mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DRAFT SCOPING REPORT
SARIE ROODT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT AND/OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND PROSPECTING.

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: Sarie Roodt

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PHYSICAL ADDRESS: Farm Hendriksdal, Lichtenburg, 2740

FILE REFERENCE NUMBER SAMRAD: NW30/5/1/1/2/13735PR

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
PART A

2) Contact Person and correspondence address

a) Details of:

i) The EAP who prepared the report

Name of the Practitioner: Malcolm Angus Goliath
Tel No.: 0824523693
Fax No. : goliathmalcolm@yahoo.com
e-mail address: goliathmalcolm@yahoo.com

ii) Expertise of the EAP.

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

Malcolm Goliath holds a NHD in Metalliferous Mining
LSTD (Science) with Botany and Geology
MMCC (Government Certificate of Competency)

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

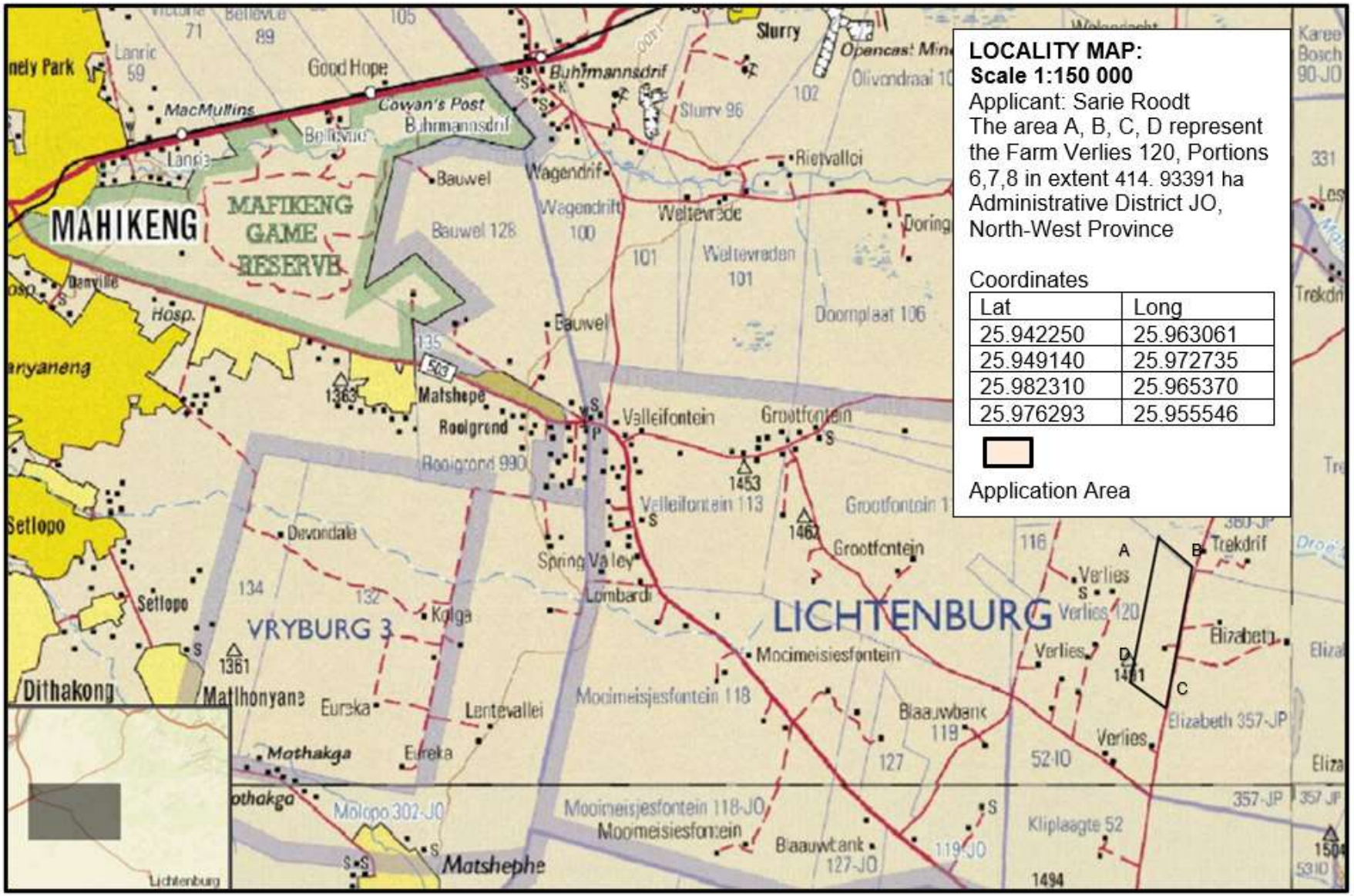
The past experience of the EAP relating to this application is included in the Curriculum Vitae as **APPENDIX 2**

b) Description of the property.

Farm Name:	Farm Verlies 120 Portions 6,7 and 8
Application area (Ha)	414. 93391 ha
Magisterial district:	JO
Distance and direction from nearest town	Approximately 33km southeast of Mahikeng and 27k northwest of the town Lichtenburg, Northwest Province.
21-digit Surveyor General Code for each farm portion	Verlies 120 Portions 6-T0JO00000000012000006 7-T0JO00000000012000007 8-T0JO00000000012000008

c) Locality map

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



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 showsthe location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placedon site and attach as **Appendix 4**

NAME OF ACTIVITY (All activitiesincluding 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 ofthe Activity Ha or m²	LISTED ACTIVITY Mark with an X whereapplicable oraffected.	APPLICABLE LISTING NOTICE (*GNR 544, GNR 545 or GNR 546)/NOT LISTED*
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— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.	414. 93391 ha lodged for the surveyed portion only.	**X**	327 Activity 20
The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including: (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the	414. 93391 ha lodged for the surveyed portion only.	**X**	325 Activity 19

smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.			
Activity 27 of GNR 327 The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or maintenance purposes undertaken in accordance with amaintenance management plan.	7 ha lodged for the surveyed portion only.	X	327 Activity 27
DEVERLOPMENT FOOTPRINT			
Geological investigations	414. 93391 ha lodged for the surveyed portion only.		
Drilling			
Core Drilling	0.04 ha		
Drilling sludge	> 5 m³		
Sampling	-		
Core yard and storage	0.01 ha		
Rehabilitation	0.05 ha		
Ablution Facility	0.0008 ha		
Vehicle storage	-		
Site camp / Equipment storage	> 1 ha		
Diesel storage	> 30 m³ (0.005 ha)		
Domestic waste facility	0.0008 ha		
Access road	-		
Drill traverses	0.2 ha		
Bulk Sample	1 ha		

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 ofthe activity

DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

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

Desktop Study (1 -6 months)

A first phase of geological investigations comprises of collecting various geological literature relating to the area of interest. This literature may be obtained from relevant books and journals. Information can also be inquired from companies which have previously mined in the area. Satelliteimages as well as geological maps will be used to identify possible prospecting target areas.

Geological Mapping with aid of UAV (1month)

To identify prospecting target areas more accurately, an Unmanned Aerial Vehicle (UAV) or commonly known as a drone will be employed. It has different sensors integrated into the drone, making this more productive and environmentally friendly (no contact with the ground). It is an automated system, with a programmed flight plan, allowing for large areas to be covered in a short period of time. The intention is also to reduce drilling needed (and hence costs).

The system also provides a cost-effective way to make mineral exploration in new, unexplored areas.

The flight is controlled by an autopilot. The autopilot records flight data including GPS time and position (latitude and longitude), the orientation (roll, pitch and yaw), and barometric pressure. The real-time flight is controlled by PC software via a telemetry (radio) link. The nominal accuracy of the GPS position is about ±1.5 m.

The magnetic field is measured using a digital 3-component flux-gate magnetometer. The magnetometer data (X, Y, Z components and total field), are recorded by the company's own data logger. The GPS time and position are synchronized with the autopilot.

A base station located near the mobile telemetry/control station measures the time variation of the total magnetic field using a proton precession magnetometer.

This allows for more cost effective (i.e., faster and more versatile (e.g., swamps or rivers are no obstacles for drones) and environmentally friendlier (no impact on the ground) exploration. Challenges remaining are the limited payload (requiring survey equipment to be modified light weight), the limited flight time (requiring comprehensive planning for larger survey areas), weather (i.e., wind) and different aviation policy requirements in different countries.

Impact on the mining value chain

EXPLORATION

- safe and fast remote exploration
- reduced environmental impact.

The data so obtained would be incorporated into a drilling plan and the final bulk sampling positions.

Mapping

Thorough filed mapping of the surface geology will be done in order to narrow down target areas for determining the location of the ore body. Field mapping and satellite images makes it possible to eliminate certain areas and focus on the possible ore deposits.

Geological Report (months 44-60)

This written report comprises of all prospecting results as well as recommendations for future activities. When the prospecting period is done decisions will be made regarding the necessity of future prospecting or application for a mining right

DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

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

Drilling (month 7-18)

10 Percussion holes is anticipated to be drilled.

Logging and Sampling

All drill holes will be logged and will contain information such as, hole location, hole depth, ore depth and other geological structures or anomalies encountered within the hole. The core samples would be placed in core trays for future referencing.

10 holes is proposed to demarcate the orebody and will be up to a maximum depth of 50m.

Sample Analysis

All samples collected from the core drilling would be sent to an independent accredited laboratory for analysis and ore grade. Certification will be kept safe and secured for future referencing.

Data Input and Mapping

All data will be digitally captured, and existing maps would be updated to form a more precise model of the prospecting area.

All data and interpreted findings would be consolidated in a geological report. The report would be inclusive of a geological model and recommendations for future drilling if required. This report would inform the prospector on the viability of the project and if application for a mining right should be undertaken and a mine established.

Bulk Sampling (month 9-50)

Bulk sampling is done through opencast pitting by using machinery. Excavators will be used to remove the topsoil and overburden, load onto dump trucks and placed in dedicated stockpiles in close proximity of the open pits for rehabilitation purposes. The topsoil and overburden are expected to be at a maximum depth of 2m. Continues backfilling would be practiced. At the depth of 2-6m the material is expected to hold the silica, gravel and diamondiferous material.

The ore would be screened to differentiate between the silica and gravel material (2-6m). Each mineral would be stockpiled separately.

The diamondiferous material is generally expected to be between 6-12m. This material would be through a 6 feet rotary pan plant (Fig4). These pans operate on the principle of density of which the medium is puddle. The concentrate will report toa recovery house, and the diamonds recovered through grease tables.

The diamondiferous ore which is introduced to the Plant Receiving Bin by means of a Load Haul Dumper. The oversize material (+100mm) is used as backfill in the opened-up excavation areas. The overburden is placed on site where it is later backfilled into the pit, i.e., formations will be placed back in the same sequence it was extracted. The topsoil is then introduced back into the excavations to complete the rehabilitation process.

The manganese material expected at depth of 12-30m would be treated through a mobile crush and screen plant. Fractions of 0.1-10mm, 11-40mm and lumpy material 41-80mm would be the final product.

The dimensions of the excavations for the bulk sample will be 5 pits of dimension 50m X20m in the targeted areas The deviation to this bulk sampling program could be when a particular line of interest is encountered, and the prospecting bedone along a channel. The ore is then transported to the plants by means of Dump Trucks.

Rehabilitation is thus continuous.

The ore is treated in a processing plant (Fig4) that consists of 1 x 6 feet rotary pan. These pans operate on the principle of density of which the medium is puddle. The concentrate will report toa recovery house, and the diamonds recovered through grease tables.

Diamond / Silica Sand /Gravel

Prospecting Tonnage

5 Pits with dimension 50mx20mx12m =120 000m^3

Volume: 60 000m^3

Density used :1.8

TONNAGE: 108 000 tons

Manganese Prospecting

5 Pits with dimension 50mx20mx18m =m^3

Volume ore: 90 000m^3

Density ore:3.1

TONNAGE: 279 000 tons

TOTAL TONNAGE PROSPECTING: 387 000 tons

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** **(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)**	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT (E.g In terms of the National Water Act:- Water Use Licence has/has not been applied for).
Constitution of South Africa (Act 108 of 1996)	Section 24: Environmental Right Section 25: Rights in Property Section 27: Water and sanitation Right	Consultations with interested and affected parties as within the Environmental Management Programme
Mineral and Petroleum Resource Development Act; 2002 (Act No.28 of 2002) (As Amended)	A Prospecting Right application	A Prospecting Right has been applied for to the DMRE North West Province
Conservation of Agricultural Resources Act (Act 43 of 1983) and Regulations	Section 5: Implementation of control measures for alien and invasive plant species. Section 6: Control measures Regulation GNR1048, published on 25 May 1984, in terms of CARA	Part of Environmental Management Programme
Environmental Conservation Act (Act 73 of 1989) and Regulations	Sections 21, 22,25,26 and 28: EIA Regulations, including listed activities Section 28A: Exemptions	Part of Environmental Authorisation and Environmental Management Programme.
Mine Health and Safety Act (Act 29 of 1996) and the Regulations Promulgated thereunder	Entire Act	Part of Environmental Management Programme
Hazardous Substances Act (Act 15 of 1973) and Regulations read together with NEMA and NEMWA	Definition, classification, use, operation, modification, disposal or dumping of hazardous substances	Part of Environmental Management Programme
National Environmental Management Act, 1998 (Act 107 of1998) (as Amended)NEMA	Section 2: Strategic environmental management principles, goals and objectives Section 24: Foundation for Environmental Managementframeworks. Section 28: require duty of care where reasonable measures are taken to prevent pollution or degradation from occurring, continuing or recurring, or, where this is not possible, to minimise and rectify pollution or degradation of the environment. Section 29: addresses the protection of workers refusing to do environmentally hazardous work. Section 30: addresses procedure to be followed in the event of emergency incident which may impact on the environment. Section 31: Access to environmental information and protection of whistle blowers.	Part of Environmental Management Programme
National Environmental	Section 32: Control of dust	Section 32

Management: Air quality Act (Act 39 of 2004)	Section 34: control of noise Section 35: control of offensive odours Regulation GNR551, published on June 2015 (amended Categories 1to 5 of GN 983) in terms of NEM:AQA (Atmospheric emission which have a significant detrimental effect on the environment) Regulation GN R283, published on 2 April 2015 in terms of NEM:AQA (National Atmospheric Emissions reporting Regulations) (Group C-Mines)	
National Environmental Management Act: Biodiversity Act, 2004 (Act 10 of 2004)	Section 52 of the National Environmental Management Act: Biodiversity Act (NEMBA) Act 10 of 2004) states that the ME/Minister is to list ecosystems that are threatened and in need of protection. Section 53 states that the Minister may identify any process or activity in such a listed ecosystem as a threatening process. A list of threatened and protected species has been published in terms of section 56(1) GG 29657 GNR 151 and GNR 152, Threatened or Protected Species Regulation.	To take note of
National Environmental Management: waste management Act (Act 59 of 2008)	Chapter 4: Waste management activities Regulation GN R 634 published on 23 August 2013 in terms of NEM:WA (Waste Classification and Management Regulations) Regulations GN R921 published on 29 November 2013 in terms of NEM:WA (Categories A to C-Listed activities) National Norms and Standards for the remediation of contaminated land and Soil Quality published on 2 May 2014 in terms of NEM:WA (Contaminated land regulations)	
National Environmental Management Act: Protected Areas act (NEMPAA) Act 57 of 2003) provides for the protection of ecologically viable areas that are representative of South Africa's natural biodiversity and its landscapes and seascapes.	Chapter 2 lists all protected areas.	Take note of
National Water Act, 1998(Act 36 of 1998)	In terms of the definitions contained in Section 1 of the National Water Act, Act No.36of 1998, a 'water resource' includes a watercourse, surface water, estuary or aquifer. "Aquifer" means a geological formation which has structures or textures that hold water or permit appreciable water movement though them. "Watercourse" means a river or spring; a natural channel in which water flows regularly or intermittently;a wetland, lake or dam into which, or from which, waterflows; and any collection of water which the Minister may, by notice in the Gazette declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks. The Minister of Water and Environmental Affairs is allowed to regulate activities which have a detrimental impact onwater recourse by declaring them to be controlled activities. No person may undertake a controlled activity unless such person is authorised to do so by or under the Act. Duty of Care to prevent and remedy the effects of pollution to water recourse is addressed in Section 19. Section 20 address the procedure to be followed, as well as control of emergency incidents which may impact on a water resource. Recognised water uses are addressed in terms of section 21 and the requirements for registration of water uses are stipulated in Section 26 and 34.	Application will be lodged with the Department Water and Sanitation on approval of the EMPr
Nature Conservation Ordinance (Ord 19 of 1974)	Chapters 2,3,4 and 6: nature reserves, miscellaneous conservation measure, protection of wild animals other than fish, protection of Flora	Take note of

In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)	In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), any person who intends to undertake "any development or other activity which change the character of a site – exceeding 5000m3 in extent" and the "construction of a ….. Linear development or barrier exceeding 300m in length" must at the very earliest stages of initiating the development, notify the responsible heritage resources authority, viz, the South African Heritage Resources Agency and /or Department of Environment.	Consult SAHRA
Conservation of Agricultural Resources Act, Act No 43 of 1983	Section 5 of the Conservation of Agricultural Resources Act, Act No 43 of 1983, prohibits the spreading off weeds and Section 6 and Regulation 15 and 15E of GNR 1048 address the implementation of control measures foralien and invasive plant species. This aspect has been addressed in the Environmental Management Programme. This Act also makes provision for the conservation of agricultural land.	Part of Environmental Management Programme
National Forest Act, 190 (Act No. 84 of 1998)	National Forest Act, 190 (Act No. 84 of 1998) and Regulations, Section 7: No person may cut, disturb, damage or destroy any indigenous, living tree in a natural forest, except in terms of a licence issued underSection 7(4) or Section 23: or an exemption from the provisions of this subsection published by the Minister inthe Gazette. Sections 12 – 16 deal with protected trees, with the Minister having the power to declare a particulartree, a group of trees, a particular woodland, or trees belonging to a certain species, to be a protected tree, group of trees, woodlands or species. In terms of section15, no person may cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister.	Take note
Subdivision of Agricultural Land Act, Act 70 of 1970	Control the subdivision, and in connection therewith, the use of agricultural land. It also controls long term leases over agricultural land. The applicant needs to apply for consent from the Department of Agriculture for these leases.	Take note
Section 17 of the Fencing Act, Act No.31 of 1983	States that any person erecting a boundary fence may clean any bush along the line of the fence up to 1,5m on each side therefore and remove any tree standing in the immediate line of the fence. However, this provision must be read in conjunction with the environmental legal provisions relevant to protection of flora.	Take note
Section 8 of the Atmospheric Pollution Prevention Act, Act No.45 of 1965	Section 8 of the Atmospheric Pollution Prevention Act, Act No.45 of 1965 regulating controlled areas, as well as section 27, with regard to dust control is stillapplicable.	Comply
The Occupational Health and Safety Act, Act 85 of 1993 GNR 22810f 1987-10-16	Environmental Regulations for Workplaces are applicable.	Comply
The South African Civil Aviation Regulation Act, Act 13 of 2009.	Controls marking of structures that may influence aviation through the Civil Aviation Technical Standards, SA-CATS-AH 139.01.33 Obstacle Limitations and Markings outside Aerodrome or Heliports. It states that any structure exceeding 45m above ground level, or structures exceeds 150m above the MEAN ground level, like on top of a hill, the mean ground level considered to be the lowest point in a 3km radius aroundsuch structure. Structures lower than 45m, which are considered as a danger or a potential danger to aviation, shall be marked as such when specified. Overhead wires, cables, etc., crossing a river, valley or major roads shall be marked and in addition, their supporting towers marked and lighted if an aeronautical study indicate that it constitutes a hazard to aircraft.	Take note
Basic Conditions of Employment Act (Act 3 of 1997) as amended	Entire Act	Comply

Land Survey Act (Act 8 of 1997) and Regulations	To control land surveying, beacons etc.	Take note
Traditional Leadership and Governance Framework Amendment (Act of 2003) and Council of Traditional Leaders (Act of 1997)	These two acts provide for the recognition and establishment of traditional communities and councils and provide a framework for traditional leadership and the roles and responsibilities of this leadership.	The project is not located on land under tribal control, the role of the tribal authorities will be particularly important during the stakeholder engagement participation process that will be undertaken.
National Development Plan (NDP)	Development in South Africa is guided by the NDP, which presents a shared long-term strategic framework within which more detailed development planning can take place to advance the long-term goals adopted in the NDP (National Planning Commission, 2011). The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and the reduction of inequality. The NDP 2030 sets a target of creating approximately 11 million new jobs and achieving an annual average economic growth rate of 5.4% by 2030.	The project will create approximately 20 jobs during the course of prospecting and emphasis placed on the employment of women.
National Infrastructure Plan	The South African Government adopted a National Infrastructure Plan in 2012. The primary objective of the Plan is to transform the country's economic landscape, while simultaneously creating significant numbers of new jobs, strengthen the delivery of basicservices, and promoting integration with other Africaneconomies.	The project will result in the development of support infrastructure such as roads and pipelines. The local community and authorities will have access and use of these infrastructure.

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).

Mining has been a cornerstone of the economy of the North West Province. It has been a major contributor of employment for the province especially with the high employment rate in the application area and its surrounding communities. The desirability is further supported through the fact that skills for the prospecting programme can be sourced from the local communities.

Diamonds remain a mineral of which the demand is ever increasing and with relative stable pricing, could proof to be a long-term sustainable operation if a minable resource can be proven. Manganese is a commodity under ever increasing demand. Silica sand are currently in demand for the construction industry as well as use in the repair, maintenance and construction of asphalt roads.

Confirmation of the presence of these ore seams would increase the geological knowledge of the area.

g) Period for which the environmental authorisation is required.

8 Years inclusive of the renewal period.

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.

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.
The property has been defined as farm Verlies 120 Portions 6.7 and 8.

Farm Name:	Farm Verlies 120 Portions 6,7 and 8
Application area (Ha)	414. 93391 ha
Magisterial district:	JO
Distance and direction from nearest town	Approximately 33km southeast of Mahikeng and 27k northwest of the town Lichtenburg, Northwest Province.
21-digit Surveyor General Code for each farm portion	Verlies 120 Portions 6-T0JO00000000012000006 7-T0JO00000000012000007 8-T0JO00000000012000008

Alternative considered.

Portion 5 was considered as part of the application but due to current piggery has not been included in the application due to the negative impact it will have on the economic activity of the occupier of that land.

(b) The type of activity to be undertaken;

The activity of an invasive type is a drilling program in combination with bulk sampling. The prospecting activities as contained in the Prospecting Work Programme suggests that each activity is dependent on the outcome of the preceding phase as for the case of drilling and bulk sampling. Historically these activities have been proven to be very efficient and cost effective.

The inclusion of which can be considered as an alternative on its own, was included to further delineate the presence of the reef with the employment of an Unmanned Aerial Vehicle (UAV) or commonly known as a drone through resistivity to identify prospecting target areas more accurately.

The design or layout of the activity;
In determining the layout of the prospecting activities and any alternatives, cognizance must be taken of any sensitive environmental features. This will predominantly determine the layout of the activities.

The technology to be used in the activity;

The technology through a rotary pan plant arrangement is a proven method of achieving optimal results weight against cost and impacts on the environment especially with alluvial diamond deposits. The alternative, a Dense Medium Separation plant, is more costly and applied more with kimberlitic deposits.

The inclusion of drilling is an alternative to just the bulk sampling programme. Drilling will allow the developer to identify target areas for the bulk sampling programme and give preliminary results on the grade of manganese.

The operational aspects of the activity; and
The Prospecting activities are commenced with a desktop study of the area, the application of an unmanned aerial vehicle to identify the drilling sites.

Drilling would then confirm the presence or lack of the geological stratum for the bulk sampling programme to be conducted.

The option of not implementing the activity.

The option of not implementing the prospecting activities and the alternatives considered and included as per the above description, would have the result of maintaining the status que with no impact on the environment. The opportunity to further contribute to the geological knowledge of the Lichtenburg area, contribution to the GDP of South Africa if an ore resource can be proven with the establishment of a mine, and job opportunities would however be lost.

If the activities are managed in accordance with the Environmental Authorisation, Environmental Impact Assessment and Environmental Management Report, the impacts will be of low significance.

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.

The following process for public participation will be undertaken as prescribed by NEMA (EIA Regulations 2014).

- ✓ **ADVERTISEMENT**

An advert will be placed in a local newspaper "Noordwester" on acceptance of the application to invite Interested and Affected Parties (I&APs) to register and partake in the Public Participation Process. Contact details (018) 381-2884. **(APPENDIX B)**

- ✓ **PUBLIC NOTICE BOARDS (APPENDIX C**

Noticeboards of minimum dimensions 60cm by 40cm will be placed at:
Lichtenburg Public Library-35 Transvaal Street, Lichtenburg
Boihkotso Public Library-Manguang Street, Lichtenburg
Ditsobotla Local Municipal Offices in Lichtenburg – Corner nelson Mandela Drive and Transvaal street Lichtenburg
Entrance gate to the farm.

- ✓ **PLACEMENT OF DRAFT SCOPING REPORT**

The Draft Scoping Report will be made available to the public for comments and input and will be available for 30 days as from the 15 May 2023 at: **APPENDIX D.**
Lichtenburg Public Library-35 Transvaal Street, Lichtenburg
Boihkotso Public Library-Manguang Street, Lichtenburg
Ditsobotla Local Municipal Offices in Lichtenburg – Corner nelson Mandela Drive and Transvaal street Lichtenburg

- ✓ **DATABASE OF INTERESTED AND AFFECTED PARTIES**

A database of Interested and Affected parties identified and consulted with will be attached as

APPENDIX E.

- ✓ **TELEPHONIC CONVERSATIONS**
  Where necessary telephonic conversations were held prior to sending out information.

- ✓ **Email and other electronic mail (Whatsapp) CORRESPONDENCE**
  Emails as a consultation medium will be used where such details are known and preferred to by the participant in the process. Public Participation Document as **APPENDIX F**

- ✓ **ORGANS OF STATE**

  Registered letters will be sent to the organs of state. **APPENDIX G**

- ✓ **PUBLIC AND OTHER INTERESTED AND AFFECTED PARTIES**

  A public meeting will be conducted during EIA stage and the minutes and attendance register kept and included as **APPENDIX H.**

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

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**	**EAP's RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT**	**SECTION AND PARAGRAPH REFENCE** in this report where the issues and or response were incorporated
AFFECTED PARTIES					
Landowner/s					
Farm Verlies 120 Portions 6, 7 and 8 Ms. S Roodt Managing Director Roodsgraan (EDMS) Beperk Contact details withheld POPI ACT	X	To be included in Final Scoping Report. Consultation on-going			
Lawful occupiers/s of the land					
Farm Verlies 120 Portions 6, 7 and 8. Ms. S Roodt Managing Director Roodsgraan (EDMS) Beperk Contact details withheld POPI ACT	X	To be included in Final Scoping Report. Consultation on-going			
Landowners or lawful occupiers on adjacent properties					
Farm Verlies 120 Portions 5 Mr. B Mokoko Details withheld POPI ACT	X	To be included in Final Scoping Report. Consultation on-going			
Farm Elizabeth 357 Mr. J Roodt Details withheld POPI ACT	X	To be included in Final Scoping Report. Consultation on-going			
Southern Bordering Farm Mr. K Meyer Details withheld POPI ACT	X	To be included in Final Scoping Report. Consultation on-going			
Municipal councilor		To be included in Final Scoping Report. Consultation on-going			

The Municipal Manager Ditsobotla Local Municipality Mr. Jonas Letlhaku PO Box 7, **LICHTENBURG**, 2740. Tel: 018 633 3800 018 100 0950 **Email:** info@ditsobotla.gov.za	X	To be included in Final Scoping Report. Consultation on-going			
The Local Municipal Councillor	X	To be included in Final Scoping Report. Consultation on-going			
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWS)					
Department of Public Works, Roads and Transport 131 Kruis Street Potchefstroom 2520 Tel: 018-293 9000	X	To be included in Final Scoping Report. Consultation on-going			
Communities					
Dept Land Affairs:					
Commission on Restitution of Land Rights Contact: Mr. B Kokane Email: boitumelo.kokwane@dalrrd.gov.za	X	To be included in Final Scoping Report. Consultation on-going			
Traditional Leaders					
Dept Environmental Affairs					
Department of Rural, Environmental and Agriculture, North West.	X	To be included in Final Scoping Report. Consultation on-going			

Private Bag X2039, Mmabatho, 2735 **Tel** 018 389 5111 / 5056 / 5688					
Other Competent Authorities Affected					
Department of Water and Sanitation (DWS) Private Bag X5 MMABATHO 2735. Tel: (018) 387 9500.	X	To be included in Final Scoping Report. Consultation on-going			
South African Heritage Resources Agency (SAHRA) Portal	X	To be included in Final Scoping Report. Consultation on-going			
National Department of Agriculture Forestry and Fisheries (DAFF) Agriculture Place, 20 Steve Biko (Formerly Beatrix) Street, Arcadia, Pretoria 0002 Private Bag X388, Pretoria, 0001 012 319 6000	X	To be included in Final Scoping Report. Consultation on-going			
North West Department of Agriculture Landbou Sentrum, Botha St, Potchefstroom, 2531 Tel:0182996773	X	To be included in Final Scoping Report. Consultation on-going			
The Wildlife and Environment Society of South Africa 18 Blackwood Street Bryanston x3, 2191 PO Box 435, Ferndale, 2160 Tel 011 462 5663 Email jnbadmin@wessa.co.za	X	To be included in Final Scoping Report. Consultation on-going			
OTHER INTERESTED AND AFFECTED PARTIES					

iv) The Environmental attributes associated with the sites.

(1) Baseline Environment

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

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

Topography

The study area is relatively flat with an average altitude of around 1485 mamsl.

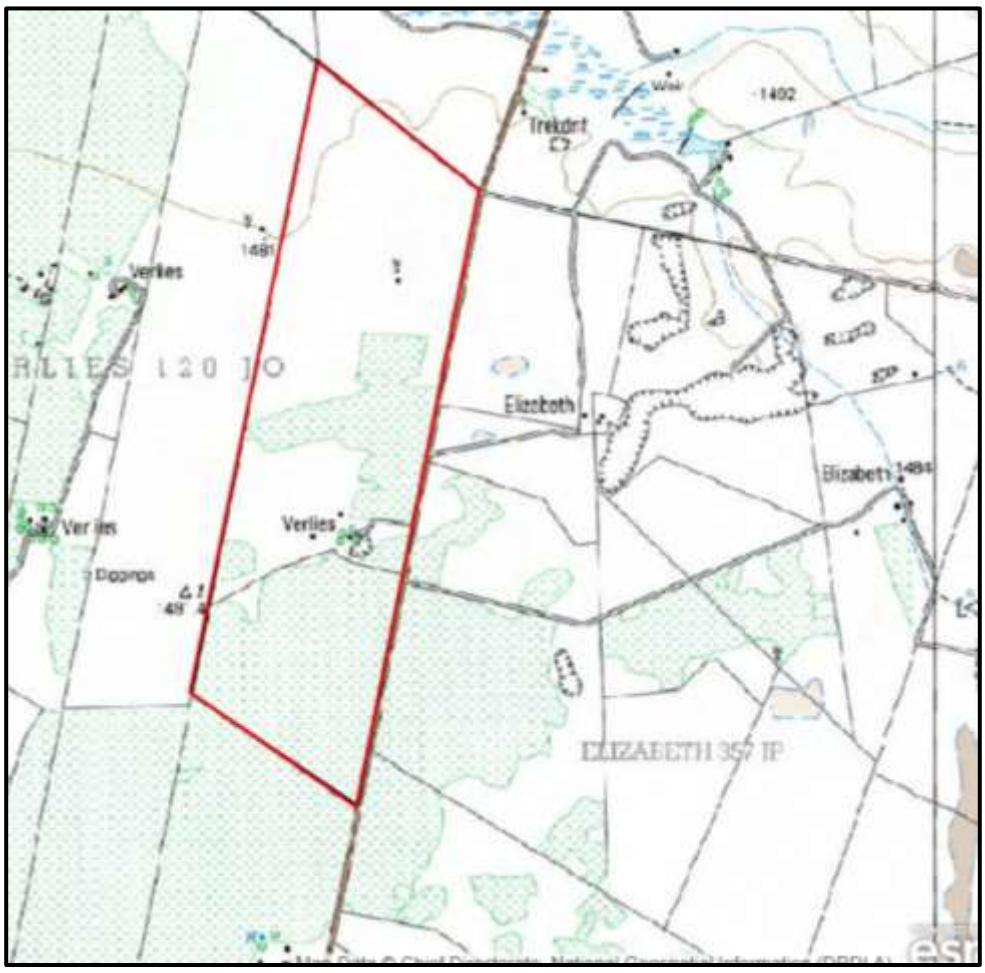


Figure 1: Topographic map of the study area taken from Chief Directorate: National Geospatial Information

Pictures taken by EAP on-site.

