



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

Eskom Holdings SOC Limited



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## Final Basic Assessment Report for the Proposed Construction of the Eskom Libanon 132kV Power Line, Gauteng Province

J34079

DEA REF: 14/12/16/3/3/1/1360

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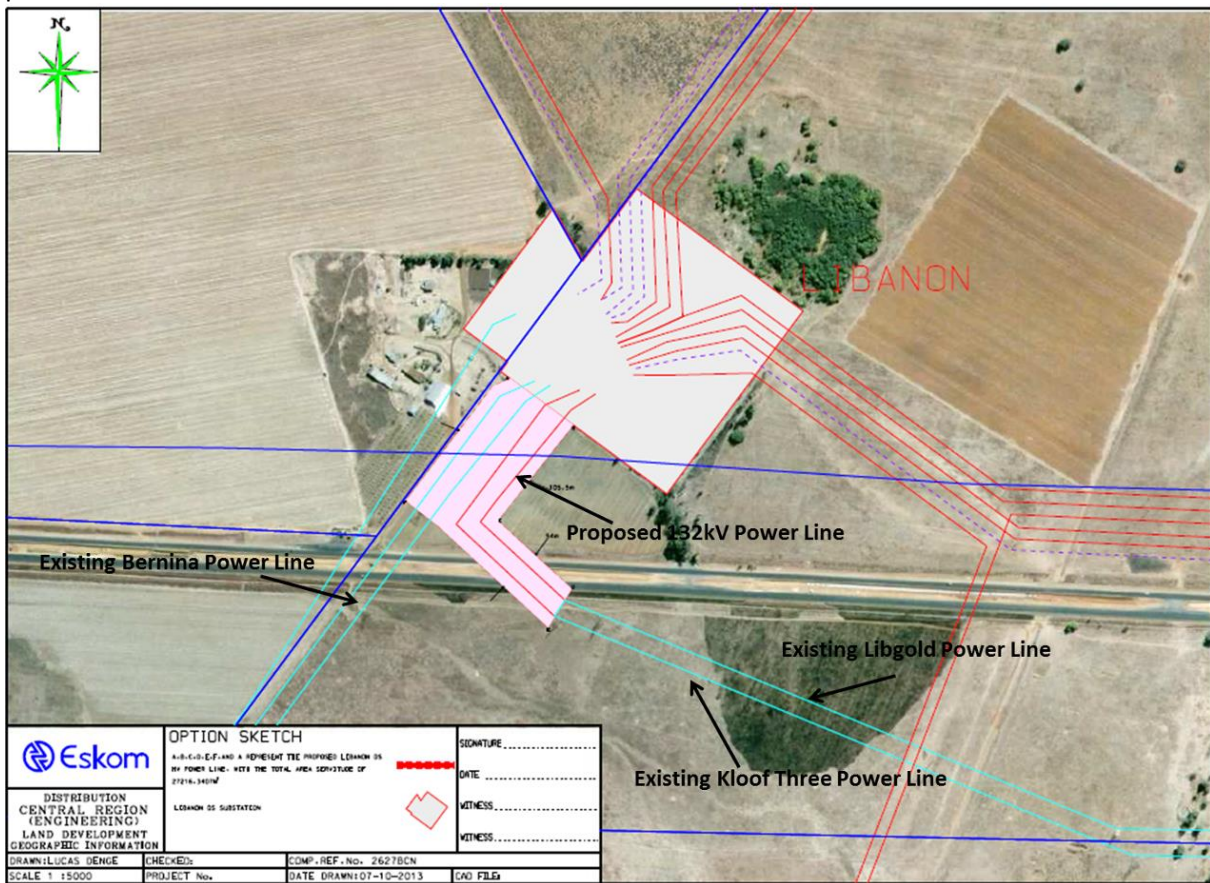
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# Executive Summary

## Introduction

Eskom proposes to construct a 132kV power line 500m in length which will loop-in from the existing Libgold power line to the existing Libanon DS Substation and loop-out to the existing Kloof Three power line. The existing Kloof Three and Libgold power lines are located south of the Libanon DS Substation. The aim of the project is to provide an additional 132kV line to the Libanon Substation, thus providing needed spare capacity and improving back-feed capabilities to provide power to the surrounding mining companies. The new line will be constructed within Eskom servitude and will cross R501 road. See Appendix A for maps.

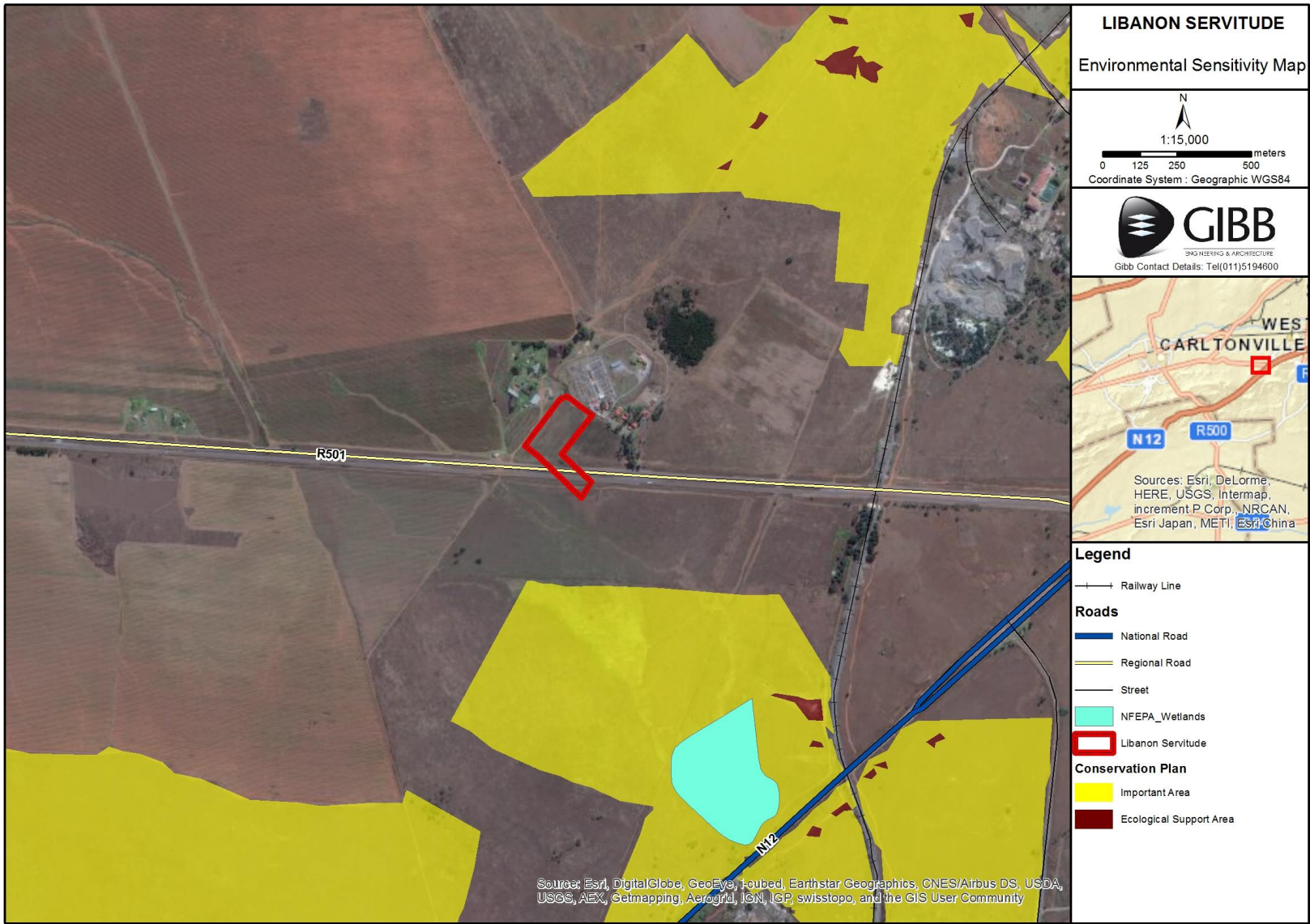
The proposed project is located within the Westonaria Local Municipality (WLM) and West Rand District Municipality (WRDM) in the Gauteng Province. The figure below shows the existing Libanon substation footprint shaded white with the servitude for the new proposed development in pink. The existing Kloof Three and Libgold power lines are located south of the substation and are represented by turquoise lines while the new proposed 132kV loop-in loop-out line located within the pink shaded area is indicated by the red lines. It should be noted that in order to avoid crossing of power lines it is envisaged that the existing Bernina power line located south east of the substation (See Figure below) will be shifted to the left to accommodate the new proposed 132kV power line.



