substances must be collected in a suitable receptacle and removed from the site, for resale or appropriate disposal at a recognised facility.</p> <p>-Spills must be cleaned immediately to satisfaction by removing the spillage and the polluted soil and disposing it at a recognised facility. Proof must be filed.</p> <p>-Suitable covered receptacles must be available at all times and conveniently placed for waste disposal.</p> <p>-Non-biodegradable refuse, such as glass bottles, plastic bags, metal scrap, etc., must be stored in a container with a closable lid at a collecting point and collected on a regular basis and disposed of at a recognised landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the Plant area.</p> <p>-Biodegradable refuse generated must be handled as indicated</p> | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------------------------|-------------------|-------------------------------|---|--|----------------------------------|
| | | | above. | | |
| Wash Plant Area | Operational phase | 0.483ha | <p>-Washery effluent must be re-circulated through thickener and PCD.</p> <p>-This water must be treated and used for dust suppression.</p> <p>-For reducing air pollution, water spraying and sprinkling must be done on the haul /transport roads to suppress the dust generation.</p> | <p>Dust NEMAQA 2004</p> <p>Waste NEMWA 2008</p> | Throughout the operational phase |
| Stockpiling and transporting | Operational phase | 2.923ha | <p>Visual mitigation</p> <p>-The site must be neat and be kept in good condition at all times.</p> <p>Upon decommissioning, the site must be rehabilitated and sloped to ensure that the visual impact on the aesthetic value of the area is minimal.</p> <p>Storm water handling</p> <p>-Storm water must be diverted around the stockpile areas and access roads to prevent erosion and material loss.</p> <p>Runoff water must be diverted around the stockpile areas with trenches and contour structures to prevent erosion of work areas.</p> | <p>Storm water NWA, 1998</p> <p>Weeds CARA, 1983</p> <p>Dust and noise NEMAQA, 2004 Regulation 6(1)</p> <p>Waste NEMWA, 2008</p> | Throughout operational phase |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>Processing Plant must be conducted in accordance with the Best Practice Guideline for small scale Processing Plant that relates to storm water management, erosion and sediment control and waste management, developed by the DWS, and any other conditions that the DWS may impose:</p> <ul style="list-style-type: none"> -Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. Prevent clean water from running or spilling into dirty water systems. -Dirty water must be collected and contained in a system (PCD) separate from the clean water system. -Dirty water must be prevented from spilling/seeping into clean water systems. -The storm water management plan must apply for the entire life cycle of the Plant and over different hydrological cycles (rainfall patterns). | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>-The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into the storm water management plan.</p> <p>Management of health and safety risks</p> <p>-Workers must have access to the correct PPE as required by law.</p> <p>-All operations must comply with the OHSA.</p> <p>Dust handling</p> <p>-Dust liberation into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents.</p> <p>-The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness.</p> <p>-Speed on the access roads must be limited to 40km/h to prevent excess dust generation.</p> <p>Management of access roads</p> <p>-Storm water should be diverted</p> | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>around the access roads to prevent erosion.</p> <p>-Vehicular movement must be restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.</p> <p>-Rutting and erosion of the access road caused as a result of the Processing Plant activities must be repaired by the applicant.</p> <p>Noise handling</p> <p>-The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.</p> <p>-No loud music permitted at the Processing Plant area.</p> <p>All Processing Plant vehicles must be equipped with silencers and kept roadworthy in terms of the Road Transport Act.</p> <p>-Plant activities must be limited to daytime working hours.</p> <p>Waste management</p> <p>-No processing area or waste pile may be established within 100 m of</p> | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>the edge of any river channel or other water bodies.</p> <p>-Regular vehicle maintenance may only take place in the service bay area of the off-site workshop. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200 l closed container/bin to be removed from the emergency service area to the workshop for proper disposal.</p> <p>-Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from site, for resale or appropriate disposal at a recognised facility.</p> <p>-Spills must be cleaned up immediately to satisfaction by removing the spillage and polluted soil and disposing of it at a recognised facility. Proof must be filed.</p> <p>-Suitable covered receptacles must be available at all times and conveniently placed for waste disposal.</p> | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|---|-----------------------|-------------------------------|---|---|------------------------------------|
| | | | <p>-Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., should be stored in a container with a closable lid at a collecting point and collected on a regular basis and disposed of at a recognised landfill site. Specific precautions should be taken to prevent refuse from being dumped on or in the vicinity of the Plant area.</p> <p>-Biodegradable refuse generated must be handled as indicated above.</p> | | |
| Sloping and landscaping during rehabilitation | Decommissioning phase | 5 ha | <p>Storm water handling</p> <p>-Storm water must be diverted around the rehabilitated area to prevent erosion and loss of reinstated material.</p> <p>Management of health and safety risks</p> <p>-Workers must have access to the correct PPE as required by law.</p> <p>-All operations must comply with the OHSA.</p> <p>Dust handling</p> <p>-Dust liberation into the surrounding environment must be effectively</p> | <p>Storm water NWA, 1998</p> <p>Health and safety MHSA, 1996 OHSA, 1993 OHSAS 18001</p> <p>Dust and noise NEMAQA 2004, Regulation 6(1) Waste NEMWA 2008</p> | Upon cessation of Processing Plant |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>controlled by the use of, inter alia, water spraying and/or other dust-allaying agents.</p> <p>-The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness.</p> <p>-Speed on the access roads must be limited to 40km/h to prevent excess dust generation.</p> <p>-Roads must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCBs (e.g. DAS products) if dust is generated above acceptable limits.</p> <p>Noise handling</p> <p>-The applicant must ensure that staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.</p> <p>-No loud music permitted at the Processing Plant area.</p> <p>-All Processing Plant vehicles must be equipped with silencers and kept roadworthy in terms of the</p> | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>Road Transport Act.</p> <p>Waste management</p> <ul style="list-style-type: none"> -Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the Processing Plant area and disposed of at a recognised landfill facility. It will not be permitted to be buried/burned on site -Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from site, for resale/ appropriate disposal at a recognised facility. -Spills must be cleaned up immediately to the satisfaction by removing the spillage together with the polluted soil and disposing of it at a recognised facility. Proof should be filed. -Suitable covered receptacles must be available at all times and conveniently placed for waste disposal. -Non-biodegradable refuse, like glass bottles, plastic bags, metal | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|---|-----------------------|-------------------------------|---|--|------------------------------------|
| | | | <p>scrap, etc., should be stored in a container with a closable lid at a collecting point and collected on a regular basis and disposed of at a recognised landfill site. Specific precautions should be taken to prevent refuse from being dumped on or in the vicinity of the Plant area.</p> <p>-Biodegradable refuse generated must be handled as indicated above.</p> | | |
| Replacing of topsoil and rehabilitation of disturbed area | Decommissioning phase | 5 ha | <p>Rehabilitation of cleared areas</p> <p>-The area will be fertilized if necessary to allow vegetation to establish rapidly. The site will be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within 6 months from site closure.</p> <p>-If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the competent authority may require that the soil be analysed and any deleterious effects on the soil arising from the Processing Plant</p> | <p>Rehabilitation MPRDA, 2008 Health and safety MHSA, 1996 OHSA, 1993 OHSAS 18001 Dust and noise NEMAQA, 2004 Regulation 6(1) Weeds CARA, 1983 Waste NEMWA, 2008</p> | Upon cessation of Processing Plant |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|--|---------------------------|--------------------------------|
| | | | <p>operation be corrected and the area seeded with a vegetation seed mix to his or her specification.</p> <p>Rehabilitation of plant area</p> <ul style="list-style-type: none"> -The compacted areas will be ripped and the topsoil returned over the area. -Stockpiles will be removed during the decommissioning phase, and topsoil returned to original depth to provide a growth medium. o Where sites have been rendered devoid of vegetation/grass or soils have been compacted by traffic, the surface will be scarified or ripped. o The site will be seeded with a vegetation seed mix adapted to reflect the local indigenous flora if natural vegetation does not re-establish within 6 months of site closure. o Photographs of the Processing Plant area and office sites, before and during the Processing Plant operation and after rehabilitation, | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|--|---------------------------|--------------------------------|
| | | | <p>will be taken at selected fixed points and kept on record for the information of the Regional Manager.</p> <ul style="list-style-type: none"> ○ On completion of Processing Plant operations, the surface of these areas, if compacted due to hauling and dumping operations, will be scarified to a depth of at least 300 mm and graded to an even surface condition. The previously stored topsoil will be returned to its original depth over the area. ○ The area will then be fertilized if necessary to allow vegetation to establish rapidly. The site will be seeded with a local, adapted indigenous seed mix if natural vegetation does not re-establish within 6 months after site closure. <p>Final rehabilitation</p> <p>-All infrastructure, equipment, plant, temporary housing and other items used during the Processing Plant period will be removed from</p> | | |

| Activities | Phase | Size and scale of disturbance | Mitigation measures | Compliance with standards | Time period for implementation |
|------------|-------|-------------------------------|---|---------------------------|--------------------------------|
| | | | <p>the site.</p> <p>-Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the Processing Plant area and disposed of at a recognized landfill facility. It will not be permitted to be buried/burned on site.</p> <p>-Weed/alien clearing will be done in a sporadic manner during the life of the Processing Plant activities. Species regarded as Category 1 weeds according to CORA, 1983 – Act 43; Regulations 15 & 16 (as amended in March 2001) must be eradicated from the site.</p> <p>-Final rehabilitation will be completed within a period specified by the Competent Authority.</p> | | |

1.6 Impact management outcomes

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

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|--|--|------------------|--|---|---|---|
| Whether listed or not. E.g. excavations, stockpiles, discard dumps/ dams, loading, hauling, transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc. | E.g. dust, noise, drainage, surface disturbance, surface water contamination, groundwater contamination, air pollution, etc. | | In which impact is anticipated. E.g. construction, commissioning, operational decommissioning, closure and post-closure. | Modify, remedy, control or stop through, e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, controls, avoidance, relocation, alternative activity, etc. | Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation therefore state either – Upon cessation of the individual activity or upon the cessation of Processing Plant, bulk sampling or alluvial diamond prospecting as the | Impact avoided, noise levels, dust levels, rehabilitation standards, end-use objectives, etc. |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|--|--|--|---|--|--------------------------------|--|
| | | | | | case may be. | |
| Topsoil stripping and stockpiling | Visual intrusion associated with the establishment of the Processing Plant area. | The visual impact may affect the residents of the immediate area. | Site establishment/ construction phase | Control: Implementation of proper housekeeping | | -Impact on the surrounding environment mitigated until rehabilitation standards can be implemented. |
| | Dust nuisance caused by soil disturbance. | Dust will be contained within property boundaries and therefore affect only the landowner. | | Control: Dust suppression | | -Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m ² /day. -Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – particulates >1/10th of the occupational exposure limit. NEMAQA 2004, Regulation 6(1) |
| | Noise nuisance caused by machinery stripping and stockpiling the | The noise impact should be contained within property boundaries, but | | Control: Noise control measures | | -Noise levels on the site must be managed and needs to comply with the standards stipulated in NEMAQA, 2004 |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|----------|--|--|-------|---|--------------------------------|---|
| | topsoil. | might have a periodic impact on the closest residents. | | | | Regulation 6(1) as well as the noise standards of SANS 10103:2008 -Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection. |
| | Infestation of the topsoil heaps by weeds and invader plants | Biodiversity | | Control and remedy: Implementation of weed control | | -The impact must be avoided through the eradication of Category 1 weeds/ invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document. |
| | Loss of topsoil due to incorrect storm water management. | Loss of topsoil will affect the rehabilitation of the Processing Plant area. | | Control: Storm water management | | -The impact must be avoided through the implementation of storm water management. |
| | Contamination of area with hydrocarbons or hazardous waste | Contamination may cause surface or ground water | | Control and remedy: Implementation of waste | | -The impact must be avoided through the implementation of the mitigation measures stipulated in this |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|--|--|--|--------------------------|---------------------------------|--------------------------------|---|
| | materials. | contamination if not addressed | | management | | document. -Should spillage occur, the area needs to be cleaned in accordance with the standards of the NEMWA, 2008. |
| Washing, Screening & Crushing | Dust nuisance due to the wash plant activities | Dust will be contained within the property boundaries and will therefore affect only the immediate landowner | Operational phase | Control: Dust suppression | | -Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m ² /day. -Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit. -NEMAQA, 2004 Regulation 6(1). |
| | Noise nuisance generated by the plant activities | The noise impact should be contained within the boundaries of | | Control: Noise control measures | | -Noise levels on the site has to be managed and need to comply with the standards stipulated in |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|----------|---|--|-------|--|--------------------------------|---|
| | | the property but might have a periodic impact on the dotted settlements around the project area. | | | | NEMAQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. -Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection. |
| | Contamination of area with hydrocarbons or hazardous waste materials. | Contamination may cause surface or ground water contamination if not addressed. | | Control: Implementation of waste management | | -The impact should be avoided through the implementation the mitigation measures stipulated in this document. -Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEMWA, 2008. |
| | Loss of material due to ineffective storm water handling. | Impact will affect income of applicant. | | Control: Storm water control measures | | -The impact should be avoided through the implementation of storm water management. |
| | Weed and invader plant infestation of | Biodiversity | | Control and remedy: | | -The impact should be avoided through the eradication of Category |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|-------------------------------------|--|---|--------------------------|-------------------------------------|--------------------------------|---|
| | the area due to the disturbance of the soil | | | Implementation of weed control | | 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document. |
| Stockpiling and transporting | Dust nuisance from stockpiled material and vehicles transporting the material. | Dust will be contained within the property boundaries and will therefore affect only the landowner. | Operational phase | Control: Dust suppression | | <p>-Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m²/day.</p> <p>-Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit.</p> <p>-NEMAQA, 2004 Regulation 6(1).</p> |
| | Degradation of access roads. | All road users will be affected. | | Control and remedy: Road management | | -The impact should be avoided through the implementation of the mitigation measures |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|--|--|--|------------------------------|---|--------------------------------|--|
| | Noise nuisance caused by vehicles. | The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the closest residents. | | Control: Noise management monitoring and management | | <p>proposed in this document.</p> <p>-Noise levels on the site has to be managed and need to comply with the standards stipulated in NEMAQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008.</p> <p>-Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.</p> |
| Sloping and landscaping during rehabilitation | Contamination of area with hydrocarbons or hazardous waste materials | Contamination may cause surface or ground water contamination if not addressed. | Decommissioning phase | Control: Implementation of waste management | | <p>-The impact should be avoided through the implementation the mitigation measures stipulated in this document.</p> <p>-Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.</p> |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|----------|---|---|-------|---|--------------------------------|---|
| | Soil erosion | Biodiversity | | Control: Soil management | | -The impact should be avoided through the implementation the mitigation measures stipulated in this document. |
| | Health and safety risk posed by un-sloped areas | Impact will affect employees and residents of the property | | Control: Health and safety monitoring and management. | | -The impact should be avoided through compliance with the standards of the MHSa, 1996, OHSa, 1993 and OHSAs 18001 |
| | Dust nuisance caused during sloping and landscaping activities. | Dust will be contained within the property boundaries and will therefore affect only the landowner. | | Control: Dust suppression | | -Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m ² /day. -Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10 of the occupational exposure limit. NEM:AQA, 2004 |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|---------------------------------|---|--|------------------------------|---------------------------|--------------------------------|---|
| | | | | | | Regulation 6(1). |
| | Noise nuisance caused by machinery. | The noise impact should be contained within the boundaries of the property, but might have a periodic impact on the closest residents of the Middelburg community. | | Control: Noise monitoring | | <p>-Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM:AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008.</p> <p>-Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.</p> |
| | Contamination of area with hydrocarbons or hazardous waste materials. | Contamination may cause surface or ground water contamination if not addressed. | | Control: Waste management | | <p>-The impact should be avoided through the implementation the mitigation measures stipulated in this document.</p> <p>-Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.</p> |
| Replacing of topsoil and | Loss of reinstated topsoil due to the | Biodiversity and soil management | Decommissioning phase | Control: Soil management | | -The impact should be avoided through the |

