mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

PROSPECTING RIGHT APPLICATION OF DIAMONDS ALLUVIAL & DIAMONDS GENERAL NEAR SCHWEIZER-RENEKE ON THE REMAINING EXTENT OF PORTION 2 (CYPHERFONTEIN) AND PORTION 15 (ON AVON – A PORTION OF PORTION 2) OF THE FARM MARAETCHESFONTEIN 54, REGISTRATION DIVISION: HO, NORTH WEST PROVINCE.

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

NAME OF APPLICANT	**Brakpan Trust**
COMPILED BY	**Milnex 189 CC**
TEL NO	(018) 011 1925
FAX NO	087 231 7021
POSTAL ADDRESS:	P.O. Box 1086, Schweizer-Reneke, 2780
PHYSICAL ADDRESS:	4 Botha Street, Schweizer-Reneke, 2780
FILE REFERENCE NUMBER SAMRAD:	**NW30/5/1/1/2/12057PR**

CLAUSE

This report has been compiled by Milnex 189 CC, using information provided by **Brakpan Trust** the client as well as third parties, which information has been presumed to be correct. While Milnex 189 CC have made every endeavour to supply accurate information, and exercised all care, skill and diligence in the drafting of this report, errors and omissions may occur. Accordingly, Milnex 189 CC does not warrant the accuracy or completeness of the materials in this report. Milnex 189 CC does not accept any liability for any loss or damage which may directly or indirectly result from any advice, opinion, information, representation or omission, whether negligent or otherwise, contained in this report. Milnex 189 CC does not accept any liability for any loss or damage, whether direct, indirect or consequential, arising out of circumstances beyond the control of Milnex 189 CC, including the use and interpretation of this report by the client, its officials or their representatives or agents. This document contains information proprietary to Milnex 189 CC and as such should be treated as confidential unless specifically identified as a public document by law. Milnex 189 CC owns all copyright and all other intellectual property rights in this report. The document may not be copied, reproduced in whole or in part, or used for any manner without prior written consent from Milnex 189 CC. Copyright is specifically reserved in terms of the Copyright Act 98 of 1987 including amendments thereto. By viewing this disclaimer and by accepting this document, you acknowledge that you have read and accepted these Terms of Use and undertake to keep the information contained herein confidential and not to do any act or allow any act which is in breach of these Terms of Use.

IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE SCOPING PROCESS

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

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

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

(c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;

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

(e) identify the key issues to be addressed in the assessment phase;

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

(g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

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SCOPING REPORT

2) Contact Person and correspondence address

a) Details of:

i) The EAP who prepared the report

Name of Practitioner: Danie Labuschagne

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

e-mail address: danie@milnex-sa.co.za

Name of Practitioner: Percy Sehaole

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

e-mail address: percy@milnex-sa.co.za

ii) Expertise of the EAP.

(1) **The qualifications of the EAP**
(With evidence attached as **Appendix 1**).

Danie Labuschagne holds a Master's Degree in Environmental Management and Geography (refer to **Appendix 1**)

Percy Sehaole holds a Master's Degree in Environmental Science (refer to **Appendix 1**)

(2) **Summary of the EAP's past experience**.
(Attach the EAP's curriculum vitae as **Appendix 2**)

Milnex 189 CC was contracted by Brakpan Trust as the independent environmental consultant to undertake the Scoping and EIA process for a Prospecting Right of Diamond Alluvial & Diamond General near Schweizer-Reneke on the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 (On Avon – a Portion of Portion 2) of the farm Maraetchesfontein 54, Registration Division: HO, North West Province. Milnex 189 CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Milnex 189 CC is a specialist environmental consultancy with extensive experience in the mining industry which provides a holistic environmental management service, including environmental assessment and planning to ensure compliance with relevant environmental legislation. Milnex 189 CC benefits from the pooled resources, diverse skills and experience in the environmental and mining field held by its team that has been actively involved in undertaking environmental studies for a wide variety of mining related projects throughout South Africa. The Milnex 189 CC team has considerable experience in environmental impact assessment and environmental management, especially in the mining industry.

Danie Labuschagne & Percy Sehaole have experience consulting in the environmental field. Their key focus is on environmental assessment, advice and management and ensuring compliance to legislation and guidelines. They are currently involved in undertaking EIAs for several projects across the country (refer to **Appendix 2** for CV)

b) Description of the property.

Farm Name:	1) Remaining Extent of Portion 2 (Cypherfontein) 2) Portion 15 (On Avon – a Portion of Portion 2)	of the farm Maraetchesfontein 54
Application area (Ha)	294.824ha	
Magisterial district:	HO	
Distance and direction from nearest town	The property is located approximately 11.5km North East of Schweizer-Reneke adjacent to the R504 towards Migdol.	
21 digit Surveyor General Code for each farm portion	1) T0HO00000000005400002 2) T0HO00000000005400015	

c) Locality map

(show nearest town, scale not smaller than 1:250000 attached as **Appendix 3).**

A Locality map is attached in **Appendix 3** and on figure 1 below.

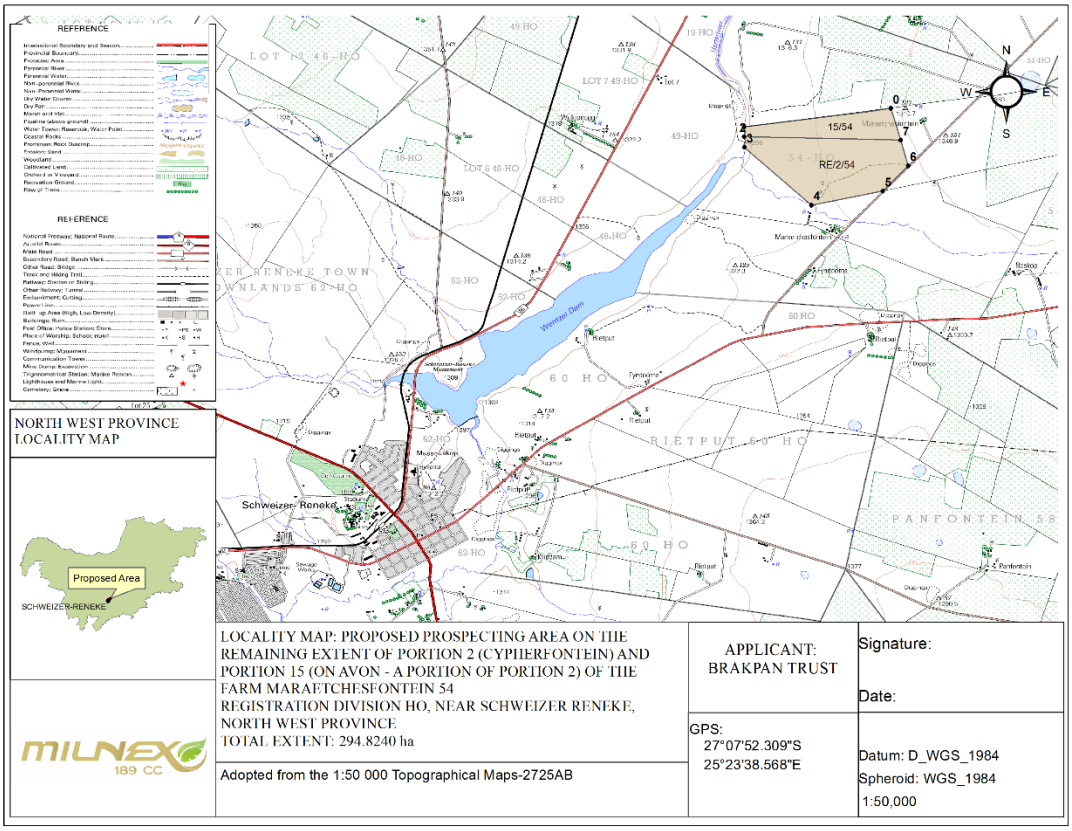


Figure 1: Locality Map

Farms Co-ordinates:

Farms	Longitude	Latitude
1) Remaining Extent of Portion 2 (Cypherfontein) of the farm Maraetchesfontein 54 2) Portion 15 (On Avon – a Portion of Portion 2) of the farm Maraetchesfontein 54	27° 7'29.82"S	25°24'11.23"E
	27° 7'40.12"S	25°22'48.44"E
	27° 7'45.75"S	25°22'48.44"E
	27° 7'51.79"S	25°22'48.59"E
	27° 8'24.40"S	25°23'26.42"E
	27° 8'16.44"S	25°24'6.73"E
	27° 8'2.17"S	25°24'21.00"E
	27° 7'47.70"S	25°24'16.77"E

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

i) Listed and specified activities

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site and attach as **Appendix 4**

Refer to Site Plan included within **Appendix 4**.

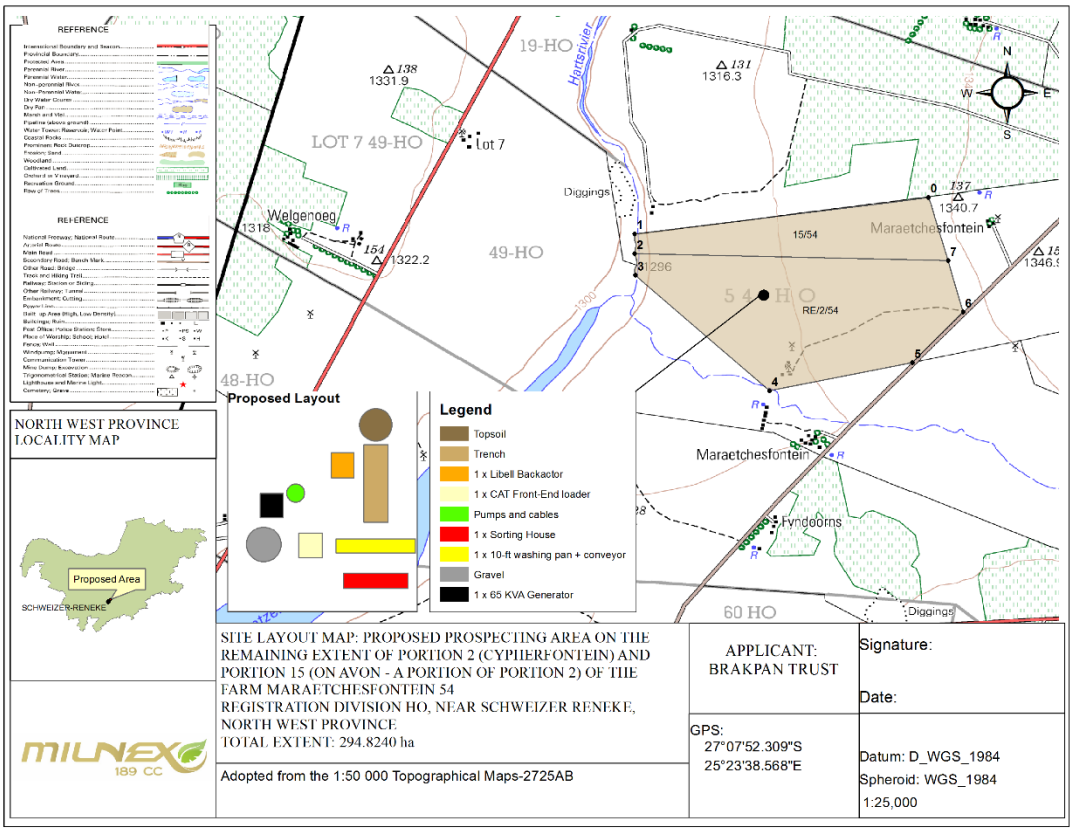


Figure 2: Site Layout Map

NAME OF ACTIVITY (All activities including activities not listed) **(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)**	**Aerial extent of the Activity** **Ha or m²**	**LISTED ACTIVITY** **Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE** ***(GNR 983, GNR 984 or GNR 985)/NOT LISTED***
Clearance of indigenous vegetation	294.824 ha- Only the areas where prospecting takes place, will be cleared. Concurrent backfilling will take place in order to rehabilitate.	X	GNR. 984
Office and Workshop	50m²	-	-
Roads	+- 4 km	-	-
Stockpiling op topsoil	294.824 ha – 20m x 20m x 1.5m x 60 = 36 000m³	-	-
Prospecting of Diamond Alluvial - Excavations	294.824 ha – 3m x 2m x 5m pit (100 pits), 20m x 20m x 2m trench (60 trenches)	X	GNR. 984
Processing Plant	1 x 16 Ft Pan – 79 200 tons to be washed	X	-