Geology and Soils

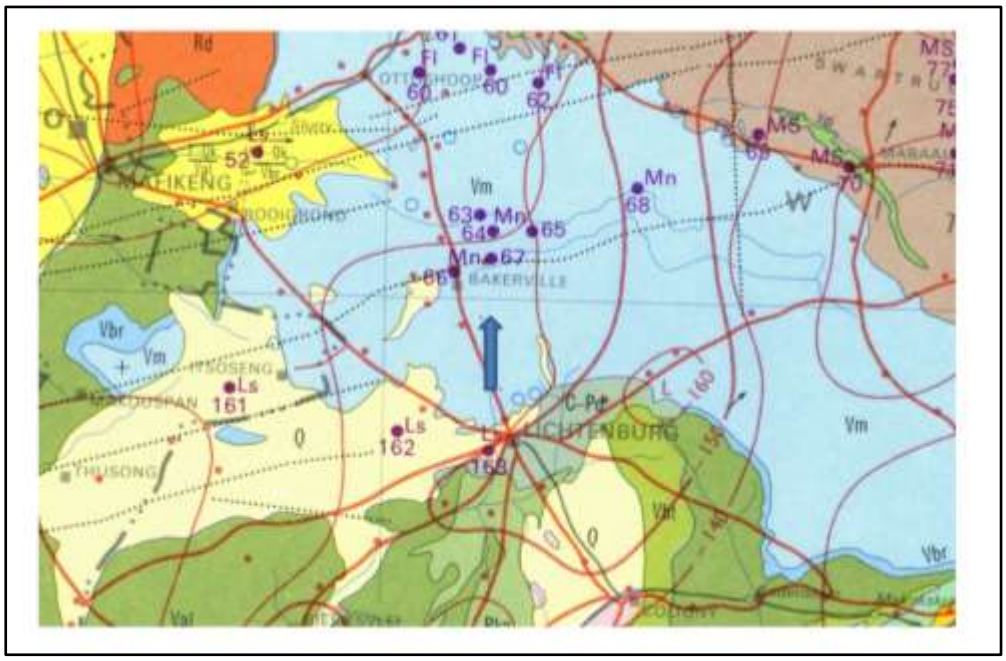


Figure 2: Map enlarged from the Geological Survey 1: 1 000 000 map 1984.

Explanation of symbols for the geological map and approximate ages (Erikssen et al., 2006. Johnson et al., 2006; McCarthy et al., 2006; Robb et al., 2006; van der Westhuizen et al., 2006). SG = Supergroup; Fm = Formation.

Symbol	Group/Formation	Lithology	Approximate Age
Q	Quaternary	Alluvium, sand, calcrete	Neogene, ca 25 Ma to present
T-Qk	Kalahari Group	Sand, limestone	
Jd	Jurassic dykes	Dolerite dykes, intrusive	Jurassic, approx. 180 Ma
C-Pd	Dwyka Group, Karoo Supergroup	Tillite, sandstone, mudstones, shales	Upper Carboniferous
Vdi	Diabase	diabase	
Vt	Timeball Hill Fm and Rooihoogte Fm, Pretoria Group, Ventersdorp SG	Quartzite	< 2420 Ma
Vm	Malmani Subgroup, Chuniespoort Group, Transvaal Supergroup	Dolomite, chert	Ca 2750 – 2650 Ma
Vbr	Black Reef Fm,	Quartzite, conglomerate, shale, basalt	Ca 2650 – 2640 Ma
Val	Allanridge Fm, Ventersdorp Supergroup	Andesite	>2700 Ma

Geological Overview

The Malmani Subgroup is up to 2000m thick and comprises five formations distinguished by the amount of chert, stromatolite morphology, intercalated shales and erosion surfaces (Eriksson et al., 2006). The basal Oaktree Fm overlies the Black Reef Formation, and is made up of carbonaceous shales, stromatolitic dolomites and locally developed quartzites. Above this is the Monte Christo Formation comprising erosive breccia, overlain by stromatolitic and oolitic platformal dolomites. Next is the Lyttleton Formation of shales quartzites and stromatolitic dolomites. The Eccles Formation comprises a series of erosional breccias and the overlying Frisco Formation is made up mostly of stromatolitic dolomites.

Site Geology

The geology of the study area and surrounds is dominated by the Chuniespoort Group (Situated within the Transvaal Basin of the Transvaal Supergroup), and specifically the Neorachaean dolomites of the

Malmani Subgroup. The chert-rich dolomites (i.e. magnesium-rich calcium carbonate rock) of the Monte Christo Formation, which falls within the Malmani Subgroup, underlie the proposed project area and dip shallowly to the north. The depositional environment of the Malmani Subgroup is interpreted to have been a stable shallow marine platform and basin e.g. something akin to the present day Great Barrier Reef, and has been subdivided into the following formations (oldest to youngest): Oaktree, Monte Christo, Lyttelton, Eccles and Frisco Formations. The ~10-200 m thick Oaktree Formation forms the base of the Malmani Subgroup and consists of carbonaceous shales, stromatolitic dolomites and locally developed quartzites. The Monte Christo Formation (which underlies the proposed project area) is ~300-500 m thick and consists of chert-rich dolomite and oolitic. The remaining Malmani Subgroup formations that overlie the Monte Christo Formation occur north of the proposed mine. The Lyttelton Formation immediately overlies the Monte Christo Formation ~1.5 km north of the proposed mine, consists of 100- 200 m of shales, quartzites and stromatolitic dolomites, and is rich in iron and manganese. This is overlain by the 600 m thick cherty dolomites of the Eccles Formation. The Frisco Formation forms the top of the Malmani Subgroup and consists of 400 m of stromatolitic dolomites.

Lithology:
Dolomite, stromatolitic, interbedded chert, minor carbonaceous shale, limestone and quartzite.

Soil Classes-General description

The northern portion of the study area can be described as having soils with minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils. Lime rare or absent in the landscape and south as red, yellow and /or greyish soils with high base status. The southern portion of the study area has soils with a high base status.

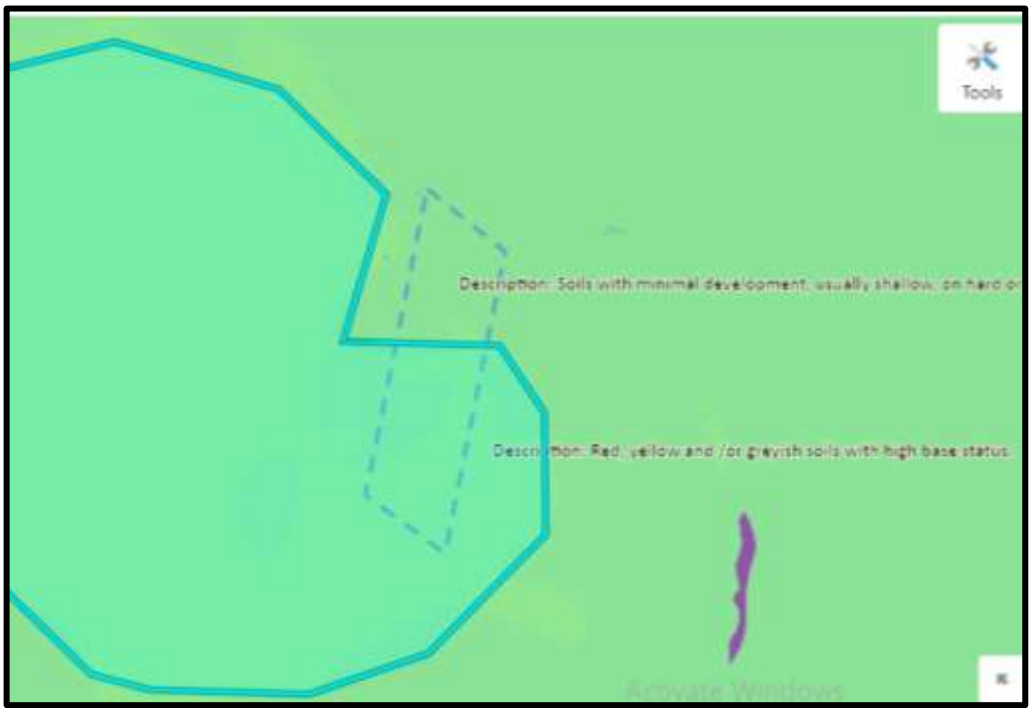


Figure3:Source: National Soils Description SANBI

Biome: Grassland Biome
Source layer: National vegetation types from Vegetation map for South Africa, Lesotho and Swaziland (2009 update)
Mucina and Rutherford 2006
Vegetation type: Carletonville Dolomite Grassland
Vegetation type code: Gh 15

Source layer: National vegetation types from Vegetation map for South Africa, Lesotho and Swaziland (2009 update)

Picture taken by EAP on-site.

Figure 4: Biome SANBI BGIS (Vegetation map 2009 update)

Gh 15 Carletonville Dolomite Grassland

VT 61 Bankenveld (65%) (Acocks 1953). LR 34 Rocky Highveld Grassland (88%) (Low & Rebelo 1996).

Distribution North-West (mainly) and Gauteng and marginally into the Free State Province: In the region of Potchefstroom, Ventersdorp and Carletonville, extending westwards to the vicinity of Ottoshoop, but also occurring as far east as Centurion and Bapsfontein in Gauteng Province. Altitude 1 360–1 620 m, but largely 1 500–1 560 m.

Vegetation & Landscape Features Slightly undulating plains dissected by prominent rocky chert ridges. Species-rich grasslands forming a complex mosaic pattern dominated by many species.

Geology & Soils Dolomite and chert of the Malmani Subgroup (Transvaal Supergroup) supporting mostly shallow Mispah and Glenrosa soil forms typical of the Fa land type, dominating the landscapes of this unit. Deeper red to yellow apedal soils (Hutton and Clovelly forms) occur sporadically, representing the Ab land type.

Climate Warm-temperate, summer-rainfall region, with overall MAP of 593 mm. Summer temperatures high. Severe frequent frost occurs in winter. See also climate diagram for Gh 15 Carletonville Dolomite Grassland (Figure 8.23).

Important Taxa Graminoids: *Aristida congesta* (d), *Brachiaria serrata* (d), *Cynodon dactylon* (d), *Digitaria tricholaenoides* (d),

Diheteropogon amplectens (d), *Eragrostis chloromelas* (d), *E. racemosa* (d), *Heteropogon contortus* (d), *Loudetia simplex* (d), *Schizachyrium sanguineum* (d), *Setaria sphacelata* (d), *Themeda triandra* (d), *Alloteropsis semialata* subsp. *eckloniana*, *Andropogon schirensis*, *Aristida canescens*, *A. diffusa*, *Bewsia biflora*, *Bulbostylis burchellii*, *Cymbopogon caesius*, *C. pospischilii*, *Elionurus muticus*, *Eragrostis curvula*, *E. gummiflua*, *E. plana*, *Eustachys paspaloides*, *Hyparrhenia hirta*, *Melinis nerviglumis*, *M. repens* subsp. *repens*, *Monocymbium ceresiiforme*, *Panicum coloratum*, *Pogonarthria squarrosa*, *Trichoneura grandiglumis*, *Triraphis andropogonoides*, *Tristachya leucothrix*, *T. rehmannii*. Herbs: *Acalypha angustata*, *Barleria macrostegia*, *Chamaecrista mimosoides*, *Chamaesyce inaequilatera*, *Crabbea angustifolia*, *Dianthus mooiensis*, *Dicoma anomala*, *Helichrysum caespititium*, *H. miconiifolium*, *H. nudifolium* var. *nudifolium*, *Ipomoea ommaneyi*, *Justicia anagalloides*, *Kohautia amatymbica*, *Kyphocarpa angustifolia*, *Ophrestia oblongifolia*, *Pollichia campestris*, *Senecio coronatus*, *Vernonia oligocephala*. Geophytic Herbs: *Boophone disticha*, *Habenaria mossii*. Low Shrubs: *Anthospermum rigidum* subsp. *pumilum*, *Indigofera comosa*, *Pygmaeothamnus zeyheri* var. *rogersii*, *Rhus magalismontana*, *Tylosema esculentum*, *Ziziphus zeyheriana*. Geoxylic Suffrutices: *Elephantorrhiza elephantina*, *Parinari capensis* subsp. *capensis*.

Endemic Taxon Succulent Shrub: *Delosperma davyi*.

Conservation Vulnerable. Target 24%. Small extent conserved in statutory (Sterkfontein Caves—part of the Cradle of Humankind World Heritage Site, Oog Van Malmanie, Abe Bailey, Boskop Dam, Schoonspruit, Krugersdorp, Olifantsvlei, Groenkloof) and in at least six private conservation areas. Almost a quarter already transformed for cultivation, by urban sprawl or by mining activity as well as the building of the Boskop and Klerkskraal Dams. Erosion very low (84%) and low (15%).

References Louw (1951), Morris (1973, 1976), Coetzee (1974), Coetzee & Werger (1975), Van Wyk (1983), Van Wyk & Bredenkamp (1986), Bezuidenhout & Bredenkamp (1990), Scogings & Theron (1990), Bezuidenhout et al. (1994b, c, f), Bredenkamp et al. (1994), Grobler (2000), Hartmann (2001), Siebert & Siebert (2005), Grobler et al. (2006).

SANBI Red List of Ecosytems: Remnants

Name:	Carletonville Dolomite Grassland
Bioregion:	Dry Highveld Grassland Bioregion
Biome:	Grassland
Threat Status 2021:	LC
Map Code 18:	Gh15
Global vs National:	National status

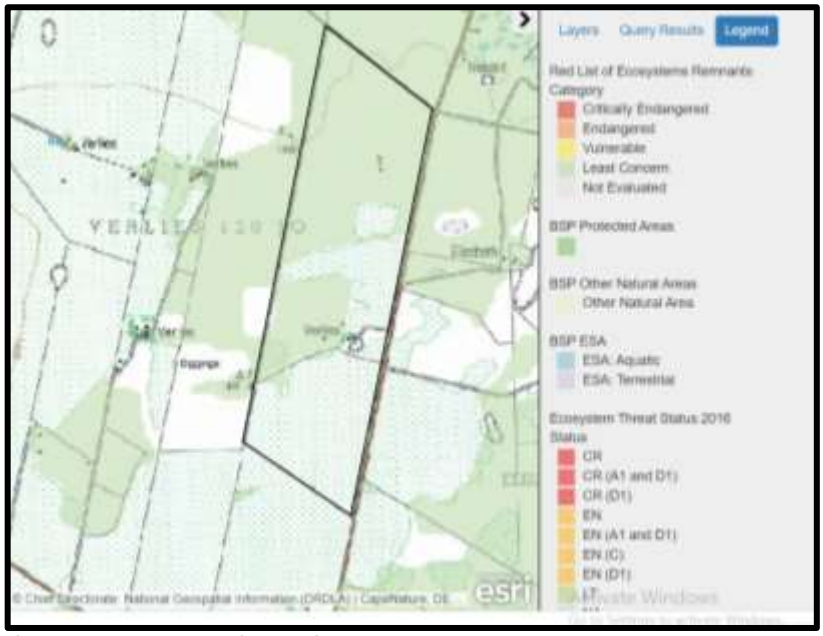


Figure 5: Source: CFM –(DRDLA)

NPAES

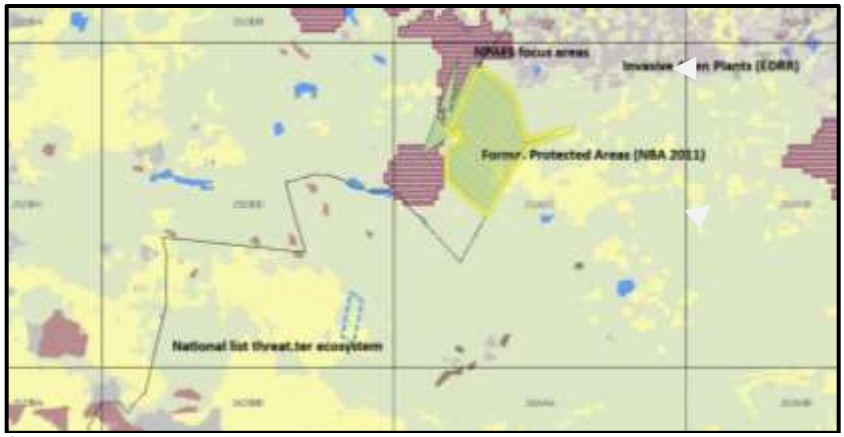


Figure 6: Source Layer: SANBI BGIS

National Protected Area Expansion Strategy. (NPAES) is to achieve cost effective protected. area expansion for improved ecosystem. representation, ecological sustainability and resilience to climate change.

Formal Protected areas
Name: Molemane Nature Reserve (northeast of the study area)

Protected areas or conservation areas are locations which receive protection because of their recognized natural, ecological, or cultural values.

Focus area: NW/Gauteng Bushveld (north northeast of study area)

Description: The National Protected Area Expansion Strategy, first published in 2008 (NPAES 2008), presents a 20-year strategy for the expansion of protected areas in South Africa. Provision is made for the review and updating of the NPAES every 5 years.

What are Invasive Alien Species?
Invasive alien species are plants, animals, pathogens and other organisms that are non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health. In particular, they impact adversely upon biodiversity, including decline or elimination of native species - through competition, predation, or transmission of pathogens - and the disruption of local ecosystems and ecosystem functions.
Invasive alien species introduced and/or spread outside their natural habitats, have affected native biodiversity in almost every ecosystem type on earth and are one of the greatest threats to biodiversity.

SAPAD BIOSPHERE RESERVES

Biosphere Reserves

Name:	Marico Biosphere Reserve
Site Type:	Biosphere Reserve
Date Declared:	2018-07-25
Legal Status:	Inscribed
WDPAID:	555570452

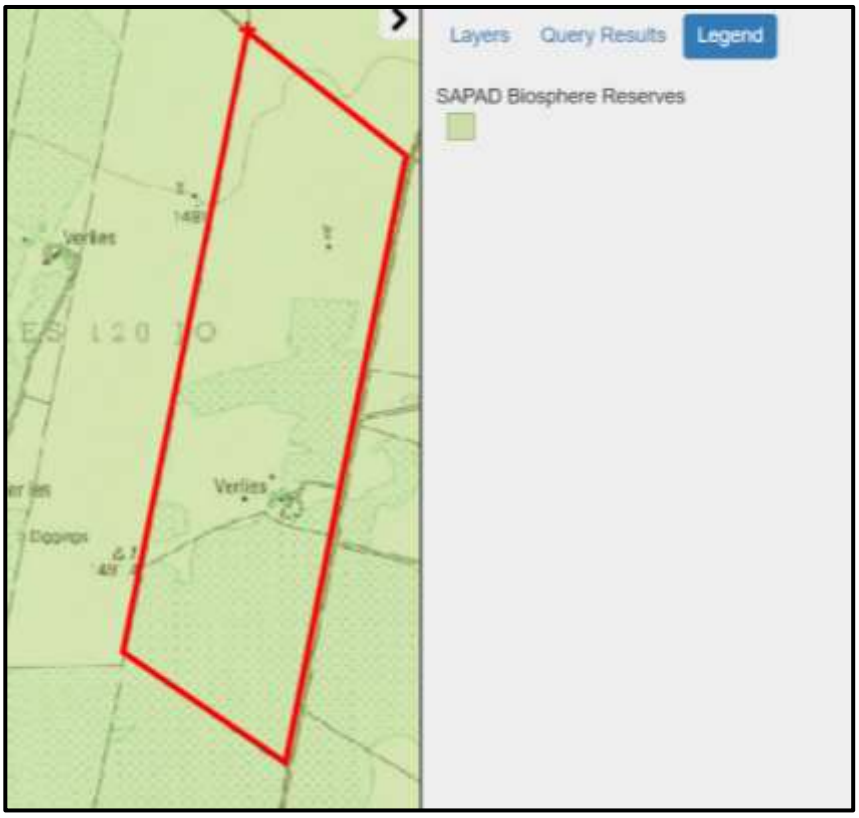


Figure 7: CFM Agriculture BGIS

Grazing Capacity (2018)

Ha/Large Stock Unit: 8

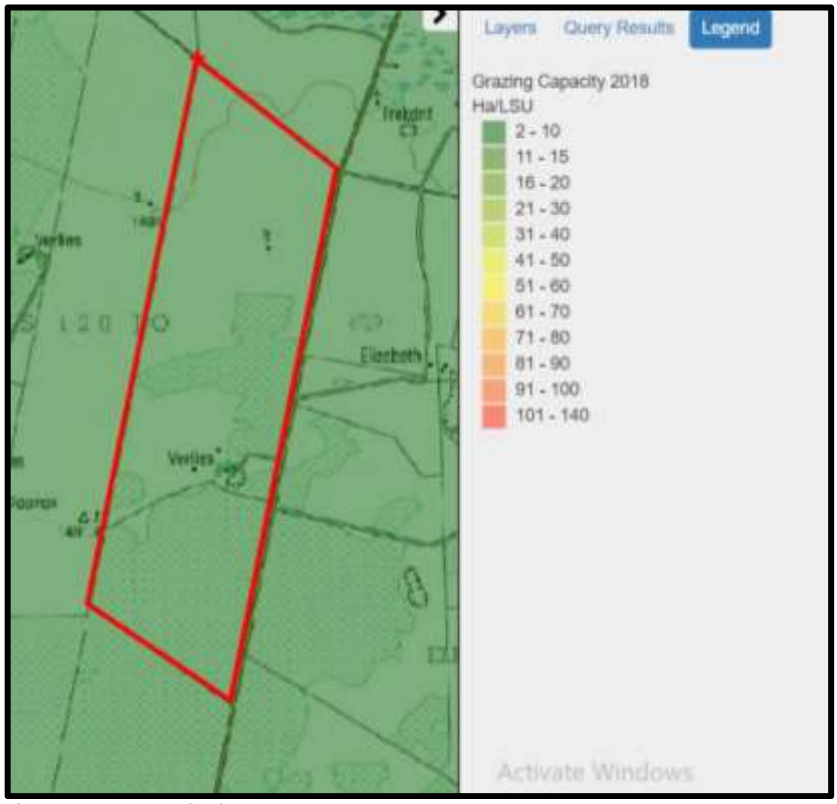


Figure 8: CFM Agriculture BGIS

Land capability

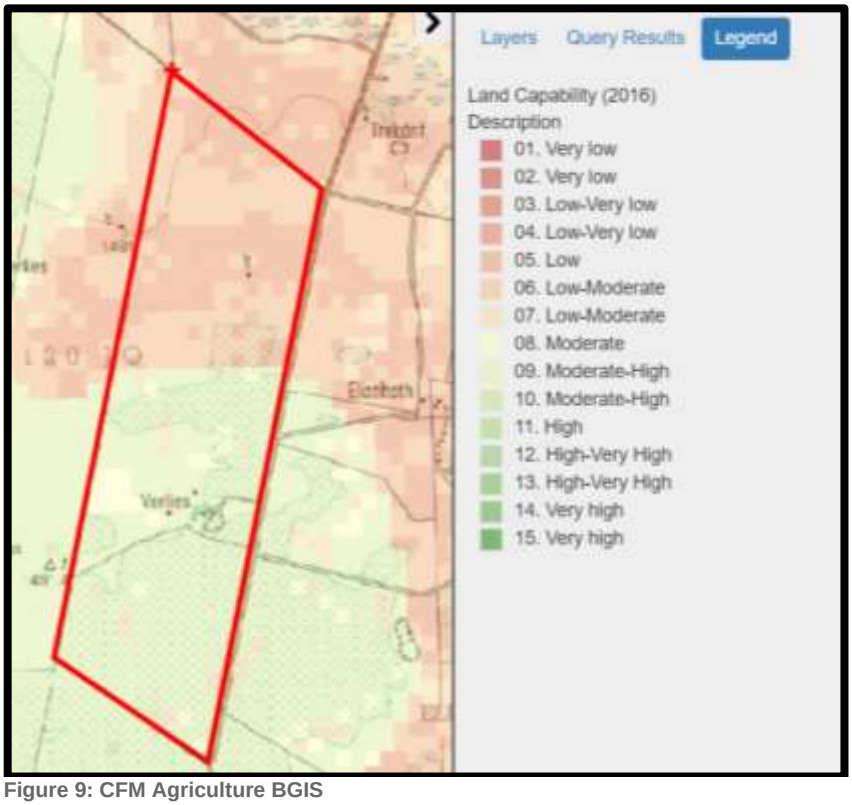


Figure 9: CFM Agriculture BGIS

Land Capability (DAFF 2016)

Land capability is the combination of soil suitability and climate factors. The site and surrounds has a land capability classification of:

Northern Part of the study area

Land Capability (1-15):	05. Low
Soil Capability (1-9):	02. Low-Very low
Terrain Capability (1-9):	07. High
Climate Capability (1-9):	05. Moderate

Southern part of the study area

Land Capability (1-15):	09. Moderate-High
Soil Capability (1-9):	06. Moderate-High
Terrain Capability (1-9):	07. High
Climate Capability (1-9):	05. Moderate

Agricultural Enterprise on the study area is grains.

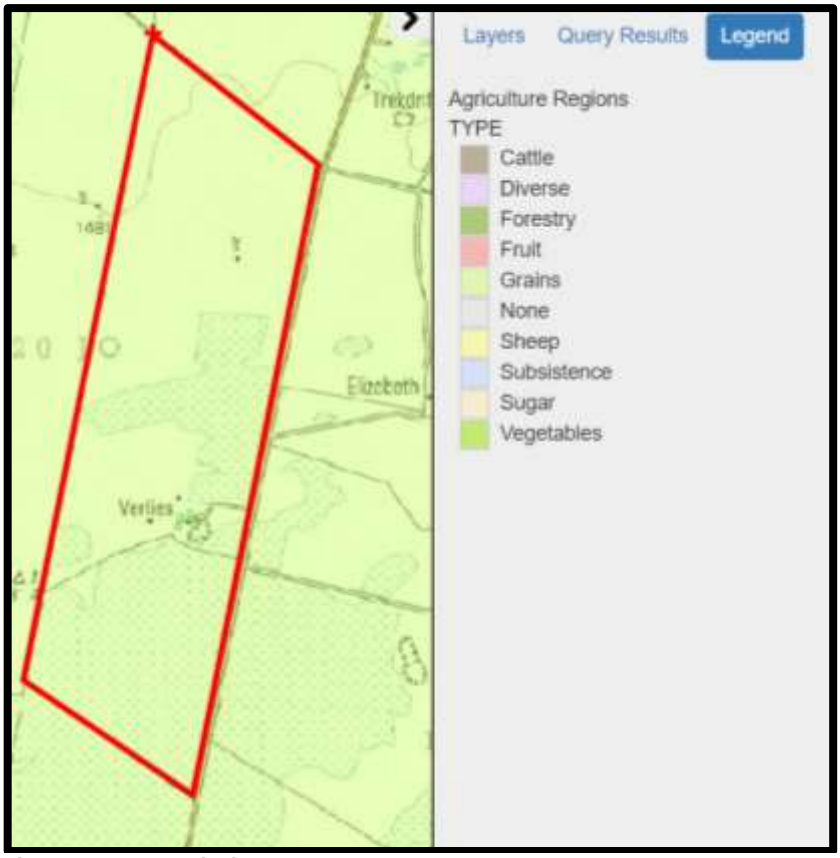


Figure 10: CFM Agriculture BGIS

WMA name: CROCODILE(WEST) AND MARICO
Source layer: Water Management Area (WMA) boundaries
Sub-WMA name: Upper Molopo

Figure 11: Source Layer: SANBI BGIS

National Wetlands NFEPA

Figure 12: Source layer SANBI BGIS

There are no wetlands on the study area.

Groundwater

Aquifer

The aquifer is karst with a yield of >5.01l/s. The classification can be described as major, with a very high susceptibility classified as low and most vulnerability. Aquifer vulnerability is defined as the likelihood for contamination to reach a specified position in the groundwater system after being introduced at some point above the uppermost aquifer. The vulnerability is determined by evaluating seven parameters, namely:

- Depth to groundwater;
- Recharge;
- Aquifer media;
- Soil media;
- Topography;
- Impact on vadose zone; and
- Hydraulic conductivity.

Depth to groundwater is 25.17 (mbgl)

Groundwater recharge is between 2-5.