Map of Libanon Substation and associated existing and proposed power lines

## Environmental sensitivities

No major environmental sensitivities were identified with the proposed project. Please see the environmental sensitivity map for the proposed site below.



Environmental Sensitivity Map

## Geology

According to the 1:250 000 scale Geological Map 2626 West Rand, dolomite and chert underlie the investigation area, therefore consideration of this must be taken into account during construction. From the geotechnical site visit, sub-rounded and sub-angular gravels to cobbles mixed of mixed origin were scattered on the surface across the site. Land underlain by dolomite of the Malmani Subgroup, either from surface or beneath a cover of other rock types, is classified as “dolomite land” in terms of SANS 1936 (Development of Dolomite Land). The potential development of sinkholes (rapid subsidence) or dolines (gradual settlement movements) are risks that must be taken into account during the development of dolomite land.

## Fauna and Flora

The study area is surrounded by agricultural fields and traverses open land that has been significantly impacted upon by on-going anthropogenic activities and power line development within the existing servitude. The study area under assessment falls within the Grassland biome and the Dry Highveld Grassland Bioregion. The entire study area traverses the Carletonville Dolomite Grassland vegetation type.

This vegetation type is formally classified as an Vulnerable vegetation type (provincial conservation target is 24%) of it conserved in statutory reserves (Sterkfontein Caves – part of the Cradle of Humankind World Heritage Site, Oog van Malmanie, Abe Bailey, Boskop Dam, Schoonspruit, Krugersdorp, Olifantvlei, Groenkloof). Almost a quarter of the vegetation unit has already undergone transformation mostly due to urbanisation, cultivation, mining activity or the building of the Boskop and Klerkskraal Dams. Erosion is very low (84%) and low (15%). However, according to the National List of Threatened Terrestrial Ecosystems (2011) the study area historically fell within the Least Threatened Carletonville Dolomite Grassland vegetation type.

No protected or Red Data List (RDL) floral species, except for *Hypoxis hemerocallidea*, were encountered within this habitat unit and due to the high levels of habitat transformation, are not expected to occur within Secondary Grassland Habitat Unit It is recommended that these species be rescued and relocated to the adjacent natural veld, outside of the project footprint.

## Alternatives

### Technology

#### Monopole Structures

It is envisaged that monopole structures will be used for the proposed project. The following advantages and disadvantages exist for monopoles:

#### Advantages:

- More cost effective than lattice structures
- Have a smaller footprint compared to lattice
- Monopoles are more difficult to vandalise and remove members therefore less susceptible to theft
- less visually obtrusive
- Potentially less attractive to bird perching

#### Disadvantages

- May require stay wires for strength and stability on bends

#### Steel Lattice Towers

Should monopoles be considered not feasible during the design phase lattice towers will be used. The following advantages and disadvantages exist for lattice towers:

### Advantages:

- Self-supporting structure

### Disadvantages:

- Costs are higher with lattice structures
- Have a larger footprint as there are 4 legs
- At a higher risk of theft
- More visually obtrusive

It should be noted that if lattice towers are considered over monopoles the impacts in this report will remain the same. Both technologies have the same impact on the environment and should be managed appropriately.

### No go

The No-go option implies that the proposed project does not proceed, and Eskom does not go ahead with the construction of the 132kV power line. The implications of No-go alternative include:

- There is no change to current landscape;
- Electricity supply to the area will be negatively affected;
- New Eskom customers cannot be accommodated; and
- Maintenance cannot be done without disrupting supply.

## Impact Assessment

The following impacts were identified:

### Planning and Design

- Removal of vegetation leading to loss of floral habitat and diversity.
- Potential impact for dolomitic areas since the study area is underlain by chert and dolomite of the Malmani Subgroup.

### Construction

- Compaction of soils due to construction activities and erosion.
- Risk of spillages and dumping of construction waste into surrounding natural areas.
- Erosion within natural areas as a result of construction activities.
- The disturbance of soils due to construction activities leading to increased erosion.
- Alien plant species invading and transforming natural flora habitat.
- Potential loss of protected species and associated habitat.
- Potential loss of Habitat for floral species as a result of removal of vegetation, invasion of alien species, movement of construction vehicles outside the proposed footprint area, dumping of material outside designated areas and compaction of soils.
- Potential loss of floral diversity as a result of the movement of construction vehicles outside the proposed footprint area, dumping of material outside designated areas, increased anthropogenic activity and an increase in the collection of medicinal floral species and changes to floral communities due to alien invasion.
- Potential loss of species of conservational concern as a result of Site clearance and removal of species of conservational concern and increased anthropogenic activity and an increase in the collection of plant material for medicinal purposes.
- Site clearing and removal of faunal habitat.