Listing Notices:

Description of the overall activity. **(Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)**	1. **Listing Notice GNR 984, Activity 15:** *"The clearance of an area of 20 hectares or more, of indigenous vegetation."* – Random indigenous vegetation clearance of over a 294.824-hectare area. 2. **Listing Notice GNR 984, Activity 19:** *"The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resource4s Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)"* – Prospecting right with bulk samples for the mining of Diamonds Alluvial (DA) and Diamonds General (D) including associated infrastructure, structures and earthworks.

	3. **Listing Notice GNR 984, Activity 21:** *"Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies*." 4. **Listing Notice GNR 983, Activity 20:** "*Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource…"* – Prospecting right with bulk samples for the mining of Diamonds Alluvial (DA) and Diamonds General (D) including associated infrastructure, structure and earthworks.

ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, and for a linear activity, a description of the route of the activity

Phase 1 – Site Visit

A formal site visit will be done within 90 days after the prospecting right was executed.

Phase 2 – Desktop studies

Desktop studies will be undertaken after the site investigation was done to determine the target areas including the identification of any infrastructure to be build and any potential problems that may need to be addressed.

Phase 3 – Pitting

Pits will be dug by an excavator to look for gravel. If gravel is found, the applicant will determine the composition and quality of the gravel.

It is envisaged that 100 pits will be dug. It may be less depending on results.

294.824 ha- 3m x 2m x 5m pit (100 pits). It is planned that only 20 pits will be excavated in the first year, but it may be more if the process is quicker than planned for. It should be kept in mind that no more than 100 pits will be excavated.

The total area to be disturbed a year will be- 20 pits x (3m x2m) = 0.012ha per year

Phase 4 – Trenches

The applicant will proceed with this way of prospecting by means of the open cast / trenching method, simultaneously or after pitting depending on the information obtained from the earlier work done. The trenches will be dug to remove and to wash the gravel. It will be washed by 16 feet washing pan to determine diamond proceeds per 100 ton of gravel.

294.824 ha- 20m x 20m x 3m trench (60 Trenches). It is planned that only 12 trenches will be excavated in the first year, but it may be more if the process is quicker than planned for. It should be kept in mind that no more than 60 trenches will be excavated.

The total area to be disturbed a year will be- 12 trenches x (20m x 20m) = 0.48ha per year. No more than 0.492 ha will be left as un-rehabilitated in two years. Rehabilitation will be done concurrently.

Phase 5 – Consolidation and interpretation

All data will be consolidated and processed to determine the diamond bearing resource on the property. This will be a continuous process throughout the prospecting work. Each phase of prospecting will be followed by desktop studies involving interpretation and modeling of all data gathered and how the applicant will proceed with the work program in terms of activity, quantity, resources expenditures and duration. A pre-feasibility study will be done to determine the preliminary economic assessment of the resource and to determine whether additional evaluation of the deposit will be warranted to increase confidence in the resource estimation. Prospecting work will be conducted by a multi-disciplinary team to determine whether the resource can be viable exploited and if the results can support an application for a mining right.

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);	**REFERENCE WHERE APPLIED**
The Constitution of South Africa (Act No. 108 of 1996)	-
The National Environmental Management Act (Act No. 107 of 1998)	S24(1) of NEMA S28(1) of NEMA
The National Water Act (Act No. 36 of 1998)	S21 (a)(b) of NWA
Management: Air Quality Act (Act No. 39 of 2004)	S21
The National Heritage Resources Act (Act No. 25 of 1999)	-
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	-
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	-
National Infrastructure Plan	-
National Forests Acts, Act 84 of 1998	Chap 3 (Part 1) 1998 S12(1) S15(1) S58(1)
Department of Environmental and Nature Conservation	-
Department of Agriculture, Forestry and Fisheries	-
National Veld & Forest Fires Act (Act 101 of 1998)	-
Lejweleputswa District Municipality Integrated Development Plan (IDP)	-
Tswelopele Local Municipality Integrated Development Plan (IDP)	-
National Environmental Management: Waste Act, (No. 59 of 2008) (NEM:WA)	-
Occupational Health and Safety Act as amended, (No.181 of 1993)	-

f) Need and desirability of the proposed activities.

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

Prospecting rights have been applied for in the vicinity of the proposed area, around Schweizer-Reneke.

There are various operational alluvial diamond mines adjacent to proposed properties. The property is known for having diamonds. Previous prospecting was done, Rooikoppie gravel outcrops can be seen on certain areas. The property is an area known to be diamond bearing.

The North West Province is an important supplier of rough diamonds to the international market and is a large corner stone of the South African economy.

g) Period for which the environmental authorisation is required.

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

h) Description of the process followed to reach the proposed preferred site.

NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

Each of the phases are dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond bulk sampling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, the overall prospecting area is presented in **Appendix 3**.

i) Details of all alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

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

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site and previous prospecting on the proposed site, the possibility to encounter further Diamond Reserves on the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 (On Avon – a Portion of Portion 2) of the farm Maraetchesfontein 54, were identified.

Furthermore, no other properties have been secured by the applicant, Brakpan Trust.

(b) The type of activity to be undertaken

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

(c) The design or layout of the activity

The location of the activities will be determined based on the location of the prospecting activities, which will only be determined during phase 1 of the Prospecting Work Programme (see **Appendix 9** for the Programme). Identified on the proposed area by using a topographical map and a site visit conducted on the 15th of March 2017, were the following: windmills, non-perennial river (Harts river) running through certain areas, an earth dam, a cement dam, water troughs, a farm house, farm shed, an old workers' house and other buildings. Where applicable a Water Use License Application will be launched for conducting prospecting operations. All infrastructure will be temporary and/or mobile.

(d) The technology to be used in the activity

In terms of the technologies proposed, these have been chosen based on the long term success of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme (**Appendix 9**) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

The preferred technology for the proposed mining activity, will be to remove the diamond bearing gravel with an excavator, depositing it in the 10 – 18 feet rotary pan(s) to be washed and sorted. Please find the Prospecting Work Programme attached as **Appendix 9**.

Pros & Cons of the alternative **Dense Media Separation (DMS)**

Advantages	**Disadvantages**
DMS plants is used mostly for kimberlite deposits	10 times more expensive than Rotary pan
	Water consumption is high
	Operating costs are expensive

In a Dense Media Separation (DMS) plant, powdered ferrosilicon (an alloy of iron and silicone) is suspended in water to form a fluid near the density of diamond (3.52 g/cm3), to which the diamond bearing material is added to begin the separation process of the heavier minerals from the lighter material. Additional separation of the denser material occurs by centrifuge in "cyclones" that swirl the mixture at low and high speeds, forcing the diamonds and other dense minerals to the walls and then out the bottom of the cyclone. Waste water rises at the center of the cyclones and is sucked out and screened to remove waste particles. The DMS process results in a concentrate that generally weighs less than one percent of the original material fed into the plant at the beginning of the process.

Pros & Cons of the alternative **Rotary Pan Plants**

Advantages	**Disadvantages**
More cost effective	The industry perception that Rotary Pan Plants yield poorer diamond recoveries
Readily available	
Generate more work opportunities	
Consume less water	
Rotary Pan Plants are most often used when mining alluvial deposits	

In a Rotary Pan plant, crushed ore, when mining kimberlite, or alluvial gravel and soil is mixed with water to create a liquid slurry called "puddle" which has a density in the 1.3 to 1.5 g/cm3 range. The mix is stirred in the pan by angled rotating "teeth". The heavier minerals, or "concentrate", settle to the bottom

and are pushed toward an extraction point, while lighter waste remains suspended and overflows out of the centre of the pan as a separate stream of material. The concentrate, representing just a small percentage of the original kimberlite ore or alluvial gravels, is drawn off for final recovery of the diamonds.

Both methods are in actual fact used for bulk material reduction and require a further process for the final diamond recovery however, for this project the Rotary Pan will be used.

When it comes to dust suppression two main methods were considered, namely molasses stillage and the wetting (water) of roads. The table below provides a short summary of the advantages and disadvantages of each.

Water	Molasses stillage
More cost effective	Much more expensive
Could lead to the depleting of water resources	Requires less water
No damage (only if used excessively)	The product may be toxic to aquatic organisms. (As this product could have physical effects on aquatic organisms for e.g. floating, osmotic damage)
No harm to humans or animals (Only a high quantity will have harm to humans or animals)	Not Hazardous or toxic. Could cause irritation to eyes, skin or when ingested and inhaled.
Non-flammable	Non-flammable
Eye-wash fountains not needed	Eye-wash fountains in the work place are strongly recommended
	Working procedures should be designed to minimize worker exposure to this product.
Basic storing methods	Storing methods are a bit more complicated. Should be stored in a plastic, plastic lined or stainless steel, tight closed containers between 5 and 40 degrees Centigrade.

Considering the above mentioned information, water will be used for dust suppression purposes.