| Activity | Potential impact | Aspects affected | Phase | Mitigation type | Time period for implementation | Standard to be achieved |
|----------------------------------|---|----------------------------------|-------|---|--------------------------------|--|
| rehabilitation of disturbed area | absence of vegetation | | | | | implementation the mitigation measures stipulated in this document. -CARA, 1993 |
| | Infestation of the area by weed and invader plants. | Biodiversity and soil management | | Control and remedy: Implementation of weed control | | -The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document. |

1.7 Impact management actions

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

| Activity | Potential impact | Mitigation type | Time period for implementation | Compliance with standards |
|---|--|--|--|--|
| Whether listed or not, e.g. excavations, , stockpiles, discard dumps/dams, loading, hauling, transport, water supply dams, boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc. | E.g. dust, noise, drainage, surface disturbance, surface water contamination, groundwater contamination, air pollution, etc. | Modify, remedy, control or stop through, e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, controls, avoidance, relocation, alternative activity, etc. E.g. Modify through alternative method, control through noise control, control through management and monitoring, and remedy through rehabilitation. | Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation therefore state either – Upon cessation of the individual activity or upon the cessation of Processing Plant, bulk sampling or alluvial diamond prospecting as the case may be. | A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities |
| Topsoil stripping and stockpiling | Visual intrusion associated with the establishment of the Processing Plant area. | Control: Implementation of proper housekeeping | To be implemented daily throughout the site establishment / construction phase: -Daily compliance monitoring by site management. -Quarterly compliance | Impact on the surrounding environment must be mitigated until rehabilitation standards can be implemented. |

| Activity | Potential impact | Mitigation type | Time period for implementation | Compliance with standards |
|----------|---|---|--|---|
| | | | monitoring of site by an Environmental Control Officer. | |
| | Dust nuisance caused by the disturbance of soil. | Control: Dust suppression | To be implemented daily throughout the site establishment / construction phase: -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an -Environmental Control Officer. | -Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m ² /day. -Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10 th of the occupational exposure limit NEMAQA, 2004 Regulation 6(1) |
| | Noise nuisance caused by machinery stripping and stockpiling the topsoil. | Control: Noise control measures | To be implemented daily throughout the site establishment / construction phase: -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO | -Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. -Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection. |
| | Infestation of the topsoil heaps by weeds and | Control and remedy: Implementation of weed | To be implemented when necessary throughout the site | -The impact should be avoided through the eradication of |

| Activity | Potential impact | Mitigation type | Time period for implementation | Compliance with standards |
|----------|--|--|---|---|
| | invader plants | control | <p>establishment / construction phase:</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an -Environmental Control Officer. | Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document. |
| | Loss of topsoil due to incorrect storm water management. | Control: Storm water management | <p>To be implemented daily throughout the site establishment / construction phase:</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an Environmental Control officer | -The impact should be avoided through the implementation of storm water management. |
| | Contamination of area with hydrocarbons or hazardous waste materials | Control and remedy: Implementation of waste management | <p>To be implemented daily throughout the site establishment / construction phase:</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance | <p>-The impact should be avoided through the implementation of the mitigation measures stipulated in this document.</p> <p>-Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008.</p> |

| Activity | Potential impact | Mitigation type | Time period for implementation | Compliance with standards |
|-------------------------------------|--|--|---|---|
| | | | monitoring of site by an ECO. | |
| Wash Plant Activities | Noise nuisance generated by the crushing activities. | Control: Noise control measures | To be implemented daily throughout the operational phase: -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO | -Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008. -Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection. |
| | Contamination of area with hydrocarbons or hazardous waste materials. | Control: Implementation of waste management | To be implemented daily throughout the operational phase: -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO | -The impact should be avoided through the implementation the mitigation measures stipulated in this document. -Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEM: WA, 2008. |
| Stockpiling and transporting | Visual intrusion associated with the stockpiled material and vehicles transporting the material. | Control: Implementation of proper housekeeping | To be implemented daily throughout the operational phase: -Daily compliance monitoring by site management. -Quarterly compliance | -Impact on the surrounding environment mitigated until rehabilitation standards can be implemented. |

| Activity | Potential impact | Mitigation type | Time period for implementation | Compliance with standards |
|----------|---|--|---|--|
| | Loss of material due to ineffective storm water handling. | Control: Storm water control measures | <p>monitoring of site by an ECO.</p> <p>-To be implemented daily throughout the operational phase:</p> <p>-Daily compliance monitoring by site management.</p> <p>-Quarterly compliance monitoring of site by an Environmental Control Officer.</p> | -The impact should be avoided through the implementation of storm water management |
| | Weed and invader plant infestation of the area due to the disturbance of the soil | Control and remedy: Implementation of weed control | <p>To be implemented when necessary throughout the operational phase:</p> <p>-Daily compliance monitoring by site management.</p> <p>-Quarterly compliance monitoring of site by an ECO.</p> | The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document. |
| | Dust nuisance from stockpiled material and vehicles transporting the material. | Control: Dust suppression | <p>To be implemented daily throughout the operational phase:</p> <p>-Daily compliance monitoring by site management.</p> <p>-Quarterly compliance</p> | Fallout dust levels has to comply with the acceptable dust fall rate published for non-residential areas in the National Dust Control Regulations 2013 – 600 < Dust Fall < 1 200 mg/m ² /day. |

| Activity | Potential impact | Mitigation type | Time period for implementation | Compliance with standards |
|----------|---|--|---|--|
| | | | <p>monitoring of site by an ECO.</p> | <p>-Gravimetric dust levels have to comply with the standard published in the NIOSH guidelines – Particulates >1/10th of the occupational exposure limit.</p> <p>-NEM: AQA, 2004 Regulation 6(1).</p> |
| | <p>Degradation of access roads</p> | <p>Control and remedy: Road management</p> | <p>To be implemented, when necessary, throughout the operational phase:</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an Environmental Control Officer. | <p>-The impact should be avoided through the implementation of the mitigation measures proposed in this document.</p> |
| | <p>Noise nuisance caused by vehicles.</p> | <p>Control: Noise management monitoring and management</p> | <p>To be implemented daily throughout the operational phase:</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO. | <p>-Noise levels on the site has to be managed and need to comply with the standards stipulated in NEM: AQA, 2004 Regulation 6(1) as well as the noise standards of SANS 10103:2008.</p> <p>-Employees working in areas with noise levels of more than 82dBA need to be issue with hearing protection.</p> |

| Activity | Potential impact | Mitigation type | Time period for implementation | Compliance with standards |
|--|---|--|---|---|
| | Contamination of area with hydrocarbons or hazardous waste materials. | Control: Implementation of waste management | To be implemented daily throughout the operational phase: -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO. | -The impact should be avoided through the implementation the mitigation measures stipulated in this document. -Should spillage however occur the area needs to be cleaned in accordance with the standards of the NEMWA, 2008. |
| Replacing of topsoil and rehabilitation of disturbed area | Loss of reinstated topsoil due to the absence of vegetation | Control: Soil management | To be implemented throughout the rehabilitation / closure phase: -Daily compliance monitoring by site management. -Compliance monitoring of site by an Environmental Control Officer. | -The impact should be avoided through the implementation the mitigation measures stipulated in this document. -CARA, 1993 |
| | Infestation of the area by weed and invader plants. | Control and remedy: Implementation of weed control | To be implemented throughout the rehabilitation / closure phase: -Daily compliance monitoring by site management. -Compliance monitoring of site by an Environmental Control Officer. | The impact should be avoided through the eradication of Category 1 weeds/invader plants in terms of CARA, 1993 as well as the implementation of the mitigation measures in this document. |

1.7.1 Environmental sensitivity of the Plant area

| | |
|---|-----|
| Environmental sensitivity of the Plant area | Low |
|---|-----|

1.7.2 Level of information

| | |
|--------------------------------|---------|
| Level of information available | Limited |
|--------------------------------|---------|