Aquifer Type and Yield

Classification: Karst > 5.0 l/s

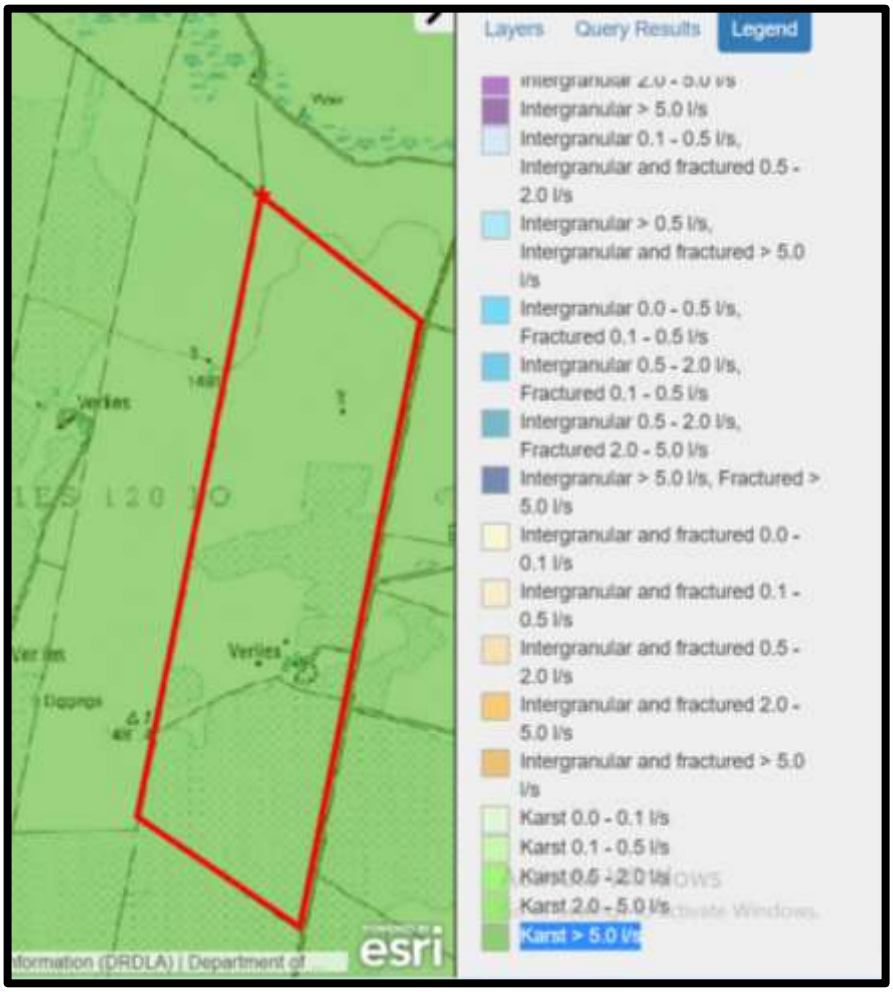


Figure 14: CFM Agriculture BGIS

Aquifer Classification

Classification: Major

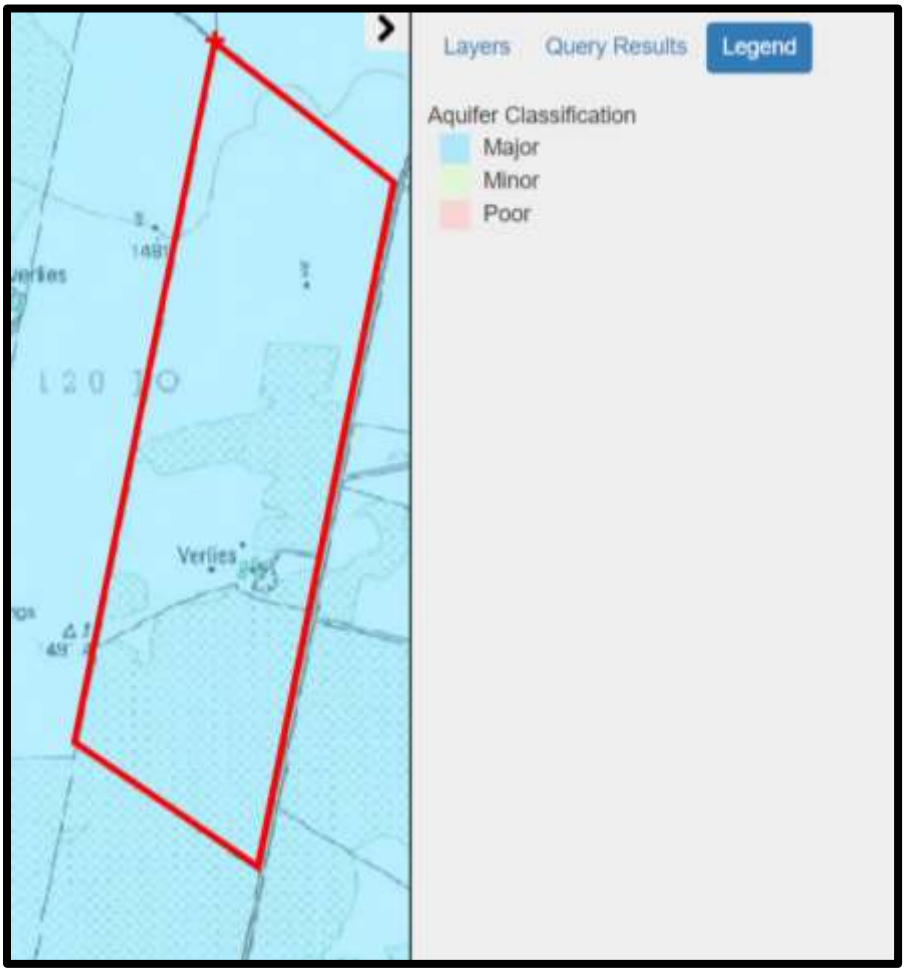


Figure 15: CFM Agriculture BGIS

Aquifer Susceptibility

Susceptibility: Very High

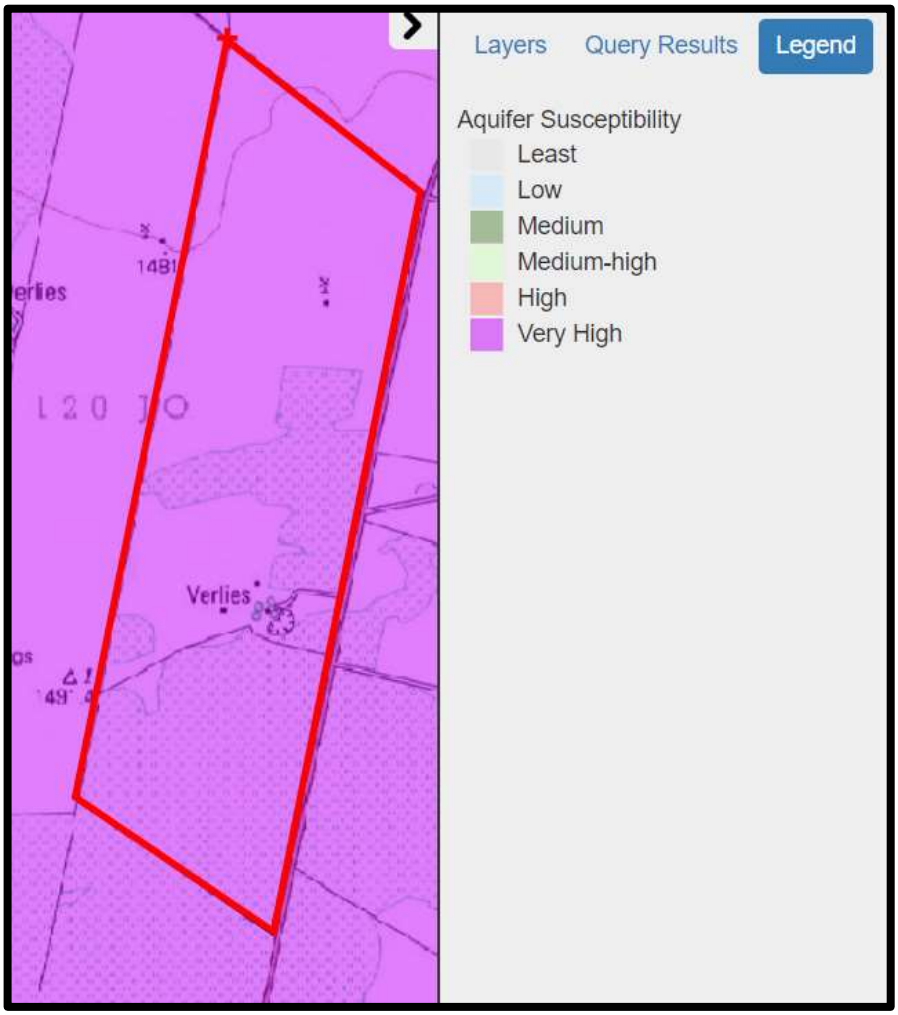


Figure 16: CFM Agriculture BGIS

Aquifer Vulnerability

Vulnerability: Most

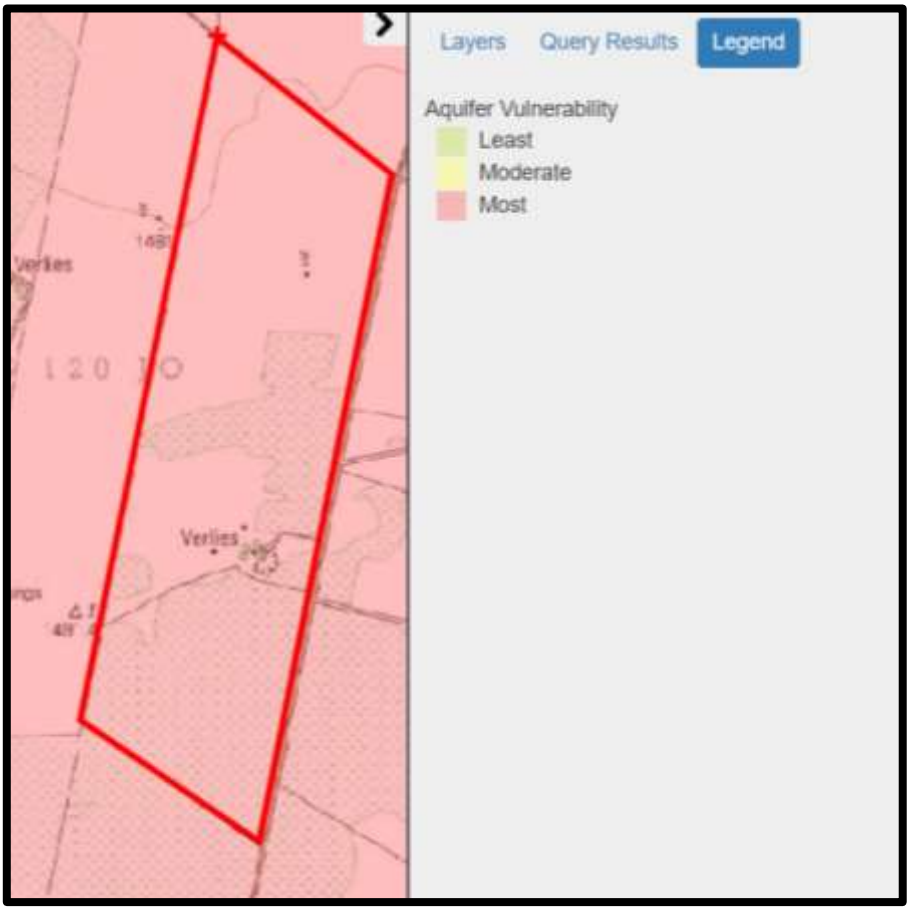


Figure 17: CFM Agriculture BGIS

Depth to Groundwater

Depth (mbgl): 19.16

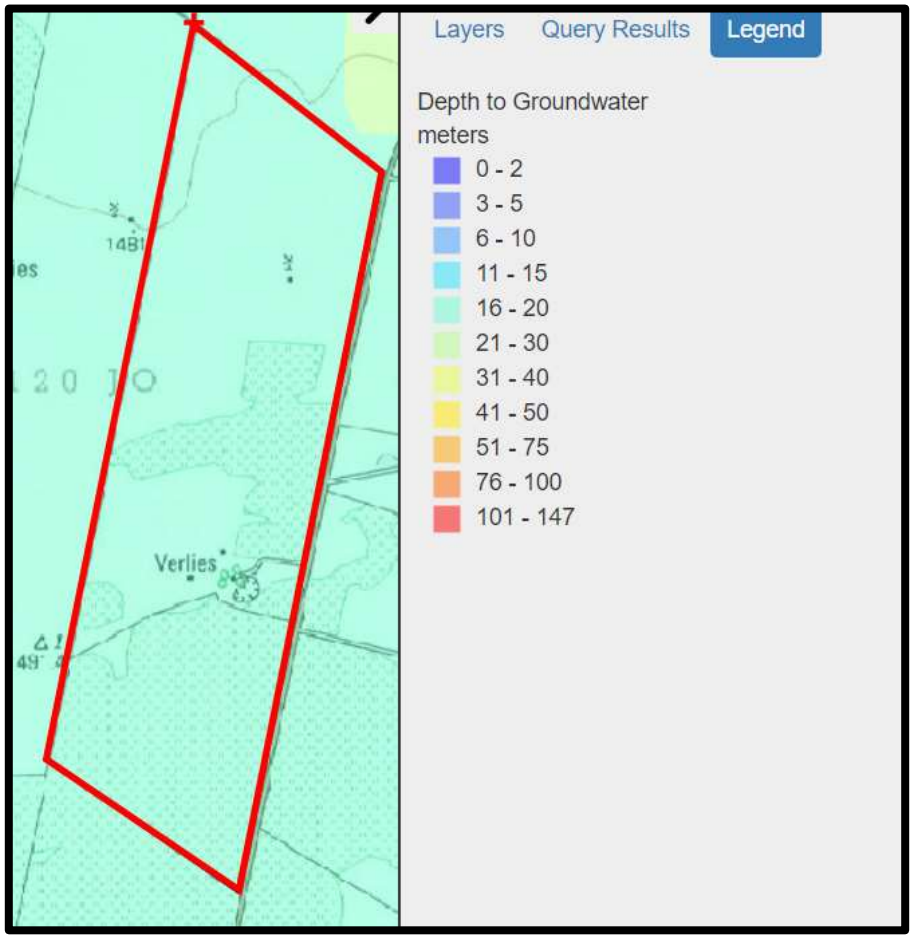


Figure 18: CFM Agriculture BGIS

Groundwater Recharge

Recharge (mm/a): 24.23

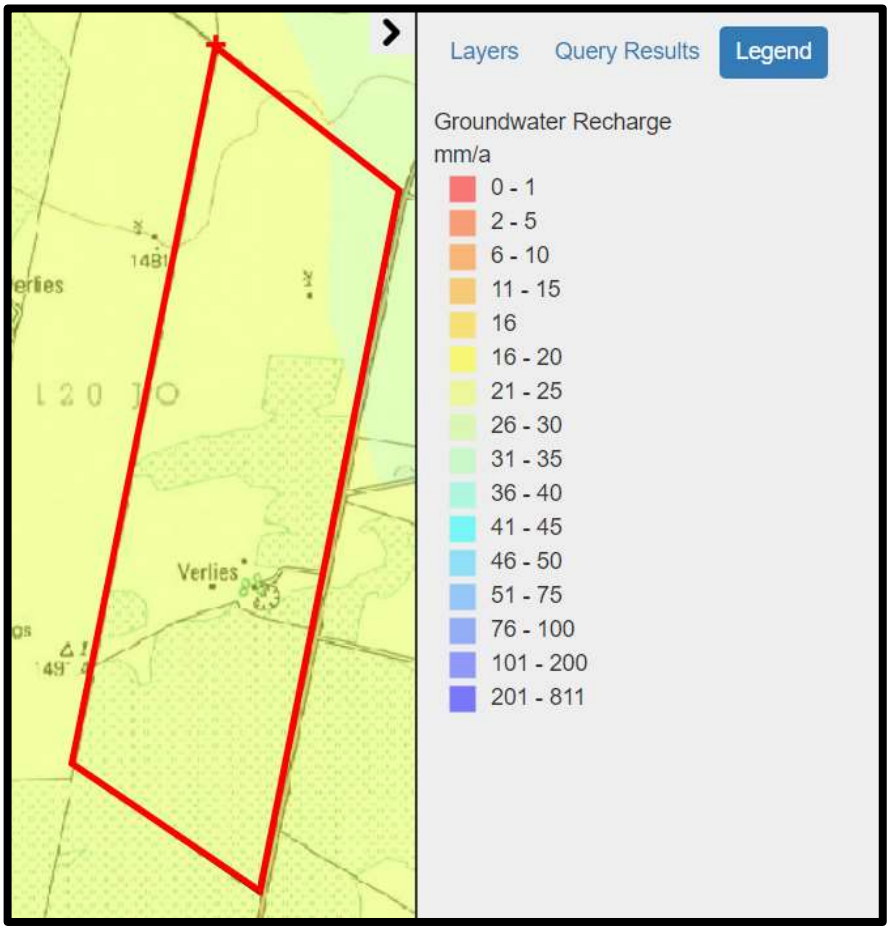


Figure 19: CFM Agriculture BGIS

Groundwater Quality

EC (mS/m): 0 - 70

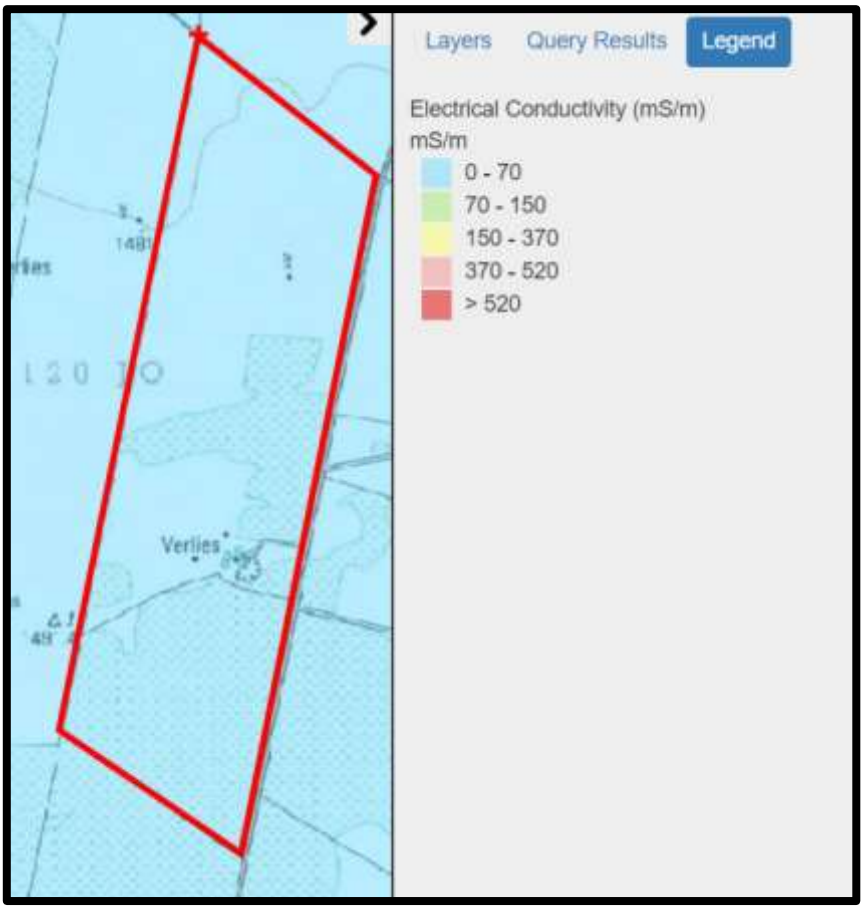


Figure 20: CFM Agriculture BGIS

Veldfire Risk (2010)

Risk: Extreme

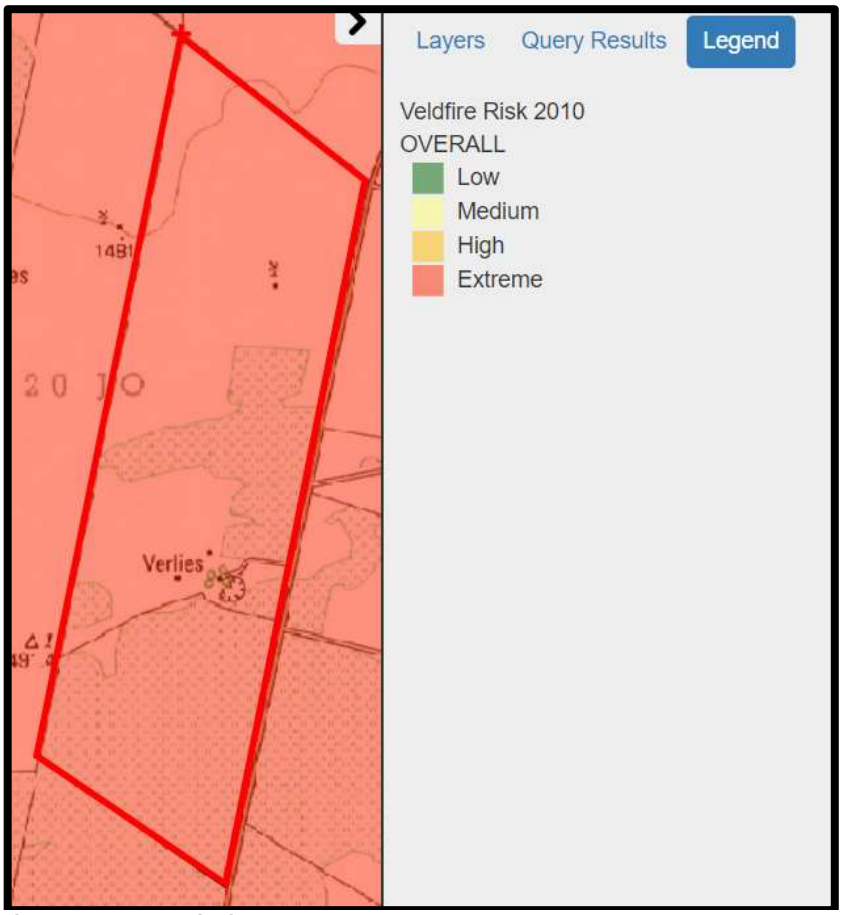
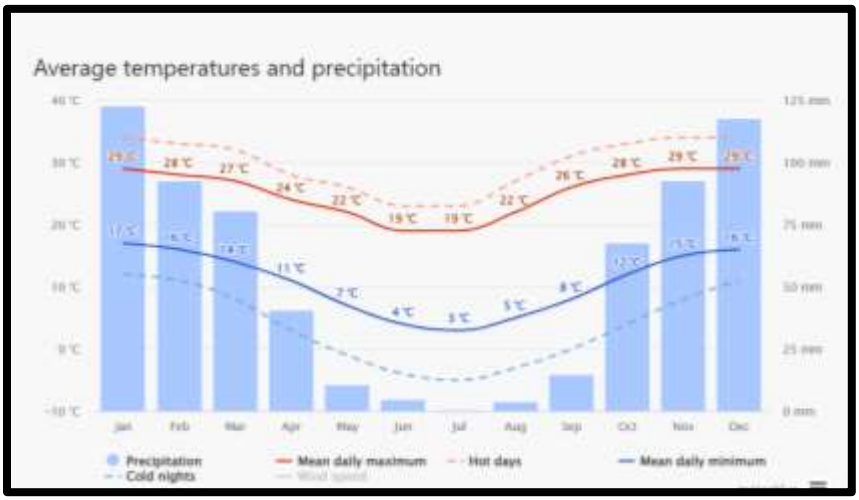


Figure 21: CFM Agriculture BGIS

CLIMATE

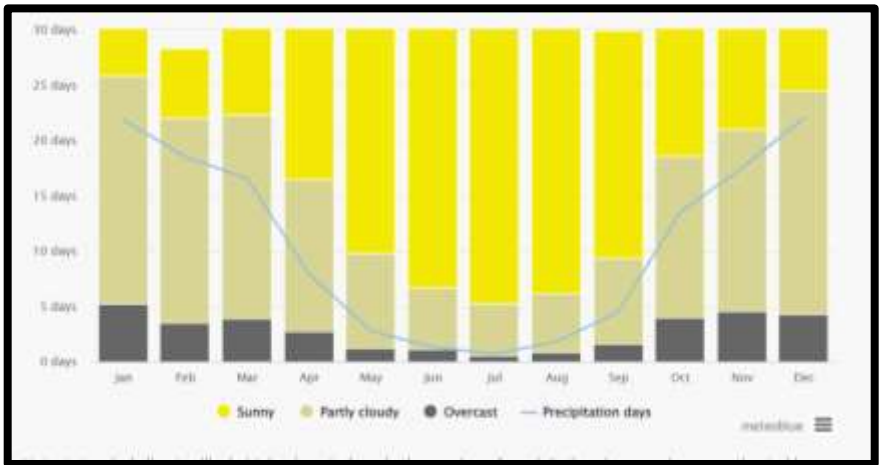
(Graphs from meteoblue)
Lichtenburg's climate is a local steppe climate. There is not much rainfall in Lichtenburg all year long. The Köppen-Geiger climate classification is BSk. The temperature averages 17.3 °C and the rainfall is around 609 mm per annum.

Average temperature and precipitation

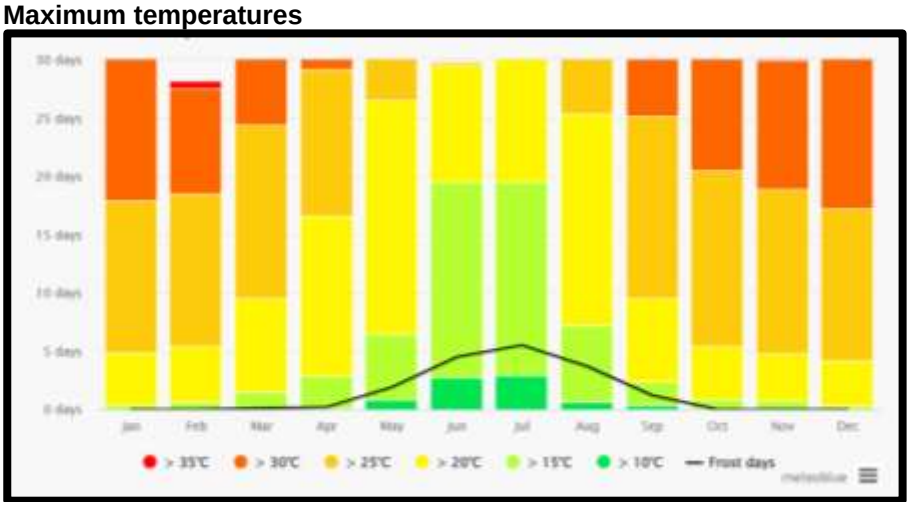


The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Lichtenburg. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years.

oudy, sunny and precipitation days



Maximum temperatures

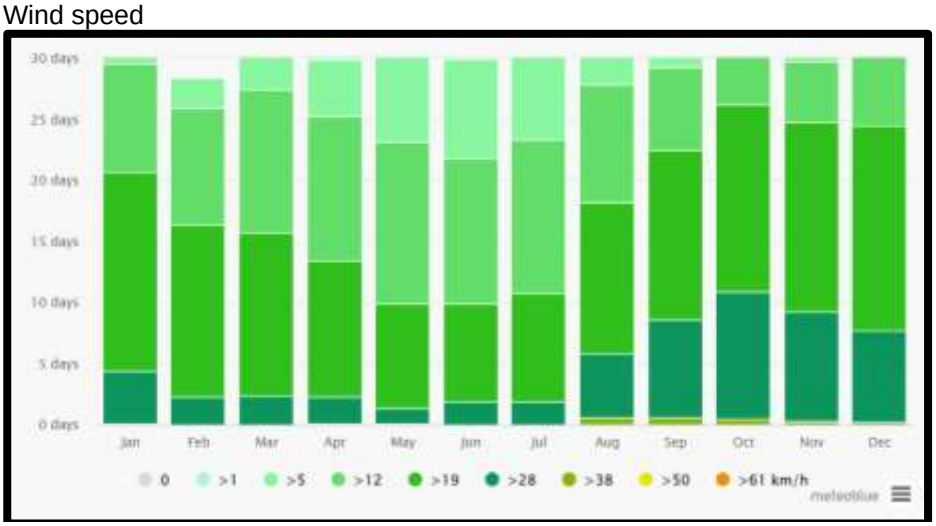


The maximum temperature diagram for Lichtenburg displays how many days per month reach certain temperatures.

Precipitation amounts.

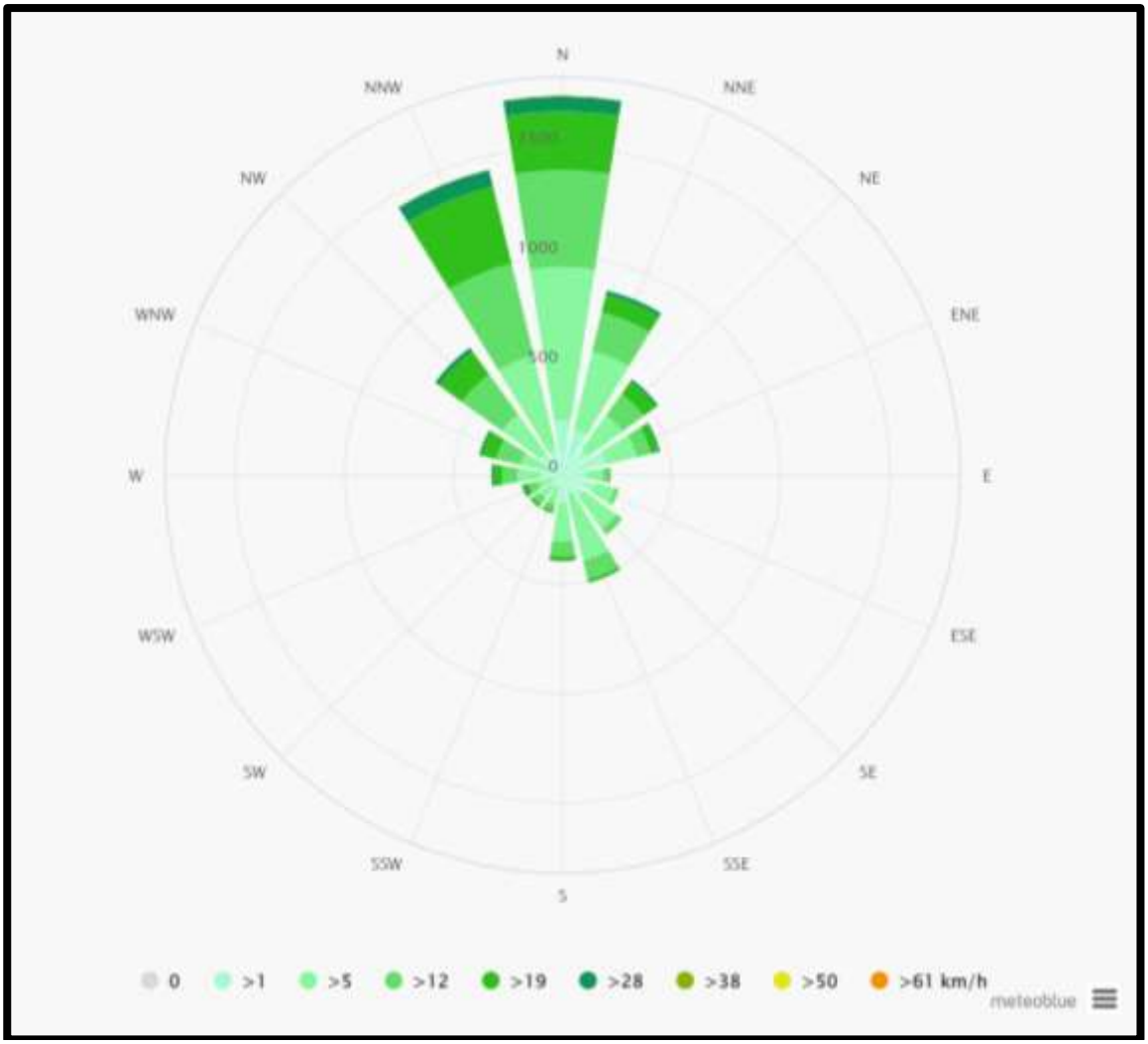
The precipitation diagram for Lichtenburg shows on how many days per month, certain precipitation amounts are reached.

Wind speed



The diagram for Lichtenburg shows the days per month during which the wind reaches a certain speed.

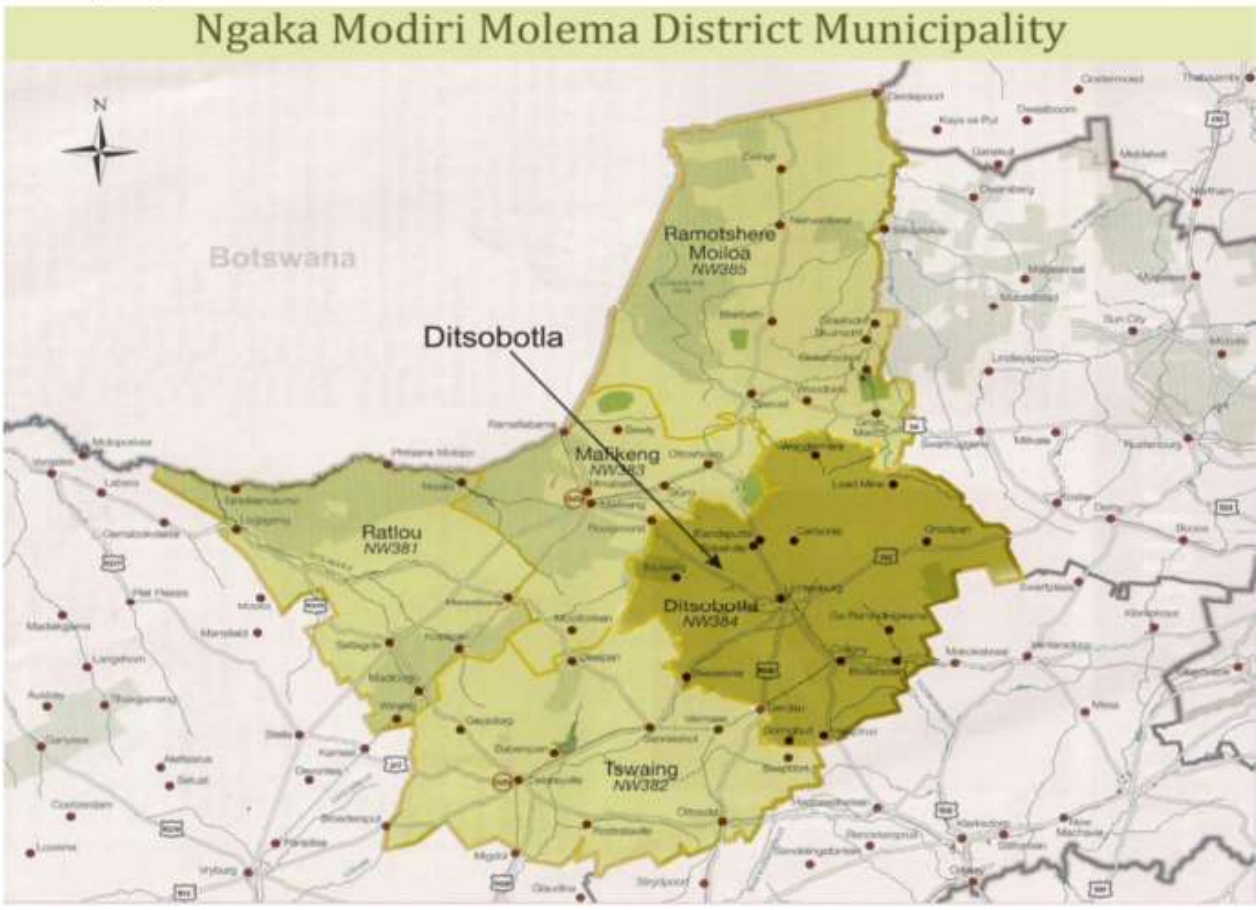
Windrose



The wind rose for Lichtenburg shows how many hours per year the wind blows from the indicated direction.