(e) The operational aspects of the activity

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

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

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

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

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

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

(f) The option of not implementing the activity

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

ii) Details of the Public Participation Process Followed

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

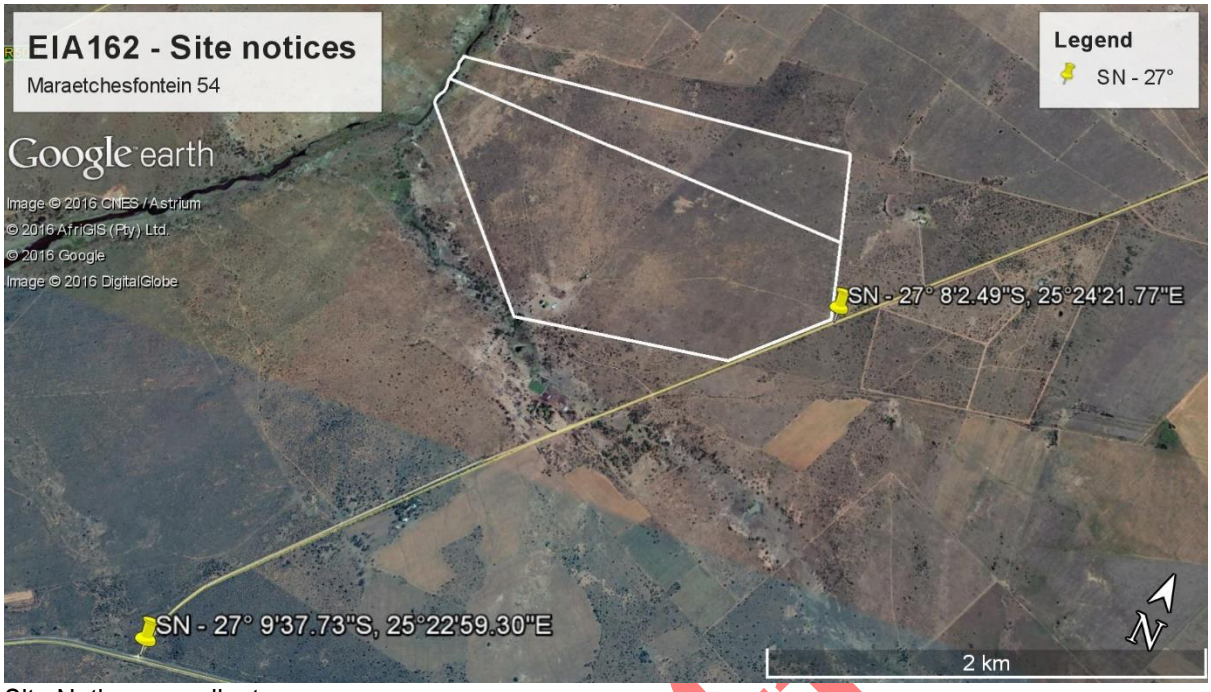
1. Advertisement and Notices

Newspaper advertisement

An advertisement will be placed in English in the local newspaper (Stellalander newspaper) on 22 February 2017 (see **Appendix 6**) notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with, and submit their comments to Milnex 189 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

Site notices

Site notices will be placed on site in English on the 01 March 2017 to inform surrounding communities and immediately adjacent landowners of the proposed development. I&APs were given the opportunity to raise comments. Photographic evidence of the site notices is included in **Appendix 6**. Below is a picture depicting were site notices were placed



Site Notices coordinates

Direct notification and circulation of Scoping Report to identified I&APs

Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the Scoping Report via registered post on 20 February 2017and were requested to submit comments by 23 March 2017. A copy of this report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Thursdays and between 7:30AM and 4PM on Fridays. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**. The consultees included:

- Department of Rural, Environmental and Agricultural Development
- Department of Water and Sanitation
- North West Department of Mineral Resources
- North West Department of Agriculture
- North West Department of Public Works, Roads and Transport
- North West Provincial Heritage Resources Authority
- North West Department of Agriculture and Forestry
- National Department of Agriculture, Forestry and Fisheries
- The Wildlife and Environment Society of South Africa (WESSA)
- Dr. Ruth Segomotsi Mompati District Municipality
- Municipal Manager at the Mamusa Local Municipality
- Local Councilor at the Mamusa Local Municipality

It is expected from I&APs to provide their inputs and comments within 30 days after receipt of the notification or Scoping Report.

Direct notification of surrounding land owners and occupiers

Written notices and the availability of the Scoping Report are also provided to all surrounding land owners and occupiers on 20 February 2017. The surrounding land owners are given the opportunity to raise comments by 23 March 2017. For a list of surrounding land owners see **Appendix 6**.

3) Consultation

All I&AP's are invited to attend the public meeting scheduled for the 1**5th of March 2017 at 10:00am–11:00am** on the gravel road heading towards Migdol approximately 3.5km from the R504 at the coordinates mentioned below.

Coordinates
27° 8'9.47"S
25°24'14.86"E

The public meeting is an opportunity to share information regarding the proposed development and provide I&APs with an opportunity to raise any issues and provide comments.

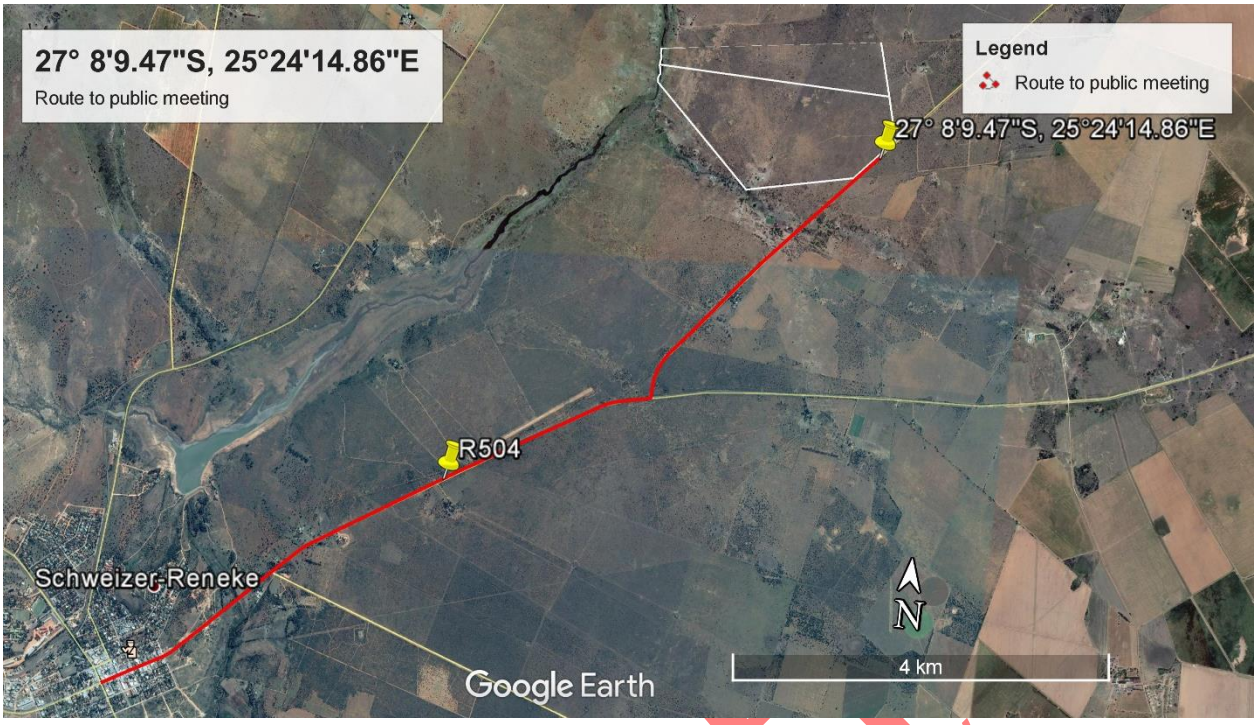
The following key stakeholders and surrounding land owners are also directly informed of the public meeting via registered post 20 February 2017.

- Department of Rural, Environmental and Agricultural Development
- Department of Water and Sanitation
- North West Department of Mineral Resources
- North West Department of Agriculture
- North West Department of Public Works, Roads and Transport
- North West Provincial Heritage Resources Authority
- North West Department of Agriculture and Forestry
- National Department of Agriculture, Forestry and Fisheries
- Wildlife and Environment Society of South Africa (WESSA)
- Dr. Ruth Segomotsi Mompati District Municipality
- The Municipal Manager at the Mamusa Local Municipality
- Local Councilor at the Mamusa Local Municipality
- Wildlife and Environment Society of South Africa (WESSA)
- Land Owner 1: Mr Hendrik Johannes Fouche
- Surrounding Land Owner: Mr. Pieter Renier Nieuwoudt
- Surrounding Land Owner: Mr. Jacobus Coenraad Lock
- Surrounding Land Owner: Mr.Abraham Johannes Stephanus Strauss
- Surrounding Land Owner: Welgenoeg Trust, Mrs. Johanna Dannhauser
- Surrounding Land Owner: Gawie Badenhorst Trust

Public meeting

The stakeholders & interested and affected parties were informed about the proposed project with the use of site notices, press advertisement and registered letters.

The meeting is scheduled for the **15th of March 2017 at 10:00am–11:00am** on the gravel road heading towards Migdol approximately 3.5km from the R504, with the I&AP and stakeholders as represented by the figure below.



Comments received will be included in the comments and response table/form (See Appendix 6 for comments and response form)

Please note: The interested and affected parties where given an opportunity to register via site notice, press advert and letters and only one person registered.

Milnex representative Ms. Anica Nieuwoudt attended the meeting & no I&AP attended the meeting. Attached as appendix 6 is the attendance register for the meeting.

3. Issues Raised by Interested and Affected Parties

When the comment period ends, comments received will be included in the comments and response table/form (See Appendix 6 for comments and response form).

iii) Summary of issues raised by I&APs

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

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issue and or response where incorporated
Organisation	Contact person				
Land Owner					
Maraetchesfontein RE/2/54 & 15/54	Mr Hendrik Johannes Fouche				
Landowners or lawful occupiers on adjacent properties					
Maraetchesfontein 12/54	Mr. Pieter Renier Nieuwoudt				
Maraetchesfontein 20/54	Mr. Jacobus Coenraad Lock	10/03/2017	Email received 10/03/2017 at with attached comments and response form, which states that Mr. Lock would like to receive project information via email and will not attend the public meeting. Email received 10/03/2017 at 16:11 states that Mr. Lock meant he only wanted project information that relates to him.	Email sent on 10/03/2017 at 13:44 states that Milnex 189 CC received his email and gave him the dropbox link to follow for more project information. Email sent 10/03/2017 at 15:46 with attached Draft Scoping Report.	
Lot 7 RE/49	Mr.Abraham Johannes Stephanus Strauss				
Lot 7 2/49	Welgenoeg Trust Mrs. Johanna Dannhauser				
Maraetchesfontein RE/54	Gawie Badenhorst Trust				
The Municipality in which jurisdiction the development is located					