1.8 Mechanisms for compliance monitoring against EMP

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

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

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|--|--|---|--|---|
| <ul style="list-style-type: none"> ▪ Washing, Crushing Screening ▪ Stockpiling and transporting ▪ Decommissioning | <p>Dust monitoring</p> <p>The dust generated by the Processing Plant activities should be continuously monitored and addressed by the implementation of dust suppression methods.</p> | <p>Dust handling and monitoring</p> <p>Dust suppression equipment, like a water car and water dispenser. The applicant already has this equipment available.</p> | <p>Role</p> <ul style="list-style-type: none"> -Site Manager to ensure compliance with BAR & EMPr guidelines. -Compliance to be monitored by the Environmental Control Officer. <p>Responsibility</p> <ul style="list-style-type: none"> -Control dust liberation into surrounding environment by using, e.g., water spraying and/or other dust-allaying agents. -Limit speed on access roads to | <p>Throughout construction, operational and decommissioning phase</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO. |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|---|---|--|---|--|
| | | | <p>40km/h to prevent excess dust generation.</p> <p>-Spray roads with water/environmentally friendly dust allaying agent that contains no PCBs (e.g. DAS products) if dust is generated above acceptable limits.</p> <p>-Assess effectiveness of dust suppression equipment.</p> <p>-Re-vegetate all disturbed/exposed areas as soon as possible to prevent any dust source from being created.</p> | |
| <ul style="list-style-type: none"> ▪ Washing, Crushing Screening ▪ Stockpiling and transporting ▪ Decommissioning & Rehabilitation | <p>Noise monitoring</p> <p>The noise generated by the Processing Plant activities should be continuously monitored, and any excessive noise should be addressed.</p> | <p>Noise handling and monitoring</p> <p>-Site manager to ensure that the vehicles are equipped with silencers and kept roadworthy.</p> <p>-Compliance with the appropriate legislation with respect to noise will be mandatory.</p> | <p>Role</p> <p>-Site Manager to ensure compliance with BAR & EMPr guidelines.</p> <p>-Compliance to be monitored by the Environmental Control Officer.</p> <p>Responsibility</p> <p>-Ensure that staff conduct themselves in an acceptable manner while on site.</p> <p>-No loud music permitted at Processing Plant area.</p> | <p>Throughout construction, operational and decommissioning phase</p> <p>-Daily compliance monitoring by site management.</p> <p>-Quarterly compliance monitoring of site by an ECO.</p> |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|--|--|--|--|--|
| | | | <p>-Ensure that all Processing Plant vehicles are equipped with silencers and kept roadworthy in terms of the Road Transport Act.</p> | |
| <ul style="list-style-type: none"> ▪ Stockpiling and transporting | <p>Management of weed or invader plants</p> <p>-The presence of weed and/or invader plants should be continuously monitored, and any unwanted plants should be removed.</p> | <p>Management of weed or invader plants</p> <p>-Removal of weeds should be manually or by the use of an approved herbicide</p> | <p>Role</p> <p>-Site Manager to ensure compliance with BAR & EMPr guidelines.</p> <p>-Compliance to be monitored by the Environmental Control Officer.</p> <p>Responsibility</p> <p>-Implement a weed and invader plant control management plan.</p> <p>-Control declared invader or exotic species on the rehabilitated areas.</p> <p>-Keep the temporary topsoil stockpiles free of weeds.</p> | <p>Throughout operational and decommissioning phase</p> <p>-Daily compliance monitoring by site management.</p> <p>-Quarterly compliance monitoring of site by an ECO.</p> |
| <ul style="list-style-type: none"> ▪ Stockpiling and transporting ▪ Decommissioning and rehabilitation | <p>Surface and storm water monitoring</p> <p>-The effectiveness of the storm water infrastructure needs to be</p> | <p>Surface and storm water handling</p> <p>-Trenches and contours to be made to direct storm- and runoff water around the stockpile</p> | <p>Role</p> <p>-Site Manager to ensure compliance with BAR & EMPr guidelines.</p> <p>-Compliance to be monitored by the Environmental Control Officer.</p> | |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|-----------------|---------------------------------------|--|--|--|
| | continuously monitored. | areas. | <p>Responsibility</p> <ul style="list-style-type: none"> -Divert storm water around topsoil heaps, stockpile areas and access roads to prevent erosion and material loss. -Divert runoff water around the stockpile areas with trenches and contour structures to prevent erosion of the work areas. -Conduct Processing Plant in accordance with the Best Practice Guideline for small scale Processing Plant that relates to storm water management, erosion and sediment control and waste management, developed by the DWS, and any other conditions the DWS may impose. | |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|---|--|--|--|--|
| <ul style="list-style-type: none"> ▪ Wash plant stockpiling and transporting ▪ Decommissioning and rehabilitation | <p>Waste management</p> <ul style="list-style-type: none"> -Management of waste should be a daily monitoring activity. -Hydrocarbon spills need to be cleaned immediately and the site manager should check compliance daily. | <p>Waste management</p> <ul style="list-style-type: none"> -Closed containers for the storage of general/hazardous waste until waste is removed to the appropriate landfill site. -Hydrocarbon spill kits to enable sufficient clean-up of contaminated areas. -Drip trays should be available to place underneath machinery overnight. -Should a vehicle have a break down, it should be serviced immediately. | <p>Role</p> <ul style="list-style-type: none"> -Site Manager to ensure compliance with BAR & EMPr guidelines. -Compliance to be monitored by the Environmental Control Officer <p>Responsibility</p> <ul style="list-style-type: none"> -Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and remove from site, for resale or appropriate disposal at a recognised facility. -Clean spills immediately to the satisfaction by removing the spillage and polluted soil and by disposing of them at a recognised facility. -Ensure availability of suitable covered, conveniently placed receptacles at all times for waste disposal. -Place all used oils, grease or hydraulic fluids therein and remove receptacles from site regularly for disposal at a registered/licensed hazardous disposal facility. | <p>Throughout construction, operational and decommissioning phase</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|-----------------|---------------------------------------|--|---|--|
| | | | <p>-Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point. Collection should take place regularly and disposed of at the recognised landfill site at Middelburg. Prevent refuse from being dumped on or in the vicinity of the Plant area.</p> <p>-Biodegradable refuse to be handled as indicated above.</p> | |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|------------------------------|---|---|---|--|
| Stockpiling and transporting | <p>Management of access roads</p> <ul style="list-style-type: none"> -Access road conditions must be continuously monitored. -Vehicles carrying materials has to be equipped with adequate tarpaulin type covers to ensure that material being transported will not leave the vehicle during transportation. | <p>Management of access roads</p> <ul style="list-style-type: none"> -Dust suppression equipment such as a water car and dispenser. -Trenches and contours to be made to direct storm- and runoff water around the access roads. | <p>Role</p> <ul style="list-style-type: none"> -Site Manager to ensure compliance with BAR & EMPr guidelines. -Compliance to be monitored by the Environmental Control Officer. <p>Responsibility</p> <ul style="list-style-type: none"> -Maintain newly constructed access roads (if applicable) to minimise dust, erosion or undue surface damage. -Divert storm water around access roads to prevent erosion. -Erosion of access road: Restrict vehicular movement to existing access routes to prevent crisscrossing of tracks through undisturbed areas. -Cover vehicles carrying materials with adequate tarpaulin type covers to ensure that material being transported does leave the vehicle during transportation. -Ensure vehicles entering and using the public road system from the site does not exceed the permissible legal limits on gross vehicle mass and | <p>Throughout construction, operational and decommissioning phase</p> <ul style="list-style-type: none"> -Daily compliance monitoring by site management. -Quarterly compliance monitoring of site by an ECO |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|-----------------------------------|--|--|---|--|
| | | | individual axle loads as prescribed in terms of the National Road Traffic Act (Act No 93 of 1996). | |
| Topsoil stripping and stockpiling | <p>Topsoil handling</p> <p>-When topsoil has been removed from any area the topsoil heaps need to be continuously protected against loss of soil due to</p> | <p>Topsoil handling</p> <p>-Excavating equipment to remove the first 300mm of topsoil from the proposed work areas. The applicant already has this equipment available.</p> | <p>Role</p> <p>-Site Manager to ensure compliance with BAR & EMPr guidelines.</p> <p>-Compliance to be monitored by the Environmental Control Officer.</p> <p>Responsibility</p> <p>-Remove the first 300mm of topsoil in</p> | <p>Throughout construction, operational and decommissioning phase</p> <p>-Daily compliance monitoring by site management.</p> <p>-Quarterly compliance monitoring of site by</p> |

| Source activity | Impacts required monitoring programme | Functional requirements for monitoring | Roles and responsibilities for the execution of monitoring programmes | Monitoring and reporting frequency and time periods for implementing impact management actions |
|-----------------|---------------------------------------|--|--|--|
| | wind and water erosion. | -Trenches and contours to be made to direct storm and runoff water around stockpiled topsoil area. | <p>strips and store at the stockpile area.</p> <p>-Keep the temporary topsoil stockpiles free of weeds.</p> <p>-Place topsoil stockpiles on a levelled area and implement measures to safeguard the piles from being washed away in the event of heavy rains/storm water.</p> <p>-Topsoil heaps should not exceed 2 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.</p> <p>-Divert storm- and runoff water around the stockpile area and access roads to prevent erosion.</p> | an ECO. |

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

The committed time frames for monitoring and reporting are stipulated in the following:

| Monitoring aspect | Time frames | Reporting |
|---------------------------------------|--|---|
| Dust handling | Throughout construction, operational and decommissioning phase | -Daily compliance monitoring by site management -Quarterly compliance monitoring of site by an Environmental Control Officer |
| Noise handling | | |
| Management of weed/invader plants | Throughout operational and decommissioning phase | |
| Surface and storm water handling | | |
| Management of health and safety risks | Throughout construction, operational and decommissioning phase | |
| Waste management | | |
| Management of access roads | | |
| Topsoil handling | | |

3 Environmental Awareness Plan

3.1 Manner in which the applicant intends to inform employees of any environmental risk which may result from their work

Training, as detailed below, will address the specific measures and actions required for specific emergency events. In this way, each employee will be provided the knowledge required for their job to, firstly, prevent impact and secondly identify if an impact is likely to occur and then to report the possibility of risk or impact immediately so as to ensure immediate response. The most likely potential environmental emergencies in this proposed Processing Plant operation are fires and explosion, chemical spills/leaks, and flooding. In the case of environmental emergencies, the remedial measures and actions as listed in the Emergency Response Plan should be followed.

3.1.1 Fire and explosion control measures

Hazardous waste and dangerous substances can, by the verify definition, be flammable and reactive. As such, special precautionary measures must be taken when handling these substances. On the other hand, veld fires and fires resulting from other sources must be handled with extreme caution. In the event of a fire:

- Fire extinguishers must be placed around the Plant at accessible locations

and needs to be frequently inspected and maintained in working condition.

- An alarm must be activated to alert all employees and contractors.
- Identify the type of fire and the appropriate extinguishing material. E.g., water for a grass fire and mono ammonium phosphate-based fire extinguisher for chemical and electrical fires
- In the event of a small fire, the fire extinguishers placed around the Plant should be used to contain and extinguish the fire.
- In the event of a large fire, the fire department will be notified.
- All staff will receive training in response to a fire emergency on site, including evacuation procedures.
- If possible, surrounding drains, such as storm water drains must be covered and/or protected to prevent any contaminated water from entering the drains.
- In case of a chemical or petroleum fire, run-off from the area must be contained as far as possible using the most appropriate measures, e.g., spill absorbent cushions, sand, or a physical barrier.
- Contaminated run-off must be diverted into an oil sump or cleaned up.

Control measures include:

- Minimizing the storage of flammable liquids on site (e.g. fuel, flammable wastes).
- Using a nitrogen atmosphere for organic waste liquid with a low flashpoint stored in tanks.
- Not allowing smoking anywhere on site
- Providing an emergency tipping area for waste loads identified to be on fire or otherwise deemed an immediate risk
- Preparing and annually reviewing a fire risk assessment
- Ensuring all staff are appropriately trained for fire and explosion hazards

Other than explosion incidents related to Processing Plant, explosions can occur in the workshop areas when working with gas cylinders and chemicals. These could result in large numbers of employees being injured and requiring medical assistance.

The procedure to be followed includes:

- Devising safe evacuation routes in the event of an uncontrolled explosion and all staff trained on relevant evacuation routes and assembly points.
- Providing first aid to injured parties, once safe to do so for first responders.

3.1.2 Chemical spills

Hydrocarbons such as diesel, petrol, and oil used as fuel for machinery will be kept on site, meaning that spillage may occur. As this is a Granite Plant, there is also the possibility of a Granite spillage occurring. Any chemicals contained on site, such as those associated with explosives may also be detrimental to the environment if spills occur. In the event of a spillage, procedures must be put into place to ensure that there are minimal impacts to the surrounding environment.

The following procedure applies to a chemical spill:

- The incident must be reported to the SHE officer immediately.
- The SHE officer will assess the situation from the information provided, and set up an investigation team. Included in this team could be the General Plant Manager, SHE Officer, the employee who reported the incident and an individual responsible for the incident.
- When investigating the incident, priority must be given to safety.
- Once the situation has been assessed, the Environmental Coordinator must report back to the Site Manager.
- The General Site Manager and the investigation team must make a decision on what measures can be taken to limit the damage caused by the incident, and if possible, any remediation measures that can be taken.
- In the event of a small spillage, the soil must be treated in situ, using Hazmat clean up kits and bioremediation.
- Every precaution must be taken to prevent the spill from entering the surface water environment.
- In the event of a large spillage, adequate emergency equipment for spill containment or collection, such as additional supplies of booms and absorbent materials, will be made available and if required, a specialised

clean-up crew will be called in to decontaminate the area. The soil must be removed and treated at a special soil rehabilitation facility.

- Reasonable measures must be taken to stop the spread of spills and secure the area to limit access.

3.1.3 Flooding

There is always potential for flooding during the rainy season. This could result in a large volume of water accumulating in a water containment facility, which could cause major damage to equipment and endanger the lives of employees on site. Procedures must be put in place to ensure a quick response to flood events and minimal damage.

The procedure for flooding is as follows:

- During operations, DWS's flood warning system must be reviewed annually.
- The use of emergency pumps must occur if the water floods the Processing Plant .
- Site management must be made aware of any such event so they can take appropriate action to ensure minimal production losses.
- The Pollution Control Dam should have a 0.8m freeboard and an overflow or outlet to ensure that no damage occurs to the facilities.
- All contaminated water must be contained on site, as far as possible and discharges to the environment must only occur if absolutely necessary in an extreme flood event.