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- Migratory corridors altered due to construction of infrastructure.
- Fire hazards within the study area; collision of construction vehicles with faunal species.
- Potential loss of faunal habitat as a result of disturbance within the project footprint and surrounding adjacent areas, collision of fauna with construction vehicles and fire hazard from informal fires.
- Potential loss of faunal diversity as a result of disturbance within the project footprint and surrounding adjacent areas, collision of fauna with construction vehicles and fire hazard from informal fires.
- Potential loss of faunal species of conservational concern as a result of Site clearing and the removal of vegetation, Collision of construction vehicles with potential species of conservational concern and increased fire hazards.
- Impact on heritage features.
- Emissions from vehicles resulting in an increase in air pollution.
- Dust generation as a result of construction activities.
- Noise generation from vehicles resulting in an increase in noise pollution.

### **Operational**

- Vehicles driving through sensitive areas.
- On-going edge effects such as erosion within natural areas.
- Loss of habitat for floral species as a result of Increased introduction and proliferation of alien plant species and further transformation of natural habitat.
- Loss of floral diversity as a result of an increase in alien plant species leading to altered plant community structure and composition.
- Loss of floral species of conservational concern as a result an increase in alien plant species leading to loss of medicinal plant species by outcompeting these species and Ongoing collection of medicinal floral species.
- Collision of construction vehicles with faunal species.
- Potential loss of faunal habitat as a result of further decline in faunal diversity due to the associated operational activities within the project footprint and Fire hazard from informal fires.
- Potential loss of faunal diversity as a result of further decline in faunal diversity due to the associated operational activities within the project footprint, fire hazard from informal fires and bird strikes with power lines and associated avifaunal mortalities.
- Potential loss of faunal species of conservational concern as a result of habitat loss and modification, collision of species of concern with construction vehicles and bird strikes with power lines and associated avifaunal mortalities.
- Emissions from vehicles resulting in an increase in air pollution.
- Increased run-off from impervious surfaces effecting surrounding water resources and causing increased erosion.

## BASIC ASSESSMENT REPORT

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(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

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**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 August 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.



## Section A: Activity information

Has a specialist been consulted to assist with the completion of this section?

YES ✓	NO
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If YES, please complete the form entitled “Details of specialist and declaration of interest” for the specialist appointed and attach in Appendix I.

### 1. PROJECT DESCRIPTION

#### a) Describe the project associated with the listed activities applied for

##### 1. Introduction

Eskom Holdings SOC Limited (Eskom) proposes to construct a 132kV power line 500m in length which will loop-in from the existing Libgold power line to the existing Libanon DS Substation and loop-out to the existing Kloof Three power line. The existing Kloof Three and Libgold power lines are located south of the Libanon DS Substation. The aim of the project is to provide an additional 132kV line to the Libanon Substation, thus providing needed spare capacity and improving back-feed capabilities to provide power to the surrounding mining companies. The new line will be constructed within Eskom servitude and will cross R501 road. See **Appendix A** for maps indicating project locality, sensitive areas as well as co-ordinates of the project footprint.

In terms of the NEMA EIA Regulations, 2010: GN. R 544 promulgated under Chapter 5 of the National Environmental Management Act (Act 107 of 1998) (“NEMA”), Activity 10(i) is triggered therefore a Basic Assessment Report (BAR) is required for the proposed project (refer to Table 1 for the activity triggered). Eskom has appointed Gibb (Pty) Ltd as the independent environmental consultant, to undertake the Basic Assessment, EMPr and associated stakeholder engagement processes for the proposed project. The main objective of the Basic Assessment process is to identify and assess potential environmental impacts associated with the proposed project, and to compile appropriate mitigation measures.

Table 1: List of Activities Triggered in GN.R 544 (Listing Notice 1)

Detailed description of listed activities associated with the project	
Listed activity as described in GN R.544, 545 and 546	Description of project activity that triggers listed activity – if activities in GN R. 546 are triggered, indicate the triggering criteria as described in the second column of GN R. 543
GN R.544 Activity 10 (i): the construction of facilities or infrastructure for the transmission and distribution of electricity outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.	A 132kV loop in line of approximately 500 metres in length will be constructed outside an urban area.

GIBB (Pty) Ltd (GIBB) has been appointed as an Environmental Assessment Practitioner (EAP), to carry out the Basic Assessment, EMPr and associated stakeholder engagement processes for the proposed project in order to obtain an Environmental Authorisation (EA) from the Department of Environmental Affairs (DEA). The undertaking of the Basic Assessment process is a legislative requirement of the National Environmental Management Act (No 107 of 1998) due to the triggering of activities listed in the Environmental Regulations as amended in 2010. The application has been submitted DEA under the reference number 14/12/16/3/3/1/1360. The following specialist studies presented below (Table 1) were undertaken to assess the proposed project. A summary of the findings will be discussed in the sections that follow. For more details refer to the specialist studies in **Appendix D**.

Table 1: Specialist studies undertaken during the Basic Assessment process

Name	Organisation	Specialist study conducted
D.J Kruger	Jaffers & Green	Desktop Geotechnical Study
J van Schalkwyk	J van Schalkwyk	Heritage Impact Assessment

**2. Project Location and Description**

**2.1. Project Location**

Eskom proposes the construction of a 132kV (approximately 500m in length) Loop-in loop-out power line between the existing Libanon Substation and the existing Kloof Three and Libgold power lines located within the Westonaria Local Municipality (WLM) and West Rand District Municipality (WRDM) in the Gauteng Province. Figure 1 below shows the project locality, for more detailed maps refer to **Appendix A**.