Mamusa Local Municipality	Municipal Manager: Mr Ruben Gincane				
Municipal councilor of the ward in which the site is located					
Mamusa Local Municipality	Ward 7 Councilor				
Organs of state having jurisdiction					
Department of Rural, Environmental and Agricultural Development, North West (READ)	Ouma Skosana				
The Department of Water & Sanitation (DWS)	Mr. Abe Abrahams				
NW Department of Agriculture (Dept. of Agric.)	Ms. Bonolo Mohlakoana				
Provincial Heritage Resources Agency (PHRA) North West	Mr. Motlhabane Mosiane				
Department of Public Works, Roads and Transport in NW (DPWRT)	HOD: Ms. Mulangaphuma				
Department of Mineral Resources – North West (DMR)	Mr. Nephawe Mbavhalelo	20/02/2017	Mr. Nephawe Mbavhalelo called on the 20/02/2017 and asked that the locality map be emailed to him.	Ms. Percy Sehaole emailed Mr. Nephawe Mbavhalelo the locality map on 20/02/2017.	
	Mr. Pieter Swart	23/02/2017	Letter dated 23/02/2017 states that the application is acknowledged and it is assigned to Mr. Nephawe Mbavhalelo. <u>Comment 5</u> states that this application is subject to the provisions of Chapter 2, Section 28 of the National Heritage Resources Act, Act 25 of 1999, then this Department will not be able to make nor		

			issue a decision in terms of your application for Environmental Authorisation pending a letter from the pertinent heritage authority categorically stating that the application fulfils the requirements of the relevant heritage resources authority as described in Chapter 2, Section 38.8 of the National Heritage Resources Act, Act 25 of 1999.		
Department of Agriculture, Forestry (DAF)	Mr. Maurice Vugeya & Mrs Mpho Gumula				
Department of Agriculture, Forestry, and Fisheries (DAFF)	To whom it may concern				
Department of Rural development and Land reform	Mr Lengane Bogatsu	01/03/2017	Email received 01/03/2017 states that the require is receiving attention.	Email sent 01/03/2017 is proof of land claims consultation.	
	Norah Lebogang Lethuli	07/03/2017	Email received on 07/03/2017 with attached letter dated 06/03/2017 states that no claims appear on the North West database in respect of the properties. This include the database for claims lodged by 31st December 1998 and those lodged between 1 July 2014 and 27 July 2016 in terms of the Restitution of Land Rights Amendment Act , 2014.		
Other–					
Dr. Ruth Segomotsi Mompati District	Municipal Manager: Zebo Tshetlho				
WESSA	Mr. John Wesson				

The Environmental attributes associated with the sites

(1) Baseline Environment

The baseline environment is described with specific reference to geotechnical conditions, ecological habitat and landscape features, Soil, land capability and agricultural potential, climate and the visual landscape.

(a) Type of environment affected by the proposed activity.
(its current geographical, physical, biological, socio- economic, and cultural character).

Geology and Soils

The Council for Geo Science describes the gravel found in the area under application as follows:

Ra: Tholelitic and calc-alkaline basalt and andesite; tuff and pyroclastic breccia.

Classification
The allanridge formation underlies the Bothaville Formation conformably but where the latter pinches out the Allanridge verstemps onto diverse older lithologies.

The formation consists mainly of two types of lava, i.e. a dark-green amygdaloidal lava and light green-grey porphyritic lava.

Mineralogy
The dark-green lava, which is by far the most prominent unit in the Allanridge formation, also constitutes the greater part of the Ventersdorp supergrouop in the area. The lava is fine to medium grained in texture and the plagioclase and augite in it have been replaced by secondary minerals, such as chlorite, eqidote, calcite sericite and uralite. The amygdales in the lava consist of quartz, chalcedony, calcite, chlorite or eqidote, or any combination of these minerals. Where more than one mineral makes up an amygdale, the minerals commonly form concetric zones.

Sedimentary Rocks
The sedimentary rocks of the Allanridge formation consist of a mixture of tuff, agglomerate and volcanic breccia occur interbedded with the lava towards the top of the formation

Ecological habitat and landscape features

It is noted that protected tree species under the National Forests Act No. 84 of 1998 are listed in Table 4.9. In terms of a part of section 15(1) of Act No. 84 of 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a license granted by the Minister.

In cases where the trees will need to be cut, disturbed, damaged or destroyed or possessed, collected, removed, transported, exported, purchased, sold or donated a flora permit and/or NFA License will be applied for with the Department of Environmental and Nature Conservation and Department of Agriculture, Forestry and Fisheries.

The proposed area falls within vegetation unit SVk 3, which is known as the Schweizer-Reneke Bushveld. Schweizer-Reneke Bushveld is part of the Eastern Kalahari Bushveld Bioregion, which is a sub-bioregion for the Savanna Biome.

According to Mucina and Rutherford (2006:516), the Schweizer-Reneke Bushveld vegetation covers the North West Province. Schweizer-Reneke area in the east to Amalia in the west and from the farming areas of around Broedersput in the north to Never Mind (Christiana District) in the south. This Bushveld is situated on an altitude of 1250m – 1400m.

The region is characterised by plains, slightly undulating plains and some hills, supporting open woodland with a fairly dense shrub layer, with *Acacia erioloba, A. karroo, A. tortilis, Rhus lancea* trees and *A. hebeclada, Diospyros lycioides, Grewia flava, Tarchonanthus camphoratus* shrubs.

Mucina and Rutherford (2006:516) also states that the conservation of this Bushveld type, is endangered with a target of 16%. None conserved in statutory conservation areas. Largely (42%) transformed almost all by cultivation. Erosion is very low.

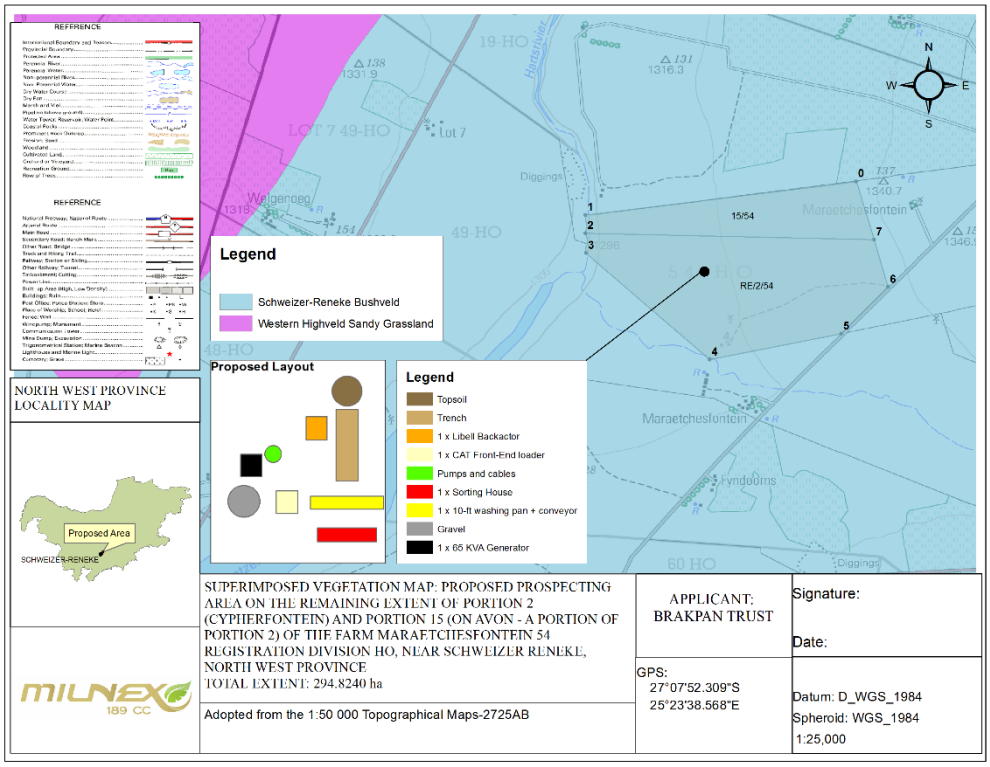


Figure 3: Vegetation Unit Map

Protected Areas

According to the data for protected areas the proposed portions does not fall within a formally protected area. However, it does fall within Schweizer-Reneke Bushveld threatened ecosystems.

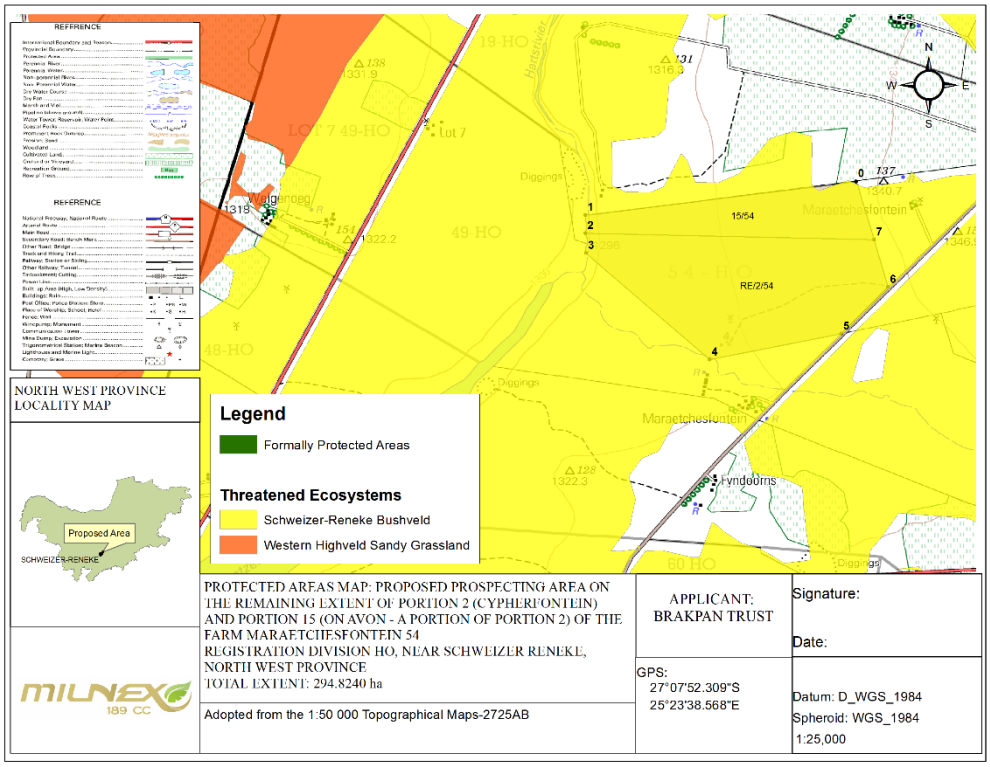


Figure 4: Protected Areas Map

Critical Biodiversity Area

According to READ (2015) "Critical biodiversity areas (CBAs) are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. In other words, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met.

Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses and can include one or more of the following: threatened ecosystems, special and important habitats, areas of high irreplaceability, ecological/biodiversity corridors, and existing or proposed protected areas and protected area development nodes. CBAs can be divided into two categories, namely: CBA 1 and CBA 2. READ (2015) also states that according to the extent of the CBA Map categories in the North-West Province, only 8% are CBA 1 and 20% are CBA 2.

According to the data for Critical Biodiversity Areas, areas of the proposed portions fall within CBA type 1 and type 2. The North West Biodiversity Sector Plan (2015) defined the management of the different CBA areas as follows:

Critical Biodiversity Area type 1

Maintain in a natural or near-natural state that maximises the retention of biodiversity pattern and ecological process:

- Ecosystems and species fully or largely intact and undisturbed.