SOCIO-ECONOMIC PROFILE OF DITSOBOLA LOCAL MUNICIPALITY

. (Reference to the Ditsobola Integrated Development Plan 2020)



Map indicates the study area as well as its locality in relation to the Ngaka Modiri Molema Municipality and the North West Province

Overview of Ditsobotla Local Municipality & Demographics

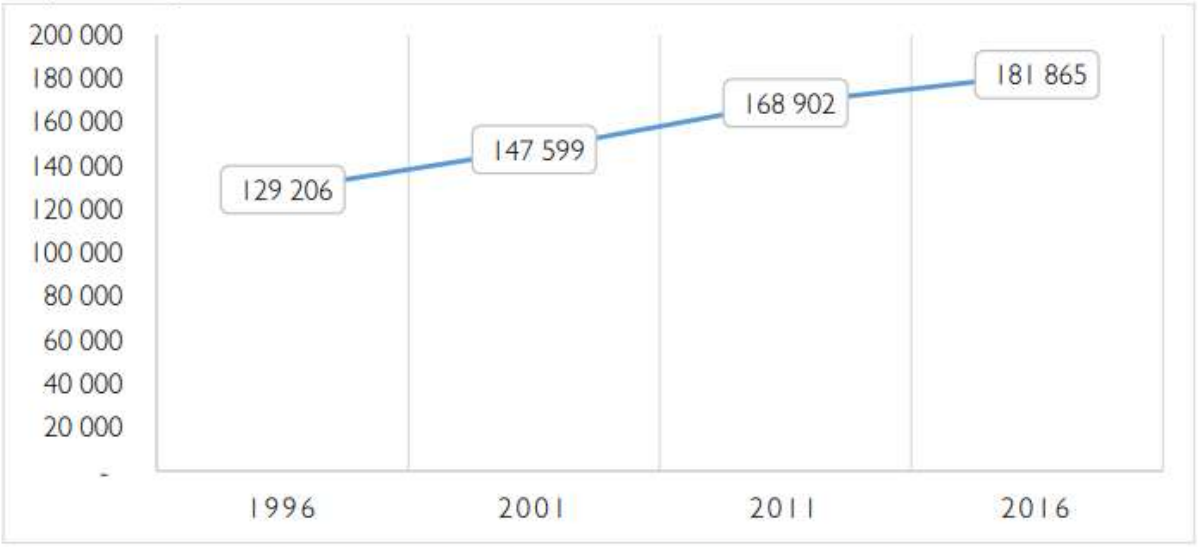
Ditsobotla Local Municipality is located in the Ngaka Modiri Molema District Municipality in the North West Province and covers approximately 6500 km². The municipality is home to approximately 181 8651 people. Ditsobotla Local Municipality consists of two main towns of Lichtenburg and Coligny and four semi-urban areas (townships) of Itsoseng, Tlhabologang, Itekeng and Boikhutso. It is also surrounded by a vast number of rural areas (villages) including commercial farming areas. The village composition of the municipality includes among others the following main residential areas:

- Bodibe;
- Matile;
- Springbokpan;
- Verdwaal;
- Bakerville;
- Ga-Motlatla; and
- Putfontein.

Population & Households Profile

The population growth of Ditsobotla Local Municipality has shown a steady average growth of 1% between 1996 and 2016. The graph below illustrates this population growth trend.

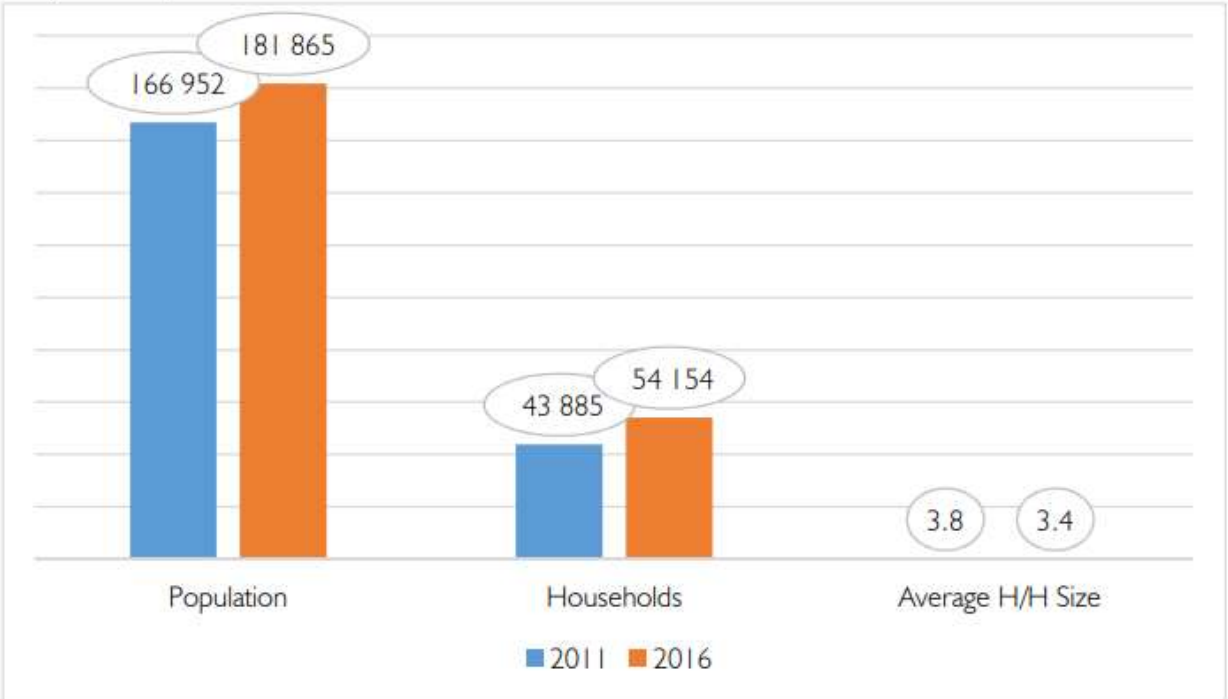
Graph 1: Population Growth Trends



Sources: Census 1996, 2001 and 2011 except for 2016 (Community Survey, 2016)

The number of households have increased from a base of 44 5002 during 2011 to an estimated 54 5003 . The average household size has declined from 3.8 to 3.4 family members during the same period. This figure supports the upward trend movement of people migrating from farms to urban centres (Lichtenburg) in search of economic opportunities, employment and access to services.

Graph 2: Population and Households Trends 2011 & 2016

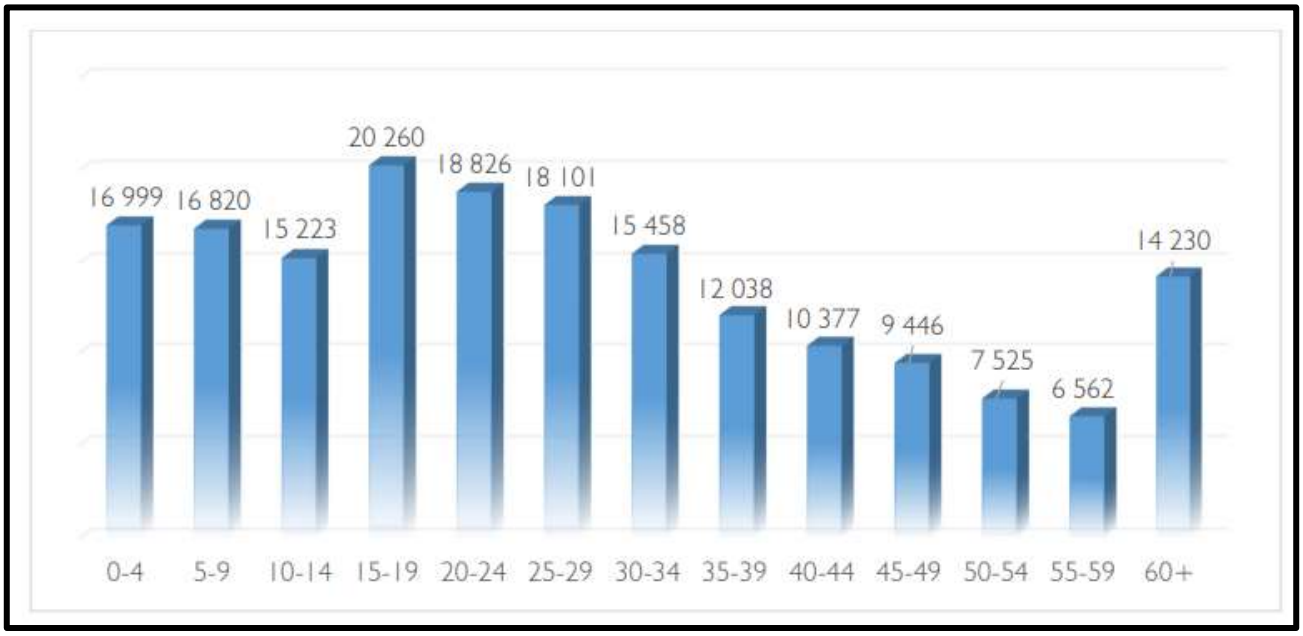


Source: Statistics South Africa, Census 2011 and Community Survey, 2016

Age Profile

Age Profile Age Profile An understanding of the age structure and population of the municipality is vital in planning for the anticipated demands for services and employment opportunities. Specifically, it enables the municipality to:

• Identify the potential need and location of facilities (e.g. education and health);
• Identify the expected growth in economically active population and potential employment seekers; and
• Project and plan for facilities to cater for the older persons as well as the future demands for cemeteries. The graphic presentation below indicates the age structure of Ditsobotla Local Municipality.

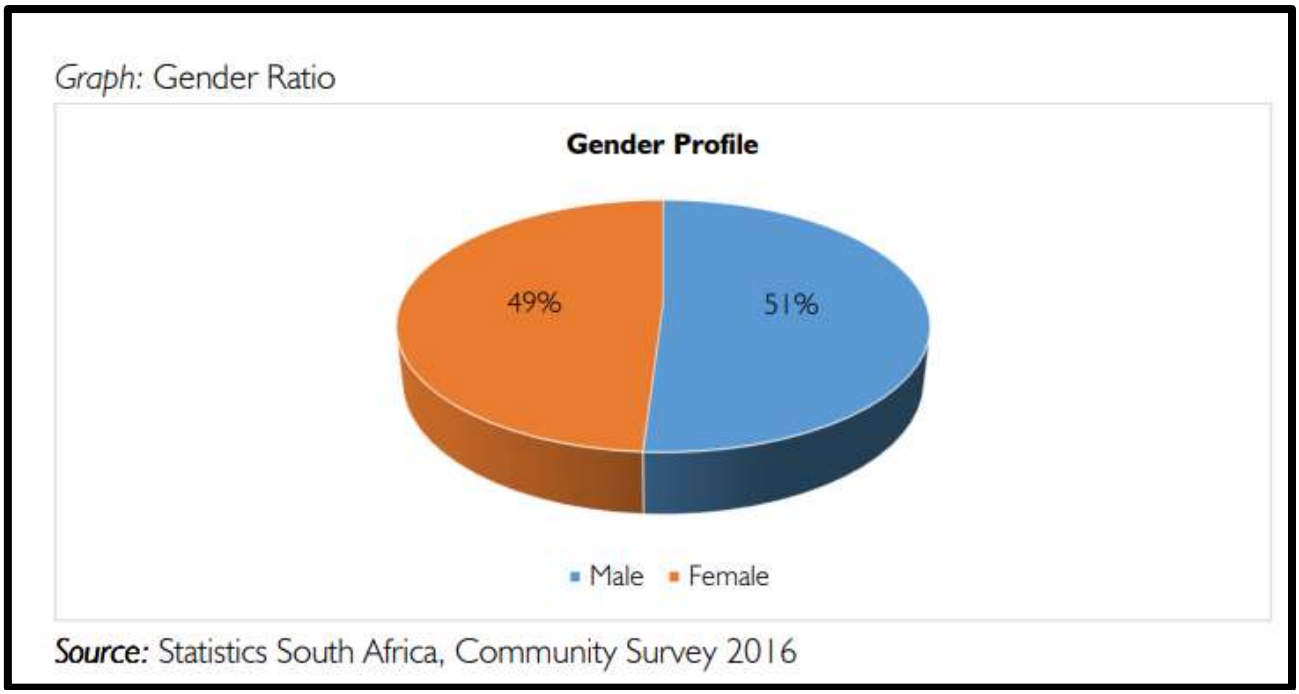


The analysis of the above graphic presentation indicates a highly youthful age structure of 66%. The proportion of the working group population (aged 15 – 64) is approximately 73%.

Gender Profile

An overview of the gender structure is necessary to determine the following:

• Provide an indication of the socio-economic trends such as male absenteeism;
• Potential future population and growth trends;
• The need for specific types of facilities in specific locations (e.g. maternity services at hospitals and clinics); and
• The need for specific capacity building and skills development programmes for targeted groups such as women.



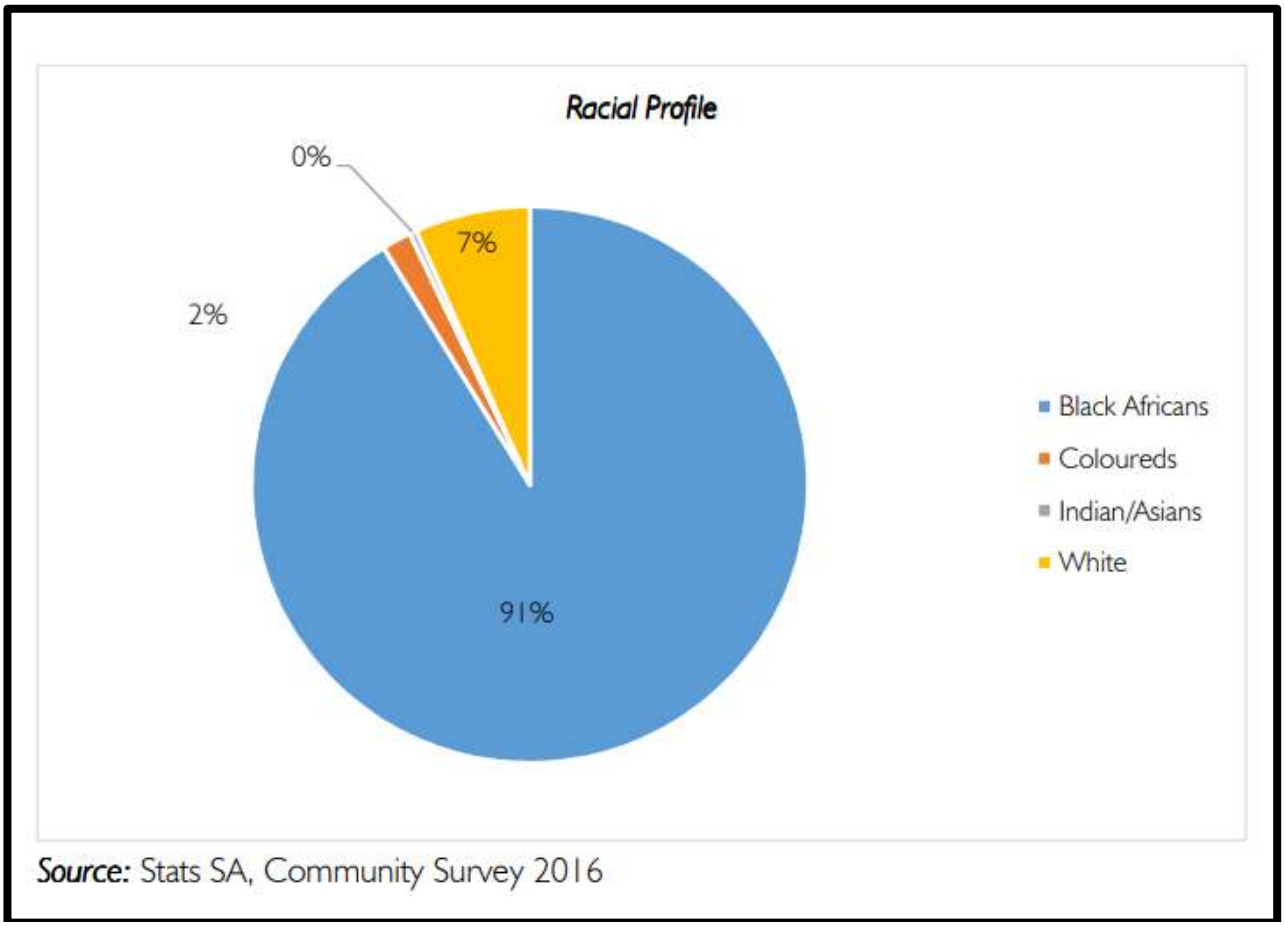
According to the Community Survey 2016, the gender structure in Ditsobotla is male dominated with the male/female ratio of 51:49. The male population is 93 421 compare to the female figure of 88 444 people.

This figure is similar to that of the North West Province but slightly different from that of Ngaka Modiri Molema district area, which reveals a male/female ration of 49:51.

Racial Profile

Racial Profile Racial Profile

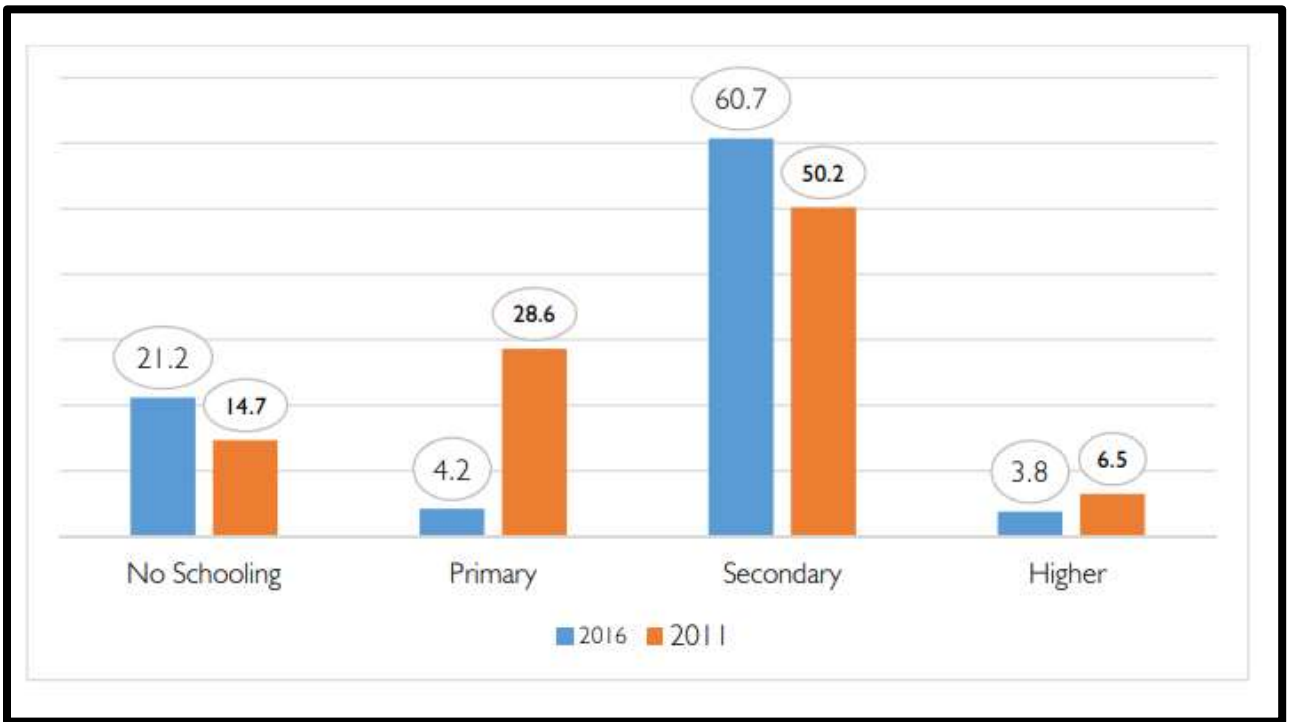
The population breakdown indicates a predominant presence of Black Africans (91%) followed by Whites (7%) and Coloured (2%).



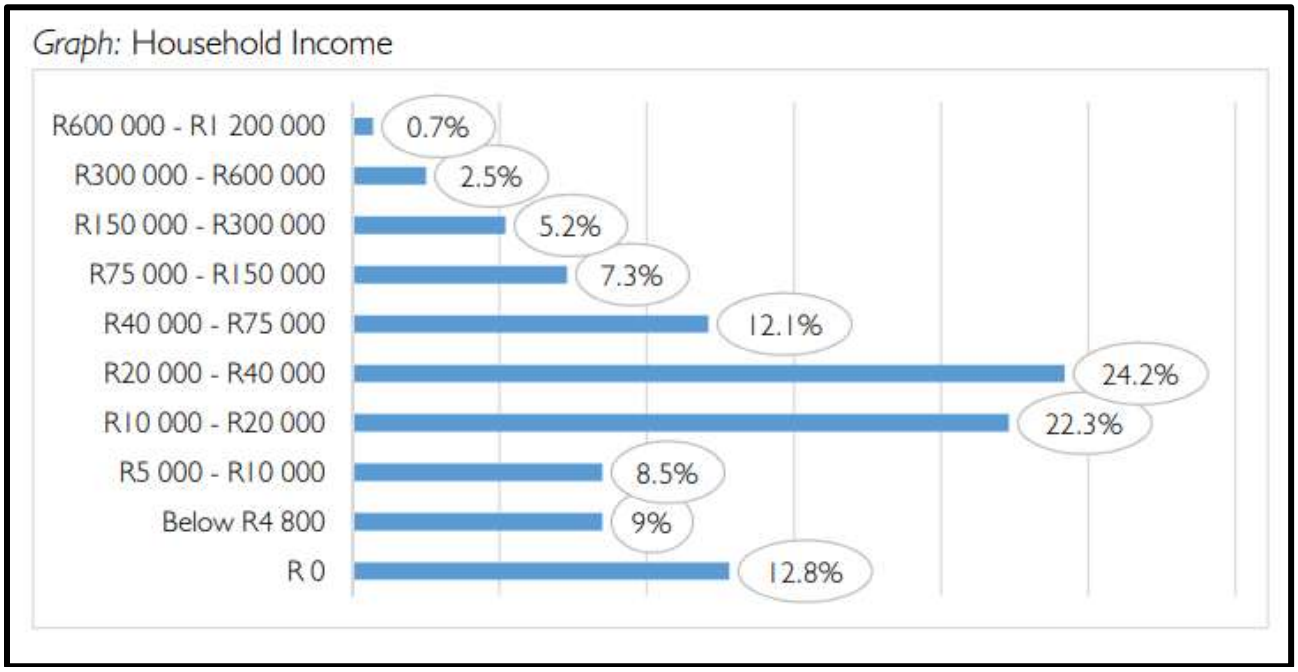
Educational Profile

According to the Community Survey 2016, there is a significant improvement in the proportion of people with access to education in the secondary schooling category (from 50.2% to 60.7%). There is a downward trend in the category of people with primary education, which shows a decline from 28.6% to 4.2% and seems to correlate with an increase in the number of people without any schooling (from 14.7% to 21.2% during the same period). The figures also show a 2.7% decrease in the category of people with some form of higher education between the same periods.

The spatial distribution of the education figures reveals low skills and education levels mostly in the rural parts of the municipality. The highest education and skills levels are concentrated in the urban areas of Lichtenburg and Coligny. A significant proportion of the population in these areas have received tertiary education and the proportion of the population who have not received any form of schooling are relatively low in these areas. The percentages of population who have not received any form of schooling are found in most of the villages.

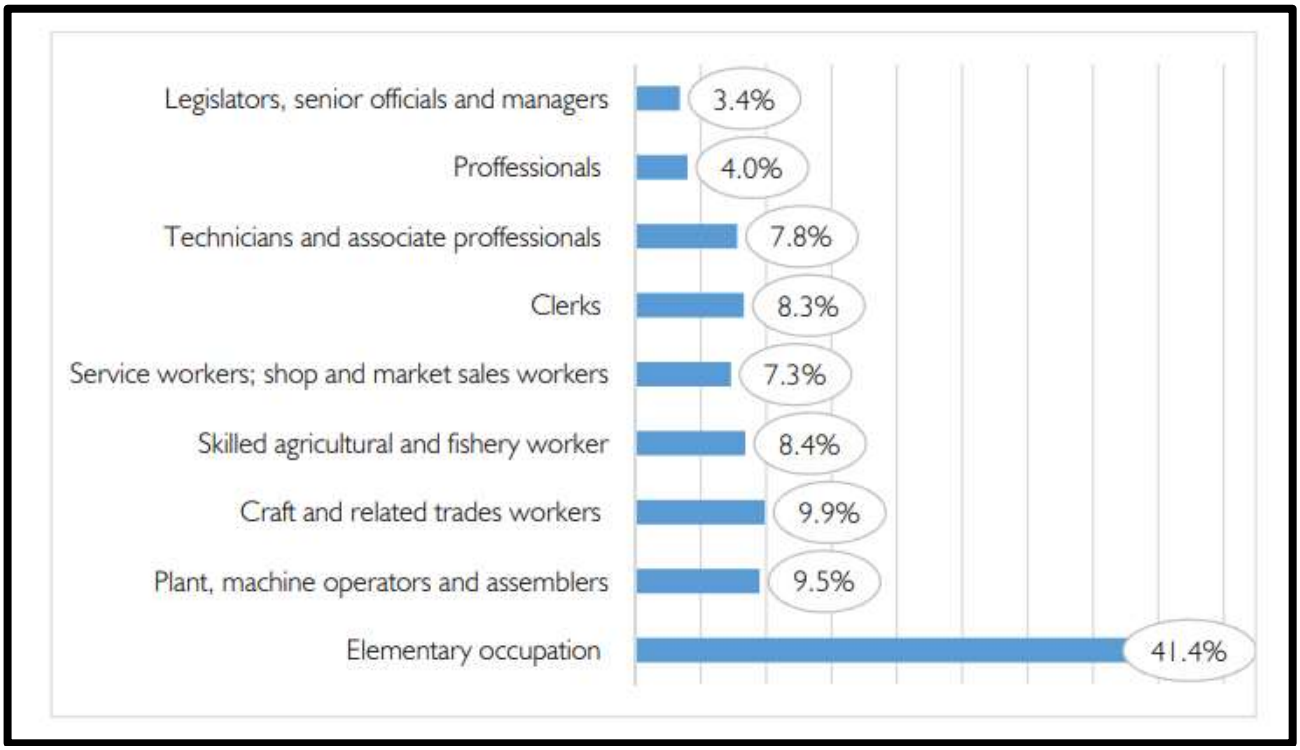


Household Income Profile
The graphic presentation below indicates that approximately 13% of the households have no income. The majority of households earn in the range of R10 000 – R20 000 and R20 000 - R40 000 per annum.



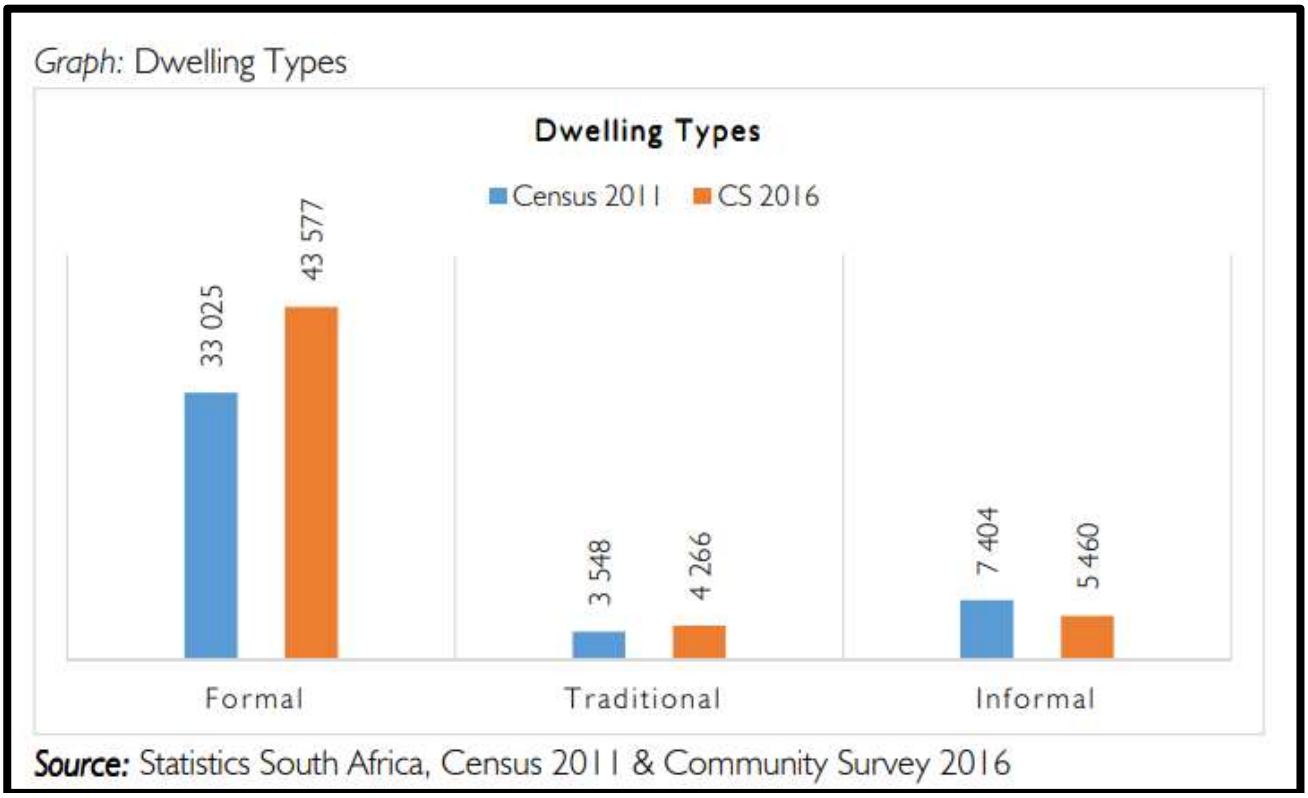
The occupational profile below provides an indication of the sources of income for households in the municipal

area



Dwelling Profile

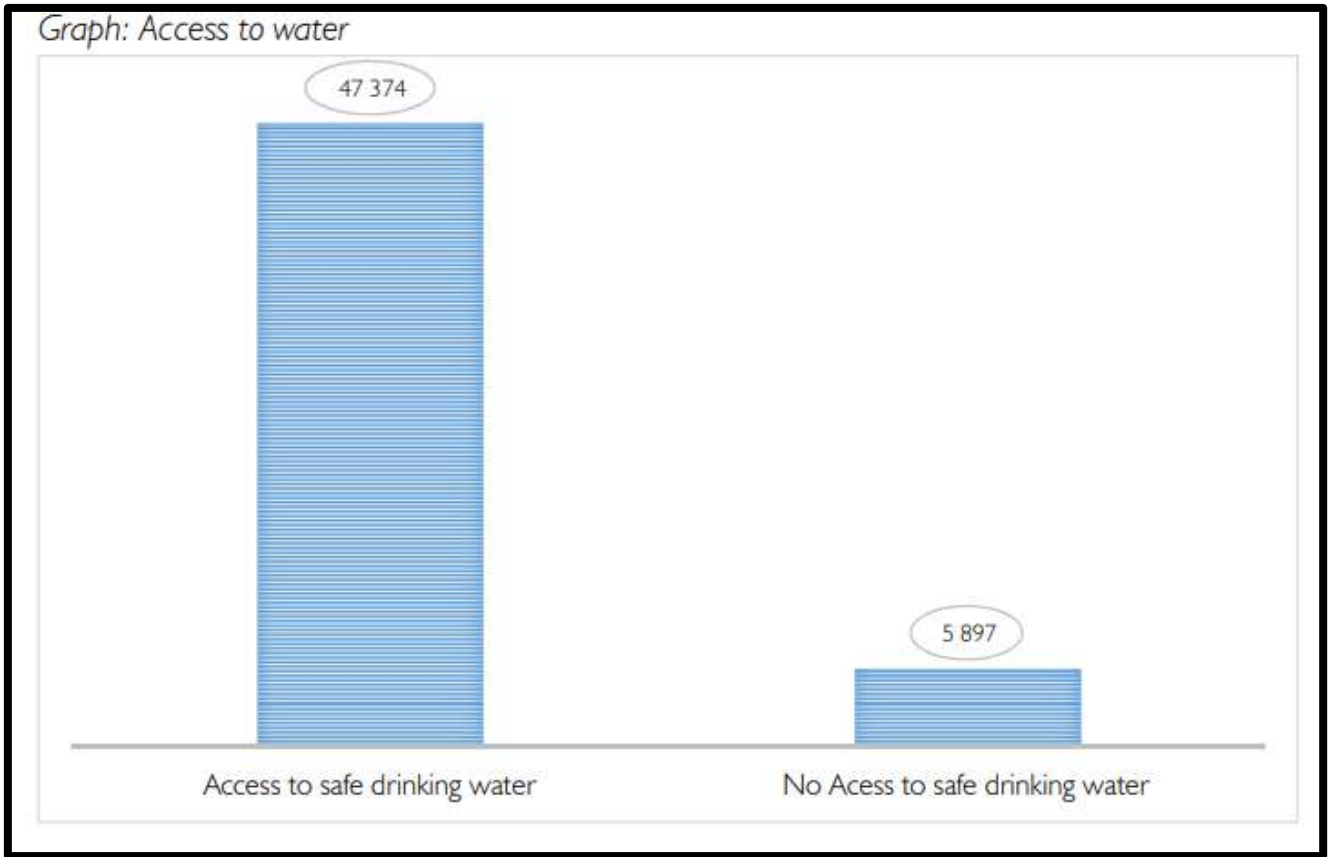
Between the period 2011 and 2016, the number of people with access to formal housing has increased remarkably, partly due to intensive rollout of government's low cost housing programme for the poor. The formal dwellings increased from 33 025 to 43 577 and traditional structures from 3 548 to 4 266 during this period.