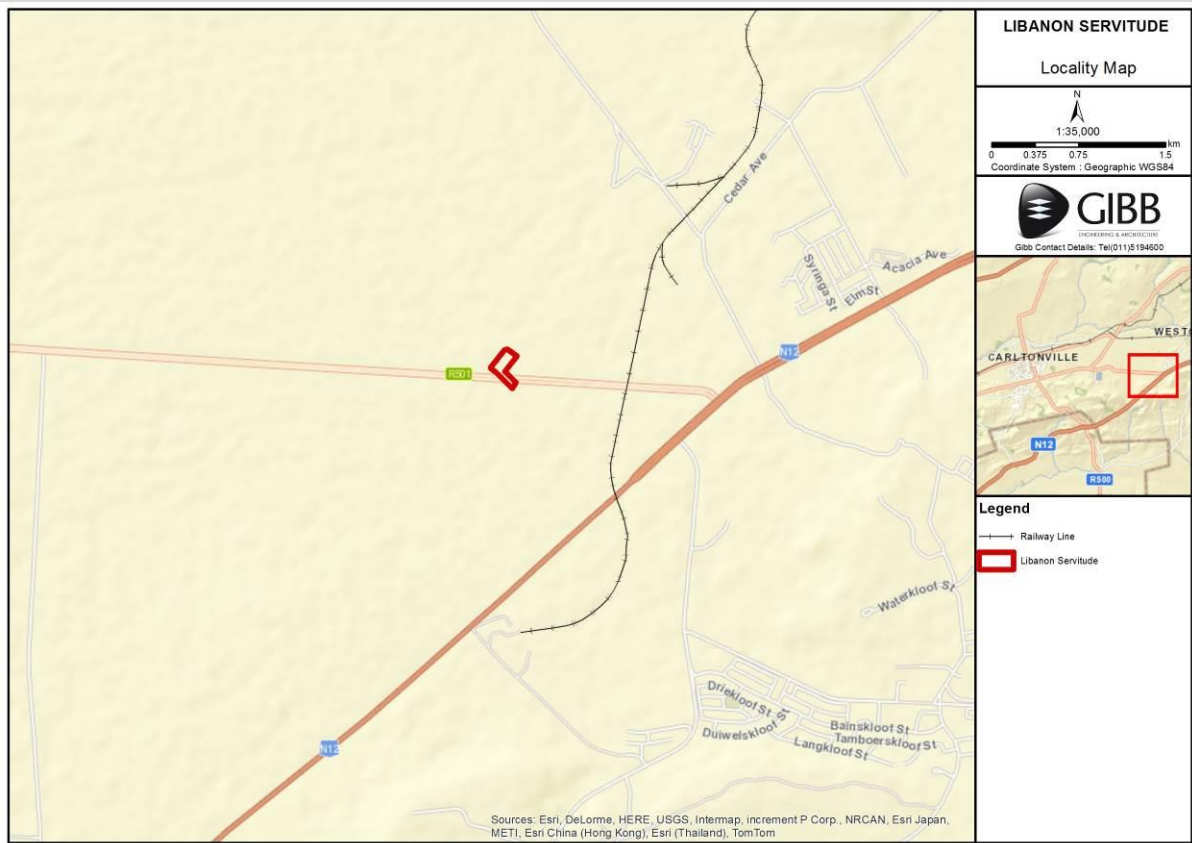


Figure 1: Locality Map of Proposed Development Footprint

**2.2. Project Description**

Eskom has proposed the construction of a 132kV (approximately 500m in length) Loop-in loop-out distribution line between the existing Libanon DS Substation and the existing Kloof Three and Libgold power lines located south of the Libanon Substation. The aim of the project is to provide an additional 132kV line to the Libanon Substation, thus providing needed spare capacity and improving back-feed capabilities to provide power to the surrounding mining companies. The new line will be constructed within Eskom servitude and will cross R501 road.

Figure 2 below shows the existing Libanon substation footprint shaded white with the servitude for the new proposed development in pink. The existing Kloof Three and Libgold power lines are located south of the substation and are represented by turquoise lines while the new proposed 132kV loop-in loop-out line located within the pink shaded area is indicated by the red lines. It should be noted that in order to avoid crossing of power lines it is envisaged that the existing Bernina power line located south east of the substation (See Figure 2) will be shifted to the left to accommodate the new proposed 132kV power line.

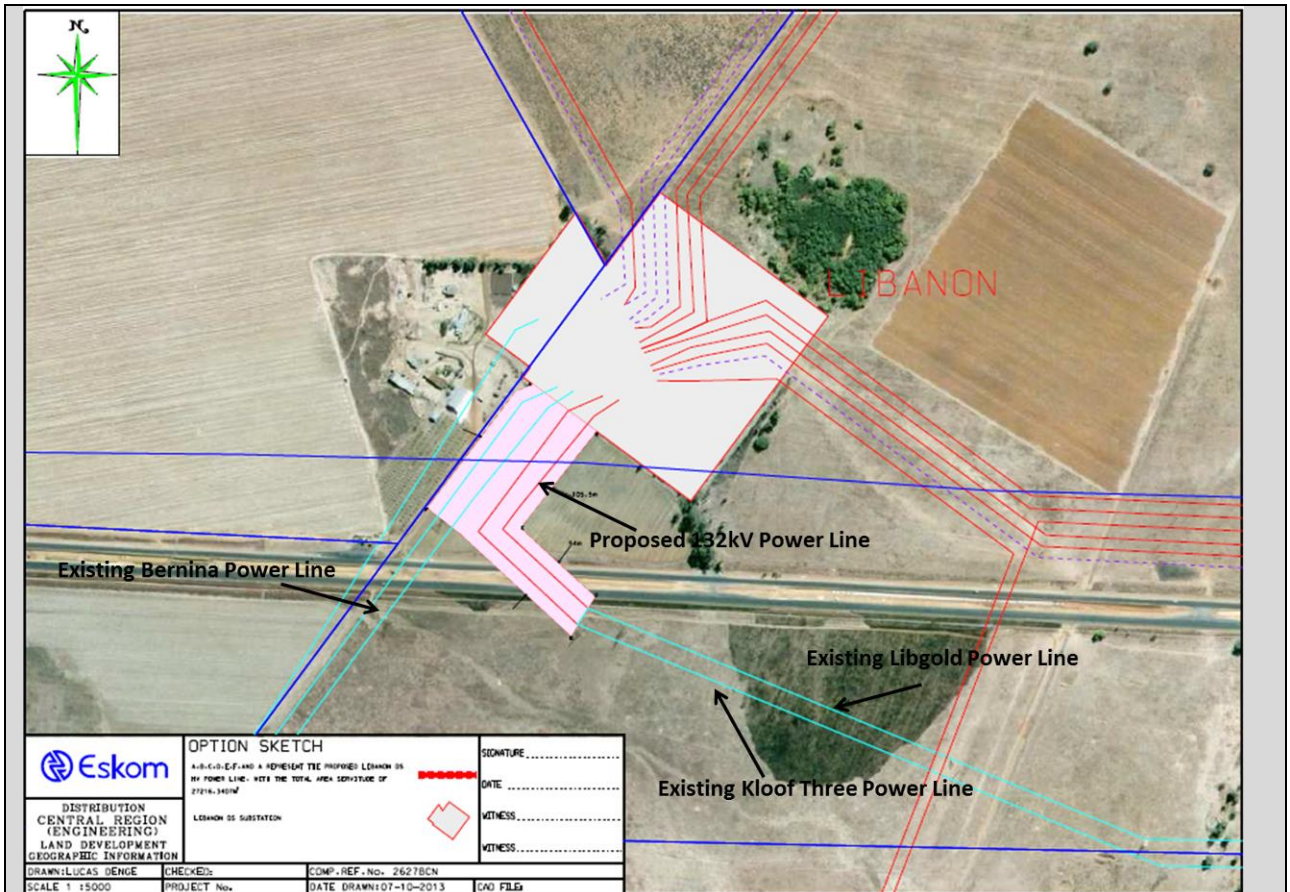


Figure 2: Map of Libanon Substation and associated existing and proposed power lines

- **Distribution lines**

In South Africa, thousands of kilometres of high voltage transmission lines (i.e. 765 kV, 400 kV or 275 kV transmission lines) transmit electricity generated at power stations to Eskom’s major substations. At these major substations, the voltage is reduced, and the electricity is distributed to smaller substations all over the country through distribution lines (i.e. 132 kV, 88 kV or 66 kV lines). At the smaller substations the voltage is further reduced and the power is distributed to local users via numerous small powerlines (i.e. 22 kV and 11 kV lines) referred to as reticulation lines. The power generated by Eskom can only be utilised from those points of supply, which transform the power into a usable voltage.