- These are areas with high irreplaceability or low flexibility in terms of meeting biodiversity pattern targets. If the biodiversity features targeted in these areas are lost, then targets will not be met.
- These are biodiversity features that are at, or beyond, their limits of acceptable change.

Critical Biodiversity Area type 2

Maintain in a natural or near-natural state that maximises the retention of biodiversity pattern and ecological process:

- Ecosystems and species fully or largely intact and undisturbed.
- Areas with intermediate irreplaceability or some flexibility in terms of meeting biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising the ability to achieve biodiversity targets, although loss of these sites would require alternative sites to be added to the portfolio of CBAs.
- These are biodiversity features that are approaching but have not passed their limits of acceptable change

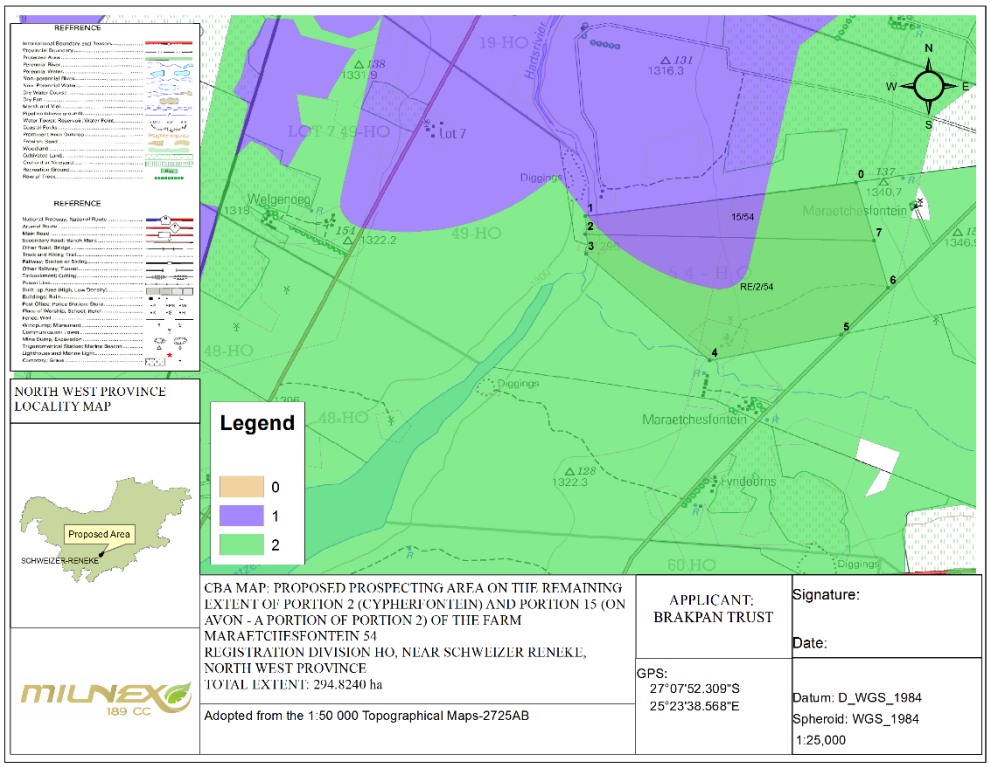


Figure 5: Critical Biodiversity Areas Map.

According to a matrix of recommended land use zones and associated activities in relation to the CBA map categories), prospecting is not permitted or it is discouraged in CBA type 1 areas. In CBA type 2 areas it is restricted to compulsory, site specific conditions and controls when unavoidable, not usually permitted

NO	LAND USE ZONE	ASSOCIATED LAND USE ACTIVITIES	PA/CA	CBA1	CBA2	ESA1	ESA2	ONA
15	Quarrying and Mining	Prospecting and Underground Mining	N	N	R	R	R	R
		Quarrying and open-cast mining (includes surface mining, dumping & dredging).	N	N	N	N	N	R
		Hydraulic Fracturing (fracking)	N	N	N	R	R	R

Notes:

1. Guidelines apply only to natural or near-natural land with natural vegetation cover within each category (on site).
2. Y = YES, permitted and actively encouraged activity;
3. N = NO, not permitted, actively discouraged activity; and,
4. R = RESTRICTED to compulsory, site-specific conditions & controls when unavoidable, not usually permitted.

(North West Biodiversity Sector Plan, 2015:57

Sensitive area for Mine

According to the mine guide map, certain areas of the proposed portions fall within category B and C, which states the biodiversity priority areas for the different categories is as follows:

Category B (Highest risk for mining)

These areas are viewed as necessary to ensure protection of biodiversity, environmental sustainability, and human well-being.

Biodiversity priority areas:

- Critically endangered and endangered ecosystems
- Critical Biodiversity Areas (or equivalent areas) from provincial spatial biodiversity plans
- River and wetland Freshwater Ecosystem Priority Areas (FEPAs), and a 1km buffer around these FEPAs
- Ramsar Sites

Category C (High risk for mining)

These areas are important for conserving biodiversity, for supporting or buffering other biodiversity priority areas, for maintaining important ecosystem services for particular communities or the country as a whole.

Biodiversity priority areas:

- Protected area buffers (including buffers around National Parks, World Heritage Sites* and Nature Reserves).
- Transfrontier Conservation Areas (remaining areas outside of formally proclaimed protected areas).
- Other identified priorities from provincial spatial biodiversity plans.
- High water yield areas
- Coastal Protection Zone
- Estuarine functional zone

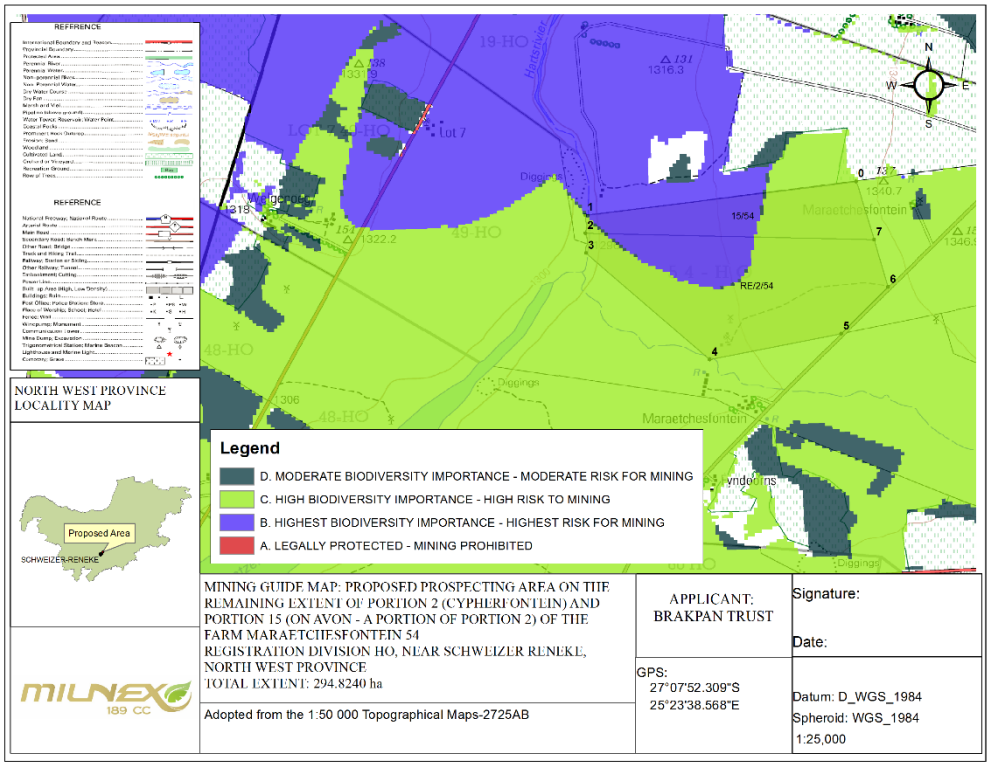


Figure 6: Sensitive area for mine

Wetland Areas

Wetland is defined as land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil (from the South African National Water Act; Act No. 36 of 1998).

Map below depicts all wetland areas on the proposed area. The proposed area consists of an channelled valley-bottom wetland and the wetland vegetation type falls within the Eastern Kalahari Bushveld Group 2.

According to the 2013 SANBI Biodiversity Series 22 a:

Channelled valley-bottom wetland is a valley-bottom wetland with a river channel running through it. It is characterised by their position on valley floors and the absence of characteristic floodplain features and the presence of a river channel flowing through the wetland. Dominant water inputs to these wetlands are from the river channel flowing through the wetland, either as surface flow resulting from flooding or as subsurface flow, and/or from adjacent valley-side slopes (as overland flow or interflow).