4 Manner in which risk will be dealt with to avoid pollution or environmental degradation

4.1 Training (educational needs)

The Safety, Health and Environment (SHE) Officer must ensure that:

- New employees attend environmental awareness programmes through inductions
- Plant management conducts bi-annual workshops
- Documented training and competency
- Training records be maintained
- Training includes proper management of waste streams, labelling, containers and emergency procedures outlined
- Hazardous waste handlers and their supervisors/managers must complete training or on-the-job instruction relevant to their duties to include hazardous waste management procedures and contingency plan implementation
- Training of all personnel must be completed before duties are assigned and training in terms of handling of hazardous waste must be repeated annually and as and when required

4.2 Outsourced specialist skills

A training department will be established on site during operations. All inductions and workshops will be hosted by this department. This department, in conjunction with the SHE Officer, is responsible for ensuring job-specific training for personnel performing tasks, which can cause significant environmental (e.g. receipt of bulk hazardous chemicals/fuel, hazardous materials handling, responding to emergency situations etc.). The General Site Manager with the assistance of the SHE Officer must identify relevant personnel and training courses. Short courses such as First aid training, Level 1 and 2; Fire Fighting Level; safety representative training; etc. should be mandatory and sourced from the training providers,

4.3 Review and updating of training manual and course layout

Before implementing the emergency and response plans and other environmental standard operating procedure, the SHE Coordinator and SM/Supervisors will designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.

All training manual and courses must be reviewed with all employees at the following times:

- Initially when the plan is developed,
- Whenever the employee's responsibilities or designated action under the plan change, and whenever the plan or Processing Plant processes has changed.
- At least annually employee meetings are to be held to train employees of the contents of the EP&RP and revise the plan as appropriate.
- Drills will be conducted and full participation encouraged.
- All training must be documented in writing and copies sent to the competent Authority.

Effectiveness of the environmental management training will be done by management through task observations and during internal and external audits. All training material for presentation to personnel and contractors will be reviewed annually to ensure consistency with organisational requirements and best practice guidelines. In addition to this, annual monitoring reports, audit results and all incident reports will be reviewed; any shortcomings and non-compliance will be highlighted and management measures incorporated or improved upon within the training material.

4.4 Records

The Plant will keep records such as waste, water, electricity usage etc. Record of incoming and outgoing waste must be kept and these must include:

- Types and categories of incoming and outgoing waste
- Quantities of each waste type and category

- Transporter details
- Safe disposal certificate must always be returned and filed at waste disposal site
- Training records for all employees working on the hazardous waste facility
- All records must be computerised or legible paper trails and cross-referenced, waste tracking easily accessed
- Records must be kept in a database on site for 3 years or more

Records from the implementation of this EAP will be kept and controlled in accordance with the SHE Management System Control of Records Procedure of the Plant, which is required to be implemented so as to provide evidence of conformity and effective operation of the relevant requirements of the SHE management system.

4.5 Environmental awareness notice boards

The following basic environmental education material will be posted on a monthly basis on accessible notice boards on Plant premises, one topic will be selected each month:

WHAT IS THE ENVIRONMENT?

- Soil
- Water
- Plants
- People
- Animals
- Air we breathe
- Buildings, cars and houses



WHY MUST WE LOOK AFTER THE ENVIRONMENT?

- It affects us all as well as future generations
- We have a right to a healthy environment
- A contract has been signed
- Disciplinary action (e.g. construction could stop or fines issued)

ANIMALS

- Do not injure or kill any animals on the site
- Ask your supervisor or Contract's Manager to remove animals found on site



TREES AND FLOWERS

- Do not damage or cut down any trees or plants without permission
- Do not pick flowers



SMOKING AND FIRE

- Put cigarette butts in a rubbish bin
- Do not smoke near gas, paints or petrol
- Do not light any fires without permission
- Know the positions of fire fighting equipment
- Report all fires
- Do not burn rubbish or vegetation without permission



PETROL, OIL AND DIESEL

- Work with petrol, oil & diesel in marked areas
- Report any petrol, oil & diesel leaks or spills to your supervisor
- Use a drip tray under vehicles & machinery
- Empty drip trays after rain & throw away where instructed



DUST

- Try to avoid producing dust - Use water to make ground & soil wet



NOISE

- Do not make loud noises around the site, especially near schools and homes
- Report or repair noisy vehicles



TRUCKS AND DRIVING

- Always keep to the speed limit
- Drivers - check & report leaks and vehicles that belch smoke
- Ensure loads are secure & do not spill



RUBBISH

- Do not litter - put all rubbish (especially cement bags) into the bins provided
- Report full bins to your supervisor
- The responsible person should empty bins regularly



EATING

- Only eat in demarcated eating areas
- Never eat near a river or stream
- Put packaging & leftover food into rubbish bins



TOILETS

- Use the toilets provided
- Report full or leaking toilets



HOW DO WE LOOK AFTER THE ENVIRONMENT?

- Report problems to your supervisor/ foreman
- Team work
- Follow the rules in the EMP



WORKING AREAS

- Workers & equipment must stay inside the site boundaries at all times



The operations manager must ensure that they understand the BAR & EMPr document, its requirements and commitments before any Processing Plant takes place. An Environmental Control Officer must ensure compliance of Processing Plant activities to the management programmes described in the EMPr. The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks.

4.5.1 Site management

- Stay within site boundaries – do not enter adjacent properties.
- Keep tools and material properly stored
- Smoke only in designated areas
- Use toilets provided – report full or leaking toilets

4.5.2 Water management and erosion

- Check that rainwater flows around work areas and is not contaminated
- Report any erosion
- Check that dirty water is kept from clean water
- Do not swim in or drink from streams

4.5.3 Waste management

- Take care of your own waste
- Keep waste separate into labelled containers – report full bins
- Place waste in containers and always close lid
- Don't burn waste
- Pick-up any litter laying around

4.5.4 Hazardous waste management (petrol, oil, diesel, grease)

- Never mix general waste with hazardous waste
- Use only sealed, non-leaking containers
- Keep all containers closed and store only in approved areas
- Always put drip trays under vehicles and machinery
- Empty drip trays after rain
- Stop leaks and spills, if safe
- Keep spilled liquids moving away
- Immediately report the spill to the site manager/supervision
- Locate spill kit/supplies and use to clean-up, if safe

- Place spill clean-up wastes in proper containers
- Label containers and move to approved storage area

4.5.5 Discoveries

- Stop work immediately
- Notify site manager/supervisor
- Includes archaeological finds, cultural artefacts, contaminated water, pipes, containers, tanks and drums, any buried structures

4.5.6 Air quality

- Wear protection when working in dusty areas
- Implement dust control measures:
 - Sweep paved roads
 - Water all roads and work areas
 - Minimise handling of material
 - Obey speed limit and cover trucks

4.5.7 Driving and noise

- Use only approved access roads
- Respect speed limits
- Only use turn-around areas – no crisscrossing through undisturbed areas
- Avoid unnecessary loud noises
- Report or repair noisy vehicles

4.5.8 Vegetation and animal life

- Do not remove any plants or trees without approval of the site manager
- Do not collect fire wood
- Do not catch, kill, harm, sell or play with any animal, reptile, bird or amphibian on site
- Report any animal trapped in the work area

- Do not set snares or raid nests for eggs or young

4.5.9 Fire management

- Do not light any fires on site, unless contained in a drum at demarcated area
- Put cigarette butts in a rubbish bin
- Do not smoke near gas, paints or petrol
- Know the position of firefighting equipment
- Report all fires
- Don't burn waste or vegetation

5 Undertaking

The EAP herewith confirms

- the correctness of the information provided in the reports
- the inclusion of comments and inputs from stakeholders and I&APs
- the inclusion of inputs and recommendations from the specialist reports where relevant
- that the information provided by the EAP to I&APs and any response of the EAP to comments or inputs made by I&APs are correctly reflected herein

Signature of the Environmental Assessment Practitioner

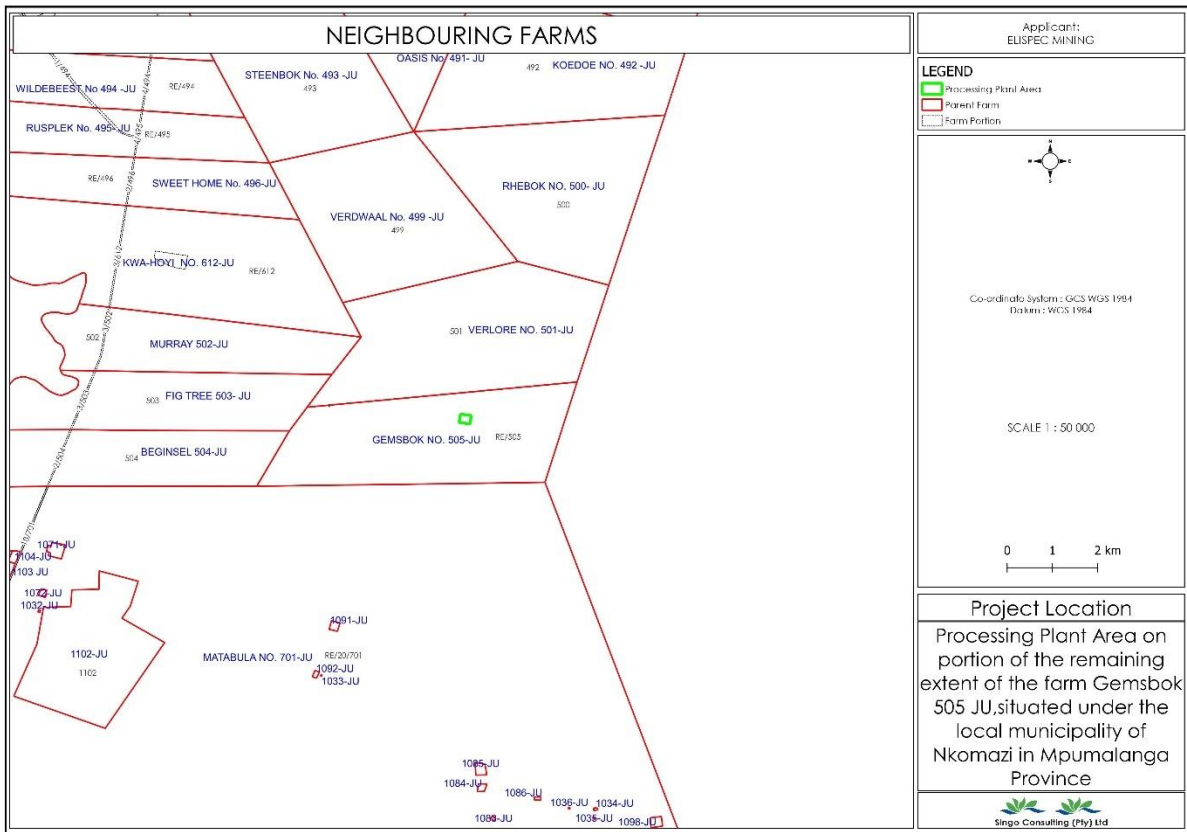
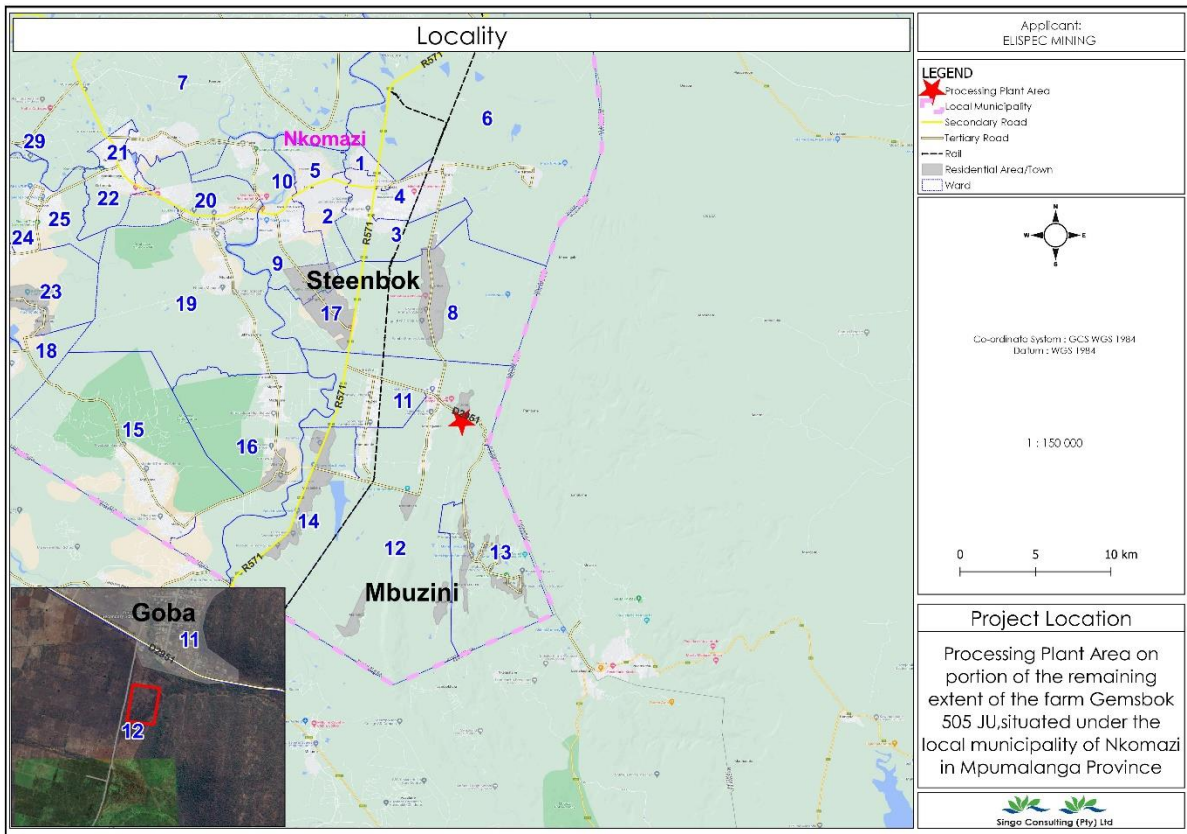
Singo Consulting (Pty) Limited