HOUSEHOLD INFRASTRUCTURE & SERVICES

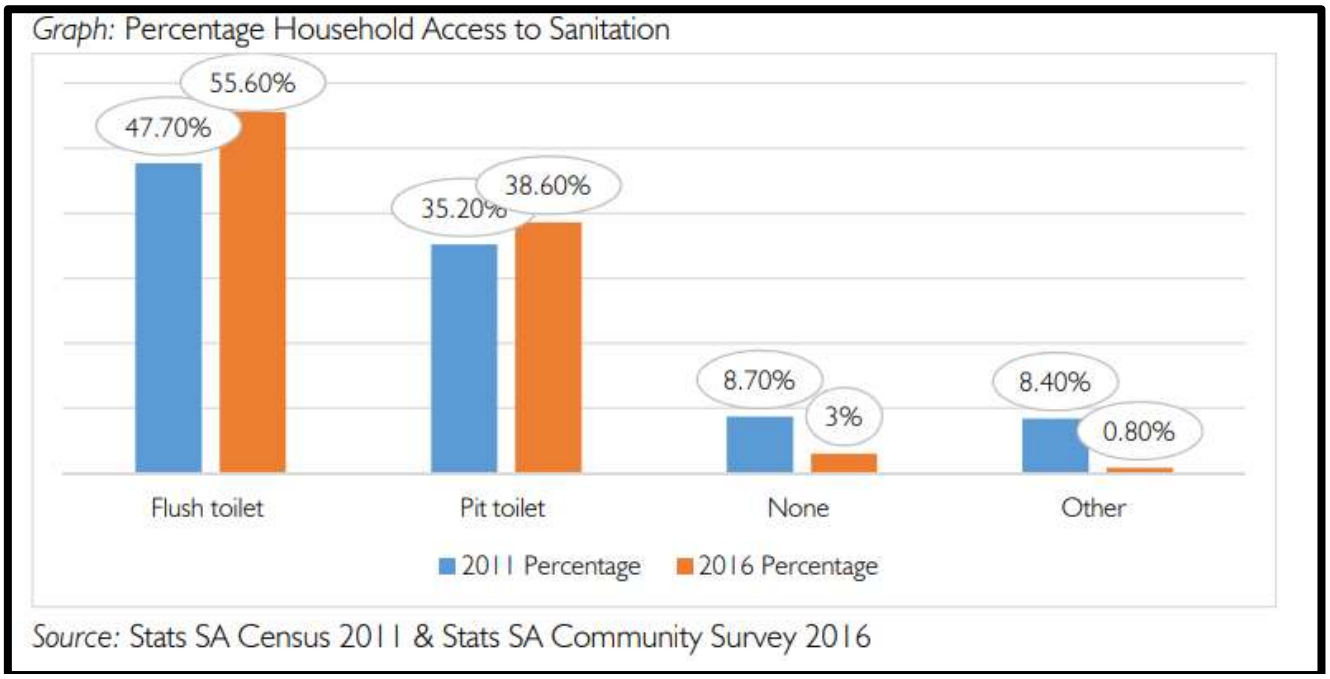
Portable Water

According to the Community Survey 2016 the total number of households with access to piped water stands at 43 162 of the total households which translates to 79%. Based on own municipal analysis the number of households without access to water is approximately 6 000 based on the emergence of informal settlements notably in Itekeng (2 000 households), Tlhabologang Extension 8 (1 800 households), and Blydeville (2 000 households). The proportion of households without access to water based on this analysis translates to 11%.



Sanitation

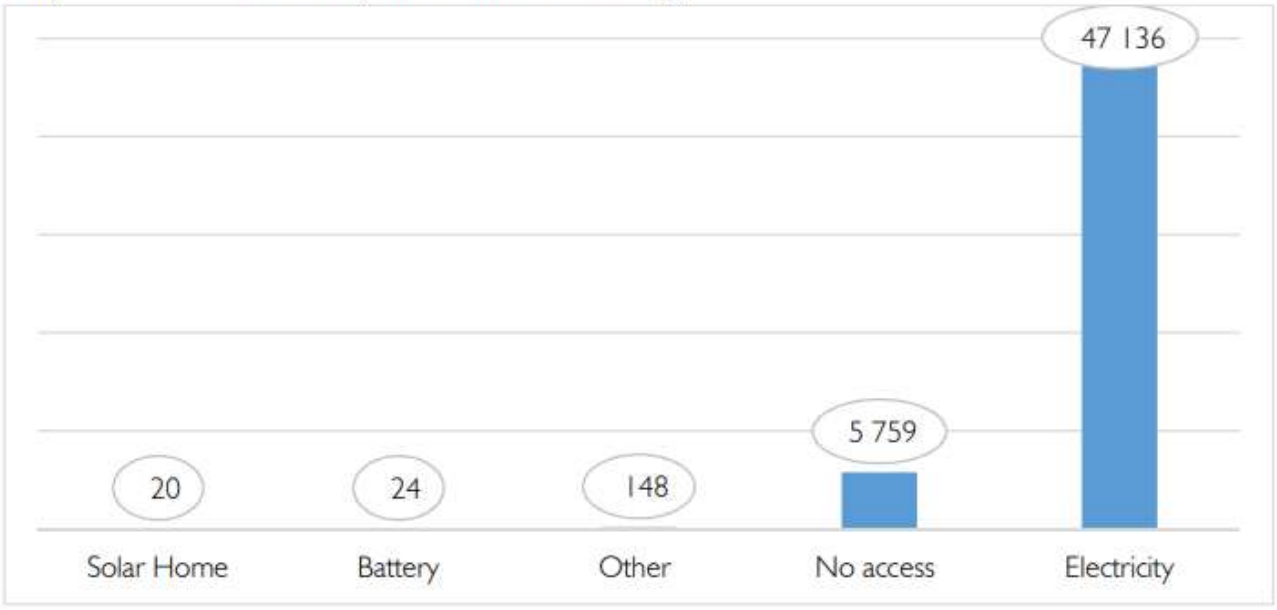
Applying statistical information from the Community Survey 2016 there seems to be an increase in the number of households with access to sanitation services. A comparative analysis reveals that households with access to flush/chemical toilets increased between 2011 and 2016 from 21 303 to 30 882. The category of households using other types of sanitation facilities also increased from 19 118 to 20 948 during the same period. The total backlog reduced significantly during the same period from 4 079 to 2 384. The use of pit latrines is mostly prevalent in the villages and rural parts of the municipality.



Electricity

The municipality is licensed to provide electricity in the areas of Lichtenburg, Blydeville, and Coligny, which are urban centres. Eskom services all other villages and townships. The Ditsobotla Local Municipality has approximately 48 201 (Community Survey, 2016) households connected to the electricity grid which is a significant increase from the 32 933 recorded during Census 2011. According to the Community Survey (2016) approximately 192 households are reliant on other sources of energy while 5 759 do not have access to electricity.

Graph: Access to electricity and alternative energy sources



Source: Stats SA Community Survey 2016

Based on the information 89% of households have access to electricity. The remaining 11% dependant on alternative sources and or not having access to electricity largely fall within the category of "infills". The backlog is also reflective of the informal settlements in Itekeng, Blydeville and Tlhabologang Extension 8. The municipality has already submitted electrification proposal for the latter two areas to Eskom for feasibility studies and inclusion in its electrification plans.

Economic Profile

The table below shows the share of GDPR contributed by each sector in Ditsobotla Local Municipality, Ngaka Modiri Molema District, the North West Province and South Africa.

Sector	North West		Ngaka Modiri Molema		Ditsobotla Local Municipality	
	2011	2012	2011	2012	2011	2012
Agriculture	8%	8%	5%	6%	9%	10%
Mining	15%	16%	4%	4%	13%	13%
Manufacturing	11%	13%	6%	6%	17%	17%
Electricity and Water	2%	2%	3%	3%	0%	0%
Construction	2%	2%	2%	2%	2%	3%
Trade	10%	10%	10%	10%	11%	11%
Transport	9%	8%	7%	7%	8%	8%
Finance	13%	12%	16%	14%	15%	13%
Community Service (including government)	30%	29%	48%	49%	24%	25%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: *IHS Global Insight 2013*

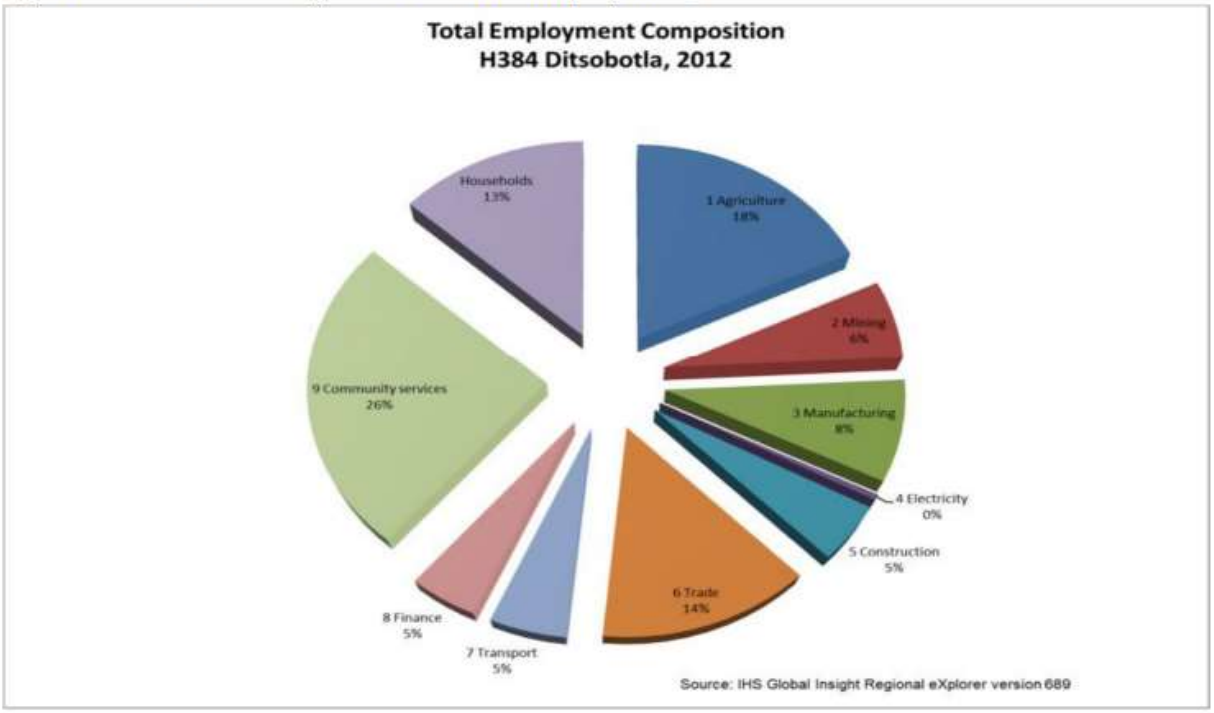
The table above indicates that the GDPR of the municipality was slightly more than R5 billion during 2012. The Community Services (including Government) sector made the biggest contribution with 25% to the economy of Ditsobotla Municipality in 2012. The contribution of the Community Services has, increased from 24% in 2011, and is currently still far less than the average contributions made by this sector at the district level. This shows that although this sector is still the highest in the municipality, it is not as important when compared to the average of the district. The second highest GDP contributing sectors in the municipality is that of the manufacturing sector (17%) followed by mining and the finance (13%) respectively. In the instance of both the manufacturing and mining sectors, they are much more than the average of the district and are not far behind that of the province. This shows the importance of both the sectors for the municipality. This probably contributes towards the strong trade sector in the municipality and the spin-offs created by the trade sector towards the finance sector. The agriculture sector contributed approximately 10% to the economy of the municipality, constituting a higher share in its economy than in the province (8%) and district with 6%

The agriculture share to the municipality's economy has however increased from the 9% contribution in 2011. Again, this shows that agriculture is an important contributor to the economy of the municipality. The electricity and water, construction transport sectors share has remained relatively constant over the aforementioned timeframe and are well within the average range of both the district and the provincial contributions. Interestingly the manufacturing sector is the second highest contributor to GDP, even higher than both district and province. This shows that there is great scope for local manufacturing and further beneficiation in this area. Table: Percentage contribution of local municipalities to sectoral Gross Value Add of Ngaka Modiri Molema, 2012

	Ditsobotla	Mahikeng	Ramotshere	Ratlou	Tswaing	NMMDM
Agriculture	33.4%	15.8%	9.0%	20.7%	21.0%	100%
Mining	63.0%	16.8%	11.3%	2.3%	6.5%	100%
Manufacturing	53.7%	21.8%	16.6%	3.4%	4.5%	100%
Electricity & water	2.1%	71.1%	17.5%	9.0%	0.2%	100%
Construction	20.9%	55.2%	11.0%	9.7%	3.3%	100%
Wholesale and trade	21.1%	59.9%	17.4%	7.1%	2.5%	100%
Transport	21.1%	58.3%	8.2%	9.7%	2.6%	100%
Finance	17.7%	50.3%	13.5%	11.4%	7.1%	100%
Community services (incl. Government)	9.6%	66.1%	10.8%	10.9%	2.7%	100%

The table above gives an indication of the contribution made by each municipality to the district GVA and each of its sectors. From this table, it is possible to see how the Ditsobotla Local Municipality is performing compared to other municipalities in the Ngaka Modiri Molema District. Ditsobotla contributes the most to the district GVA in mining (63.0%), in manufacturing (53.7%) and in agriculture (33.4%). These areas are the strength of the municipality and would be easy to further exploit. While the wholesale trade sector (21.1%) falls way behind that of Mahikeng, this is a potential area of growth for the municipality.

Figure: Sectoral Percentage distribution of employment, 2012

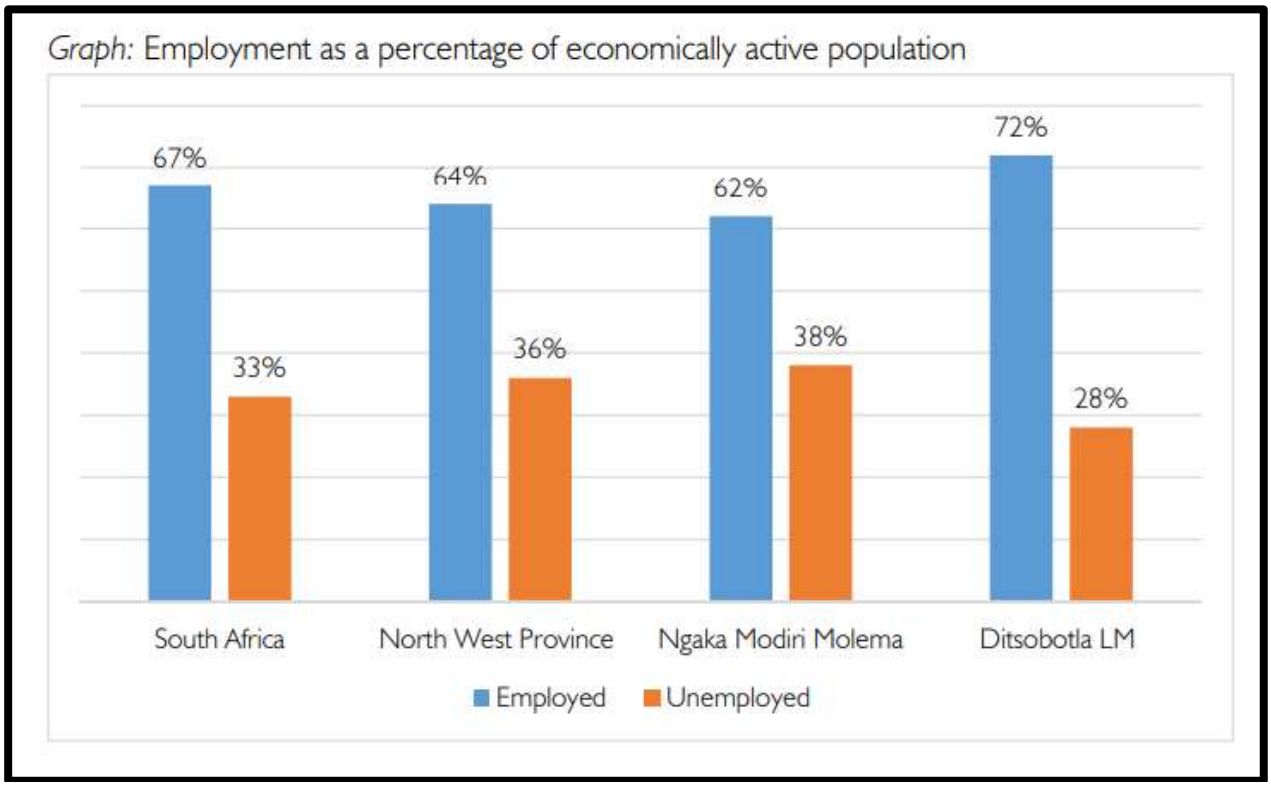


Source: IHS Global Insight 2013

In 2012, the community services sector by far made the largest contribution to the employment in Ditsobotla Municipality, absorbing more than a quarter (26%) of the local employment. The share of contribution from this sector to employment is slightly larger than the share of the same sector to the contribution of GDPR. This indicates that, while the wholesale and trade industry remains an important economic sector for the municipality, it is an even more important sector in terms of supplying a large number of jobs opportunities. Trade (14%) and agriculture (18%) sectors also made significant contributions to local employment. The agriculture sector is a large employment creator. However, the agriculture sector is a far smaller GVA R contributor. This indicates that, while the agriculture sector is an important job-creating sector for the municipality, it is not supplying high paid job opportunities and it is not contributing equally to the economic contribution of the economy.

Employment rate

Available statistics indicate that Ngaka Modiri Molema District and Ditsobotla Municipality have employment rates of 62% and 72% of the economically active population being employed respectively, while 38% and 28% of the economic active population is respectively unemployed (Global Insight 2013).

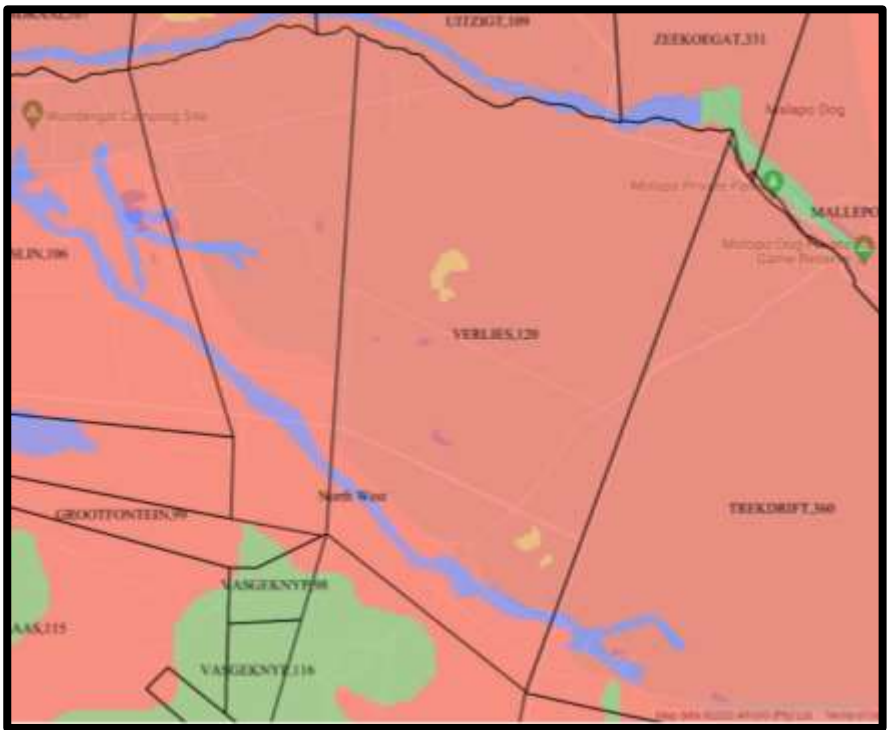


Heritage and Culture (Specialist studies required)

Numerous literatures on the study area and its surrounds have been consulted. A list is provided under literature as Part of Acknowledgements and References at the end of this document.

Palaeontology (Specialist studies required)

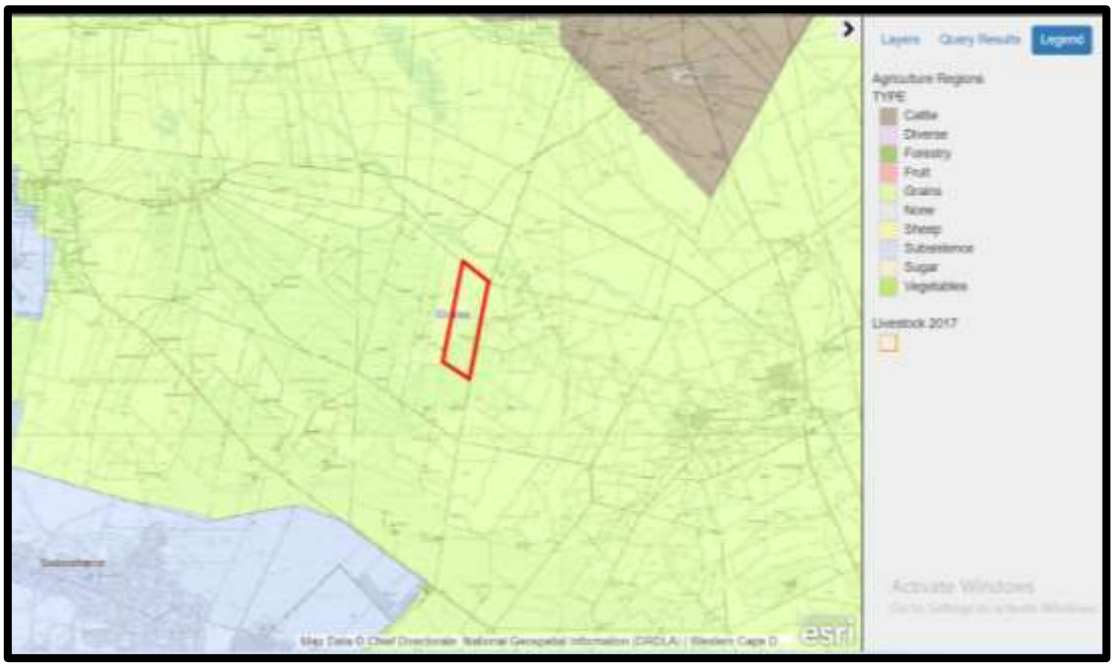
The SAHRIS PalaeoSensitivity map requires that a field assessment and protocols for finds. Specialist studies would therefore be required.



Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map

(b) Description of the current land uses.

A vast area on the study area and its surrounds is used for agricultural crops, grain. Adjacent on Portion 5 is a piggery and further northeast used for cattle farming. To the southwest, subsistence farming is practiced in the rural setting.



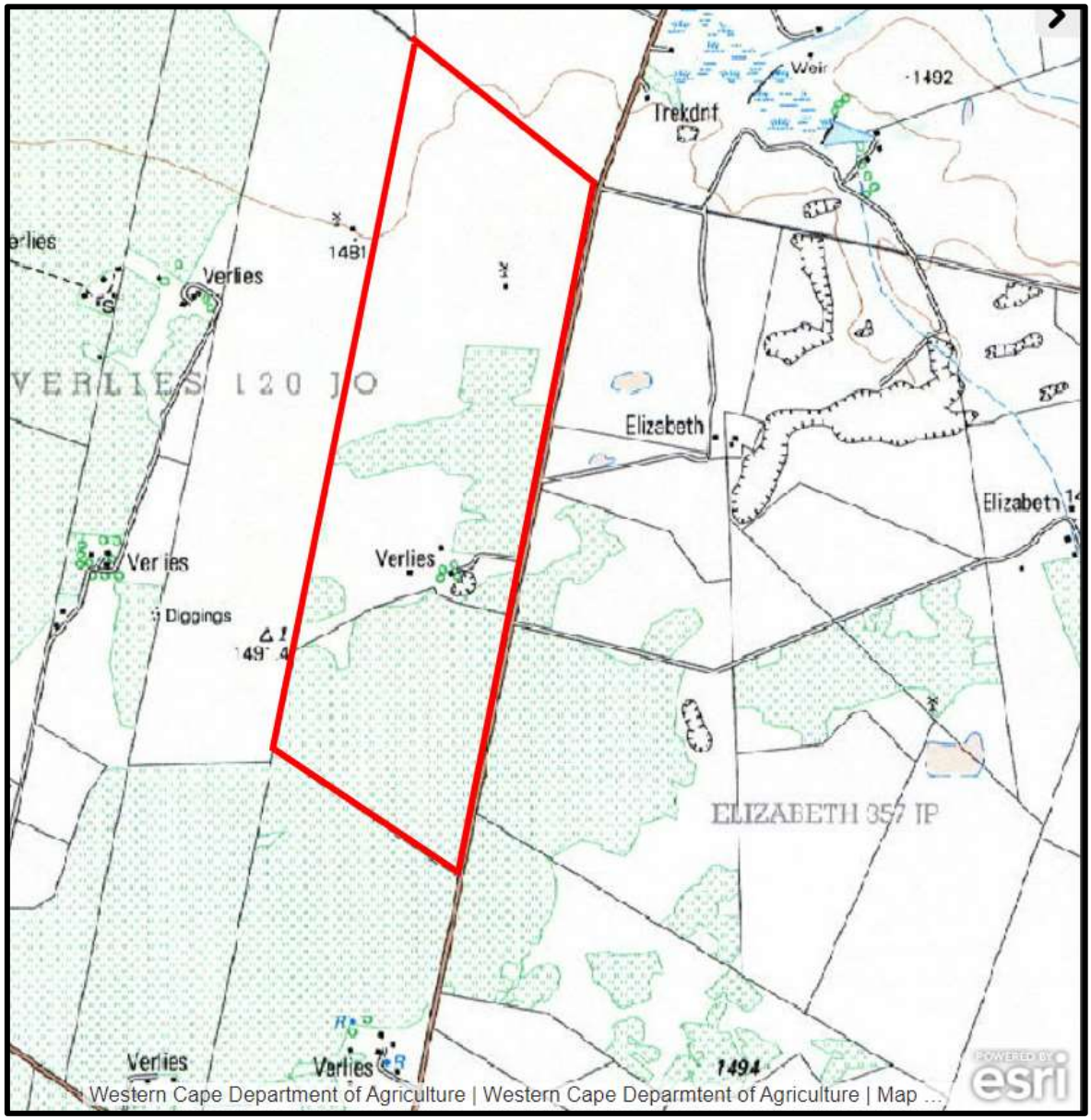
(c) Description of specific environmental features and infrastructure on the site.

The study area has a homestead with ESKOM powerline as supply, windmill with reservoir, dirt roads (farm roads), livestock farming infrastructure, mine excavations and tailings dumps.