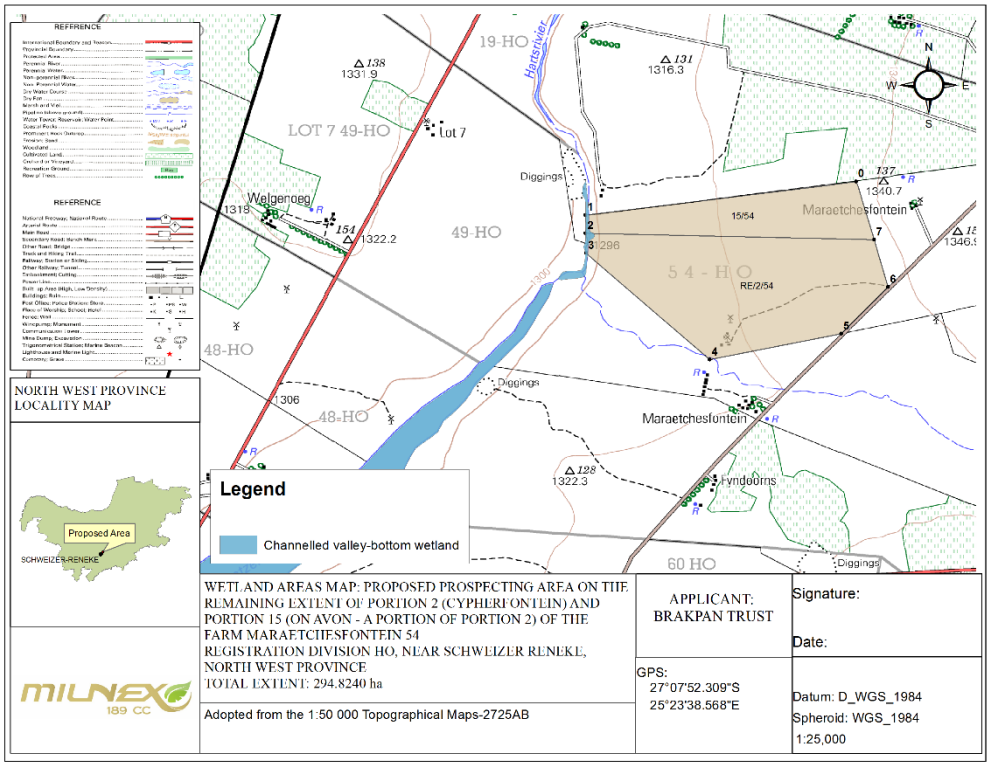


Figure 7: Wetland types present on site

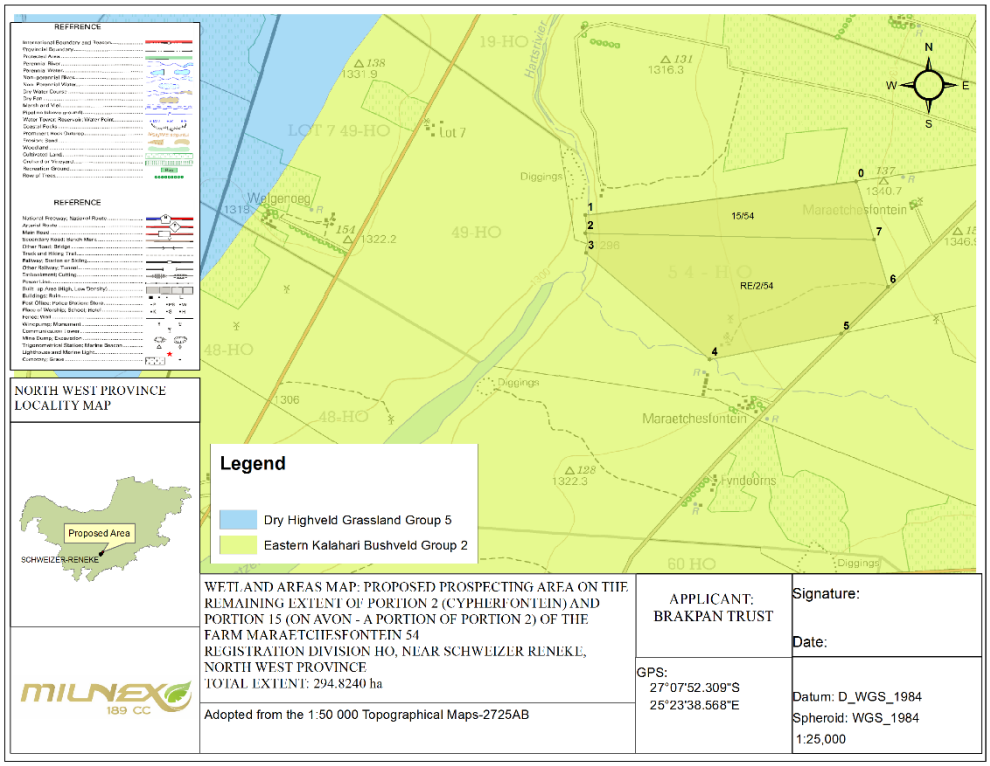
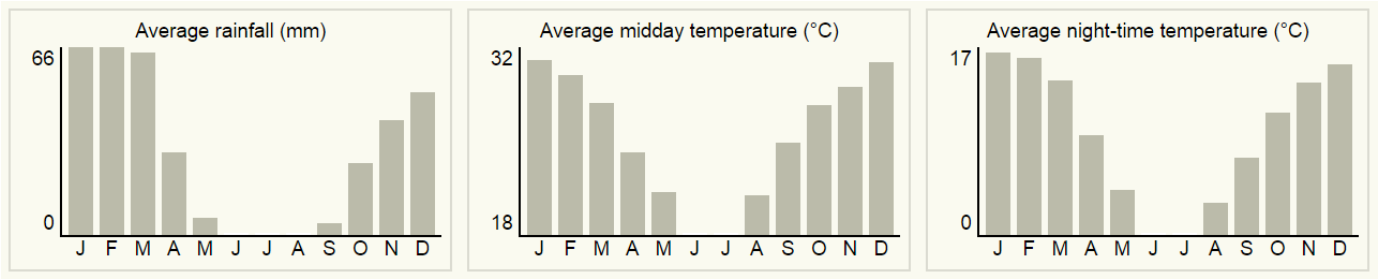


Figure 8: Wetland vegetation types

Land capability and agricultural potential

- Climate and water availability

Schweizer-Reneke normally receives about 350mm of rain per year, with most rainfall occuring mainly during summer. The chart below (lower left) shows the average rainfall values for Schweizer-Reneke per month. It receives the lowest rainfall (0mm) in June and the highest (66mm) in January. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Schweizer-reneke range from 18°C in June to 31°C in January. The region is the coldest during July when the mercury drops to 0°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures. (SAexplorer:2014).



- Agricultural / land capability

Land capability is the combination of soil suitability and climate factors. The site and surrounds has a land capability classification, on the 8-category scale, of Class 4 – which falls under Arable land. Class 4 is described as land which has very severe limitations that restrict the choice of plants, require very careful management, or both. It may be used for cultivated crops, but more careful management is required than for Class III and conservation practices are more difficult to apply and maintain. (refer to Land capability map on figure 9 and attached as Appendix 5).

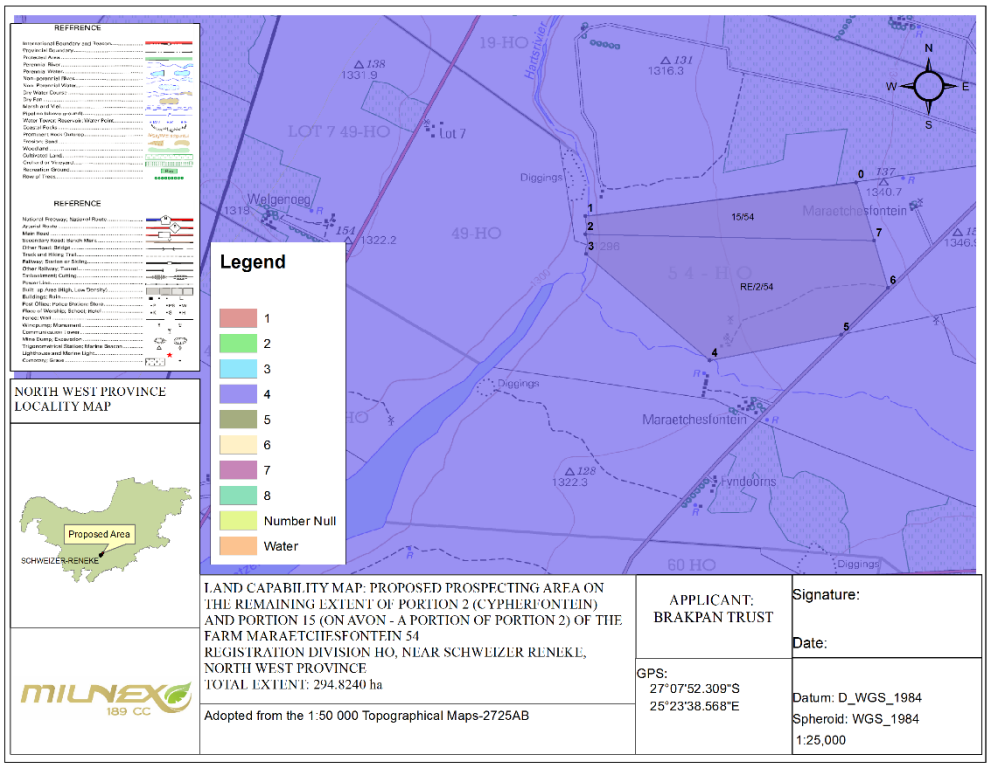


Figure 9: Land capability Map

Description of the socio-economic environment

Socio-economic conditions

According to the 2014/1 Mamusa Local Municipality's IDP review the municipal area comprises a total area of 3 681 km². The land mass is 7.8% of the total area of the Dr. Ruth S Mompati District Municipality. The administrative Centre of the municipality is in the rural area of Schweizer-Reneke situated on the banks of the Harts River and at the foot of Mamusa hills in the North-West Province. The town of Schweizer-Reneke is the only town in Mamusa Local Municipality `and surrounded by agricultural farms. The municipal area covers the central part of the Southern District municipal area and neighbours the following municipalities: Lekwa-Teemane Local Municipality, Naledi Local Municipality and Greater Taung Local Municipality.

According to census 2011, The Mamusa municipality has a total population of 60 355, this however only contributes only 13% to the total population of the Dr. Ruth S Mompati District Municipality which population totals at 463 815 people. The Global Insight survey 2009 indicated that the population was 48 465 within the Mamusa Local Municipality. The population of MLM is thus increasing and this could be attributed by migration of people from other surrounding local municipalities.

Statistic SA 2011 depicts that the Africans are in majority and constitute about 55195 people of the total population of Mamusa LM. The Whites population group is about 3330 of the total population of Mamusa LM, Coloureds constitute 1356 of the total population of Mamusa LM and the total number of Asians is 290 of the total population of Mamusa LM.

African gender groups dominate the demographic profile of the Mamusa LM. African females are in the majority at 47.4% of the population, followed by African males at 45.6%. White females are dominating at 2.2% compared to the coloureds females at 1.1%. The number of white males is lower at 2.1% and the coloureds males are currently at 0.2%. There is an increase in the Indian/ Asian population at 0.4% overall and this can be attributed to business opportunities within local sector.

According to the Water and Sanitation Backlog Study Report of 2007, the total number of households in MLM was 13,676 as compared to 14,968 from the 2001 census and 14,310 as reported by Census 2011 households.

The household structure is measured by the number of households and the average household size. The following describes the household structure. In total, there were 14,625 households in MLM. With a total population of 60355, this gives an average household size of 4.9, about 5 people per household.

The Gross Domestic measures the total number of goods and services produced in a region. The total Gross Domestic Product of MLM in 2009 was R948 461. Gross Domestic Products for Mamusa LM is highly depended on various sectors which include but not limited to Agriculture and hunting, Construction, wholesale, retail, sale and repairs of motor vehicles, restaurants, land and water transport, education, finance, real estates, health and social work and public administration activities. These are some of the sectors highlighted which contribute positively to the growth of Mamusa LM's GDP.

Cultural and heritage aspects

Special attention will be given to the identification of possible cultural or heritage resources on site. Proof of such aspects did not occur. However heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected by the National Heritage Resources Act no 25 of 1999. Therefore, if such resources are found during the prospecting or development activities, they will not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development, the developer will ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA will be contacted immediately.

The habitation of the larger geographical area took place since Early Stone Age times, especially in the region of the Vaal River. However, the biggest legacy dating to the Stone Age are the numerous sites with rock engravings found in the larger region. Some of the farms in the Christiana region known to have rock engravings are the Townlands and Twaalfkameelbomen, to mention but a few. As yet, no sites dating to the Early Iron Age have been reported from the region and most sites date to the Late Iron Age. According to Breutz (1959) stone walled sites dating to the Late Iron Age and which can be linked to the Tswana occupation of the area, are found on a number of farms in the region, e.g. Waai Hoek and Brul Pan. However, the historic most important one, named Dithakong, is located some distance to the north-west. This site was first visited by early travellers such as Lichtenstein and John Campbell in the early part of the 19th century.