- **Technical details regarding the proposed 132kV distribution line**

- 132kV Towers

It is envisaged that steel lattice and/or monopoles structures will be required for the proposed line and will be located within Eskom’s servitude. These structures vary in specifications.

Lattice structures can weigh approximately 2100 kg each and vary in height from approximately 20.7m to 32.1m. The estimated footprint size for this structure is 25m<sup>2</sup>. The average span between two lattice towers is approximately 200m, but can vary between 250m and 375m depending on the ground profile (topography) and the terrain to be spanned.

Whereas monopoles weigh approximately 1 200 kg each and vary in height from approximately 17,4 m to 21 m. The size of the footprint depends on the type of pole, i.e. whether it is a self-supporting, guyed suspension or an angle strain pole structure. The size of the footprint ranges from 0,6 m x 0,6 m to 1,5 m x 1,5 m, with the larger footprint

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associated with the guyed suspension and angle strain pole used as bend/strain structures. The average span between two towers is 200 m, but can vary between 250 m and 375 m depending on the ground profile (topography) and the terrain to be spanned.

### – Servitude and Clearance

The minimum servitude width required by Eskom for a 132kV distribution line is 31 metres wide (15.5m on either side of the centre line of the power line). The minimum vertical clearance to buildings, poles and structures not forming part of the power line must be 3,8 m, while the minimum vertical clearance between the conductors and the ground is 6,7 m.

The minimum distance of a 132kV distribution line running parallel to proclaimed public roads is 95m from the centre of the distribution line servitude to the centre of the road servitude. The minimum distance between trees or shrubs and any bare phase conductor of a 132 kV distribution line must be 4m, allowing for the possible sideways movement and swing of both the distribution line and the tree or shrub.

For the centre line of proposed power line an 8 m-wide strip (4m either side of the centre line) is generally required to be cleared of all trees and shrubs down to within 100 mm of the ground within the servitude for stringing purposes only. Any tree or shrub in other areas that will interfere with the operation and/or reliability of the distribution power line must be trimmed or completely cleared.

Vegetation clearance for the proposed power line is expected to be minimal as a result of the area already being highly transformed due to vegetation clearance for agricultural activities. Since the area has a high infestation of alien species it is expected that the servitude will be treated with an appropriate herbicide. The clearing of vegetation will take place, with the aid of a surveyor, along approved profiles and in accordance with the approved Environmental Management Programme report (EMPr), and in accordance with the minimum standards to be used for vegetation clearing for the construction of the proposed new distribution line as listed in Table 2 (Eskom, 2000).

Once the centre line has been cleared, the surveyor pegs every tower position and marks the crossing point with existing fences for new gate installation. Once the tower positions have been marked, the vegetation clearing team will return to every tower position and clear vegetation (in accordance with the EMPr) for assembling and erection purposes.

Table 2: Minimum standards to be used for vegetation clearing for the construction of a new distribution line.

Item	Standard	Follow up
Centre line of the proposed distribution line	Clear to a maximum (depending on tower type and voltage) of an 8m wide strip of all vegetation along the centre line. Vegetation to be cut within 100mm of the ground. Treat stumps with herbicide.	Re-growth shall be cut within 100mm of the ground and treated with herbicide, as necessary.
Inaccessible valleys (trace line)	Clear a 1m strip for access by foot only, for the pulling of a pilot wire by hand.	Vegetation not to be disturbed after initial clearing – vegetation to be allowed to re-grow.
Access / service roads	Clear a maximum (depending on tower type) 5m wide strip for vehicle access within the maximum 8m width, including de-stumping/cutting stumps to ground level,	Re-growth to be cut at ground level and treated with

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	treating with a herbicide and re-compaction of soil.	herbicide as necessary.
Proposed tower position and proposed support / stay wire position	Clear all vegetation within proposed tower position and within a maximum (depending on tower type) radius of 5m around the position, including de-stumping/cutting stumps to ground level, treating with an herbicide and re-compaction of soil. Allow controlled agricultural practices, where feasible.	Re-growth to be cut at ground level and treated with herbicide as necessary.
Indigenous vegetation within servitude area (outside of maximum 8m strip)	Area outside of the maximum 8m strip and within the servitude area, selective trimming or cutting down of those identified plants posing a threat to the integrity of the proposed distribution line.	Selective trimming
Alien species within servitude area (outside of maximum 8m strip)	Area outside of the maximum 8m strip and within the servitude area, remove all alien vegetation within servitude area and treat with appropriate herbicide.	Cut and treat with appropriate herbicide.

### – Foundations

The type of terrain encountered, as well as the underlying geotechnical conditions, determines the choice of foundation. The actual size and type of foundation to be installed will depend on the soil bearing capacity (actual sub-soil conditions). Strain structures require more extensive foundations for support than in-line suspension structures, which contribute to the cost of the construction of the line.

Foundations will be mechanically excavated where access to the pole position is readily available. The same applies to the pouring of concrete required for the setting of the foundations. Prior to erecting the poles and filling of the foundations, the excavated foundations will be covered in order to safeguard unsuspecting animals and people from injury. All foundations are back-filled, stabilised through compaction, and capped with concrete at ground level. The minimum working area required around a structure position is 20m × 20m.

### – Insulators

Long rod composite insulators are used to connect the conductors to the towers. Glass and porcelain have used to connect the conductors for many years, and are the most common. They are, however, heavy and susceptible to breakage by vandals, as well as contamination by pollution. Composite insulators have a glass-fibre core with silicon sheds for insulation. Composite insulators are lightweight and resistant to both vandalism and pollution.

Composite (Long rod type) insulators with silicone based weather-shed material will be used for strain assemblies. Composite horizontal line post insulators will be used for the intermediate structures and on the jumper supports.