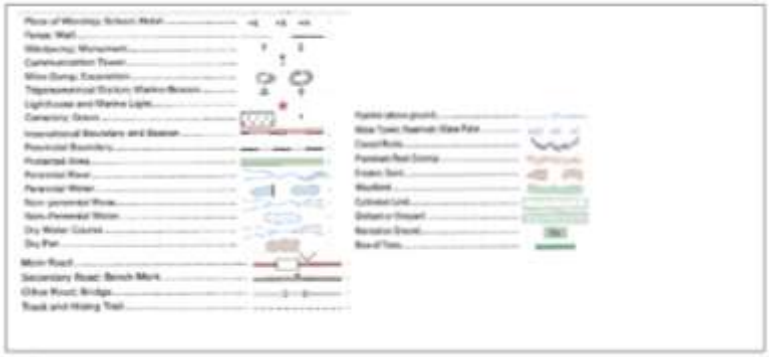
Tailings in front of picture-Taken by EAP on site.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)



LEGEND



Windmill with Reservoir

Livestock inffrastructure

v) 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 consultationswith affected parties together with the significance, probability and duration of the impacts

Nature of Impact	Impact	Positive / Negative / Neutral Impact	Reversibility	Probability	Extent	Duration	Intensity	Significance	Mitigation Rating
CONSTRUCTION / SITE ESTABLISHMENT PHASE									
ACTIVITY:	**DEMARCATION OF SITE WITH VISIBLE BEACONS.**								
Boundary Demarcation	Over boundary prospecting resulting in loss of vegetation, heritage resources and give rise to neighbouring landowner conflicts..	Neg	Irreversible	2	3	1	8	48	Low to Moderate
ACTIVITY:	**ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN BOUNDARIES OF SITE.**								
Social, Security & Safety	The area has a high unemployment rate with mining skills readily available which will result in: Influx of job seekers to the site which results in a security risk to the landowner and surrounding farmers. Unsuccessful job seekers which may informally settle in area. .	Neg	Irreversible	5	2	1	4	32	Low to Moderate
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential impact of mining activities (bulk sampling) on the runoff and infiltration of storm water.	Neg	Reversible	2	1	1	6	24	Low
Soils	Loss of soil & damage to soil characteristics. Potential hydrocarbon contamination to soils (machinery and equipment).	Neg	Irreversible	2	1	1	1	4	Low
Flora	Although minimal during construction, a loss of biodiversity would occur. The possibility of alien invasive encroachment.	Neg	Reversible	5	1	1	2	14	Low
Land Use	The study area has an extremely high veld fire risk that will impact on surrounding land-use of neighbouring farmers if a fire occurs.	Neg	Reversible	2	3	1	8	48	Low to Moderate
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	3	1	1	2	10	Low
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Neg	Irreversible	1	1	1	10	30	Low
Noise	Noise caused by yellow fleet and machinery during the site establishment phase of the operation.	Neg	Reversible	5	3	1	6	48	Low
Air quality	Dust nuisance caused by the disturbance of soil. Dust nuisance due to processing pan plant transfer points. Dust nuisance due to loading and vehicles transporting the material.	Neg	Reversible	5	2	1	8	64	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	1	1	4	28	Low
Fauna	Hindrance and alienation of animals on the study area and its surrounds. Hindrance to nocturnal animals and a possible change in behaviour of nocturnal prey and predators.	Neg	Reversible	4	3	1	6	48	Low
ACTIVITY: ABLUTION FACILITIES									
Noise	Noise nuisance generated by earthmoving machinery.	Neg	Reversible	5	1	1	2	14	Low

Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	1	1	2	10	Low
Soils	Portable Toilets. Potential harm through sewage leaks.	Neg	Reversible	3	1	1	2	8	Low
ACTIVITY: ACCESS ROADS (CURRENT FARM ROADS BE USED WHERE POSSIBLE)									
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential impact of mining activities (bulk sampling) on the runoff and infiltration of storm water.	Neg	Reversible	3	1	1	6	24	Low
Soils	Loss of soil & damage to soil characteristics. Potential hydrocarbon contamination to soils (machinery and equipment)	Neg	Reversible	5	1	1	6	42	Low
Noise	Noise caused by yellow fleet and machinery during the site establishment phase of the operation. Establishment of tracks for drilling.	Neg	Reversible	5	1	1	6	42	Low
Air quality	Dust nuisance caused by the disturbance of soil.	Neg	Reversible	5	3	1	6	42	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	3	1	3	27	Low
SITE OFFICES									
Hazardous Waste	Potential contamination through littering.	Neg	Reversible	5	1	2	4	32	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics.	Neg	Reversible	5	1	1	1	7	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	1	1	4	28	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	1	1	4	28	Low
VEHICLE HARDPARK AND VISITORS PARKING AREA (ESTABLISHMENT)									
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential impact of mining activities (bulk sampling) on the runoff and infiltration of storm water.	Neg	Reversible	3	1	1	8	40	Low
Soils	Potential hydrocarbon contamination to soils (machinery and equipment)	Neg	Reversible	4	1	1	6	36	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery.	Neg	Reversible	5	1	1	6	36	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	2	1	1	2	8	Low
WORKSHOP									
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential contamination through littering leaching into the groundwater table. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. .	Neg	Reversible	5	2	1	6	48	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soil and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	2	1	6	48	Low
Flora	Loss of biodiversity. Possibility of alien invasive encroachment. Potential loss of protected or red data plant species.	Neg	Reversible	5	1	1	4	28	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	2	1	4	32	Low
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	2	1	4	32	Low

Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	2	1	4	32	Low
ACTIVITY: BUNDED DIESEL AND OIL STORAGE FACILITIES									
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table during refueling of equipment. Potential contamination through littering leaching into the groundwater table. Potential hydrocarbon contamination which may reach downstream surface water bodies. (wetland) Potential surface water contamination if leaks escape into the environment. .	Neg	Reversible	5	2	1	6	48	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	3	1	8	64	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	2	1	1	2	8	Low
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	1	1	2	14	Low to Moderate
ACTIVITY: GENERATOR AREA									
Hazardous Waste	Risk of hydrocarbon contamination leaching into the water table during refueling of generator.	Neg	Reversible	5	1	1	6	42	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	1	1	6	42	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	1	1	6	42	Low
ACTIVITY: WASTE AREA									
Hazardous Waste	Potential contamination through littering leaching into the groundwater table. Potential surface water contamination if leaks escape into the environment.	Neg	Reversible	5	2	1	6	48	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	2	1	6	48	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	2	1	8	56	Low to Moderate
Fauna	Alienation of animals from the area. Potential risk to avifauna. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. New habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.	Neg	Reversible	5	3	1	8	72	Low to Moderate
ACTIVITY:	**STRIPPING AND STOCKPILING OF TOPSOIL FOR MINING (MINIMAL REQUIRED)**								
Hazardous Waste	Contamination of area with hydrocarbons or hazardous waste materials.	Neg	Reversible	3	2	1	4	24	Low
Soils	Potential for loss of soil & damage to soil characteristics. Initial	Neg	Reversible	4	1	1	4	24	Low to

	increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.								Moderate
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	Neg	Reversible	5	1	1	4	28	Low to Moderate
Topography	Alteration of topography.	Pos	Irreversible	5	2	1	10	80	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	Neg	Reversible	2	1	1	10	40	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	2	1	10	80	Low to Moderate
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Neg	Irreversible	2	5	1	10	80	Low to Moderate
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	2	1	8	56	Low
Air quality	Dust generation.	Neg	Reversible	5	2	1	8	56	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	2	1	8	56	Low
Fauna	Hindrance and alienation of animals on the study area and its surrounds. Hindrance to nocturnal animals and a possible change in behaviour of nocturnal prey and predators.	Neg	Reversible	5	2	1	8	56	Low
OPERATIONAL PHASE									
ACTIVITY:	**MINING (BULK SAMPLING) AND DRILLING**								
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	2	3	8	80	Low
Hazardous Waste	Contamination of area with hydrocarbons or hazardous waste materials.	Neg	Reversible	5	2	1	8	64	Low
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	Neg	Reversible	5	2	3	8	80	Low
Topography	Alteration of topography.	Pos	Irreversible	5	2	1	8	64	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	Neg	Reversible	5	2	1	8	64	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	3	1	8	72	Low to Moderate
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Neg	Irreversible	2	5	1	10	80	Low to Moderate
Air quality	Dust generation.	Neg	Reversible	5	3	1	8	72	Low
Fauna	Alienation of animals from the area. Potential risk to avifauna. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. New habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.	Neg	Reversible	5	3	1	8	72	Low
Surface water	Potential hydrocarbon contamination leaching into the water table.	Neg	Reversible	3	3	1	8	56	Low

	Reduction of local groundwater. Potential contamination through littering leaching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.								
Groundwater	Potential hydrocarbon contamination leaching into the water table. Reduction of local groundwater. Potential contamination through littering leaching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water	Neg	Reversible	3	4	1	10	70	Low
Social & Safety	Potential danger to landowner. Unsafe working environment for the employees. Safety risk posed by unslopped areas.	Neg	Reversible	3	4	1	10	70	Low
Dust	Dust nuisance caused by road maintenance. Dust nuisance caused by the disturbance of soil. Dust nuisance due to loading and vehicles transporting the material. Dust nuisance due to landscaping activities.	Neg	Reversible	5	3	1	8	64	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	3	1	10	90	Low
Air quality	Dust generation.	Neg	Reversible	5	3	1	10	90	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	3	1	10	90	Low
ACTIVITY:	**MINERAL PROCESSING-PLANT**								
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated by the processing plant unit. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	3	1	10	90	Low
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Reduction of local groundwater.	Neg	Reversible	5	3	1	8	64	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soil and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	3	1	10	90	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	3	1	10	90	Low to Moderate
Air quality	Dust generation at transfer points in the plant unit. Dust generated with stockpiling of material.	Neg	Reversible	5	3	1	10	90	Low to Moderate
Fauna	Alienation of animals from the area. Potential risk to avifauna. Impact and hindrance to nocturnal animals and change in their behaviour.	Neg	Reversible	5	4	2	10	90	Low
Surface water	Potential hydrocarbon contamination leaching into the	Neg	Reversible	2	1	1	2	8	Low

	water table. Reduction of local groundwater. Potential contamination through littering and leaching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.								
DECOMMISSIONING PHASE									
ACTIVITY:	**SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**								
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	4	2	4	10	100	Low
Soils	Soils replaced and ameliorated.	Pos	Reversible	4	2	4	10	100	Low
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	Neg	Reversible	3	2	3	10	100	Low
Topography	Alteration of topography.	Pos	Irreversible	5	2	5	10	120	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.(Low)	Neg	Reversible	3	2	4	10	110	Low
Visual aspect	Improved aesthetics through rehabilitation.	Pos	Reversible	5	2	5	10	120	Low to Moderate
Noise	Noise nuisance caused by drilling, machinery for stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	1	1	2	14	Low to Moderate
Air quality	Dust nuisance caused by the disturbance of soil. Dust nuisance due to loading and vehicles transporting the material. Dust nuisance due to drilling and landscaping activities.	Neg	Reversible	5	1	1	2	14	Low
Fauna	Reintroduction of fauna attracted to flora to the area.	Pos	Reversible	5	3	5	10	130	Low
Groundwater	Potential hydrocarbon contamination leaching into the water table. Reduction of local groundwater. Potential contamination through littering leaching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.	Neg	Reversible	5	3	2	10	100	Low

vi) 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).

Methodology used in determining and ranking nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks. The impacts were individually described and assessed using the criteria drawn from the Environmental Impact Assessment (EIA) Regulations, published by the DEA in terms of the NEMA (Act 107 of 1998). The significance of each impact is assessed using the following formula (before and after mitigation): Significance Point (SP) = (Probability + Extent + Duration) x Intensity

The significance of the impacts was determined through the consideration of the following criteria:

Probability:	Provides a description of the likelihood/probability of the impact occurring
Extent:	Describes the spatial scale over which the impact will be experienced
Duration:	The period over which the impact will be experienced
Intensity:	The degree/order of magnitude/severity to which the impact affects the health and welfare of humans and the environment
Significance:	Overall significance of the impact on components of the affected environment and whether it is a negative or positive impact

SP > 75	Indicates **high** environmental significance	An impact that could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates **moderate** environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP < 30	Indicates **low** environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.

REVERSIBILITY	**Reversible**	Impacts can be reversed through the implementation of mitigation measures
	Irreversible	Impacts are permanent and can't be reversed by the implementation of mitigation measures

MITIGATION RATING	**MITIGATED Degree impact can be mitigated**	High	*Impact 100% mitigated*

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

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

POSITIVE IMPACTS

Employment Opportunities

This operation will require the employment of yellow fleet and plant operators. It is anticipated that at least 17 people would be employed during the prospecting operation. The town of Lichtenburg and Mahikeng is situated within a 30km radius from opposite sides of the operation. This will create employment opportunities to those members of the community who have the necessary skills and competency as required by the Department Mineral Resources and Energy, Mine Health and Safety Inspectorate. (MHSA Act 29 of 1996). As the Northwest province is an active mining province, skills are readily available even for the special skills category group. SR (Sarie Roodt Operation) should however place emphasis on the employment of women, the youth and people with disability.

SMME Support

The operation will require consumables for the operation which can be sourced from SMME's.

Training and Development

It is a requirement from the DMRE-Mine Health and Safety Inspectorate that training should be provided to operators. This training should be conducted by accredited trainers and assessors. This allow operators to become skilled and semi-skilled and be employed in other sectors of the economy should a mining resource not be proven to establish a mine.

Increase in the Disposable income for the area

The employment will increase the disposable income for the area.

Revenue Generated to the State and Local authorities

SR will have to pay taxes and levies to the State and the Local authorities.

Geology

Increase the current knowledge on the geology of the area.

NEGATIVE IMPACTS

Generation of waste

The prospecting activities will generate both general and hazardous waste. The waste will be managed using the "triple R" principle, Reduce, Reuse and Recycle.

Introduction of Alien Invasive Plants on site

Invasive plants flourish where there is disturbances and ecological imbalances. The clearing of vegetation to establish drill pads and benches has the potential to attract invasive alien plants.

Criminal activities

Crime in South Africa is a social challenge faced by almost everyone, the presence of mining machinery and equipment on site will attract criminals who would seek to steal and sell such equipment in particularly diesel and batteries.

Noise Generation

The operation of machinery, crushing and screening plant will create noise which would impact on the farm owner and the owners and occupants of neighbouring farms. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00.

Dust Pollution

During the whole prospecting period including site establishment, construction, operation and closure, numerous machines and equipment will create dust.

Water Use Competition

The area is known to have a limited source of water and is a scarce commodity. The dust suppression system on the screening plant and watering down of roads will be a major consumer of water which might give rise to conflict for water use.

Loss of biodiversity

The prospecting activities will have an impact on the loss of biodiversity.

Soil contamination and disturbance to soil structure

The prospecting method which will be employed will have an impact on the soil structure as it will have to be removed. Contamination can occur during the removal of the topsoil and successive soil layers and could further be contaminated by the oil, grease, diesel and hazardous substances spillage.

Influx of labour to site

The locals who are under severe economic conditions will flux to the site seeking employment, this may also result in security threats to the operation. Influx of employment seekers from other areas of different culture might also frequent the site and the surrounding towns adding to cultural conflicts.

Traffic

The operation will contribute to the increase in traffic for the current road and transport infrastructure. This will be through the transport of the manganese material to costumers.

Loss of Heritage Resources

The activities on site have the potential to impact upon heritage resources. Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon these resources will be permanent and irreversible. Any movement of vehicles, equipment or personnel through areas containing these artefacts could result in the permanent destruction of the artefacts and loss of heritage resources.

Groundwater Contamination

Potential surface water contamination if leaks escape into the environment.

Potential hydrocarbon contamination leaching into the water table.
Reduction of local groundwater.
Potential contamination through littering leaching into the groundwater table.
Potential silt-loading of drainage lines, downstream, and surrounding water bodies.
Potential hydrocarbon contamination which may reach downstream surface water bodies.
Potential impact of mining activities on the runoff and infiltration of storm water.

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

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

Generation of waste

The prospecting activities will generate both general and hazardous waste. The waste will be managed using the “triple R” principle, Reduce, Reuse and Recycle. Waste management
A system will be implemented, and sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create general awareness.

Introduction of Alien Invasive Plants on site

If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. Herbicides are not proposed at this stage, only for a large scale eradication process which fallsbeyond the scope of this assignment.

Criminal activities

The most efficient manner in dealing with criminals entering the site would be to identify the high-risk areas for entry and ensure visible patrolling on a frequent basis. Entry to the administration area should be through the current main farm entry point which must be security controlled. Communication with local security agencies and partake in their safety and security programs.

Noise Generation

Noise barrier in the form of a berm, tree break or similar noise fence between the sensitive receptors and noise sources.
Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers.
Switch off equipment when not in use.
Engineering design of equipment as in the case of transfer points in the plant. (e.g., Langlaagte chutes as opposed to direct drop down)
Fixed noise producing sources such as generators, pump stations and crushers to be to be either housed in enclosures or barriers put up around the noise source.
All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town.
The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads.
The operation of machinery, crushing and screening plants will create noise which would impact on the farm owner and the owners and occupants of neighbouring farms. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00.

Dust Pollution

Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed.
Engineering design of equipment as in the case of transfer points in the plant. (e.g., Langlaagte chutes as opposed to direct drop down)
Speed control of machinery and equipment.

Water Use Competition

The water requirement for the operation must be met through extraction from existing municipality connections ensuring that all by-laws are adhered to.

Loss of biodiversity

Vegetation clearing must be limited to working areas only and a vegetation clearing method statement signed by a qualified environmental professional that must monitor that its specifications are adhered to.

Soil contamination and disturbance to soil structure

When establishing stockpiles, it will be erected in demarcated areas to avoid contamination and erosion through wash off. The stockpiles will be shaped to divert stormwater around the working areas. Stockpiled topsoil will be used during rehabilitation activities.

Influx of labour to site

No recruitment to be done on-site.

Traffic

Limit construction activities to the daytime and use establishment routes as far as possible.
Drivers obey all the rules of the road and ensure an open channel of communication with the surrounding road users to act proactivity on possible issues.
Consult with the relevant roads agency to determine whether SR must contribute to road maintenance or alterations due to increase traffic on the roads.
Access to the operation must be through current roads and clear signage will be erected to warn road users of heavy vehicle presence.

Loss of Heritage Resources

Adequate assessment and planning may be effective for identifying and protecting heritage resources.

Groundwater Contamination

Providing adequate bunded facilities for storage that will largely reduce the potential for groundwater contamination.

ix) 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)

Two project sites were considered:

Verlies 120 Portions 5,6,7,8

Verlies 120 Portions 6,7,8

Portions 6.7.and 8 is properties of a Trust of which the Applicant is a Trustee.

No fatal environmental flaws have been identified for the site locations considered.

The scores in the adjacent columns, for each alternative, indicate whether the outcome is positive or negative for each aspect/criterion considered:

+1 indicates a potential positive or avoidance of a potential negative impact.

-1 indicates a potential negative impact or significant disadvantage relative to the other alternatives.

0 neutral. There is neither a potentially significant positive nor negative impact.

This is not a detailed impact assessment per site but a comparative assessment for the two sites. The sole purpose of the comparison is to assist in selection of the preferred site as per the requirements of the EIA regulations.

The assessment in the table below indicates that the with Portions 6,7,8 to be preffred as to the inclusion of Portion 5.

Site Selection Matrix				
Consideration	**Portion 5**	**Score**	**Portions 6,7 and 8**	**Score**
Clearing of undisturbed land	Clearing required	-1	Clearing required	-1
Removal of indigenous vegetation	Removal required	-1	Removal required	-1
Within 500m of a wetland, or riparian area	Located more than 500m west of a wetland.	+1	Located more than 500m west of a wetland	+1
Presence of geological reef	Unknown	0	Confirmed	+1
Presence of dispersive soils	None	0	None	0
Impact on economic activity of land occupier giving rise to conflict	Piggery	-1	No conflict	+1
Proximity to ground water resources	No shallow ground water in proximity	+1	No shallow ground water in proximity	+1
Proximity to heritage resources	Possible through current known literature	-1	Possible through current known literature.	-1
Proximity to human receptors	More than 20km from Mahikeng and Lichtenburg	0	More than 20km from Mahikeng and Lichtenburg	0
Surface gradient	Flat	0	Flat	0
Visual impact	Adversely affected	-1	Adversely affected	-1
Noise	Impact on land occupier	-1	Impact on land occupier	-1
Access Road and Traffic	Cumulative to piggery activity	0	Current farm road infrastructure adequate	+1
Dust	Nuisance to current activity	-1	Nuisance to current activity	-1
Outcome	**Location 1**	**-4**	**Location 2**	**-1**

x) Motivation where no alternative sites were considered.

Portion 5 was considered.

xi) Statement motivating the preferred site.

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

The environmental impact on both options is comparatively of the same magnitude. The impact, however, on the economic activity of the occupier on Portion 5 will give rise to conflict.

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

This plan of study has been formulated to meet the requirements for a Plan of Study for Environmental Impact Assessment (EIA) as set out in Appendix 2(i) of GN R.982, which states:

"A plan of study for undertaking the environmental impact assessment process to be undertaken, including-

(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;

(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;

(iii) aspects to be assessed by specialists;

(iv) a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;

(v) a description of the proposed method of assessing duration and significance.

(vi) an indication of the stages at which the competent authority will be consulted;

(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and

(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;

(ix) identify suitable 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."

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

As per h(i) page 14.

Alternatives to be assessed.
Property or location alternatives
The preferred locations will be in accordance with the site selectionoutcomes considered in section ix of this report.

Design or layout of activity
Layout alternatives will be considered as per section h(i) of the report.

Technology to be used in the activity
Technology alternatives will be considered as per section h(i) of thereport.

Operational aspects of activity
Operational alternatives will be considered as per section 3.2.2 of thereport.

Not implementing activity " NO GO"
The no-go alternative relates to no proceeding with the proposed activities, i.e. maintaining the status quo. This will be assessed as required by the EIA regulations.

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

SPECIALIST ASSESSMENTS

The identification and assessment of environmental aspects that would require further assessment was done with screening as per the DFFE National Screening Tool, SAHRIS sensitivity map and site inspection. The following potentially significant environmental aspects will require further detailed assessment. These will be conducted during the EIA-phase.

- **Soil and Land Capability (Agricultural site sensitivity verification):** to determine the potential impacts to soils and agriculture by the proposed development.
- **Biodiversity Assessment (including fauna and flora)**: to identify and assess thepotential impact on biota related in particular, but not limited to, to land clearing and the proposed activities.
- **Freshwater Screening Ecological Assessment:** to identify and assess the potential impact on biota.
- **Archaeological Assessment:** to identify and assess the potential for sites/attributes of cultural and archaeological significance.
- **Palaeontology Assessment:** to identify and assess the potential for sites/attributes of palaeontological significance and propose management and mitigation measures.

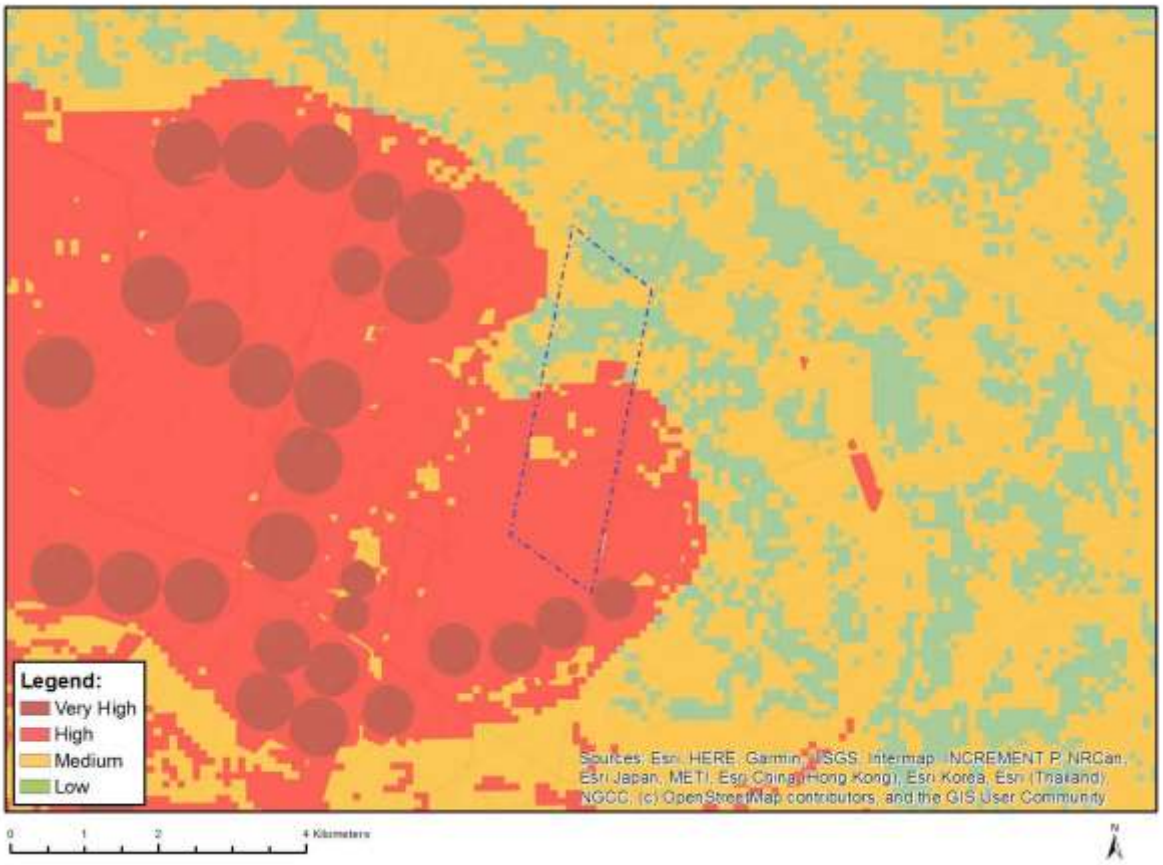
iii. Description of aspects to be assessed by specialists.

Agriculture and Soil Impact Assessment

The DFFE screening tool identified high agricultural sensitivity within parts of the area where the development is proposed to take place.

A site sensitivity verification must be undertaken by a specialist. If the outcome based on the ite verification assessment is medium or low sensitivity,then an Agricultural Compliance Statement is required.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

The following activities will be undertaken:

- Conduct a desktop assessment within the proposed development area using the digital satellite imagery and other suitable digital aids;
- Review historical as well as current land uses within the proposed developmentarea; and
- Review and interpret existing Soil Maps and other relevant database(s) such asthe Agricultural Geo-

referenced Information Service (AGIS) to establish broad baseline conditions and areas of environmental sensitivity and sensitive agricultural areas.

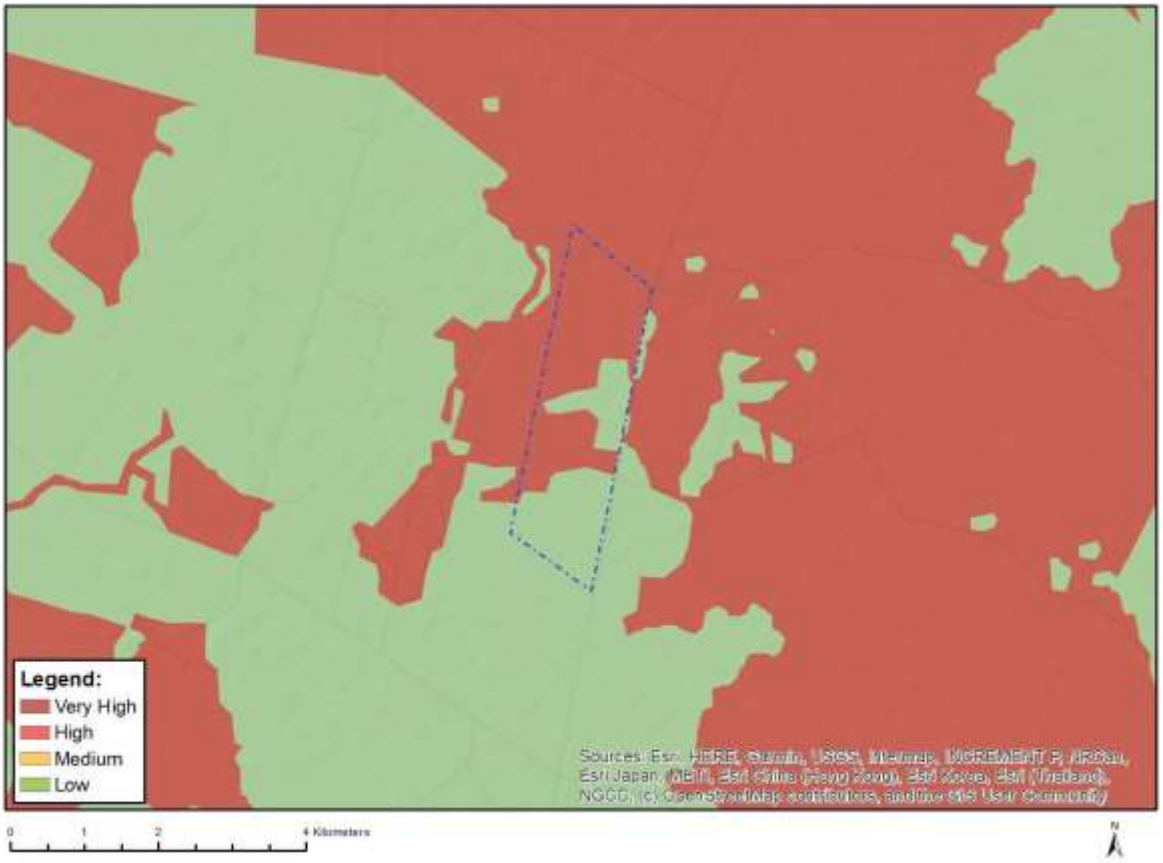
- A detailed soil classification survey will be conducted within the proposed development area;
- Subsurface soil observations will be made by means of a manual hand auger;
- Dominant soil types will be classified, and soil boundaries established accordingto the South African Soil Classification System (Soil Classification Working Group,2018);
- Soil properties of survey points will be recorded using a Global PositioningSystem (GPS); and
- Field assessment data will include a detailed description of physical soilproperties
- Determine agricultural potential of the identified soil forms;

Provide recommended mitigation measures to implement in order to managethe anticipated impacts and to comply with the applicable legislations.

Biodiversity Ecological Assessments

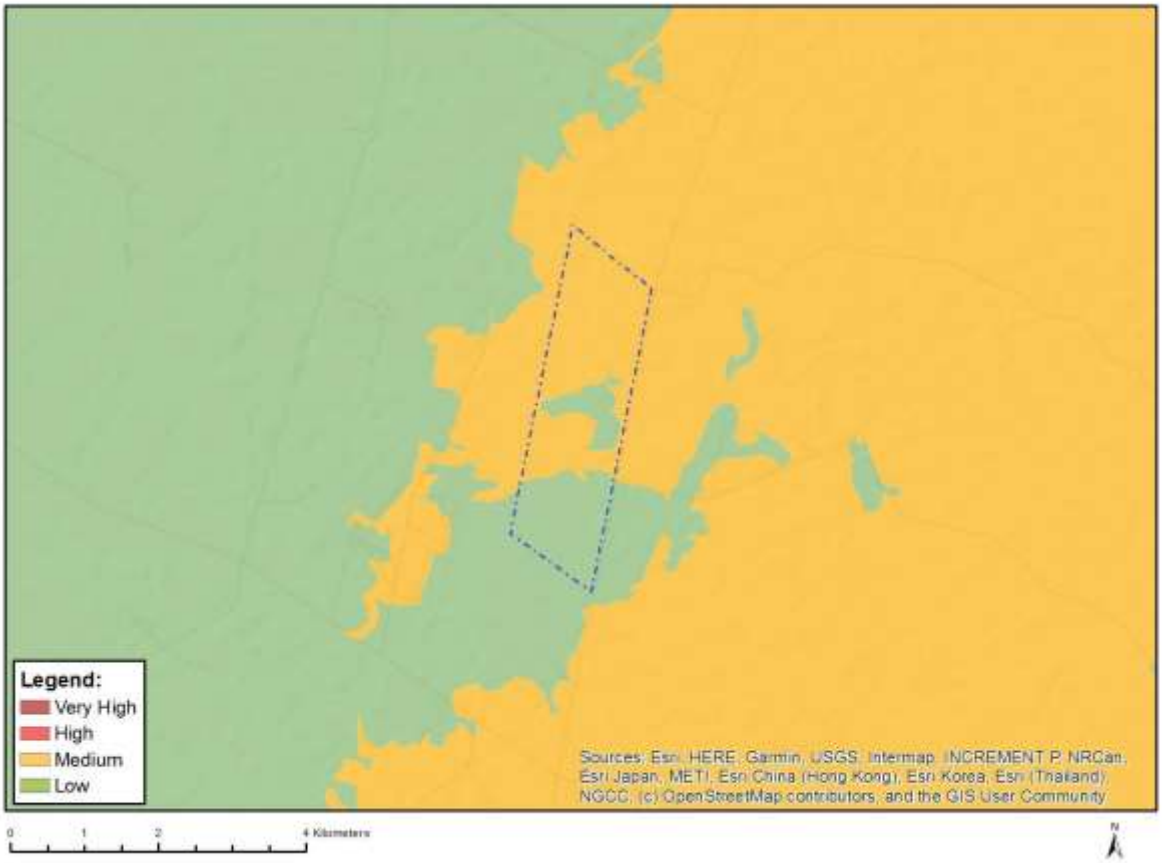
The DFFE screening tool identified a high terrestrial biodiversity sensitivity within the area where the development is proposed to take place.

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

The following activities will be undertaken:

- Desktop analysis of relevant conservation databases;
- Field assessment of the identified habitat units characterise the habitats' integrity, Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) of the receiving ecological environment;
- Site sensitivity mapping;
- Identification of permitting requirements in terms of provincial and national legislation;
- Recommendations and mitigatory measures in order to minimise impacts on both local and regional ecology;

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

Although the DFFE screening tool identified low archaeological and cultural sensitivitya heritage specialist will be required to provide a specialist assessment.

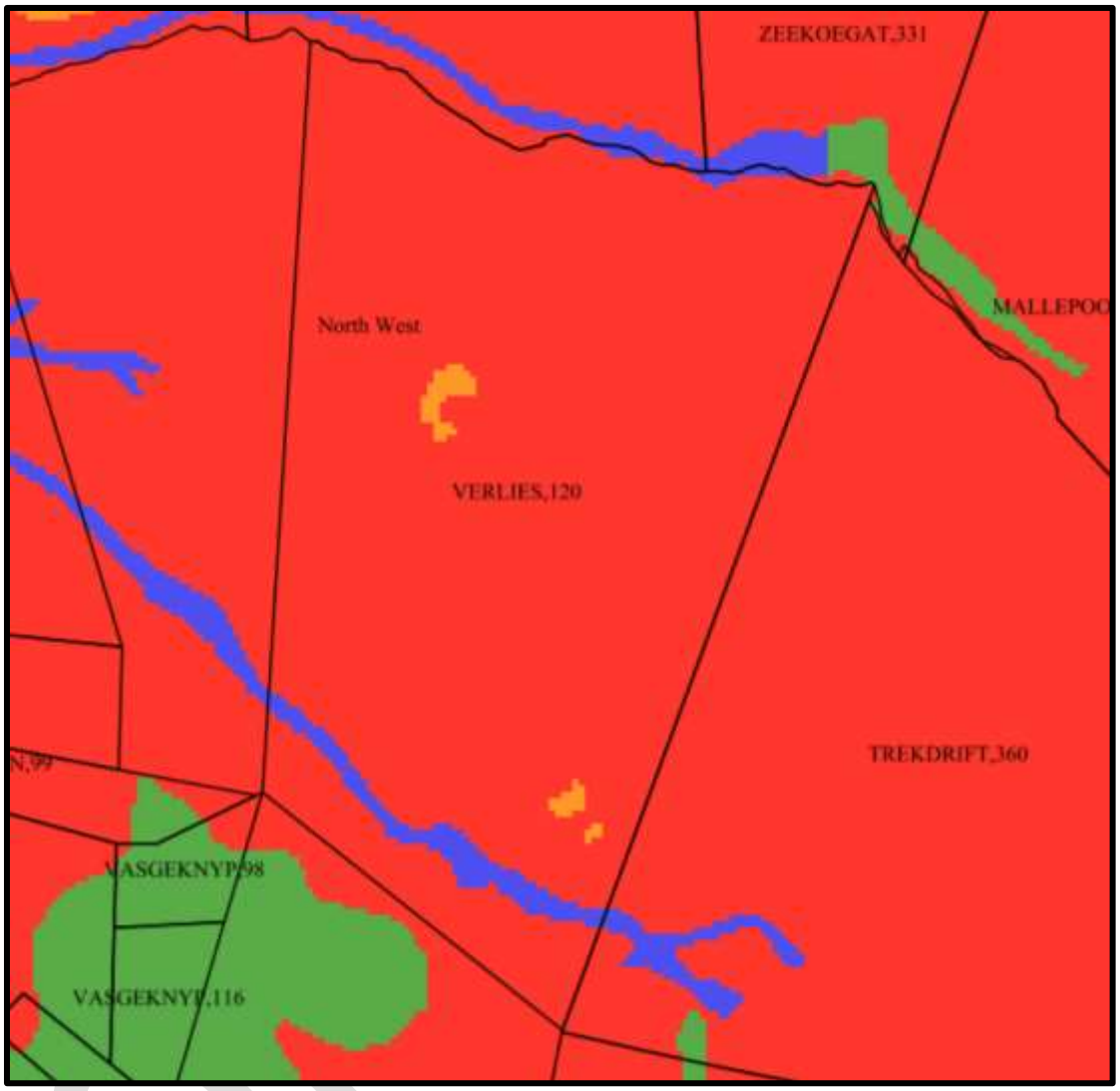
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

The following activities will be undertaken:

- Survey of literature
- Field survey
- Review of oral histories
- Documenting of sites, objects, features and structures identified.
- Significance assessment
- Management recommendations

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

The SAHRIS PaleoSensitivity map has a very high sensitivity which require a field assessment and protocol for finds.