Schweizer-Reneke was formerly part of the old Transvaal province. Founded on 1 October 1888, the town is situated on the banks of the Harts River, with six regional roads exiting the town. The town is named after Captain C.A. Schweizer and Field Cornet C.N. Reneke. Both men distinguished themselves and were among the ten soldiers killed while storming the stronghold of the Khoi Koi Koranna Khoe and their chief David Massouw on the nearby Mamusa Hill on 2 December 1885 during an action to put an end to cattle rustling in the area. The remains of the stone fortifications of Chief David Massouw can still be seen on Mamusa Hill. (Raper 2004).

(b) Description of the current land uses.

The site survey revealed that land cover on and in the immediate vicinity of the proposed area are essentially comprised of natural cover and to a lesser extent a waterbody, cultivation and degraded land cover. Below is the land cover of the farm.

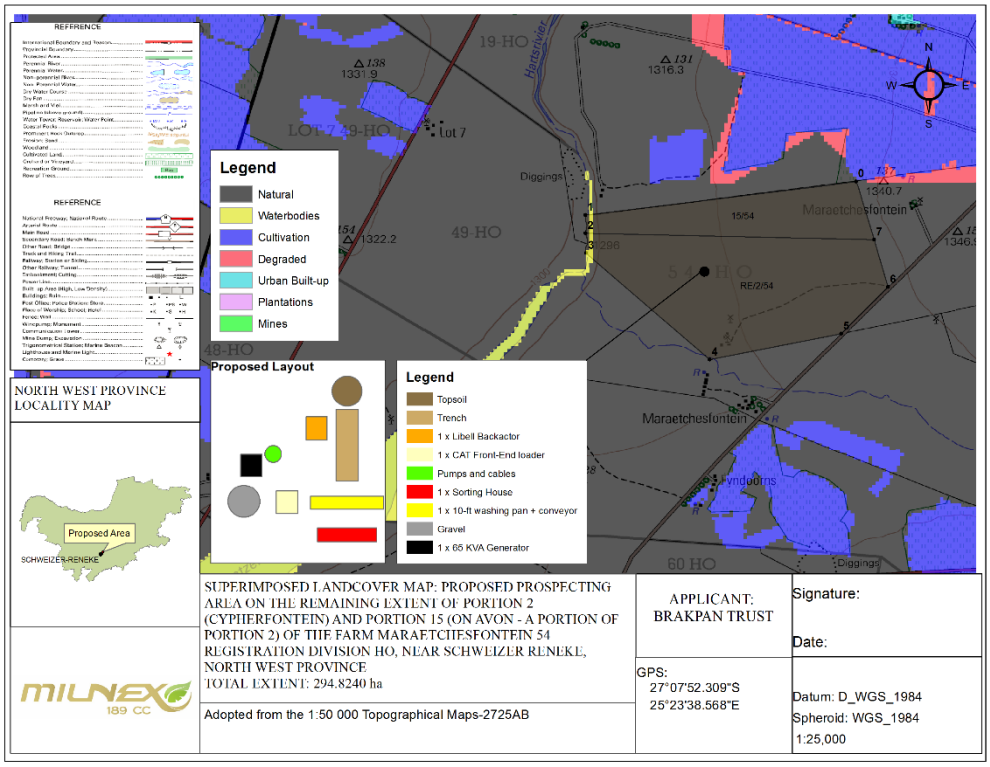


Figure 10: Land cover

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

The proposed area consists of windmills, non-perennial river (Harts river), an earth dam, a cement dam, water troughs, farm house, farm shed, an old workers' house other buildings and natural cover.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

A Locality map is attached in **Appendix 3**.

iv) Impacts identified

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability and duration of the impacts

- Impacts during construction phase:
  - Impacts on the fauna and flora
  - Impacts on the soil
  - Impacts associated with the geology of the site
  - Impacts on existing services infrastructure
  - Impacts on surface water (wetlands/pans)
  - Temporary employment and other economic benefits
  - Impacts on heritage resources
- Impacts during the operational phase:
  - Impacts on the soil

- Impacts associated with the geology of the site
- Impacts on surface water (wetlands/pans)
- Increase in employment and other economic benefits
- Visual impacts
- Generation of income to the Local Community
- Pressure on existing services infrastructure and water sources.

➢ Impacts during the decommissioning / mine closure phase:

- Loss of permanent employment & the creation of temporary employment

v) Methodology used in determining the significance of environmental impacts

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

Scoping methodology

The contents and methodology of the scoping report aims to provide, as far as possible, a user-friendly analysis of information to allow for easy interpretation.

➢ Checklist: The checklist consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts.

➢ Matrix: The matrix analysis provides a holistic indication of the relationship and interaction between the various activities, development phases and the impact thereof on the environment. The method aims at providing a first order cause and effect relationship between the environment and the proposed activity. The matrix is designed to indicate the relationship between the different stressors and receptors which leads to specific impacts. The matrix also indicates the specialist studies, which will be submitted as part of the Environmental Impact Report in order to address the potentially most significant impacts.

Checklist analysis

The site visit was conducted to ensure a proper analysis of the site specific characteristics of the study area. The table below provides a checklist, which is designed to stimulate thought regarding possible consequences of specific actions and so assist scoping of key issues. It consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts. The table highlights certain issues, which are further analysed in matrix format.

Table: Environmental checklist

QUESTION	YES	NO	Un-sure	Description
1. Are any of the following located on the site earmarked for the development?				
I. A river, stream, dam or wetland			✕	According to the topographic map a non-perennial river runs through the proposed area.
II. A conservation or open space area		✕		None.
III. An area that is of cultural importance			✕	Unsure, but if such objects should be found while prospecting, the prospecting activities will stop immediately and a specialist will be appointed to conduct further studies.

IV. Site of geological significance		✕		None.
V. Areas of outstanding natural beauty			✕	
VI. Highly productive agricultural land			✕	According to the land capability map the proposed portions fall within Class 4, which states it may be used for cultivating crops. However according to the landcover map the proposed area is naturally covered. It is used for cattle- and boer goat grazing.
VII. Floodplain		✕		None
VIII. Indigenous forest		✕		None
IX. Grass land		✕		None.
X. Bird nesting sites			✕	
XI. Red data species			✕	
XII. Tourist resort		✕		None.
2. Will the project potentially result in potential?				
I. Removal of people		✕		None.
II. Visual Impacts			✕	The proposed portion is approximate 3.4km from the R504 on a gravel road. The visual impact will be managed by placing stockpiles on the boundaries closer to the road.
III. Noise pollution		✕		The noise impact is unlikely to be significant.
IV. Construction of an access road		✕		None. Access will be obtained from the gravel road off the R504 tar road.
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		✕		None.
VI. Accumulation of large workforce (>50 manual workers) into the site.		✕		Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
VII. Utilisation of significant volumes of local raw materials such as water, wood etc.	✕			10 Ft washing pans which utilise approximately 11 000 L per hour each from which 30% is re-used.
VIII. Job creation	✕			Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
IX. Traffic generation		✕		None.
X. Soil erosion		✕		Only areas earmarked for prospecting will be cleared. The prospecting will be phased and the topsoil stockpiled separately. Concurrent rehabilitation will take place. The soil also has a low erosion potential.
XI. Installation of additional bulk telecommunication transmission lines or facilities		✕		None.
3. Is the proposed project located near the following?				
I. A river, stream, dam or wetland	✕			According to the topographical map the Harts river is adjacent the proposed portions and according to the wetland areas map this is also a Channelled valley-bottom wetland.
II. A conservation or open space area		✕		None.

III. An area that is of cultural importance			✕	
IV. A site of geological significance		✕		None.
V. An area of outstanding natural beauty			✕	Most of the area is covered in natural vegetation, however there are also degraded and cultivation land according to the landcover map.
VI. Highly productive agricultural land			✕	According to the land capability map the area around the proposed portions fall within Class 4, which states its arable land.
VII. A tourist resort		✕		None.
VIII. A formal or informal settlement		✕		None.

5.1 Matrix analysis

The matrix describes the relevant listed activities, the aspects of the development that will apply to the specific listed activity, a description of the environmental issues and potential impacts, and the significance and magnitude of the potential impacts. The matrix also highlights areas of particular concern for more in depth assessment during the EIA process. Each cell is evaluated individually in terms of the nature of the impact, duration and its significance – should no mitigation measures be applied. This is important since many impacts would not be considered insignificant if proper mitigation measures were implemented. The matrix also provides an indication if mitigation measures are available.

In order to conceptualise the different impacts the matrix specify the following:

- **Stressor**: Indicates the aspect of the proposed activity, which initiates and cause impacts on elements of the environment.
- **Receptor**: Highlights the recipient and most important components of the environment affected by the stressor.
- **Impacts**: Indicates the net result of the cause-effect between the stressor and receptor.
- **Mitigation**: Impacts need to be mitigated to minimise the effect on the environment.

Matrix Analysis

LISTED ACTIVITY (The Stressor)	ASPECTS OF THE DEVELOPMENT /ACTIVITY	POTENTIAL IMPACTS			SIGNIFICANCE AND MAGNITUDE OF POTENTIAL IMPACTS			MITIGATION OF POTENTIAL IMPACTS	SPECIALIST STUDIES / INFORMATION
			Receptors	Impact description	Minor	Major	Duration	Possible Mitigation	
CONSTRUCTION PHASE									
Listing Notice GNR 984, Activity 15:"The clearance of an area of 20 hectares or more, of indigenous vegetation."	Site clearing and preparation Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Loss or fragmentation of indigenous natural vegetation. • Loss of sensitive species. • Loss or fragmentation of habitats.		-	L	Yes	-
			Air	• Air pollution due to the increase of traffic of construction vehicles.	-		S	Yes	-
			Soil	• Soil degradation, including erosion. • Loss of topsoil. • Disturbance of soils and existing land use (soil compaction).		-	S	Yes	-
			Geology	• It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.		-	S	Yes	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at a licensed landfill site. • Generation of sewage that need to be accommodated by the local sewage plant.	-		S	Yes	-
			Ground water	• Pollution due to construction vehicles.	-		S	Yes	-
			Surface water	• Increase in storm water run-off. • Pollution of water sources due to soil erosion. • Destruction of watercourses (pans/dams/streams).		-	S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. • Business opportunities. • Skills development.		+	S	Yes	-
			Visual landscape	• Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility.	-		S	Yes	-
			Traffic volumes	• Increase in construction vehicles.	-		S	Yes	-
			Health & Safety	• Air/dust pollution. • Road safety. • Increased risk of veld fires.		-	S	Yes	-