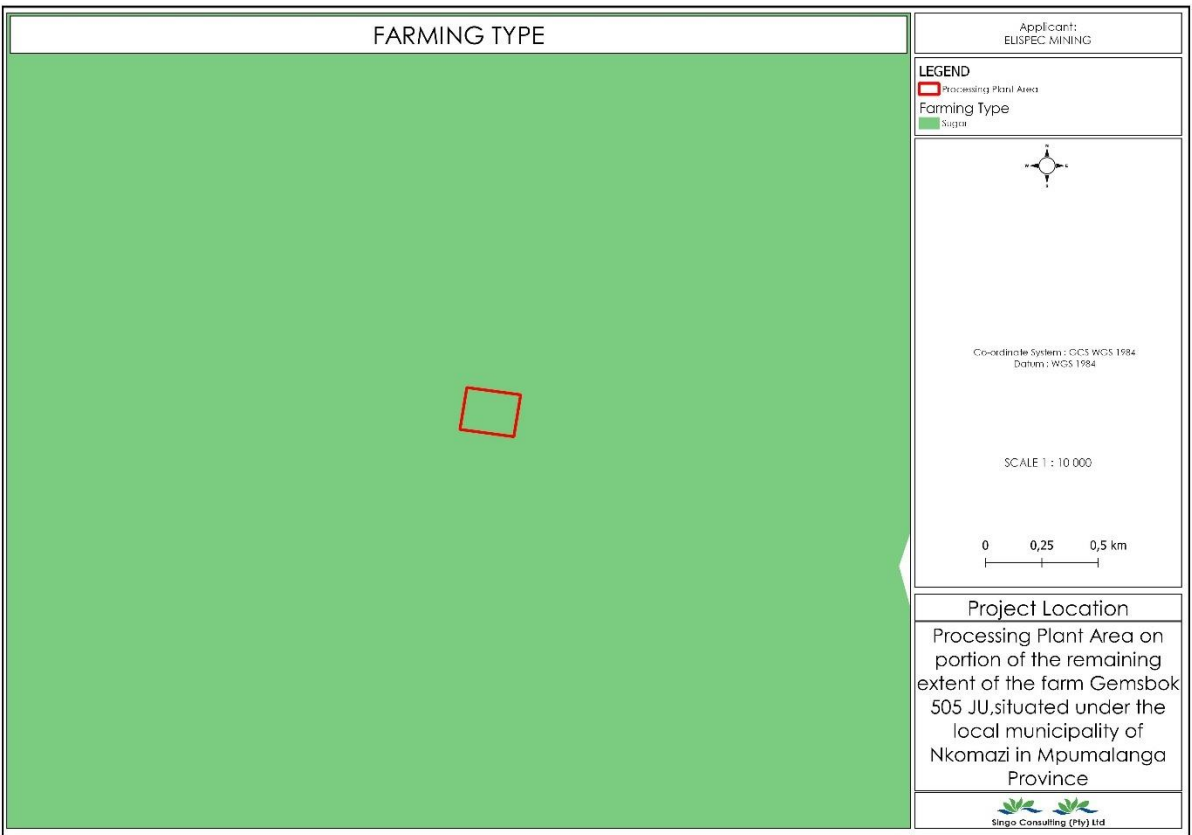
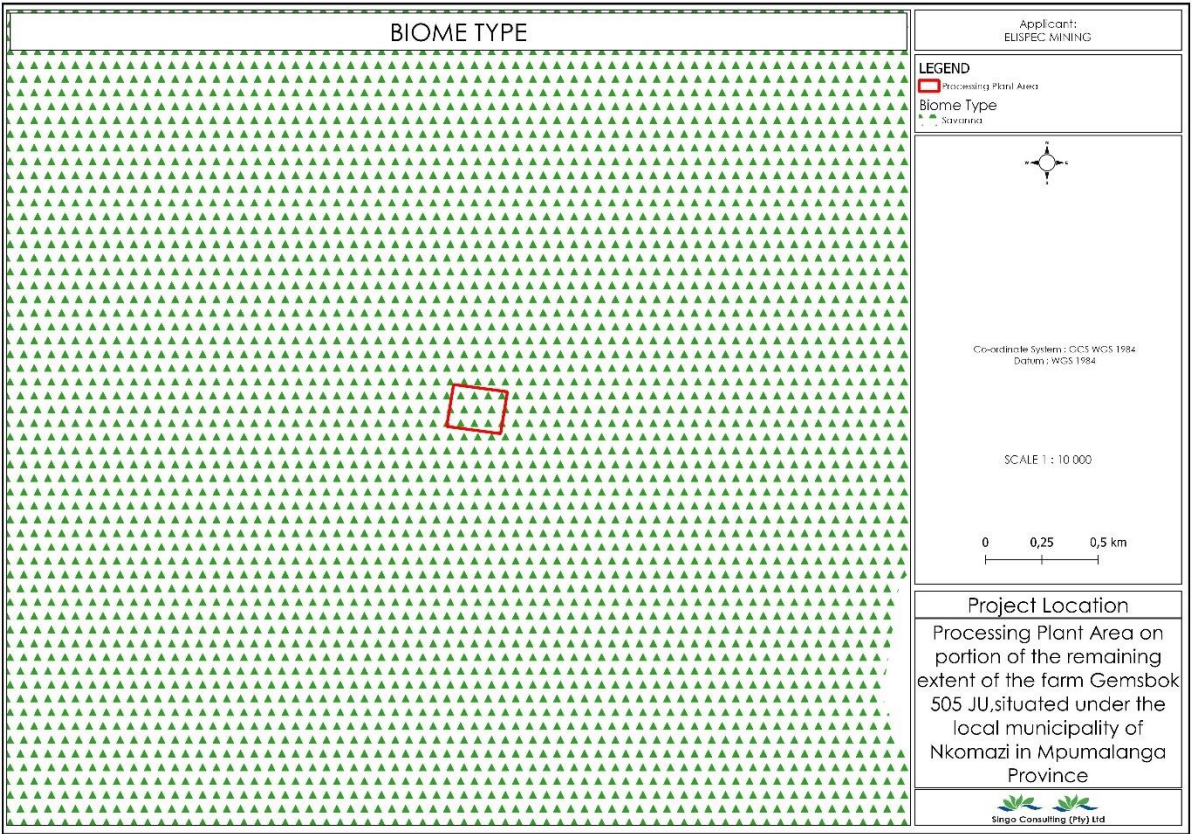
Name of company

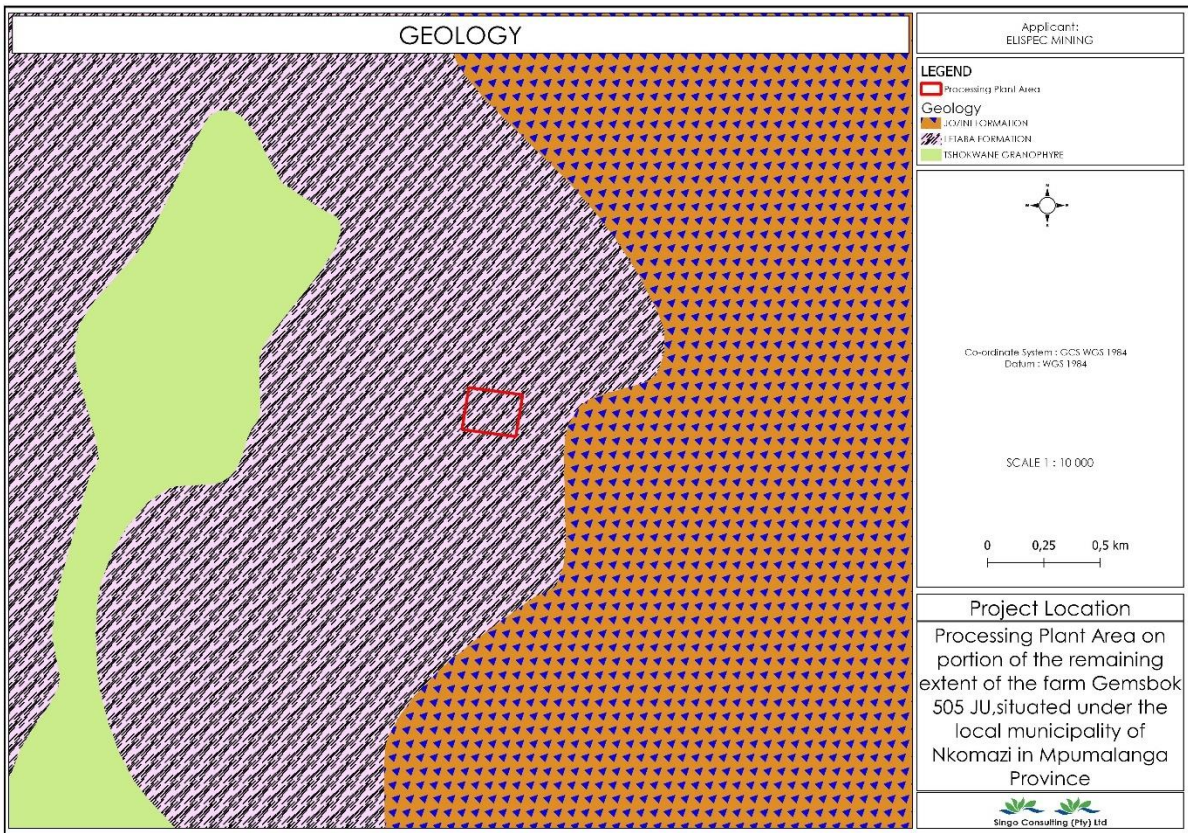
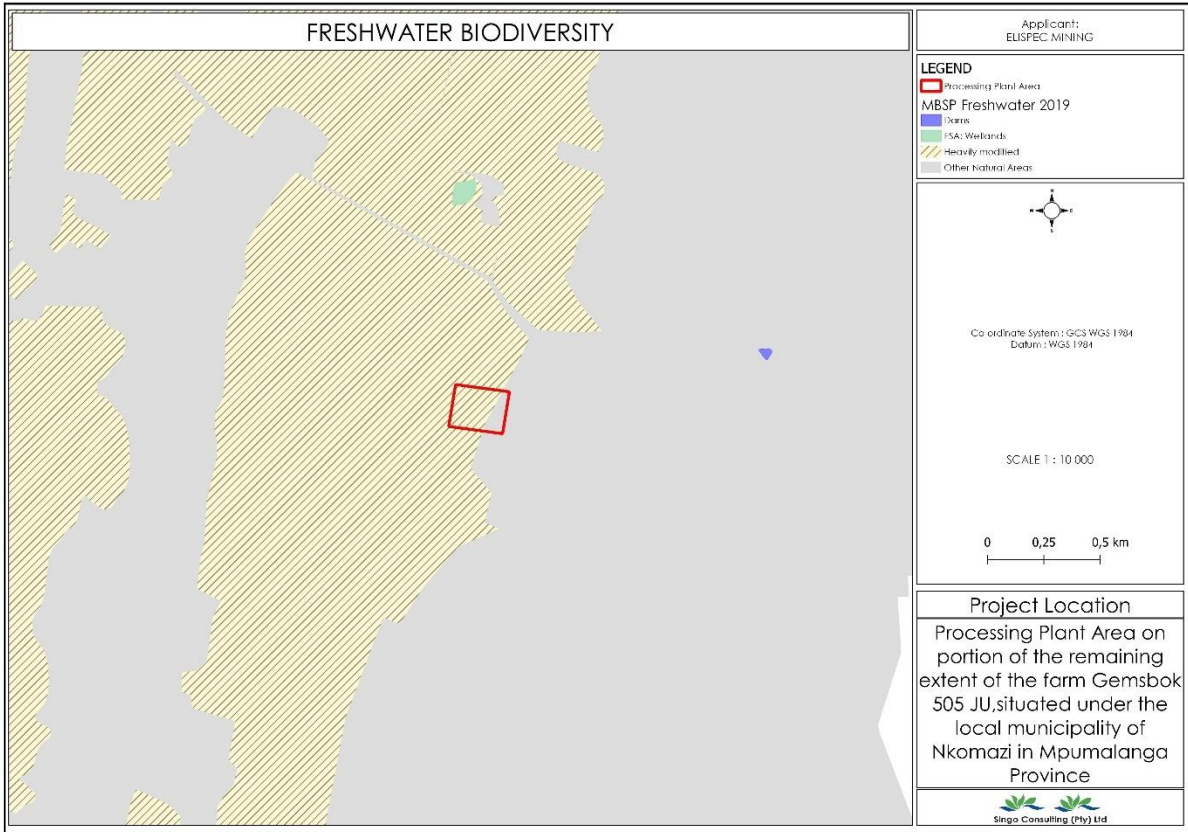
Date