### – Access

As far as possible, existing access roads and tracks will be used. It is anticipated that no additional roads will be required for the proposed project as ready access to the site exists. Access roads are required for the transportation

of construction material as well as construction teams to the site and will also facilitate maintenance activities once the power line has been constructed. Construction camps will be established at strategic positions to provide optimum access to the construction areas. Eskom will make use of existing access roads for construction, operation and maintenance. The construction of additional access roads will not be necessary.

– Project Timing

Construction of the power line will be approximately twelve (12) months.

– On-going maintenance

During the life span of the distribution line i.e. approximately 25 years, on-going maintenance is required to be performed from time to time. This maintenance work is undertaken by contractors employed by Eskom, and in compliance with the Environmental Management Programme (EMPr) once approved.

– Construction Process for distribution lines

- Step 1: Determination of technically feasible alternatives.
- Step 2: Basic Assessment input into route selection and obtaining of relevant environmental permits and Authorisations.
- Step 3: Negotiation of final route with affected landowners.
- Step 4: Survey of the route.
- Step 5: Selection of best-suited structures and foundations.
- Step 6: Final design of distribution line and placement of towers.
- Step 7: Issuing of tenders and award of contract to construction companies.
- Step 8: Vegetation clearance and construction of access roads (where required).
- Step 9: Pegging of structures.
- Step 10: Construction of foundations.
- Step 11: Assembly and erection of structures.
- Step 12: Stringing of conductors.
- Step 13: Rehabilitation of disturbed area and protection of erosion sensitive areas.
- Step 14: Testing and commissioning.
- Step 15: Continued maintenance.

### **3. Receiving Environment**

#### **3.1. Biophysical Environment**

##### **a) Climate**

The climate of the area can be described as typical of the highveld, with cool to cold, dry winters and moist, warm to hot summers. The study area experiences a dry, sunny climate with temperatures during summer ranging between

20°C and 30°C. Winter temperatures are low with Gauteng experiencing a daily mean temperature of 9.8°C in July. Most of the rainfall (84.4%) falls between October and March, and frost is common, especially in the lower lying parts. The annual average rainfall is 600 mm to 800 mm, which is mostly concentrated between October and March. The prevailing wind direction in the study area is north westerly in winter and south-easterly in summer (WRDM, 2014).

### b) Topography and Geography

The topography of the study area is relatively flat with the highest point in the north, 1610 meters above sea level (masl) and the lowest point in the south with a maximum of 1607 masl.

The site is situated along the R501 road between the towns of Carletonville and Westonaria. It is located in the Gauteng Province and falls within the West Rand District Municipality (WRDM) and Westonaria Local Municipality (WLM), respectively.

### c) Geology and Soils

In terms of geological setting, the study area is underlain by rocks of the Malmani Subgroup of the Chuniespoort Group, Transvaal Supergroup. These rocks have in places been covered by geologically younger rock units of the Eccca Group. The Transvaal Supergroup rocks were formed in the late Archean to early Proterozoic Eons (approximately 2.5 billion years ago) and are preserved within three structural basins in southern Africa. In broad terms, the lithologies of the Transvaal Supergroup basins consist of clastic sediments (shales, quartzites) overlain by chemical sedimentary rocks (dolomite and limestone overlain by ironstone and chert) with clastic sediments and volcanic rocks forming the upper stratigraphic units.

According to the 1:250 000 scale Geological Map 2626 West Rand, dolomite and chert underlie the investigation area, therefore consideration of this must be taken into account during construction. From the geotechnical site visit, sub-rounded and sub-angular gravels to cobbles mixed of mixed origin were scattered on the surface across the site. Land underlain by dolomite of the Malmani Subgroup, either from surface or beneath a cover of other rock types, is classified as "dolomite land" in terms of SANS 1936 (Development of Dolomite Land). The potential development of sinkholes (rapid subsidence) or dolines (gradual settlement movements) are risks that must be taken into account during the development of dolomite land.

### d) Surface and Groundwater

According to National Freshwater Ecosystem Priority Areas (NFEPA) database, no surface water entities are located within the proposed development footprint, however a NFEPA wetland is located approximately 1.2km south east of the Libanon site, refer to hydrology map of the study area (refer to Figure 3). It should also be highlighted that although no watercourses were identified on the abovementioned databases there appears to be a drainage line that originates west of the Libanon site and runs south of the development footprint where it appears to join a non-perennial river. Therefore the area is expected to have seasonally wet soils. It is however, not expected that this will impact or be impacted on by the proposed project.

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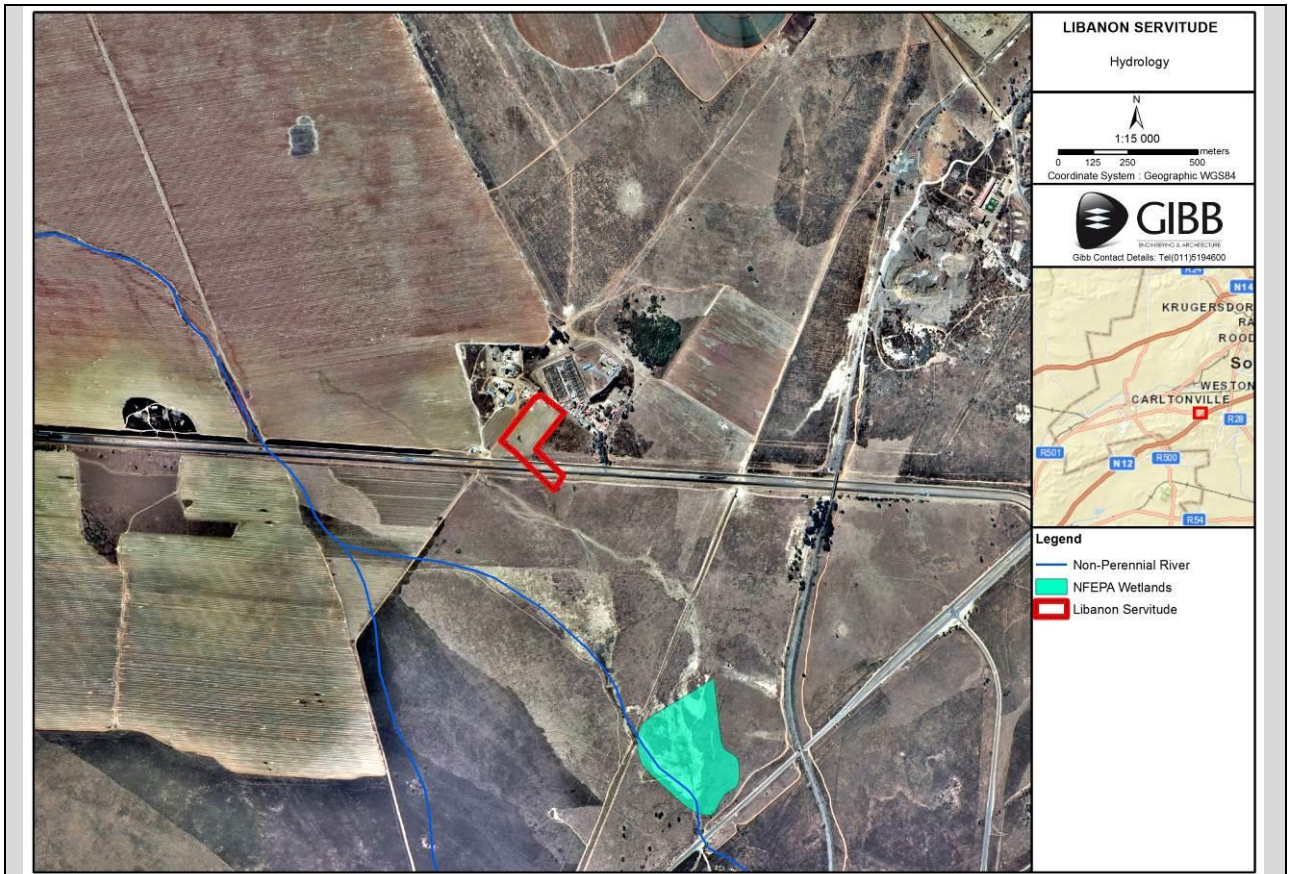