			Noise levels	• The generation of noise as a result of construction vehicles, the use of machinery such as drills and people working on the site.	-		S	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the proposed activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• Removal or destruction of archaeological and/or paleontological sites. • Removal or destruction of buildings, structures, places and equipment of cultural significance. • Removal or destruction of graves, cemeteries and burial grounds.		-	S	Yes	-
Listing Notice GNR 984, Activity 15:"The clearance of an area of 20 hectares or more, of indigenous vegetation."	Site clearing and preparation Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately. This will inevitably result in the removal of indigenous vegetation located on the site.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Loss or fragmentation of indigenous natural vegetation. • Loss of sensitive species. • Loss or fragmentation of habitats.		-	L	Yes	-
			Air quality	• Air pollution due to the increase of traffic.			S	Yes	-
			Soil	• Soil degradation, including erosion. • Disturbance of soils and existing land use (soil compaction). • Loss of agricultural potential	-		S	Yes	-
			Geology	• It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.	N/A	N/A	N/A	N/A	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at a licensed landfill site. • Generation of sewage that need to be accommodated by the local sewage plant.	-		S	Yes	-
			Ground water	• Pollution due to construction vehicles.			S	Yes	-
			Surface water	• Increase in storm water run-off. • Pollution of water sources due to soil erosion. • Destruction of watercourses (pans/dams/streams).	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. • Skills development.		+	S	N/A	-
			Visual landscape	• Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility due to dust.	-		S	Yes	-
			Traffic volumes	• Increase in construction vehicles.	-		S	Yes	-

			Health & Safety	• Air/dust pollution. • Road safety.		-	S	Yes	-
			Noise levels	• The generation of noise as a result of construction vehicles, and people working on the site.	-		S	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the proposed activity will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• Removal or destruction of archaeological and/or paleontological sites. • Removal or destruction of buildings, structures, places and equipment of cultural significance. • Removal or destruction of graves, cemeteries and burial grounds.	N/A	N/A	N/A	N/A	-
OPERATIONAL PHASE									
Listing Notice GNR 984, Activity 19: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resource4s Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)" Listing Notice GNR 984, Activity 21: "Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies." Listing Notice GNR 983, Activity 20: "Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral	The key components of the proposed project are described below: • Supporting Infrastructure - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint 50m² or less. Other supporting infrastructure includes a site office and workshop area. • Roads – Access will be obtained from the gravel road off the R504 tar road. All site roads will require a width of approximately 10m. • Fencing - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Fragmentation of habitats. • Establishment and spread of declared weeds and alien invader plants (operations).		-	L	Yes	-
			Air quality	• Air pollution due to the mining activity, crusher plant and transport of the gravel to the designated areas.	N/A	N/A	N/A	N/A	-
			Soil	• Soil degradation, including erosion. • Disturbance of soils and existing land use (soil compaction). • Loss of agricultural potential (low significance relative to agricultural potential of the site).		-	L	Yes	-
			Geology	• Collapsible soil. • Seepage (shallow water table). • Active soil (high soil heave). • Erodible soil. • The presence of undermined ground. • Instability due to soluble rock. • Steep slopes or areas of unstable natural slopes. • Areas subject to seismic activity. • Areas subject to flooding.		-	S	Yes	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at a licensed landfill site. • Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. • Increased consumption of water. Approximately 11 000 L per hour		-	L	Yes	-
			Ground water	• Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.	-		L	Yes	-
			Surface water	• Increase in storm water runoff. The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion. • Destruction of watercourses (pans/dams/streams).		-	L	Yes	-

and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource…" – Prospecting right with bulk samples for the mining of Diamond Alluvial (DA), Diamond General (D), including associated infrastructure, structure and earthworks.				• Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.					
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Job creation. Security guards will be required for 24 hours every day of the week and general laborers will also be required for the cleaning of the panels. • Skills development.		+	S	Yes	-
			Visual landscape	• Change in land-use/sense of place. The site is characterized by open veldt with a rural agricultural sense of place. The proposed portions are used for cattle- and boer goat grazing which will still take place simultaneously with the prospecting activity, however this depends on the location of the activity.		-	L	Yes	-
			Traffic volumes	• Increase in vehicles collecting gravel for distribution.	-		S	Yes	-
			Health & Safety	• Air/dust pollution. • Road safety.	N/A	N/A	N/A	N/A	-
			Noise levels	• The proposed development will result in noise pollution during the operational phase.	-	-	S	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• It is not foreseen that the proposed activity will impact on heritage resources or vice versa.	N/A	N/A	N/A	N/A	-
DECOMMISSIONING PHASE									
-	<u>Mine closure</u> During the mine closure the Mine and its associated infrastructure will be dismantled. <u>Rehabilitation of biophysical environment</u> The biophysical environment will be rehabilitated.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	• Re-vegetation of exposed soil surfaces to ensure no erosion in these areas.	+		L	Yes	-
			Air quality	• Air pollution due to the increase of traffic of construction vehicles.	-		S	Yes	-
			Soil	• Backfilling of all voids • Placing of topsoil on backfill	+		L	Yes	-
			Geology	• It is not foreseen that the decommissioning phase will impact on the geology of the site or vice versa.	N/A	N/A	N/A	N/A	-
			Existing services infrastructure	• Generation of waste that need to be accommodated at the local landfill site. • Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. • Increase in construction vehicles.	-		S	Yes	-
			Ground water	• Pollution due to construction vehicles.	-		S	Yes	-
			Surface water	• Increase in storm water run-off. • Pollution of water sources due to soil erosion. • Destruction of watercourses (pans/dams/streams).	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	• Loss of employment.		-	L	Yes	-
			Visual landscape	• Potential visual impact on visual receptors in close proximity to proposed facility.	-		S	Yes	-
			Traffic volumes	• Increase in construction vehicles.	-		S	Yes	-

			Health & Safety	• Air/dust pollution. • Road safety. • Increased crime levels. The presence of mine workers on the site may increase security risks associated with an increase in crime levels as a result of influx of people in the rural area.		-	L	Yes	-
			Noise levels	• The generation of noise as a result of construction vehicles, the use of machinery and people working on the site.	-		S	Yes	-
			Tourism industry	• Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area.	N/A	N/A	N/A	N/A	-
			Heritage resources	• It is not foreseen that the decommissioning phase will impact on any heritage resources.	N/A	N/A	N/A	N/A	-

(N/A) No impact (+) Positive Impact (-) Negative Impact (S) Short Term (M) Medium Term (L) Long Term

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

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

- Increased ambient noise levels resulting from geophysic surveys site fly-overs and increased traffic movement during all prospecting phases.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on environmental resources utilized by communities, landowners and other stakeholders.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on ecosystem functioning.
- Increased vehicle activity with in the area resulting in the possible destruction and disturbance of fauna and flora.
- Poor access control to farms which may impact on cattle movement, breeding and grazing practices.
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
- Potential visual impacts caused by prospecting activities.
- Prospecting will be undertaken by specialist sub - contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

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

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

(See Appendix 6 for comments and response form).

viii) The outcome of the site selection Matrix. Final Site Layout Plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)

Refer to the proposed site layout map below and attached as **Appendix 5**.

ix) Motivation where no alternative sites were considered.

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site and previous prospecting on the proposed site, the possibility to encounter further Diamond Reserves on the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 (on Avon – a Portion of Portion 2) of the farm Maraetchesfontein 54, were identified.

Furthermore, no other properties have been secured by the applicant, Brakpan Trust.

x) Statement motivating the preferred site.

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

The site is preferred due to its possibility of having diamond reserves.

There are various operational alluvial diamond mines adjacent and in the vicinity of the proposed area. The property is known for having diamonds. Previous prospecting was done, Rooikoppie gravel outcrops can be seen on certain areas. The property is an area known to be diamond bearing.

(i) Plan of study for the Environmental Impact Assessment process

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

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

ii. Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).

Table: Aspects to be assessed

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

Impacts on visual landscape	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on traffic volumes	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on health & safety	Refer to Matrix table	EAP assessment (desktop studies, site visits)

iii. Description of aspects to be assessed by specialists

iv. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

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

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

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

v. The proposed method of assessing duration significance

Impact Rating System

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

- planning
- construction
- operation
- decommissioning

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

Table: The rating system

NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
DURATION		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated

		by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
INTENSITY/ MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/ component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
REVERSIBILITY		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.

IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity. The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description
6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive medium impact	The anticipated impact will have moderate positive effects.

51 to 73	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive high impact	The anticipated impact will have significant positive effects.
74 to 96	Negative very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive very high impact	The anticipated impact will have highly significant positive effects.

vi. The stages at which the competent authority will be consulted

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

- Submission of the Scoping following a 30 day public review period (and consideration of comments received).
- Submission of the EIR following a 30 day public review period (and consideration of comments received).
- Arrangements will be made to discuss the report with the Environmental Officer responsible for the project during the review period.
- An opportunity to visit and inspect the site.

vii. Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

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

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

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

2. Details of the engagement process to be followed.

(Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings and records of such consultation will be required in the EIA at a later stage).

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

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

the following public participation mechanisms will be used:

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

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

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

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

viii. Description of the tasks that will be undertaken during the environmental impact assessment process

Tasks to be undertaken

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

- **Project Description**

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

- **Location alternatives**

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. The site is preferred due to its possibility of having diamond reserves.

- **Activity alternatives**

The Scoping process also needs to consider if the development of an alluvial diamond and diamonds general mine would be the most appropriate land use for the particular site.

Mining of other commodities –from the surface and desktop assessment there are no indications that there are other commodities to be mined on the site, except alluvial diamond and diamonds general.

Agriculture – the proposed area falls within arable land. However, according to the landcover map the proposed area is mostly covered in natural cover vegetation. The property is used for cattle- and boer goat grazing.

- **Design and layout alternatives**

Design alternatives were considered throughout the planning and design phase (i.e. where is the diamond bearing gravel located?). In this regard discussions on the design were held between the EAP and the developer. The layout follows the limitations of the site and aspects such as, roads, site offices and workshop area as well as fencing– refer **Appendix 3**.

- **No-go alternative**

This alternative considers the option of 'do nothing' and maintaining the status quo. The description provided in section H of this report could be considered the baseline conditions (status quo) to persist should the no-go alternative be preferred. The site is currently zoned for agricultural land uses. Should the proposed activity not proceed, the site will remain unchanged and will continue to be used for cattle – and boer goat grazing.

- Compilation of Environmental Impact Report

An EIR will be compiled to meet the content requirements as per Appendix 3 of GNR982 of the EIA Regulations (4 December 2014) and will also include a draft Environmental Management Programme containing the aspects contemplated in Appendix 4 of GNR982.

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

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

l) Other Information required by the competent Authority

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

(1) Impact on the socio-economic conditions of any directly affected person. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

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

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

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

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

Old buildings (houses and farm sheds) were identified on the site. These building will not be removed or disturbed.

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

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

From a local perspective, the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 (on Avon – a Portion of Portion 2) of the Farm Maraetchesfontein 54 are preferred due to the sites mineral resources. The specific site has been chosen for its mineral resources thus making an alternative site selection null and void.

j) UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I Percy Sehaole herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.

Sehaole.

Signature of the EAP
DATE: 28-03-2017

k) UNDERTAKING REGARDING LEVEL OF AGREEMENT

I Percy Sehaole herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Sehaole.

Signature of the EAP
DATE: 28-03-2017

-END-