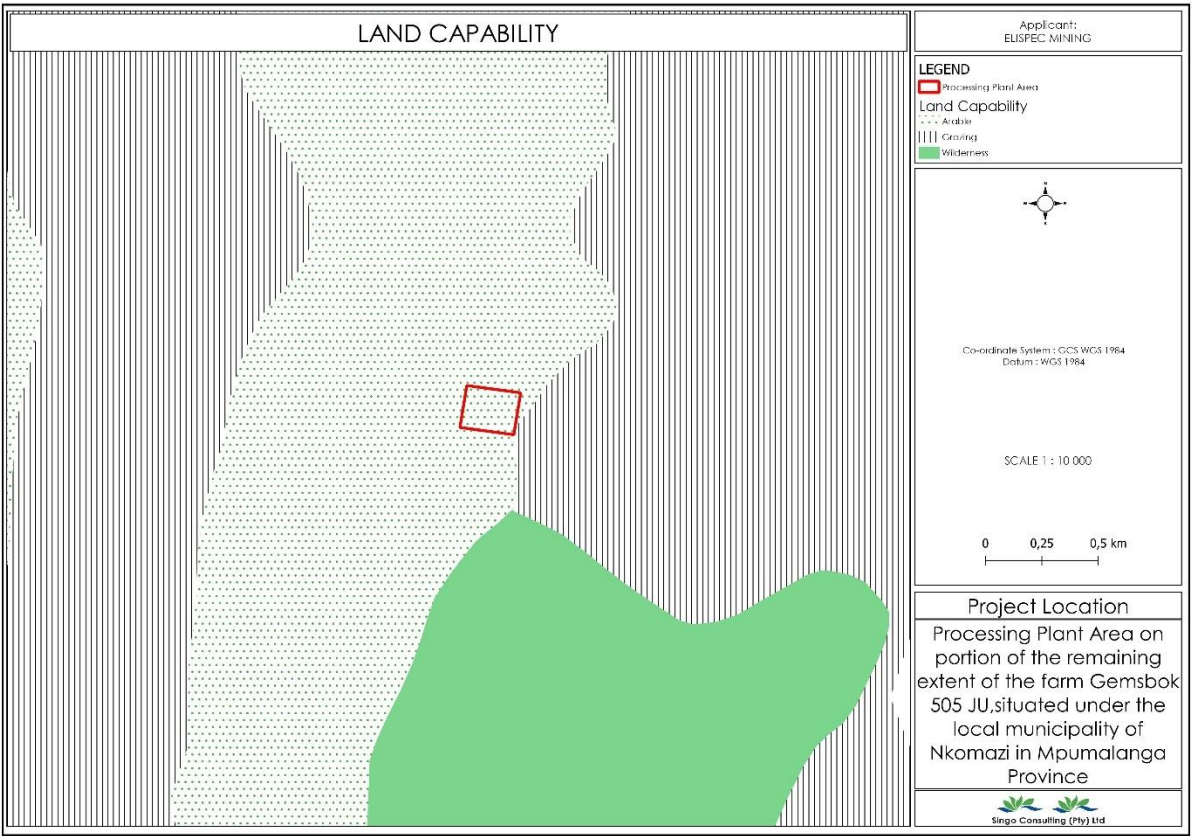
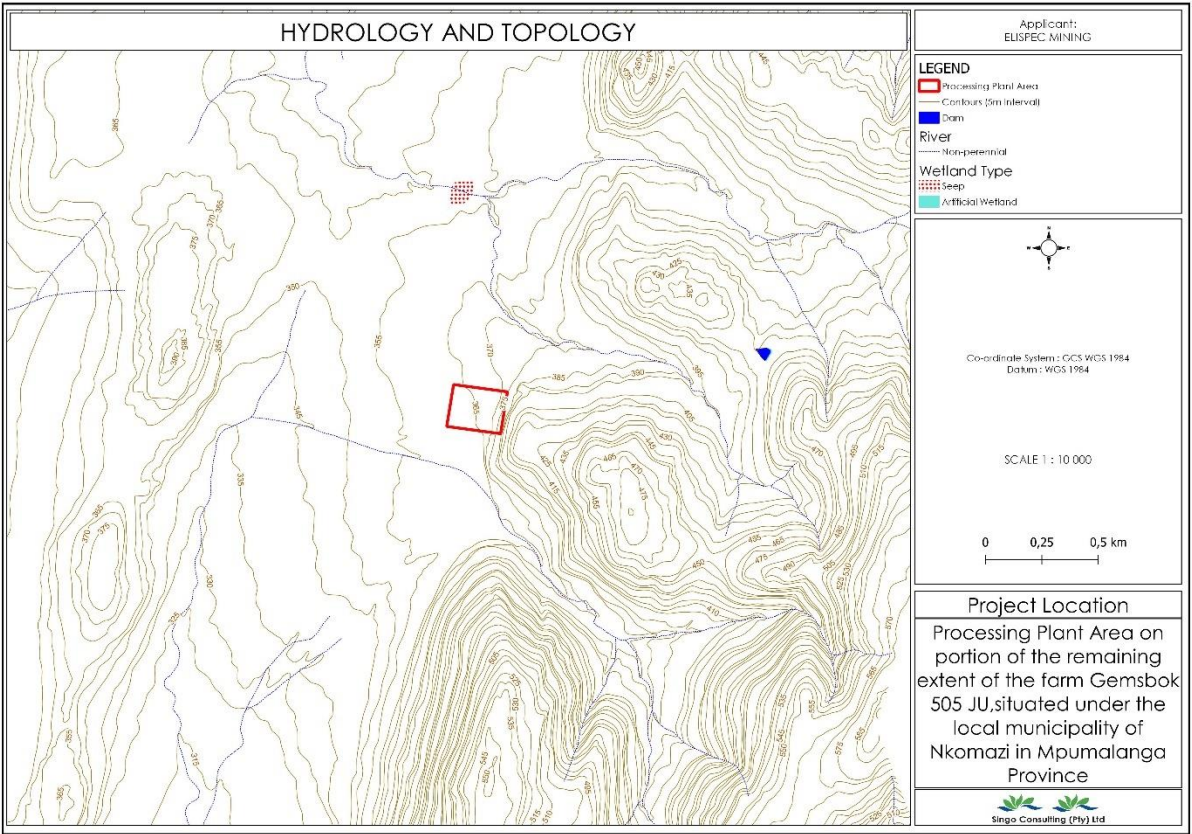
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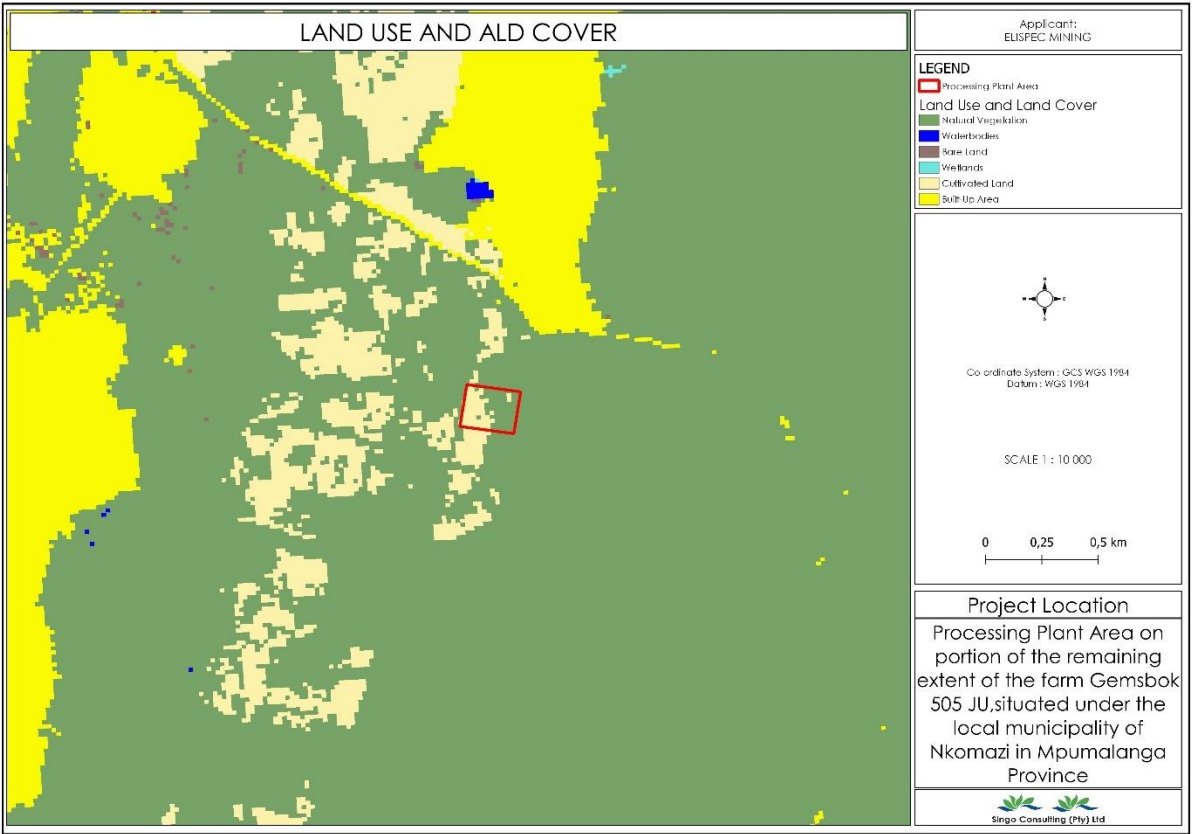
Appendix 1: Project Maps

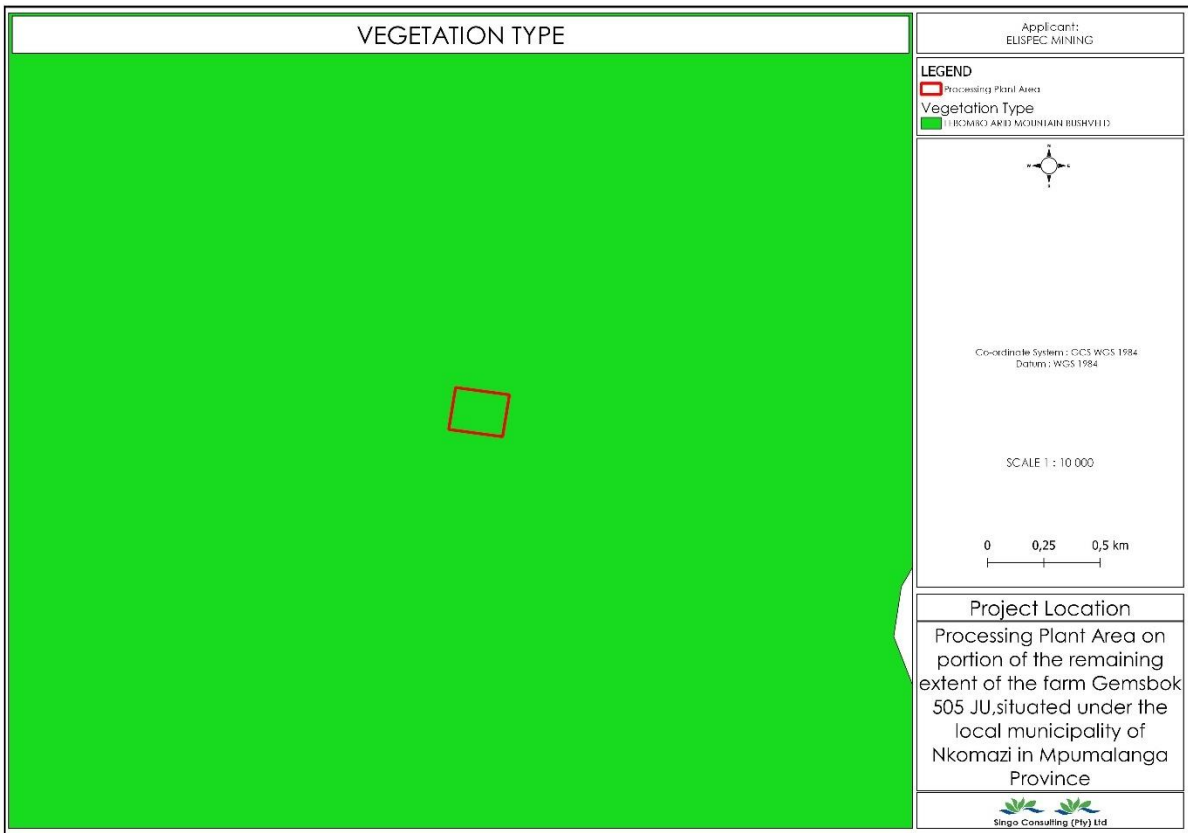
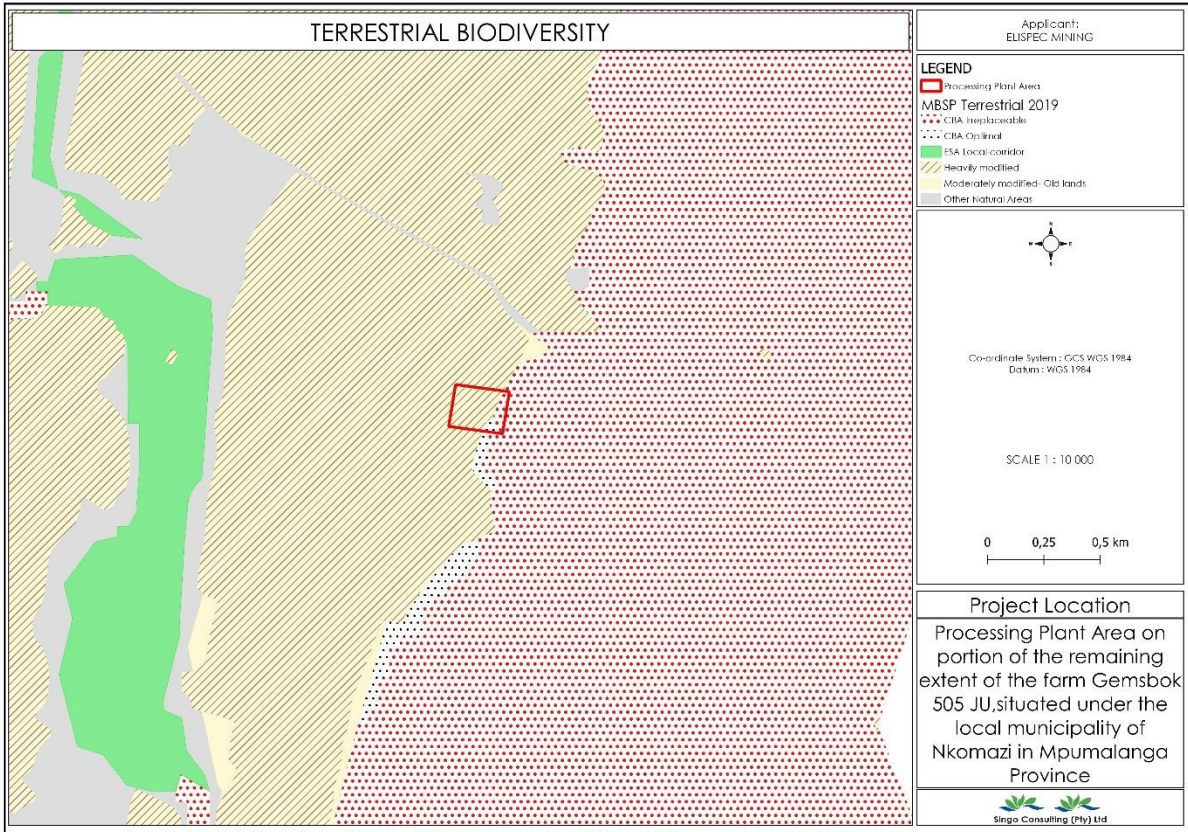