The DFFE screening tool identified very high paleontological sensitivity.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

The following activities will be undertaken:

- Desktop review of geological and paleontological history of the area
- Assessment of geographical attributes of the site
- Assessment of potential impact significance
- Field assessment and protocol for finds.
- Recommendations and mitigation measures

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

The description below is an initial assessment of the environmental aspects and their associated impacts that the project will have on the environment. A detailed analysis of the following impacts is proposed for the EIA phase that will then take into consideration the outcome of the specialists' studies.

The following criteria and methodology are proposed to determine the significance ofenvironmental impacts that may result from the facility.

TYPE/NATURE OF IMPACTS

Potential environmental impacts may either have a positive or negative effect on theenvironment, and can in general be categorised as follows:

a. Direct/Primary Impacts

Primary impacts are caused directly due to the activity and generally occur at thesame time and at the place of the activity.

b. Indirect/Secondary Impacts

Secondary impacts induce changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken.

c. Cumulative Impacts

Cumulative impacts are those that result from the incremental impact of the activity on common resources when added to the impacts of the other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time andcan include both direct and indirect impacts.

Methodology used in determining and ranking nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks. The impacts were individually described and assessed using the criteria drawn from the Environmental Impact Assessment (EIA) Regulations, published by the DEA in terms of the NEMA (Act 107 of 1998).

The significance of the impacts was determined through the consideration of the following criteria:

Probability:	Provides a description of the likelihood/probability of the impact occurring
Extent:	Describes the spatial scale over which the impact will be experienced
Duration:	The period over which the impact will be experienced
Intensity:	The degree/order of magnitude/severity to which the impact affects the health and welfare of humans and the environment
Significance:	Overall significance of the impact on components of the affected environment and whether it is a negative or positive impact

REVERSIBILITY	**Reversible**	Impacts can be reversed through the implementation of mitigation measures
	Irreversible	Impacts are permanent and can't be reversed by the implementation of mitigation measures

MITIGATION RATING	**MITIGATED Degree impact can be mitigated**	High	*Impact 100% mitigated*
		Medium	*Impact >50% mitigated*
		Low	*Impact <50% mitigated*

Cumulative:

In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area. Indicated as a **Y**es or **N**o.

v. The proposed method of assessing duration and significance.

	National (5)	Regional (3)	Local (2)	Site (1)
Duration	Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	The impact 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. The only class of impact which will be non- transitory	The impact will last for the period of the construction phase, where after it will be entirely negated	The impact will either disappear with mitigation or will be mitigated through natural process in a spanshorter than the construction phase

Significance is determined through a synthesis of impact characteristics. Significance is also 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.

The significance of each impact is assessed using the following formula (before and after mitigation):
Significance Point (SP) = (Probability + Extent + Duration) x Intensity

SP > 75	Indicates **high** environmental significance	An impact that could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates **moderate** environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP < 30	Indicates **low** environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.

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

Competent Authority Consultation		
Phase	**Details**	**Stage**
Application	Lodge application and declaration of interest	✓
	Receive confirmation of application	✓
Scoping (We are here)	Lodge Draft Scoping Report (Including Plan of Study for EIA)for review	In process
	Authority site visit if required	X
	Submit Final Scoping Report	X
	Receive confirmation of acceptance of Scoping Report	X
EIR	Lodge Draft Environmental Impact Assessment Report	X
	Submit a Final Environmental Impact Assessment Report	X
	Decision on application	X

vii. Particulars of the public participation process with regard to the ImpactAssessment 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).

The proposed public participation process for the remainder of the EnvironmentalImpact Assessment will consist of:

- Presenting registered Interested and Affected Parties and stakeholders with theopportunity to read and comment on environmental impact assessment reportincluding specialist reports.
- Presenting registered Interested and Affected Parties and stakeholders with theopportunity to read and comment on draft environmental management programme;
- A stakeholder meeting to present and discuss the findings of the EnvironmentalImpact Assessment and related specialist reports if requested by registered IAPs.

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 following process for public participation will be undertaken as prescribed by NEMA (EIA Regulations 2014). **All APPENDICES ON COMPLETION**

ADVERTISEMENT

An advert will be placed in a local newspaper "The Mail" on acceptance of the application to invite Interested and Affected Parties (I&APs) to register and partake in the Public Participation Process. Contact details (018) 381-2884. **(APPENDIX B)**

PUBLIC NOTICE BOARDS (APPENDIX C

Noticeboards of minimum dimensions 60cm by 40cm will be placed at:
Lichtenburg Public Library-35 Transvaal Street, Lichtenburg
Boihkotso Public Library-Manguang Street, Lichtenburg
Ditsobotla Local Municipal Offices in Lichtenburg – Corner nelson Mandela Drive and Transvaal Street Lichtenburg
Entrance gate to the farm.

PLACEMENT OF DRAFT SCOPING REPORT

The Draft Scoping Report will be made available to the public for comments and input and will be available for 30 days as from the 29 March 2023 at: **APPENDIX D.**
Lichtenburg Public Library-35 Transvaal Street, Lichtenburg
Boihkotso Public Library-Manguang Street, Lichtenburg
Ditsobotla Local Municipal Offices in Lichtenburg – Corner nelson Mandela Drive and Transvaal Street Lichtenburg

DATABASE OF INTERESTED AND AFFECTED PARTIES

A database of Interested and Affected parties identified and consulted with will be attached as **APPENDIX E. (Take note of POPI ACT)**

TELEPHONIC CONVERSATIONS

Where necessary telephonic conversations were held prior to sending out information.

Email CORRESPONDENCE

Emails as a consultation medium will be used where such details are known and preferred to by the participant in the process. Public Participation Document as **APPENDIX F**

ORGANS OF STATE

Registered letters will be sent to the organs of state. **APPENDIX G**

PUBLIC AND OTHER INTERESTED AND AFFECTED PARTIES

A public meeting will be conducted and the minutes and attendance register kept and included as **APPENDIX H.**

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

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).

Compulsory

The site plan.

List of activities to be authorised.

Scale and extent of activities to be authorised.

Typical impacts of activities to be authorised (e.g.surface disturbance, dust, noise, drainage, fly rock etc.)

The duration of the activity.

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)

The information contained in this scoping report.

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

The plan of study is summarised on page 67 above.

The following tasks will be undertaken as part of the EIA phase of the project:

• **Public consultation:**

Notification of the availability of the EIA Report for review and comment to all registered I&APs;

Informing registered I&APs of the project progress; and

• **Authority consultation**:

Consultation with the competent authorities if required; and

Other relevant/ commenting authorities' consultation to provide authorities with project related information and obtain their feedback.

• **Document compilation:**

The EIA Report and associated EMPr will be compiled in line with the requirements of Appendix 3 and 4 of the NEMA EIA Regulations (2014, as amended);

The EIA Report and EMPr will be made available for public comment for a period of 30 days; and

The EIA Report and EMPr will be finalised and submitted to the competent authority.

(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.

Nature of Impact	**Impact**	Mitigation Rating	Measure	**Mitigation Rating**
CONSTRUCTION / SITE ESTABLISHMENT PHASE				
ACTIVITY:	**DEMARCATION OF SITE WITH VISIBLE BEACONS.**			
Boundary Demarcation	Over boundary prospecting resulting in loss of vegetation, heritage resources and giving rise to neighbouring landowner conflicts. Activity within servitude areas affecting infrastructure.	Moderate	Clear demarcation in particular infrastructure in servitude areas.	Low to Medium
ACTIVITY:	**ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN BOUNDARIES OF SITE.**			
Social, Security & Safety	The area has a high unemployment rate with mining skills readily available which will result in: Influx of job seekers to the site that results in a security risk to the landowner and surrounding farmers. Unsuccessful job seekers which may informally settle in area.	Moderate	The most efficient manner in dealing with criminals entering the site would be to identify the high-risk areas for entry and ensure visible patrolling on a frequent basis. Entry to the administration area should be through the current main farm entry point which must be security controlled. Communication with local security agencies and partake in their safety and security programs. No recruitment to be done on-site. Control through proper site management.	Low
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential impact of mining activities (overburden and topsoil removal) on the runoff and infiltration of storm water.	Moderate	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	Low
Soils	Loss of soil & damage to soil characteristics. Potential hydrocarbon contamination to soils (machinery and equipment).	Moderate	Topsoil including the remaining vegetation, will be stripped and stockpiled in demarcated areas to avoid contamination and erosion through wash off. The stockpiles will be shaped to divert stormwater around the working areas. Stockpiled topsoil will be used during rehabilitation activities. Storm water management. Site Management. Soil Management	Low
Flora	Although minimal during construction, a loss of biodiversity would occur.	Moderate	Vegetation clearing must be limited to working areas only and a vegetationclearing method statement signed off by a qualified	Low

	The possibility of alien invasive encroachment.		environmental professional must always be onsite and its specifications adhered to. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. Herbicides are not proposed at this stage. Control & Remedy: Implementation of weed control and weed / invader plant. management plan Implement good housekeeping practices. Adhere to the recommendations made by the botanist	
Land Use	The study area has an extremely high veld fire risk that will impact on surrounding land-use of neighbouring farmers if a fire occurs.	High	Induction to employees and visitors to include emergency preparedness. Fire breaks. Mine protocols: 1. No open fires. 2. Designated smoking areas. 3. Hot permit system	Moderate
Visual aspect	Deterioration in visual aesthetics of the area.	Low	The portable ablution facilities, water tanks and any other infrastructure should beacquired with consideration for colour, natural earth, green and mat black options which will blendin with the surrounding area must be favoured. Implementation of proper housekeeping	Low
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Moderate	Survey area before site clearance. Adequate assessment and planning may be effective for identifying and protecting heritage resources. All mining and drilling must be confined to the development footprint area. If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the SAHRA. Work may only continue once the go-ahead was issued by SAHRA.	Low
Noise	Noise caused by yellow fleet and machinery during the site establishment phase of the operation.	Moderate	The noise impact should be contained within the boundaries of the property and will represent the current noise levels of the farm. Noise barrier in the form of a berm, tree break or similar noise	Low

			fence between the sensitive receptors and noise sources. Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use. Fixed noise producing sources such as generators, pump stations and crushers to be to be either housed in enclosures or barriers put up around the noise source. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. The operation would be conducted between 07:00 to 17:00.	
Air quality	Dust nuisance caused by the disturbance of soil. Dust nuisance due to loading and vehicles transporting the material.	Moderate	Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed. Correct loading and tipping techniques. Speed control of machinery and equipment.	Low
Air quality	Emissions caused by vehicles and equipment.	Moderate	Emission control through vehicle and equipment maintenance. Machines and equipment fitted with silencers. Speed control.	Low
Fauna	Hindrance and alienation of animals on the study area and its surrounds. Hindrance to nocturnal animals and a possible change in behaviour of nocturnal prey and predators.	Moderate	Biodiversity conservation Implementation of fauna protection measures. Search and rescue.	Low
ACTIVITY: ABLUTION FACILITIES				
Noise	Noise nuisance generated by earthmoving machinery. Leakages to the groundwater during construction..	Moderate	Noise barrier in the form of a berm, tree break or similar noise fence between the sensitive receptors and noise sources. Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use. The operation would be conducted between 07:00 to 17:00. Obtain a layout plan for local connections to determine if there are any in the proposed site; and should any pipe damage occur, the relevant authority must be notified immediately.	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Moderate		Low
Soils	Portable Toilets. Potential harm through sewage leaks.	Moderate	Site Management. Soil Management	Low
ACTIVITY: ACCESS ROADS (CURRENT FARM ROADS BE USED WHERE POSSIBLE)				
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential impact of mining activities (bulk sampling) on the runoff and infiltration of storm water.	Moderate	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable.	Low

			An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof	
Soils	Loss of soil & damage to soil characteristics. Potential hydrocarbon contamination to soils (machinery and equipment)	Moderate	Storm water management. Site Management. Soil Management. Spill kits used for spillage. .	Low
Noise	Noise caused by yellow fleet and machinery during the site establishment phase of the operation. Establishment of tracks for drilling.	Moderate	Noise barrier in the form of a berm, tree break or similar noise fence between the sensitive receptors and noise sources. Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use. Engineering design of equipment as in the case of transfer points in the plant. (e.g., Langlaagte chutes as opposed to direct drop down) Fixed noise producing sources such as generators, pump stations and crushers to be to be either housed in enclosures or barriers put up around the noise source. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. The operation of machinery, crushing and screening plants will create noise which would impact on the farm owner and the owners and occupants of neighbouring farms. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00.	Low
Air quality	Dust nuisance caused by the disturbance of soil.	Moderate	Proper loading and tipping techniques. Speed control.	Low
Air quality	Emissions caused by vehicles and equipment.	Moderate	Emission control through vehicle and equipment maintenance.	Low
SITE OFFICES				
Hazardous Waste	Potential contamination through littering.	Moderate	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. Management inspections..	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics.	Low	Site Management. Proper housekeeping.	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Low	The site offices mobile buildings and any other infrastructure should be acquired with consideration for colour, natural earth, green and mat black options which will blend in with the surrounding area must be favoured.	Low

			Implementation of proper housekeeping	
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated during the landscaping phase.	Low	Construction - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use.	Low
VEHICLE HARDPARK AND VISITORS PARKING AREA (ESTABLISHMENT)				
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential impact of mining activities (bulk sampling) on the runoff and infiltration of storm water.	High	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	Low
Soils	Potential hydrocarbon contamination to soils (machinery and equipment)	High	Storm water management. Site Management. Soil Management. Adequate number and the correct use of spill kits. Immediate clean up. Approved service provider for disposal of spilled hazardous substances. Planned maintenance on machines and equipment.	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery.	Moderate	Noise barrier in the form of a berm, tree break or similar noise fence between the sensitive receptors and noise sources. Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use. Engineering design of equipment as in the case of transfer points in the plant. (e.g., Langlaagte chutes as opposed to direct drop down) Fixed noise producing sources such as generators, pump stations and crushers to be to be either housed in enclosures or barriers put up around the noise source. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. The operation of machinery, crushing and screening plants will create noise which would impact on the farm owner and the owners and occupants of neighbouring farms. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00.	Low

			No hard music allowed.	
Air quality	Emissions caused by vehicles and equipment.	Moderate	Emission control through vehicle and equipment maintenance.	Low
WORKSHOP				
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential contamination through littering leaching into the groundwater table. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. .	High	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soil and soil erosion. Potential hydrocarbon contamination to soils.	High	Storm water management. Site Management. Soil Management. Adequate number and the correct use of spill kits. Immediate clean up. Service bays. Approved service provider for disposal of spilled hazardous substances. Planned maintenance on machines and equipment.	Low
Flora	Loss of biodiversity. Possibility of alien invasive encroachment. Potential loss of protected or red data plant species.	Moderate	Vegetation clearing must be limited to working areas only and a vegetationclearing method statement signed off by a qualified environmental professional must always be onsite and its specifications adhered to. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. Herbicides are not proposed at this stage. Permits required for removal of protected species	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Moderate	Infrastructure should be acquired with consideration for colour, natural earth, green and mat black options which will blendin with the surrounding area must be favoured. Implementation of proper housekeeping	Low
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Moderate	Noise barrier in the form of a berm, tree break or similar noise fence between the sensitive receptors and noise sources. Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use. Engineering design of equipment as in the case of transfer points in the plant. (e.g., Langlaagte chutes as opposed to direct drop down) Fixed noise producing sources such as generators, pump	Low

			stations and crushers to be to be either housed in enclosures or barriers put up around the noise source. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. The operation of machinery, crushing and screening plants will create noise which would impact on the farm owner and the owners and occupants of neighbouring farms. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00. PPE	
Air quality	Emissions caused by vehicles and equipment.	Moderate	Emission control through vehicle and equipment maintenance.	Low
ACTIVITY: BUNDED DIESEL AND OIL STORAGE FACILITIES				
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table during refueling of equipment. Potential contamination through littering leaching into the groundwater table. Potential hydrocarbon contamination which may reach downstream surface water bodies. (wetland) Potential surface water contamination if leaks escape into the environment. .	High	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	High	Storm water management. Site Management. Soil Management. Adequate number and the correct use of spill kits. Immediate clean up. Service bays. Approved service provider for disposal of spilled hazardous substances. Planned maintenance on machines and equipment. HAZCHEM appointee	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Low	The portable ablution facilities, water tanks and any other infrastructure should beacquired with consideration for colour, natural earth, green and mat black options which will blendin with the surrounding area must be favoured. Implementation of proper housekeeping	Low
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Medium	Fixed noise producing sources such as generators, pump stations and crushers to be to be housed in enclosures. PPE	Low to Medium
ACTIVITY: GENERATOR AREA				
Hazardous Waste	Risk of hydrocarbon contamination leaching into the water table during refueling of generator.	Moderate	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable.	Low

			An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Moderate	Storm water management. Site Management. Soil Management. Noise control measures. Dust suppression methods. Proper housekeeping. HAZCHEM appointee	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Moderate	Fixed noise producing sources such as generators, pump stations and crushers to be to be housed in enclosures. PPE	Low
ACTIVITY: WASTE AREA				
Hazardous Waste	Potential contamination through littering leaching into the groundwater table. Potential surface water contamination if leaks escape into the environment.	Moderate	Demarcated waste area. Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Moderate	Storm water management. Site Management. Soil Management. Housekeeping.	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Moderate	Implementation of proper housekeeping	Low to Medium
Fauna	Alienation of animals from the area. Potential risk to avifauna. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. New habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.	High	Biodiversity conservation Implementation of fauna protection measures. Search and rescue.	Low to Medium
ACTIVITY:	**STRIPPING AND STOCKPILING OF TOPSOIL FOR MINING (MINIMAL REQUIRED)**			
Hazardous Waste	Contamination of area with hydrocarbons or hazardous waste materials.	Moderate	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts	Low

			and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	
Soils	Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	High	Dedicated stockpile area with proper design Storm water management. Site Management. Soil Management. Planned maintenance on machines and equipment.	Low to Medium
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	High	Vegetation clearing must be limited to working areas only and a vegetationclearing method statement signed off by a qualified environmental professional must always be onsite and its specifications adhered to. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. Herbicides are not proposed at this stage. Permits required for removal of protected species. Control & Remedy: Implementation of weed control and weed / invader plant. management plan Implement good housekeeping practices. Adhere to the recommendations made by the botanist	Low to Medium
Topography	Alteration of topography.	High	Employ effective rehabilitation strategies to restore surface topography ofexcavations, dumps and plant site. Stabilise the mine residue deposits. All temporary infrastructures should be demolished during closure	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	Moderate	Induction to employees and visitors to include emergency preparedness. Fire breaks. Mine protocols: 1. No open fires. 2. Designated smoking areas. 3. Hot permit system	Low
Visual aspect	Deterioration in visual aesthetics of the area.	High	Topsoil stockpiles design, placement and erection must form unity with the surrounding area. Implementation of proper housekeeping	Low to Medium
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	High	Survey area before site clearance Adequate assessment and planning may be effective for identifying and protecting heritage resources.	Low to Medium
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Moderate	The noise impact should be contained within the boundaries of the property and will represent the current noise levels of the farm. Noise barrier in the form of a berm, tree break or similar noise	Low

			fence between the sensitive receptors and noise sources. Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use. Engineering design of equipment as in the case of transfer points in the plant. (e.g., Langlaagte chutes as opposed to direct drop down) Fixed noise producing sources such as generators, pump stations and crushers to be to be either housed in enclosures or barriers put up around the noise source. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. The operation of machinery, crushing and screening plants will create noise which would impact on the farm owner and the owners and occupants of neighbouring farms. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00. PPE	
Air quality	Dust generation.	Moderate	Stockpile design to wind erosion. Indigenous plant cover. Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed. Correct loading and tipping techniques. Speed control of machinery and equipment Machines and equipment fitted with silencers. Speed control. PPE	Low
Air quality	Emissions caused by vehicles and equipment.	Moderate	Emission control through vehicle and equipment maintenance.	Low
Fauna	Hindrance and alienation of animals on the study area and its surrounds. Hindrance to nocturnal animals and a possible change in behaviour of nocturnal prey and predators.	Moderate	Biodiversity conservation Implementation of fauna protection measures. Search and rescue. The site manager must ensure that no fauna is caught, killed, harmed, sold or played with. Workers must be instructed to report any animals that may be trapped in the working area. No snares may be set or nests raided for eggs or young..	Low
OPERATIONAL PHASE				
ACTIVITY:	**MINING (BULK SAMPLING) AND DRILLING**			
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	High	Continuous visual inspections Storm water management. Site Management. Soil Management. Adequate number and the correct use of spill kits. Immediate	Low

			clean up. Service bays. Approved service provider for disposal of spilled hazardous substances. Planned maintenance on machines and equipment. PPE	
Hazardous Waste	Contamination of area with hydrocarbons or hazardous waste materials.	High	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	Low
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.		Vegetation clearing must be limited to working areas only and a vegetationclearing method statement signed off by a qualified environmental professional must always be onsite and its specifications adhered to. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. Herbicides are not proposed at this stage. Permits required for removal of protected species. Control & Remedy: Implementation of weed control and weed / invader plant. management plan Implement good housekeeping practices. Adhere to the recommendations made by the botanist	Low
Topography	Alteration of topography.	Moderate		Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	High	Induction to employees and visitors to include emergency preparedness. Fire breaks. Mine protocols: 1. No open fires. 2. Designated smoking areas. 3. Hot permit system	Low
Visual aspect	Deterioration in visual aesthetics of the area.	72	Consideration given to total layout of the prospecting activities to form a unity with the environment. Implementation of proper housekeeping	Low to Medium
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	High	Survey area before site clearance Adequate assessment and planning may be effective for identifying and protecting heritage resources.	Low to Medium
Air quality	Dust generation.	High	Stockpile design to wind erosion. Indigenous plant cover.	Low

			Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed. Correct loading and tipping techniques. Speed control of machinery and equipment Machines and equipment fitted with silencers. Speed control. PPE	
Fauna	Alienation of animals from the area. Potential risk to avifauna. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. New habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.	High	Biodiversity conservation Implementation of fauna protection measures. Search and rescue. The site manager must ensure that no fauna is caught, killed, harmed, sold or played with. Workers must be instructed to report any animals that may be trapped in the working area. No snares may be set or nests raided for eggs or young..	Low
Ground and Surface water	Potential hydrocarbon contamination leaching into the water table. Reduction of local groundwater. Potential contamination through littering leaching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.	High	Contamination of surface or groundwater due to hazardous spills not cleaned. Good housekeeping practice at the drilling sites. Regular vehicle maintenance may only take place at the workshop on site. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200L closed container / bin to be removed from the emergency service area to the formal workshop in order to ensure proper disposal. Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility. Spills must be cleaned up immediately to the satisfaction of the Regional Manager of DMRE by removing the spillage together with the polluted soil and by disposing it at a recognised facility. Proof must be filed. Suitable covered receptacles must be available at all times and conveniently placed for the disposal of waste. Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., must be stored in a container with a closable lid at a collecting point, collected on a weekly basis, and disposed of at a recognised landfill site. Specific precautions must be taken to prevent refuse from being dumped on or near the processing area. Biodegradable refuse generated must be handled as indicated above.	Low
Social & Safety	Potential danger to landowner. Unsafe working environment for the employees. Safety risk posed by unslopped areas.	High	The most efficient manner in dealing with criminals entering the site would be to identify the high-risk areas for entry and ensure visible patrolling on a frequent basis. Entry to the administration area should be through the current main farm entry point which must be security controlled. Communication with local security agencies and partake in their safety and security programs. No recruitment to be done on-site.	Low

			Control through proper site management. Adherence to Mine Health and Safety Act, and the regulations promulgated thereunder.	
Dust	Dust nuisance caused by road maintenance. Dust nuisance caused by the disturbance of soil. Dust nuisance due to loading and vehicles transporting the material..	High	Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed. Correct loading and tipping techniques. Speed control of machinery and equipment Machines and equipment fitted with silencers. Speed control. Stockpile design and placement taking account PPE	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	High	The noise impact should be contained within the boundaries of the property and will represent the current noise levels of the farm. Noise barrier in the form of a berm, tree break or similar noise fence between the sensitive receptors and noise sources. Construction, drilling and mining (bulk sampling) - related machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00. PPE	Low
Air quality	Dust generation.	High	Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed. Correct loading and tipping techniques. Speed control of machinery and equipment. Machines and equipment fitted with silencers. Speed control. Stockpile design	Low
Air quality	Emissions caused by vehicles and equipment.	High	Emission control through vehicle and equipment maintenance	Low
ACTIVITY:	**MINERAL PROCESSING-PLANT**			
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated by the processing plant unit. Noise nuisance generated during the landscaping phase.	High	The noise impact should be contained within the boundaries of the property and will represent the current noise levels of the farm. Plant machinery and vehicles must be on a planned maintenance schedule to ensure noise suppression mechanisms are effective e.g., exhausts with silencers. Switch off equipment when not in use.	Low

			Engineering design of equipment as in the case of transfer points in the plant. (e.g., Langlaagte chutes as opposed to direct drop down) Fixed noise producing sources such as generators, pump stations and crushers to be to be either housed in enclosures or barriers put up around the noise source. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. The operation of machinery, crushing and screening plants will create noise which would impact on the farm owner and the owners and occupants of neighbouring farms. The impact, however, would be minimal due to the distance to neighbours and the greatest impact would be to the occupier. The operation would be conducted between 07:00 to 17:00.		
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Reduction of local groundwater.	Moderate	Implement a waste management: system with sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create generalawareness. Provide spill kits and the correct use thereof. HAZCHEM appointee. Management inspections. Hazardous Waste Management statement implemented and ECO to monitor compliance.	Low	
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soil and soil erosion. Potential hydrocarbon contamination to soils.	High	Continuous visual inspections Storm water management. Site Management. Soil Management. Adequate number and the correct use of spill kits. Immediate clean up. Service bays. Approved service provider for disposal of spilled hazardous substances. Planned maintenance on machines and equipment	Low	
Visual aspect	Deterioration in visual aesthetics of the area.	High	The plant and related structures, portable ablution facilities, water tanks and any other infrastructure should be acquired with consideration for colour, natural earth, green and mat black options which will blendin with the surrounding area must be favoured. Implementation of proper housekeeping	Low to Medium	
Air quality	Dust generation at transfer points in the plant unit. Dust generated with stockpiling of material.	High	Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed. Correct loading and tipping techniques. Speed control of machinery and equipment. Machines and equipment fitted with silencers.	2	

			Speed control. Stockpile design	
Fauna	Alienation of animals from the area. Potential risk to avifauna. Impact and hindrance to nocturnal animals and change in their behaviour.	High	Biodiversity conservation Implementation of fauna protection measures. Search and rescue. The site manager must ensure that no fauna is caught, killed, harmed, sold or played with. Workers must be instructed to report any animals that may be trapped in the working area. No snares may be set or nests raided for eggs or young.	Low
Ground and Surface water	Potential hydrocarbon contamination leaching into the water table. Reduction of local groundwater. Potential contamination through littering and leaching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.	Moderate	Contamination of surface or groundwater due to hazardous spills not cleaned. Good housekeeping practice at the drilling sites. Regular vehicle maintenance may only take place at the workshop on site. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200L closed container / bin to be removed from the emergency service area to the formal workshop in order to ensure proper disposal. Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility Lichtenburg). Spills must be cleaned up immediately to the satisfaction of the Regional Manager of DMR by removing the spillage together with the polluted soil and by disposing it at a recognised facility. Proof must be filed. Suitable covered receptacles must be available at all times and conveniently placed for the disposal of waste. Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., must be stored in a container with a closable lid at a collecting point, collected on a weekly basis, and disposed of at a recognised landfill site. Specific precautions must be taken to prevent refuse from being dumped on or near the processing area. Biodegradable refuse generated must be handled as indicated above.	Low
DECOMMISSIONING PHASE				
ACTIVITY:	**SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**			
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	High	Continuous visual inspections Storm water management. Site Management. Soil Management. Adequate number and the correct use of spill kits. Immediate clean up. Service bays. Approved service provider for disposal of spilled hazardous substances. Planned maintenance on machines and equipment	Low
Soils	Soils replaced and ameliorated.	High	Storm water management. Site Management. Soil Management.	Low

Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	High	Vegetation clearing must be limited to working areas only and a vegetationclearing method statement signed off by a qualified environmental professional must always be onsite and its specifications adhered to. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. If any alien invasive species establishes and spreads from nearby areas at impacted sites, these should be removed mechanically on a continued basis. Herbicides are not proposed at this stage. Permits required for removal of protected species. Control & Remedy: Implementation of weed control and weed / invader plant. management plan Implement good housekeeping practices. Adhere to the recommendations made by the botanist	Low
Topography	Alteration of topography.	High	Employ effectiverehabilitation strategies torestore surface topography ofexcavations, dumps and plant site. Stabilise the mine residue deposits. All temporary infrastructures should be demolished during closure	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	High	Induction to employees and visitors to include emergency preparedness. Fire breaks. Mine protocols: 1. No open fires. 2. Designated smoking areas. 3. Hot permit system	Low
Visual aspect	Improved aesthetics through rehabilitation.	High	Rehabilitation to leave the environment as close as possible to its original state or improved.	Low to Moderate
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Moderate	Noise barrier in the form of a berm, tree break or similar noise fence between the sensitive receptors and noise sources. Switch off equipment when not in use. All project employees and contractors will be instructed to avoid the use of engine compression brakes when approaching the site entrance or driving through or in the vicinity of any adjacent town. The on -site road network will be well maintained to limit body noise from empty trucks travelling on internal roads. PPE	Low o
Air quality	Dust nuisance due to loading and vehicles transporting the material. Dust nuisance due to landscaping activities.	Moderate	Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed. Correct loading and tipping techniques. Speed control of machinery and equipment. Machines and equipment fitted with silencers. Speed control. Stockpile design. PPE	Low
Fauna	Reintroduction of fauna attracted to flora to the area.	High	Biodiversity conservation	Low

			Implementation of fauna protection measures. Re-vegetation to attract fauna.	
Groundwater and Surface water.	Potential hydrocarbon contamination leaching into the water table. Reduction of local groundwater. Potential contamination through littering leaching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.	High	Providing adequate bunded facilities for storage that will largely reduce the potential for groundwater contamination. Contamination of surface or groundwater due to hazardous spills not cleaned. Good housekeeping practice at the drilling sites. Regular vehicle maintenance may only take place at the workshop on site. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a 200L closed container / bin to be removed from the emergency service area to the formal workshop in order to ensure proper disposal. Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility Lichtenburg). Spills must be cleaned up immediately to the satisfaction of the Regional Manager of DMR by removing the spillage together with the polluted soil and by disposing it at a recognised facility. Proof must be filed. Suitable covered receptacles must be available at all times and conveniently placed for the disposal of waste. Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., must be stored in a container with a closable lid at a collecting point, collected on a weekly basis, and disposed of at a recognised landfill site. Specific precautions must be taken to prevent refuse from being dumped on or near the processing area. Biodegradable refuse generated must be handled as indicated above.	Low to Moderate

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 activities will contribute to the local economy via its impact on job creation, total disposable income and value-added activities. The operation would further support local businesses in Lichtenburg and Mahikeng for the supply of prospecting consumables.

Five measures of economic impacts can be defined to demonstrate the positive effect of the proposed operation on the local economy.
- The employment opportunities created
- The income that employees would derive
- The CAPEX spent on fixed assets
- The monthly operational expenditure for consumables (OPEX)
- Revenue- the total value of sales arising from the sale of manganese and diamonds.

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).

Current investigation requires that specialist studies be conducted as proposed during the EIA stage. It would then be conclusive if any impact would be experienced due to the program. However, mitigating measures is reflected in this initial investigation.

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)**.

Part A

Investigation of mitigation measures to keep adverse consequences or impacts to a minimum:

Part A

Investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act;

Part A

Investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;

j) UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I, Malcolm Angus Goliath 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.