Figure 2: Map indicating hydrology of the proposed development footprint

No groundwater was encountered during the site visit. The soils recovered from the auger holes had a “moist” moisture condition. Shallow groundwater conditions should be expected during the wetter summer season at the site, particularly in the section south of the R501. The presence of pedogenic ferricrete soils are indicative of shallow, seasonally fluctuating ground water conditions, either currently or at the time when the ferricrete formed.

## e) Flora and Fauna

The study area is surrounded by agricultural fields and traverses open land that has been significantly impacted upon by on-going anthropogenic activities and power line development within the existing servitude. The study area under assessment falls within the Grassland biome and the Dry Highveld Grassland Bioregion. The entire study area traverses the Carletonville Dolomite Grassland vegetation type (refer to Figure 4).



# BASIC ASSESSMENT REPORT

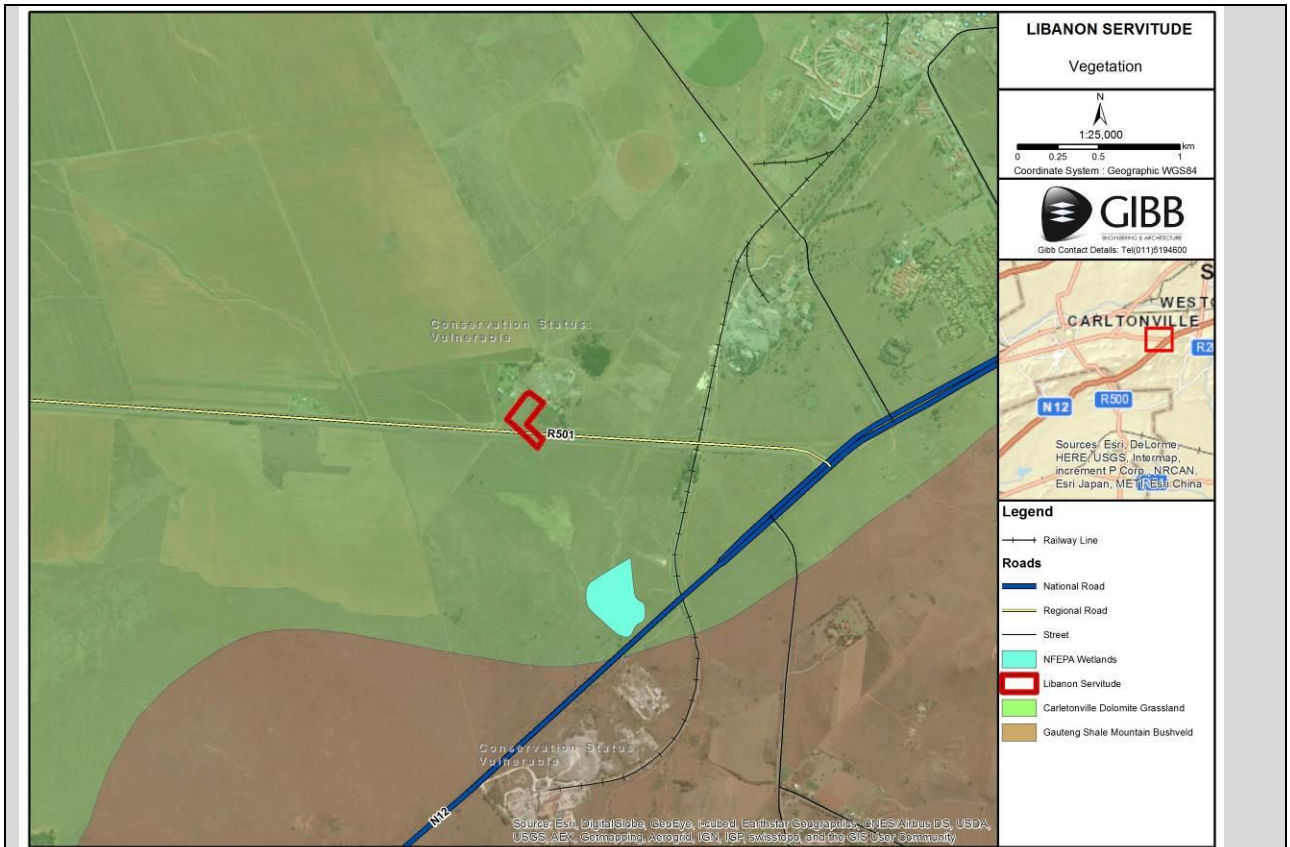


Figure 4: Map indicating vegetation type within the proposed development footprint

Carletonville Dolomite Grassland distribution is limited to North-West (mainly) and Gauteng and marginally into the Free State Province. It is found in the region of Potchefstroom, Ventersdorp and Carletonville, extending westwards to the vicinity of Ottoshoop. It also occurs in the far east of Centurion and Bapsfontein in Gauteng Province.

This vegetation type is formally classified as an Vulnerable vegetation type (provincial conservation target is 24%) of it conserved in statutory reserves (Sterkfontein Caves – part of the Cradle of Humankind World Heritage Site, Oog van Malmanie, Abe Bailey, Boskop Dam, Schoonspruit, Krugersdorp, Olifantvlei, Groenkloof). Almost a quarter of the vegetation unit has already undergone transformation mostly due to urbanisation, cultivation, mining activity or the building of the Boskop and Klerkskraal Dams. Erosion is very low (84%) and low (15%). However, according to the National List of Threatened Terrestrial Ecosystems (2011) the study area historically fell within the Least Threatened Carletonville Dolomite Grassland vegetation type.