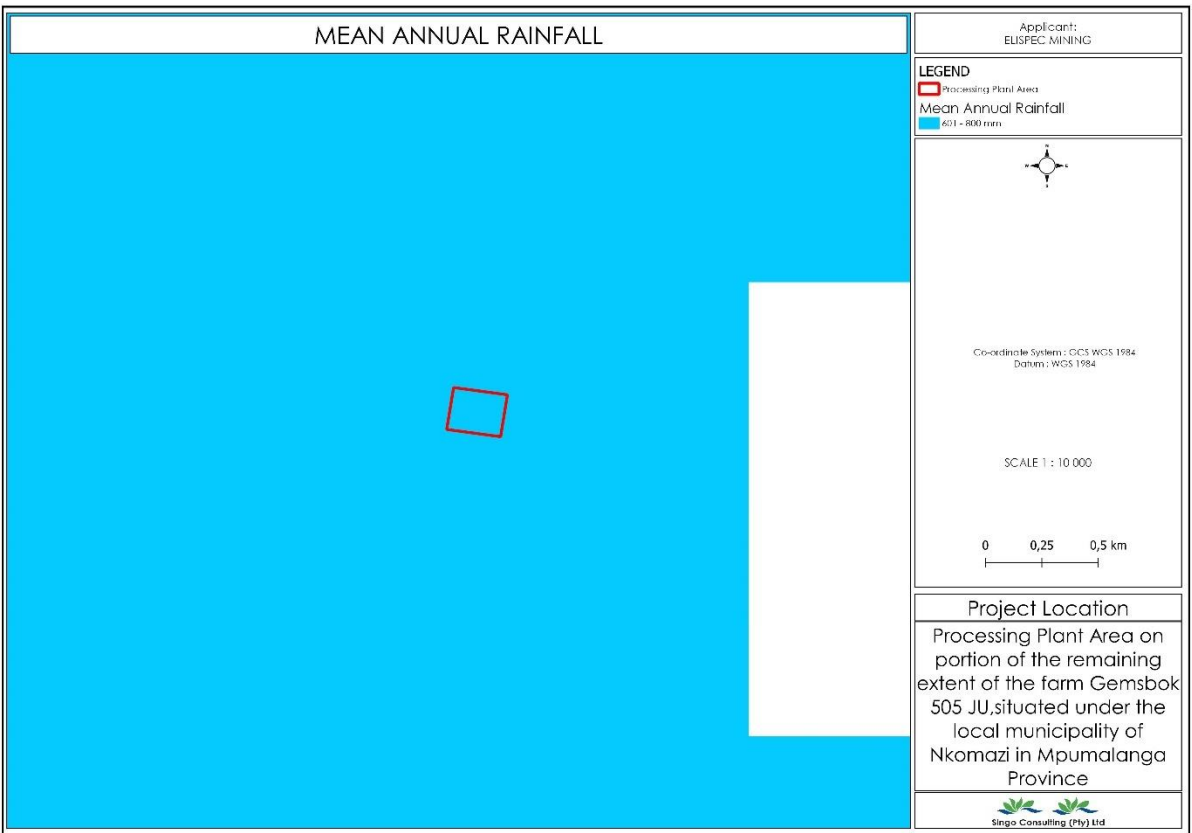
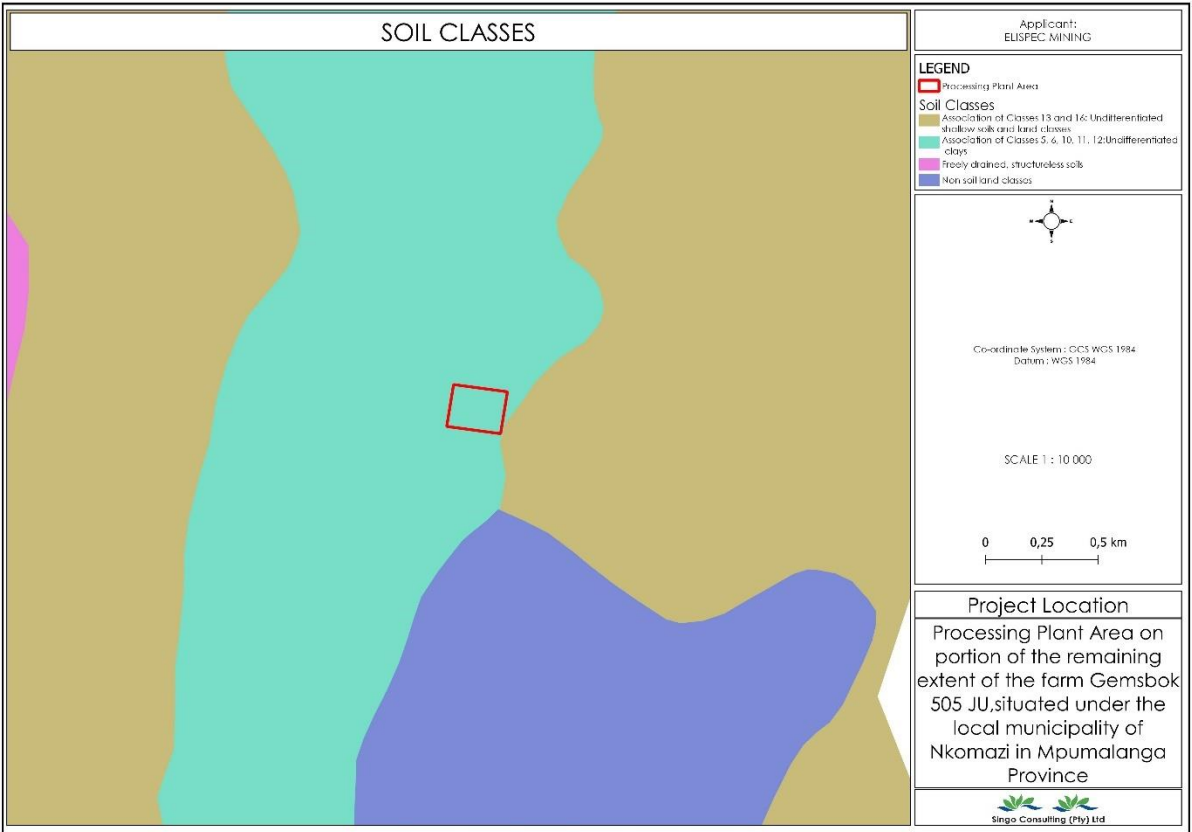












Appendix 2: EAP'S CV and Qualifications

MADE AVAILABLE UPON REQUEST

Appendix 3: Screening Report

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED DEVELOPMENT FOOTPRINT ENVIRONMENTAL SENSITIVITY

EIA Reference number: To be announced

Project name: Processing Plant

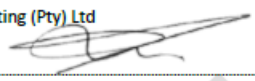
Project title: Processing Plant Area on portion of the remaining extent of the farm Gemsbok 505
JU

Date screening report generated: 18/08/2023 15:38:24

Applicant: ELISPEC MINING

Compiler: Singo Consulting (Pty) Ltd

Compiler signature: _____



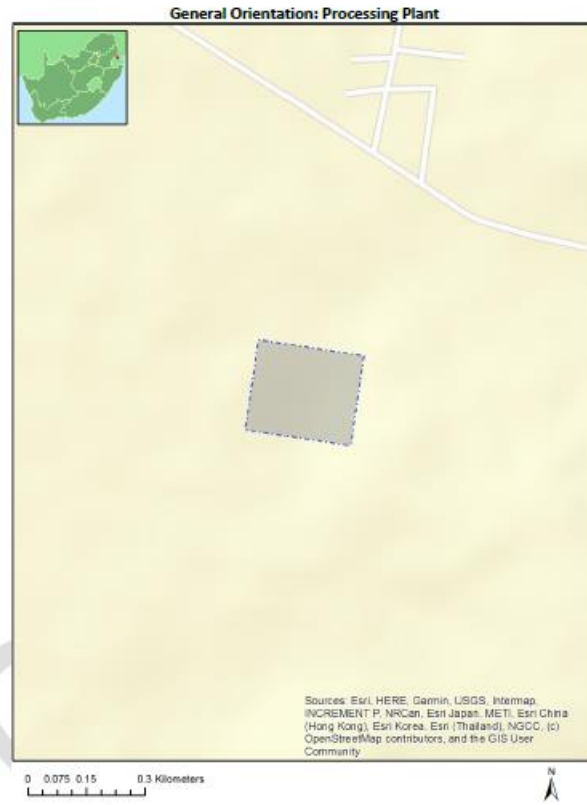
Application Category: Mining|Beneficiation|Mineral

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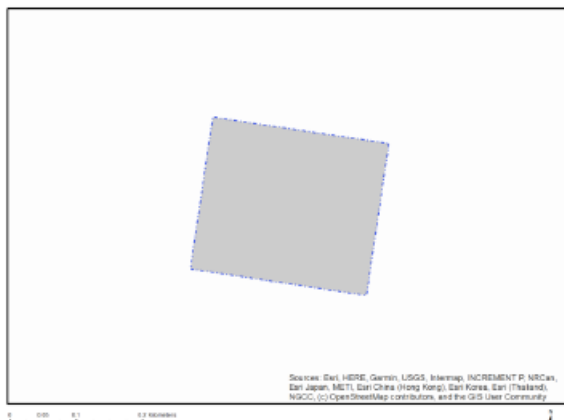
| | |
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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

| No | Farm Name | Farm/ Erf No | Portion | Latitude | Longitude | Property Type |
|----|-----------|--------------|---------|--------------|--------------|---------------|
| 1 | GEMSBOK | 505 | 0 | 25°49'52.09S | 31°54'17.19E | Farm |
| 2 | GEMSBOK | 505 | 0 | 25°49'52.09S | 31°54'17.19E | Farm Portion |

Development footprint¹ vertices:

| Footprint | Latitude | Longitude |
|-----------|--------------|--------------|
| 1 | 25°49'32.58S | 31°54'42.86E |
| 1 | 25°49'33.72S | 31°54'51.42E |
| 1 | 25°49'40.38S | 31°54'50.33E |
| 1 | 25°49'39.22S | 31°54'41.77E |
| 1 | 25°49'32.58S | 31°54'42.86E |

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No nearby wind or solar developments found.