Signature of the EAP
DATE:

k) UNDERTAKING REGARDING LEVEL OF AGREEMENT

I, Malcolm Angus Goliath, 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.

Signature of the EAP
DATE:

-END-

ACKNOWLEDGEMENT AND REFERENCES

National Environmental ManagementAct, 1998 (Act 107 of1998) (as Amended) NEMA

IDP Ditsobola 2020

Mine health and Safety Act (Act 29 of 1996 as amended)

SANBI BGIS

CFM Agriculture

Department Environment Screening Tool

National vegetation types from Vegetation map for South Africa, Lesotho and Swaziland (2009 update)
Mucina and Rutherford 2006

Chief Surveyor General

SAHRIS PalaeoSensitive map

Meteoblue Climate

Literature Reference on Heritage

The Earlier Stone Age or Old Palaeolithic Industries in the Vaal River Basin. Archaeological Survey. Archaeological Series No. VI:8-18. Holm, S.E. 1966.

Bibliography of South African Pre- and Protohistoric archaeology. Pretoria: J.L. van Schaik. Oberholzer, J.J. 1972.

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A Heritage Impact Assessment (HIA) study for the proposed new 88kV power line between Watershed Substation near Lichtenburg and the Mmabatho Bulk Substation in the North-West Province of South Africa.

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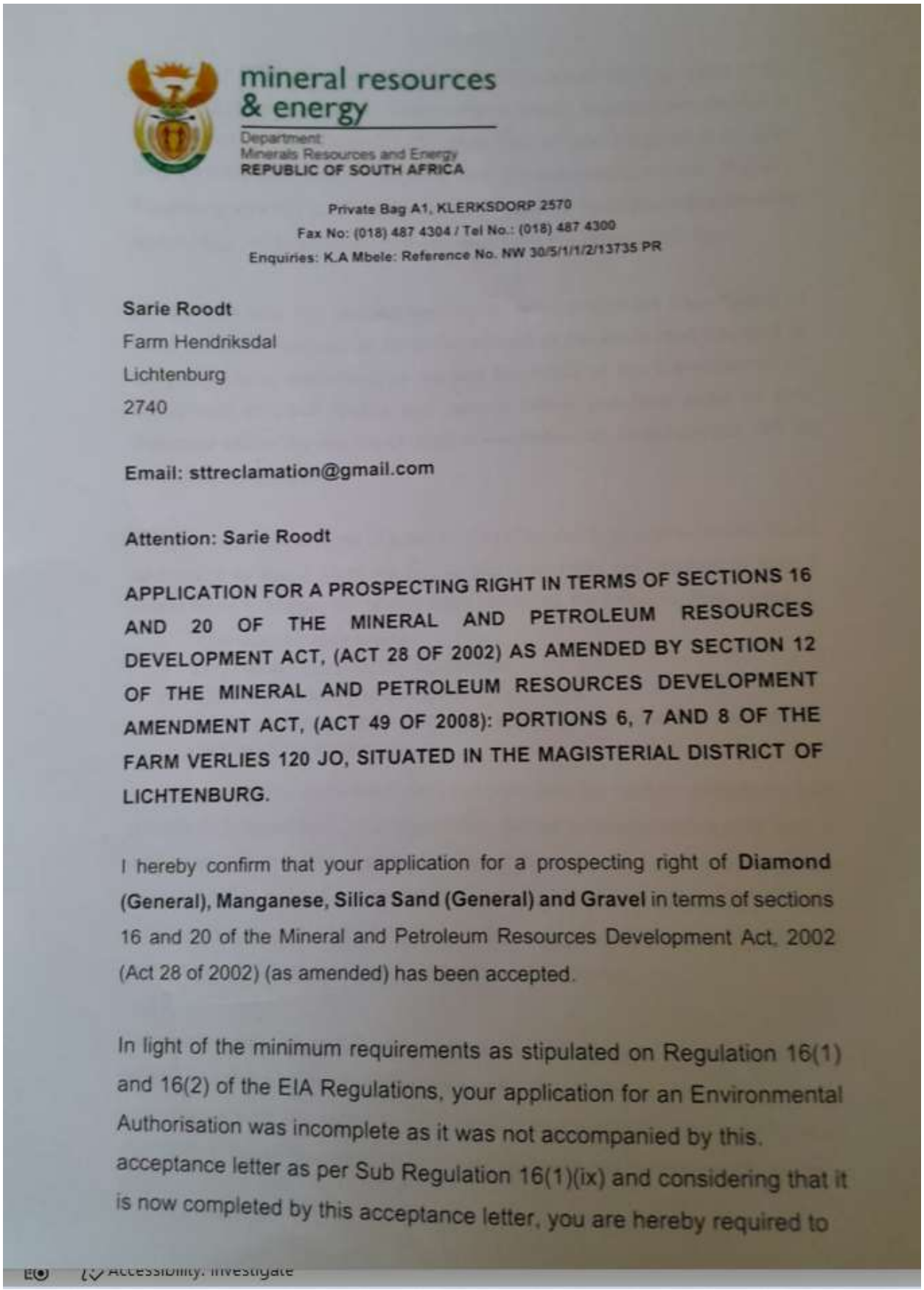
APPENDICES

ACCEPTANCE FROM DMRE



mineral resources & energy

Department:
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag A1, KLERKSDORP 2570
Fax No: (018) 487 4304 / Tel No.: (018) 487 4300
Enquiries: K.A Mbele: Reference No. NW 30/5/1/1/2/13735 PR

Sarie Roodt
Farm Hendriksdal
Lichtenburg
2740

Email: sttreclamation@gmail.com

Attention: Sarie Roodt

APPLICATION FOR A PROSPECTING RIGHT IN TERMS OF SECTIONS 16 AND 20 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, (ACT 28 OF 2002) AS AMENDED BY SECTION 12 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT AMENDMENT ACT, (ACT 49 OF 2008): PORTIONS 6, 7 AND 8 OF THE FARM VERLIES 120 JO, SITUATED IN THE MAGISTERIAL DISTRICT OF LICHTENBURG.

I hereby confirm that your application for a prospecting right of **Diamond (General), Manganese, Silica Sand (General) and Gravel** in terms of sections 16 and 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (as amended) has been accepted.

In light of the minimum requirements as stipulated on Regulation 16(1) and 16(2) of the EIA Regulations, your application for an Environmental Authorisation was incomplete as it was not accompanied by this acceptance letter as per Sub Regulation 16(1)(ix) and considering that it is now completed by this acceptance letter, you are hereby required to

Accessibility: Investigate

submit the documents as stipulated on Regulation 19(1) to 19(8) of the EIA Regulations (Only in cases where Basic Assessment Report is applicable) or Regulation 21 (Scoping Report) and Regulation 23 (EIR and EMPR) (In case of Scoping and Environmental Impact Report). **Please ignore the submission of this report in case you have already submitted**. All timeframes are effective from the date of this letter.

Kindly take note that you are required to consult with the Department of Land Affairs if the land is state owned and in the event that the land is subject to land restitution, to consult the office of the Commission on Restitution of Land Rights and submit online and hard copy to this Regional office the results of such consultation on or before the 08th of June 2023 (30 days).

You are requested in terms of section 17(4) of the Act to give effect to the object referred in section 2 (d) of the Act. In this regard you are required to submit online by no later than 19th of July 2023 (60 days), the following documents:

- Joint Venture Agreement
- Duly signed shareholders agreements
- Shares certificate and shareholders registers
- Details relating to funding, and any other agreement or documents relating to the agreement.

Acceptance of your application does not grant you the right to commence with prospecting operations. Your application will be evaluated/processed and a recommendation on the granting/refusal of the right will be forwarded to the Minister or her delegate. Any person operating without a prospecting/mining right or mining permit will be in contravention of Section 5(4) of the MPRDA and would be guilty of an offence in terms of the relevant Act.

Take note further that failure to submit the documents as requested and failure to adhere to the timeframes as stipulated above amounts to non-. compliance with the provision of the Act and will therefore lead to your application being recommended for refusal without further notification to you.

Yours faithfully

REGIONAL MANAGER
NORTH WEST REGION
DATE: 20/07/2023

ADVERTISEMENT PLACED 12 MAY 2023
(APPENDIX B)


Klasfoto van matrieks van 1982.

Klas van 1982 hou reünie


Mnr. Pottie aan die klasgee.

Zet Cloete van RGB Printers oorhandig die tjek aan die skoolhoof Mnr. Dawie Mathee namens haar medeklasmaats van 1982.

EIA PUBLIC PARTICIPATION PROCESS

Sarie Roodt has in terms of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002 as amended), the National Environmental Management Act, 1998, (Act 107 of 1998 as amended), lodged an application for a Prospecting Right to The Department of Mineral Resources and Energy, North West Province, on the following farm and minerals.

DMRE REFERENCE NW 30/5/1/1/2/13735 PR

Farm: Farm Verkies 120 Portions 6,7 and 8.

Magisterial District: Lichtenburg

Minerals: Diamonds (General) Manganese (Mn), Silica Sand (General) and Gravel.

The application has been accepted by the DMRE

LISTED ACTIVITIES:

GNR 327 LNI, 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— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; **or** (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.

GNR 325 Activity 19 – The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including: (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; **OR** (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.

GNR 327 Activity 27 – Activity 27 of GNR 327 – The clearance of an area of 1 hectares or more, butless than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linearactivity; or maintenance purposes undertaken in accordance with a maintenance management plan.

The Draft Scoping report will be available for a 30-day period from 15 May 2023 at:

Lichtenburg Public Library-35 Transvaal Street, Lichtenburg

Biokkiotse Public Library-Maregaung Street, Lichtenburg

Ditsobotla Local Municipal Offices in Lichtenburg – Corner nelson Mandela Drive and Transvaal Street, Lichtenburg

Address for Correspondence and Public Meeting

All Interested and/or Affected parties are hereby invited to register on the application database (gokaathrealestate@yahoo.com) or lodge any complaints in writing to Mr. M A Gokaath at the postal address below.

23 Goedehoop Avenue, Roydene, Kimberley, 8301

VAN AARDE 018 518 0889

EIA PUBLIC PARTICIPATION PROCESS

Sarie Roodt has in terms of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002 as amended), the National Environmental Management Act, 1998, (Act 107 of 1998 as amended), lodged an application for a Prospecting Right to The Department of Mineral Resources and Energy, North West Province, on the following farm and minerals.

DMRE REFERENCE NW 30/5/1/1/2/13735 PR

Farm: Farm Verlies 120 Portions 6,7 and 8.

Magisterial District: Lichtenburg

Minerals: Diamonds (General) Manganese (Mn), Silica Sand (General) and Gravel.

The application has been accepted by the DMRE

LISTED ACTIVITIES:

GNR 327 LN1, 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— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; **or** (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.

GNR 325 Activity 19 - The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including: (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; **OR** (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.

GNR 327 Activity 27 - Activity 27 of GNR 327 - The clearance of an area of 1 hectares or more, butless than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linearactivity; or maintenance purposes undertaken in accordance with a maintenance management plan.

The Draft Scoping report will be available for a 30-day period from 15 May 2023 at:
Lichtenburg Public Library-35 Transvaal Street, Lichtenburg
Boitekotso Public Library-Manguang Street, Lichtenburg
Ditsobotla Local Municipal Offices in Lichtenburg — Corner nelson Mandela Drive and Transvaal Street, Lichtenburg

Address for Correspondence and Public Meeting

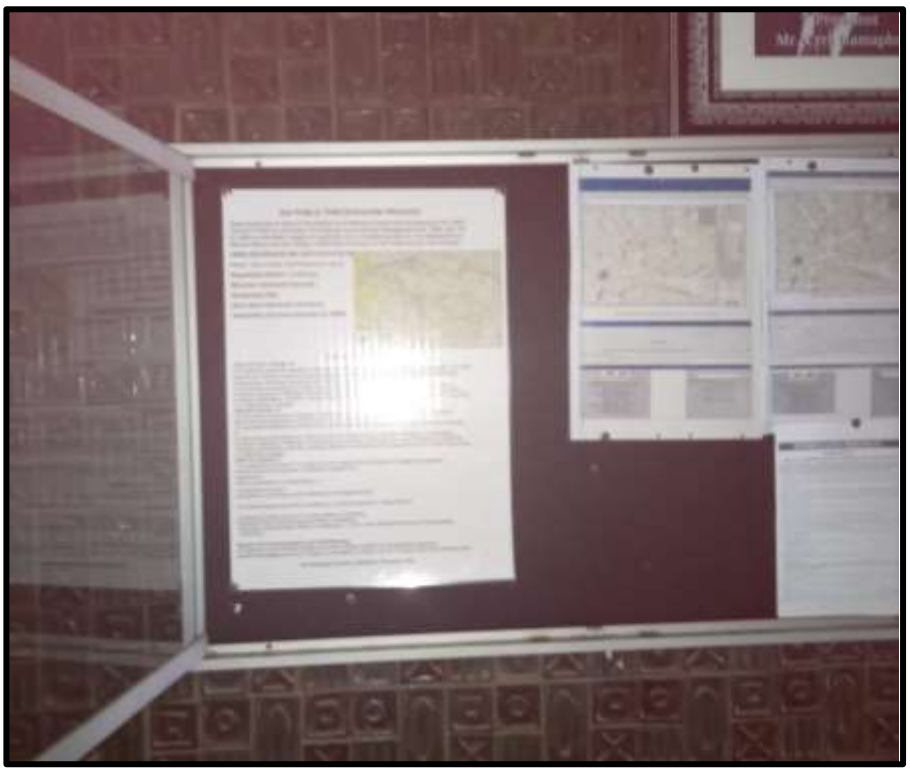
All Interested and/or Affected parties are hereby invited to register on the application database (goliathmalcolm@yahoo.com) or lodge any complaints in writing to Mr. M A Goliath at the postal address below.

23 Goedehoop Avenue, Royldene, Kimberley, 8301

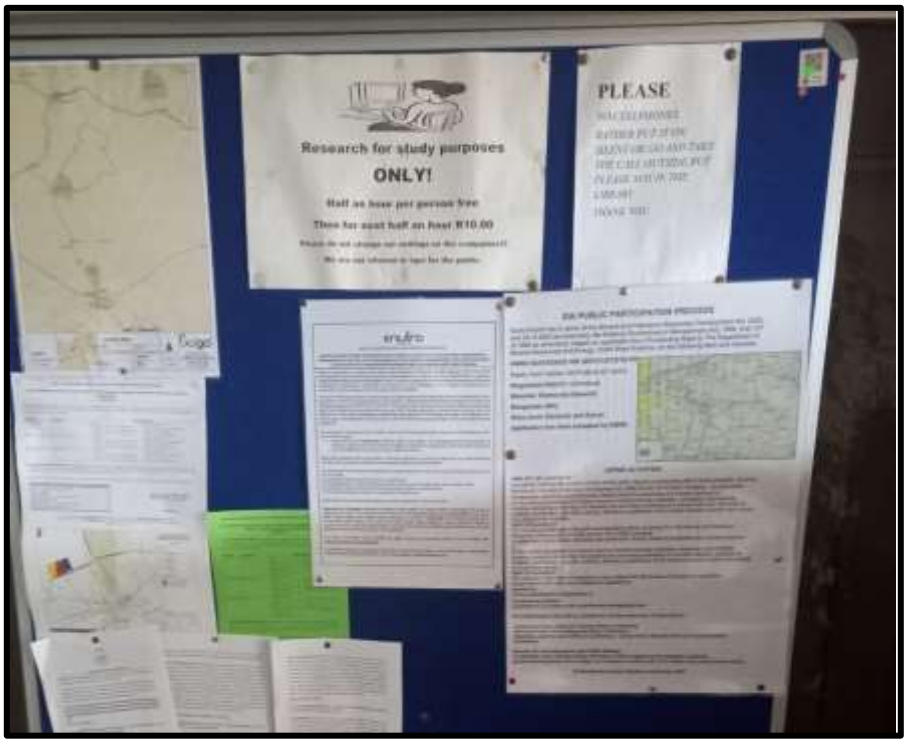
Mnr. P

PUBLIC NOTICE BOARDS (ALL PLACED ON OR BEFORE 16 MAY 2023)
(APPENDIX C)
FARM FENCE VERLIES 120

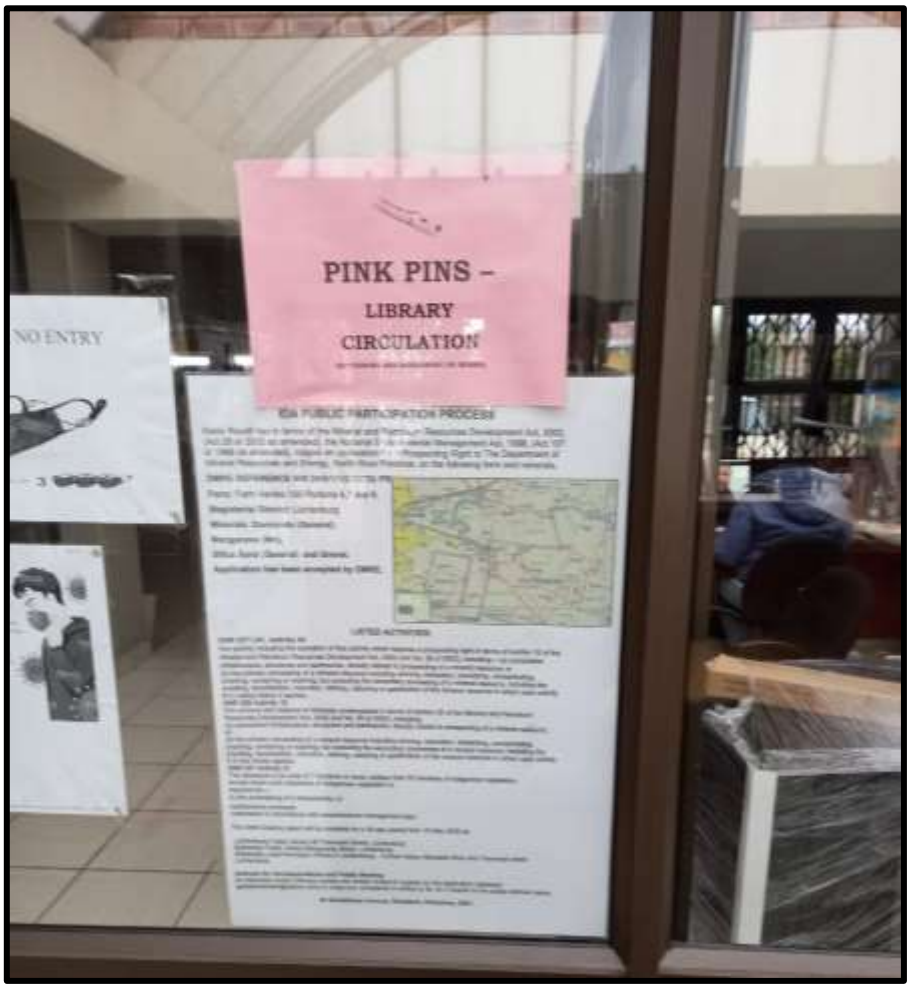
DITSOBOLA LOCAL MUNICIPALITY NOTICE BOARD IN LICHTENBURG



DITSOBOLA LIBRARY



DIKOTSO LIBRARY



PLACEMENT OF DRAFT SCOPING REPORT

APPENDIX D.

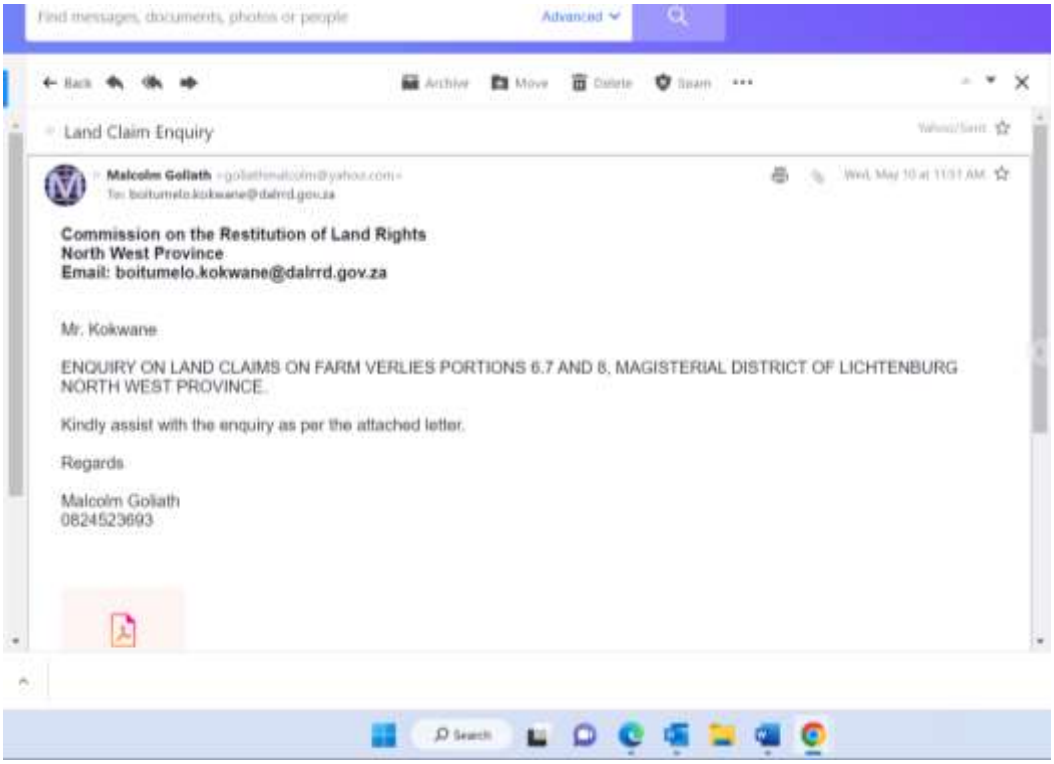
DITSOBOLA LOCAL MUNICIPALITY IN LICHTENBURG

DIKOTSO LIBRARY

DATABASE OF INTERESTED AND AFFECTED PARTIES
APPENDIX E.
To be completed with final Scoping Report

Email CORRESPONDENCE
APPENDIX F

COMMISSION ON THE RESTITUTION OF LAND RIGHTS



COMMISSION ON RESTITUTION OF LAND RIGHTS

OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: NORTH WEST
Cnr James Moroka and Sekame drive, West gallery, Megacity, MMABATHO
Tel: (018) 388 7000

Reference: R/7/10/05/2023
Enquiries: M.Shuping
Tel: (018) 388-7147/7252

By email: goliathmalcolm@yahoo.com

Dear Malcolm

LAND CLAIM ENQUIRY: PORTION 6, 7 AND 8 OF THE FARM VERLIES 120 JQ.

I acknowledge receipt of your letter dated the 10th of May 2023 regarding the above mentioned matter.

Kindly note that a formal response could be expected from our office within the next 14(fourteen) working days.

Should you however require any additional information, you can contact **Ms M. Shuping** at the above mentioned contact details.

Yours faithfully

MR L.J BOGATSU
CHIEF DIRECTOR
OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER
NORTH WEST PROVINCE
DATE: 11/05/2023

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

The Director
Commission on the restitution of Land Rights

Attention: Boitumelo Kowane

EMAIL: boitumelo.kokwane@dalrrd.gov.za

10 May 2023

Dear Sir

RE: EIA PUBLIC PARTICIPATION PROCESS

Sarie Roodt has in terms of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002 as amended), the National Environmental Management Act, 1998, (Act 107 of 1998 as amended), lodged an application for a Prospecting right with Bulk Sampling to The Department of Mineral Resources and Energy, North West Province, on the following farm and minerals. The application has been accepted.

DMRE REFERENCE NW30/5/1/1/2/13735PR

Farm: Farm Verlies 120 Portions 6,7 and 8, Magisterial district of Lichtenburg.
Minerals:
Diamonds (General) (D), Manganese (Mn), Silica Sand (General) and Gravel (grav)

Could you kindly confirm if any land claims have been lodged on the application farm portions.

Address for Correspondence
BY POST
Mr. M A Goliath
23 Goedehoop Avenue
Royldene
Kimberley
8301

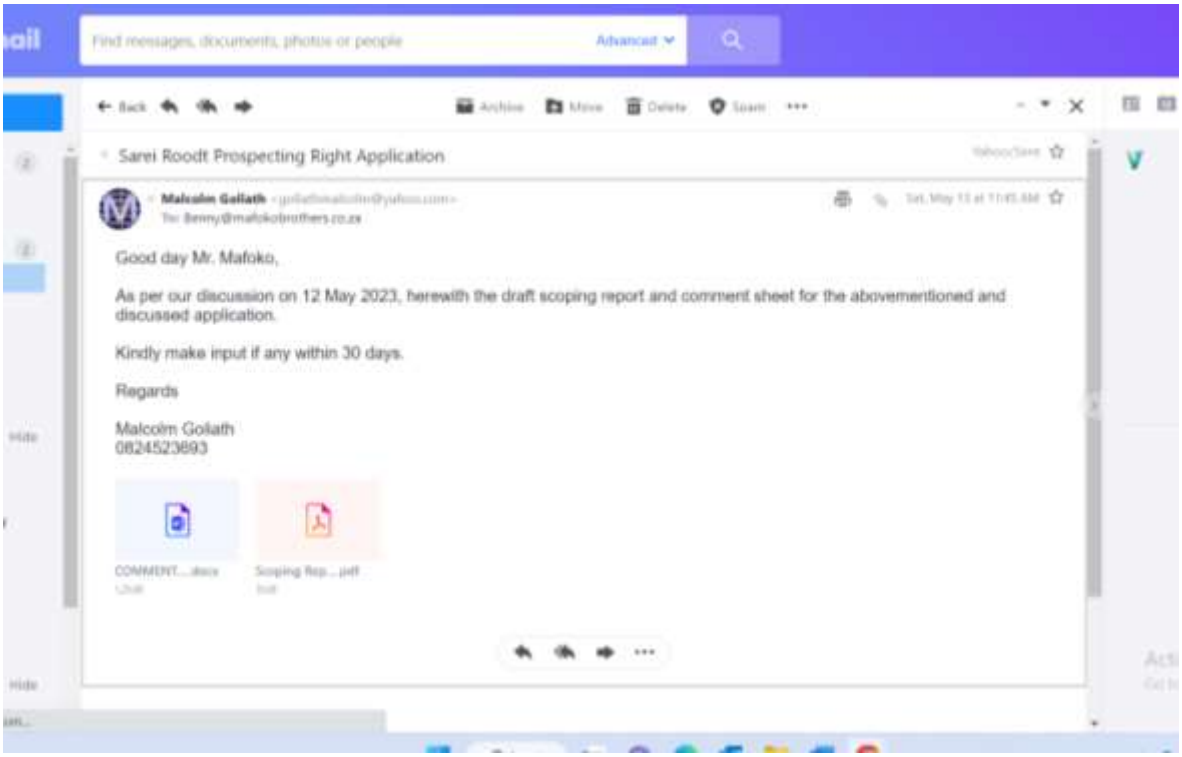
BY EMAIL
goliathmalcolm@yahoo.com

Regards

Malcolm Goliath
Project Environmental Assessment Practitioner

ESKOM LICHTENBURG

FARM VERLIES 120 PORTION 5
Mr. Mafoko



GOVERNMENT DEPARTMENTS AND ORGANS OF STATE

APPENDIX G

REGISTERED LETTERS AND DRAFT SCOPING REPORT FORWARDED


REGISTERED LETTER
GEREGISTREERDE BRIEF
Post Office
Full tracking and tracing/Volledige volg en spoor
Postage paid R
Service fee/Dienstgeld R
Insurance/Versekering R
Total/Totaal R
Insured value of contents
Versekerde waarde van inhoud R
Enquiries/Navrae
Toll-free number
Tolvry nommer
0800 111 502
Initial of accepting officer
Date stamp


REGISTERED LETTER
GEREGISTREERDE BRIEF
PostOffice
Full tracking and tracing/Volledige volg en spoor
Postage paid R
Service fee/Dienstgeld R
Insurance/Versekering R
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Date stamp

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

The Director
Department of Public Works, Roads and Transport
131 Kruis Street
Potchefstroom
2520
Tel: 018-293 9000

10 May 2023

Dear Sir/Madam

RE: EIA PUBLIC PARTICIPATION PROCESS

Sarie Roodt has in terms of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002 as amended), the National Environmental Management Act, 1998, (Act 107 of 1998 as amended), lodged an application for a Prospecting right with Bulk Sampling to The Department of Mineral Resources and Energy, North West Province, on the following farm and minerals. The application has been accepted.

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Farm: Farm Verlies 120 Portions 6,7 and 8, Magisterial district of Lichtenburg.
Minerals:
Diamonds (General) (D), Manganese (Mn), Silica Sand (General) and Gravel (grav)

LISTED ACTIVITIES:

GNR 327 LN1, Activity 20
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GNR 327 Activity 27
Activity 27 of GNR 327
The clearance of an area of 1 hectares or more, butless than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is
required for—
(i) the undertaking of a linearactivity; or

maintenance purposes
undertaken in accordance with amaintenance management plan.

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

Kindly find the Draft Scoping Report for your input and comments if any, within a 30-day period.

Address for Correspondence
BY POST
Mr. M A Goliath
23 Goedehoop Avenue
Royldene
Kimberley
8301

BY EMAIL
goliathmalcolm@yahoo.com

Regards

Malcolm Goliath
Project Environmental Assessment Practitioner

DEPARTMENT OF PUBLIC WORKS ROADS AND TRANSPORT

GOLCOR (PTY) LTD
23 Goedehoop Avenue
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BY EMAIL
goliathmalcolm@yahoo.com

Regards

Malcolm Goliath
Project Environmental Assessment Practitioner

DITSOBOTLA LOCAL MUNICPALITY

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

The Municipal Manager
Ditsobotla Local Municipality
Mr. Jonas Letlhaku
PO Box 7
LICHTENBURG
2740.

10 May 2023

Email:
info@ditsobotla.gov.za

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Email: goliathmalcolm@yahoo.com

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Kimberley
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BY EMAIL
goliathmalcolm@yahoo.com

Regards

Malcolm Goliath
Project Environmental Assessment Practitioner

NATIONAL DEPARTMENT OF AGRICULTURE FORESTRY AND FISHERIES (DAFF)

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

The Director
National Department of Agriculture Forestry and Fisheries (DAFF)
Agriculture Place
20 Steve Biko (Formerly Beatrix) Street
Private Bag X388
Pretoria
0001
Tel: 012 319 6000

10 May 2023

Dear Sir/Madam

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Mr. M A Goliath
23 Goedehoop Avenue
Royldene
Kimberley
8301

BY EMAIL
goliathmalcolm@yahoo.com

Regards

Malcolm Goliath
Project Environmental Assessment Practitioner

DEPARTMENT OF AGRICULTURE NORTH WEST

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

The Director
Department of Agriculture North West
Landbou Sentrum
Botha Street
Potchefstroom
2531
Tel:0182996773

10 May 2023

Dear Sir/Madam

RE: EIA PUBLIC PARTICIPATION PROCESS

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GOLCOR (PTY) LTD
23 Goedehoop Avenue
Roylene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

Kindly find the Draft Scoping Report for your input and comments if any, within a 30-day period.

Address for Correspondence
BY POST
Mr. M A Goliath
23 Goedehoop Avenue
Roylene
Kimberley
8301

BY EMAIL
goliathmalcolm@yahoo.com

Regards

Malcolm Goliath
Project Environmental Assessment Practitioner

DEPARTMENT OF WATER AND SANITATION

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
Kimberley
8301

Cell: 0824523693
Email: goliathmalcolm@yahoo.com

The Director
Department of Water and Sanitation (DWS)
Private Bag X5
MMABATHO
2735.
Tel: (018) 387 9500

10 May 2023

Dear Sir/Madam

RE: EIA PUBLIC PARTICIPATION PROCESS

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Regards

Malcolm Goliath
Project Environmental Assessment Practitioner

DEPARTMENT OF PUBLIC WORKS, ROADS AND TRANSPORT

GOLCOR (PTY) LTD
23 Goedehoop Avenue
Royldene
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The Director
Department of Public Works, Roads and Transport
131 Kruis Street
Potchefstroom
2520
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GNR 327 Activity 27
Activity 27 of GNR 327
The clearance of an area of 1 hectares or more, butless than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is
required for—
(i) the undertaking of a linearactivity; or

maintenance purposes
undertaken in accordance with amaintenance management plan.

PUBLIC AND OTHER INTERESTED AND AFFECTED PARTIES

APPENDIX H.

No response to advert or notice boards at compilation of draft scoping report on 16 May 2023