¹ "development footprint", means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development footprint as well as the most environmental sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

Mining | Beneficiation | Mineral.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this footprint are indicated below.

No intersection with any development zones found.

Proposed Development Area Environmental Sensitivity

The following summary of the development footprint environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

| Theme | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme | | X | | |
| Animal Species Theme | | | X | |
| Aquatic Biodiversity Theme | | | | X |
| Archaeological and Cultural Heritage Theme | | | | X |
| Civil Aviation Theme | | | | X |
| Defence Theme | | | | X |
| Paleontology Theme | | | X | |
| Plant Species Theme | | | X | |
| Terrestrial Biodiversity Theme | X | | | |

Specialist assessments identified

Based on the selected classification, and the known impacts associated with the proposed development, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the footprint situation.

| No | Specialist | Assessment Protocol |
|----|------------|---------------------|
|----|------------|---------------------|

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[Disclaimer applies](#)
18/08/2023

| | assessment | |
|----|--|---|
| 1 | Agricultural Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf |
| 2 | Archaeological and Cultural Heritage Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 3 | Palaeontology Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 4 | Terrestrial Biodiversity Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf |
| 5 | Aquatic Biodiversity Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf |
| 6 | Hydrology Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 7 | Noise Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf |
| 8 | Traffic Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 9 | Geotechnical Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 10 | Climate Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 11 | Health Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 12 | Socio-Economic Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 13 | Ambient Air Quality Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 14 | Air Quality Impact Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf |
| 15 | Plant Species Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf |
| 16 | Animal Species Assessment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf |

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed footprint for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

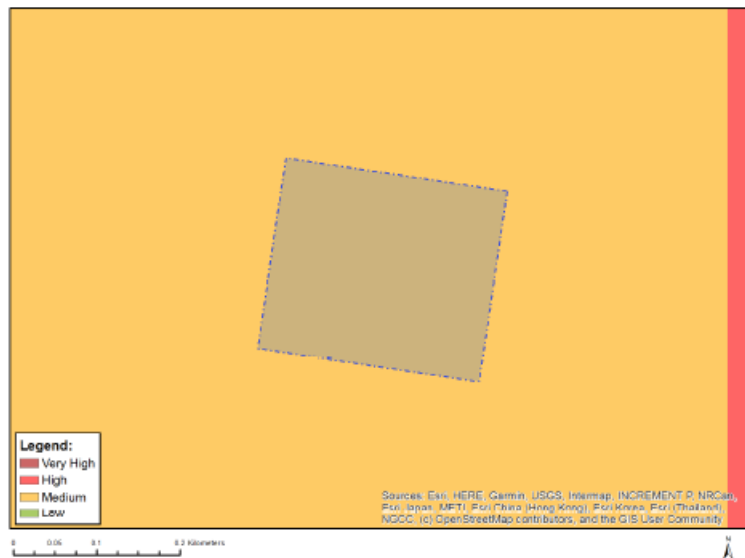


| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | X | | |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|--|
| High | Land capability;09. Moderate-High/10. Moderate-High |
| High | Subsistence Farming 1;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate |
| High | Subsistence Farming 1;Land capability;09. Moderate-High/10. Moderate-High |
| Low | Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low |
| Medium | Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate |

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



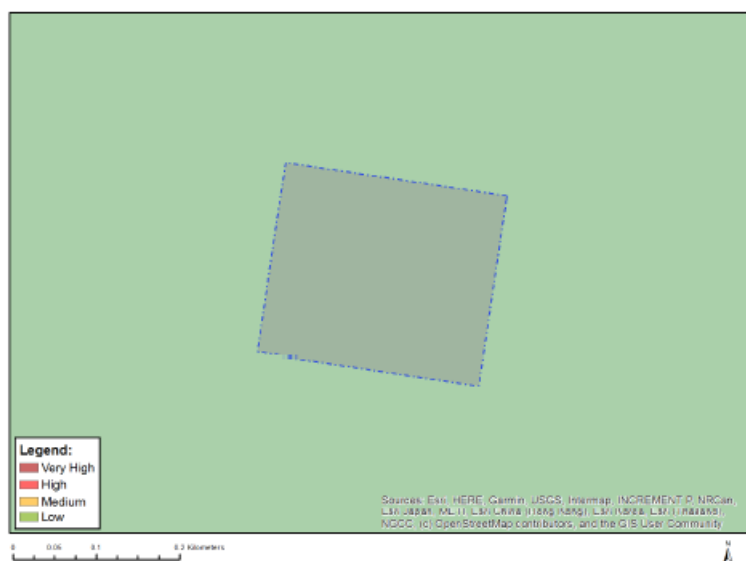
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | | x | |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|----------------------------|
| Medium | Aves-Aquila rapax |
| Medium | Aves-Terathopius ecaudatus |
| Medium | Mammalia-Dasymys robertsii |

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

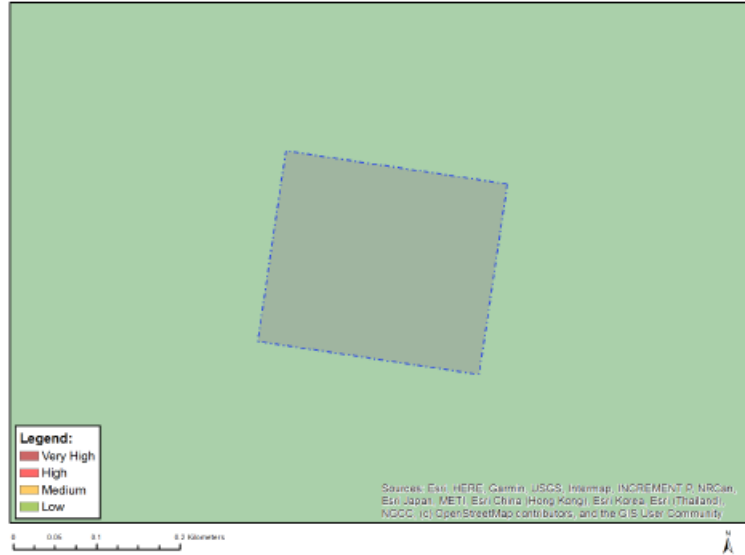


| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | | | x |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|-----------------|
| Low | Low sensitivity |

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | | | X |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|-----------------|
| Low | Low sensitivity |

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | | | x |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|-----------------|
| Low | Low sensitivity |

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

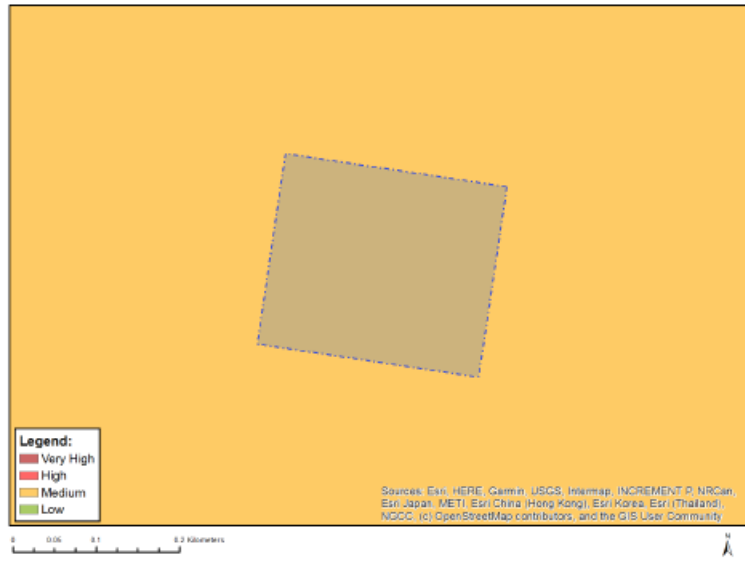


| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | | | X |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|-----------------|
| Low | Low Sensitivity |

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

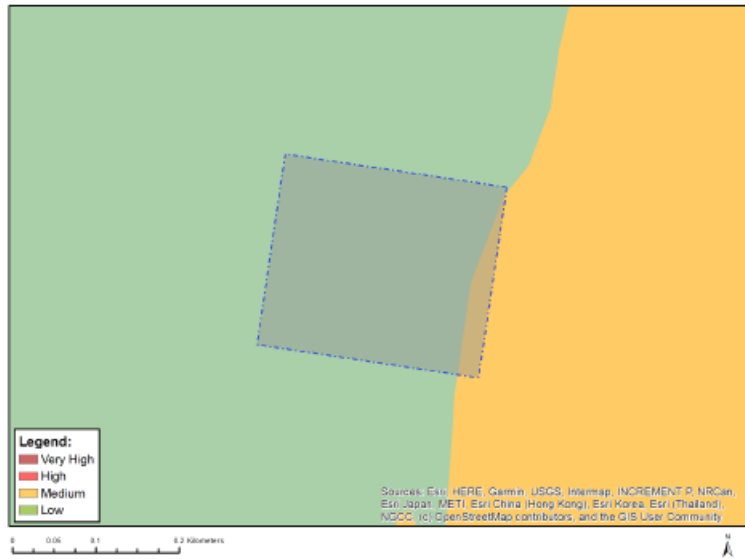


| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | | x | |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|--|
| Low | Features with a Low paleontological sensitivity |
| Medium | Features with a Medium paleontological sensitivity |

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



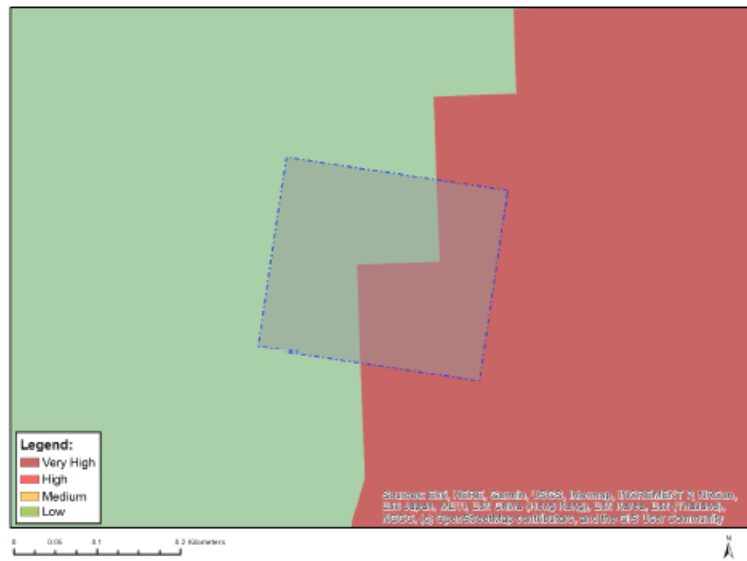
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| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| | | X | |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|------------------------|
| Low | Low Sensitivity |
| Medium | Barleria oxyphylla |
| Medium | Sensitive species 1204 |
| Medium | Sensitive species 45 |

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| X | | | |

Sensitivity Features:

| Sensitivity | Feature(s) |
|-------------|--|
| Low | Low Sensitivity |
| Very High | CBA 1 |
| Very High | CBA 2 |
| Very High | National Protected Area Expansion Strategy (NPAES) |

Appendix 4: Site Condition










Appendix 5: SAHRA

PROCESSING PLANT APPLICATION with extent of approximately 5 Hectares on portion of the remaining extent of the farm Gemsbok 505 JU, situated under the local municipality of Nkomazi in Mpumalanga Province

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| CaseHeader | LocationInfo | Admin | |
|--|---|-----------------|--------------|
| Status: DRAFT | | | |
| HeritageAuthority(s): SAHRA MPHRA | | | |
| Case Type: Section 38 (8) - Statutory Comment Required | | | |
| Development Type: Mining | | | |
| ProposalDescription: PROCESSING PLANT APPLICATION with extent of approximately 5 Hectares on portion of the remaining extent of the farm Gemsbok 505 JU, situated under the local municipality of Nkomazi in Mpumalanga Province. | | | |
| Expanded Motivation: Environmental Authorization (Ref Number: To Be Announced) and Water Use License (To Be Announced) Applications for the proposed Granite Processing Plant (GPP) portion of the remaining extent of the farm Gemsbok 505 JU, situated in the Magisterial District of Nkomazi in Mpumalanga Province | | | |
| ApplicationDate: Monday, June 5, 2023 - 10:01 | | | |
| CaseID: 21525 | | | |
| Applicants: Ellispec Mining (Pty) Ltd | | | |
| Consultants/Experts: Ndinannyi Kenneth | | | |
| OtherReferences: | | | |
| CaseReference | Department | ApplicationType | DeadlineDate |
| To be Announced | Mpumalanga - Department of Agriculture, Rural Development, Land and Environmental Affairs | BID | 05/07/2023 |
| ReferenceList: | | | |

AdditionalDocuments

1.  Background Information Document.pdf

Appendix 6: Specialist/Baseline Studies

THEY ARE UPON REQUEST