Two broad habitat units were identified within the study area namely, the Secondary Grassland Habitat Unit and the Transformed Habitat Unit (refer to Figure 5). The Transformed Habitat Unit is representative of the majority of the study area consisting of areas completely transformed due to vegetation clearance for agricultural activities and main roads. The Secondary Grassland Habitat Unit is located on either side of the main road, where vegetation has been transformed due to the edge effects from the road and alien proliferation within the power line servitude.

The Secondary Grassland Habitat Unit has been impacted due to edge effects from the main road and the power line servitude. The diversity and abundance of alien floral species is high within this habitat unit. Very little natural or indigenous vegetation is present. The abovementioned activities and impacts have led to a significant decrease in indigenous floral species diversity and loss of natural habitat and none of the dominant floral species expected to occur within the Carletonville Dolomite Grassland vegetation type have been encountered within the study area, therefore indicating that the vegetation is not representative of this vegetation type.

No protected or Red Data List (RDL) floral species, except for *Hypoxis hemerocallidea*, were encountered within this habitat unit and due to the high levels of habitat transformation, are not expected to occur within Secondary

## BASIC ASSESSMENT REPORT

Grassland Habitat Unit It is recommended that these species be rescued and relocated to the adjacent natural veld, outside of the project footprint.

The vegetation within the Transformed Habitat Unit has undergone severe levels of transformation as a result of vegetation clearance for agricultural activities and alien floral species encroachment. The Transformed Habitat Unit is considered to have a very low ecological sensitivity due to this habitat unit being completely cleared of vegetation and high levels of alien proliferation. No RDL or protected floral species were identified within this habitat unit during the site assessment, and it is unlikely that any of such species would be present due to the degree of transformation. As a result of the immense alien infestation it is thus recommended that alien proliferation and control takes place within the servitude and immediate surroundings during the construction and operational phase of the power line.



Figure 5: Habitat units identified within the study area

The study area presented very limited habitat for faunal species. The vast majority of the study area was ploughed lands, with small vegetated areas occurring under and around the existing Eskom support structures. The study area is surrounded by a mix of infrastructure and cultivated land, providing very limited faunal habitat. The only suitable faunal habitat present was the disturbed grassland to the south of the study area which is used for livestock grazing.

No mammals were directly observed in the study area; however signs of *Cryptomys hottentotus* (Common Mole Rat) were noted. This is a widespread species throughout South Africa due to its ability to inhabit a wide variety of habitats. The mounds of dirt (mole hills) excavated appeared to be old and the tunnels unused, it is most likely that any *C. hottentotus* that were in the study area have relocated to the grassland in the south when the study area was ploughed. In terms of conservation, no RDL or threatened mammal species were encountered during the field assessment. Furthermore, the likelihood of any threatened mammal species being encountered within the study area is considered to be low due to the high levels of anthropogenic activities and lack of suitable habitat.

With regards to avifauna, all avifaunal species identified within the study area are common species known to reside within or utilise the grassland habitat in the region and may be either permanently or occasionally be present within the study area. The proposed power line is between two Critical Biodiversity Area's (CBA), and so it is quite likely that there will be avifaunal species flying through the study area in order to reach either CBA. As such, the risk of birds

flying into the power lines (bird strikes) is increased. This needs to be taken into account, and bird collision avoidance measures need to be put in place, such as bird flappers/ diverters. The proposed power line development is thus unlikely to pose a significant conservation threat to RDL avifaunal species within the study and surrounding areas, provided that mitigation measures provided are adhered to.

No reptile or amphibian species were observed within the study area, nor are any species expected to utilise the study area as a permanent habitat. No invertebrate species of concern were identified either and it is unlikely that any of these species will reside within the study area. The proposed development is unlikely to contribute to a loss of invertebrate diversity in the region.

Special emphasis was placed on locating any RDL Trapdoor and Baboon Spiders and RDL scorpions, but none were found. It is unlikely that any of the RDL spiders or scorpions would inhabit the study area, and thus the proposed power lines will not affect any of these species populations.

#### **4. Socio-economic Environment**

##### a) Geographic profile

The Eskom Libanon proposed power line falls within the Westonaria Local Municipality which forms part of the West Rand District Municipality consisting of four local municipalities namely: Mogale City, Randfontein, Merafong City and Westonaria Local Municipality. It is situated approximately 60 km from Johannesburg. Westonaria Local Municipality consists of 16 Wards. The proposed Eskom Libanon project falls within ward 2 and ward 5.

##### b) Demographics

According to Statistics South Africa, the 2011 census showed that the Westonaria Local Municipality had a total population of 111 767. The population is more male dominated (61 152) with the female population equating to 50 615. In terms of distribution of the population by age majority of the population falls within the ages of 24-40. The primary language spoken in the WLM is isiXhosa (26.8%) followed by Sesotho (18.7%) and Setswana (14.4%). Only 7.2% and 3.5% of the WLM population speak Afrikaans and English, respectively.

There are 40101 households in the WLM with average household size of 2.6 persons. Households with access to water inside the dwelling have improved with 42.2% having access to water. Only 315 dwellings do not have access to piped water. Other basic services have also improved including access to electricity (64.3%), refuse removal (69.4%) and toilet facilities (58.6%). However, despite the eradication of the bucket toilet system within the WLM a proportion of pit toilet without ventilation is increasing due to the sprawl of informal settlements.

In 2011, a total of 16,990 people were considered unemployed within the WLM, which amounts to 29.5% of the population down from the 31.8% unemployment rate in 2001 (Westonaria Local Municipality IDP, 2014). According to the Census 2011 statistics, the education levels within the WLM are as follows:

	1996	2001	2011
Attending	12,214	17,624	21,872
Not Attending	13,796	14,652	13,664
<b>Total</b>	<b>26,010</b>	<b>32,266</b>	<b>35,536</b>

Within the WLM, the population that has completed Grade 12 equates to 26.6 %, this percentage is the lowest of all the Local Municipalities within the greater district. As a result of this inadequate training and skills people within the municipality struggle to find jobs therefore contributing to unemployment.

##### c) Cultural and Heritage Resources

A heritage impact assessment was undertaken for the proposed project, refer to **Appendix D**. The study concluded that no sites, features or objects of cultural heritage significance were identified in the development area and

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therefore there will be no impact on cultural or heritage resources as a result of the construction of the power line. It was however recommended that if archaeological sites or graves are exposed during development activities, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

**b) Provide a detailed description of the listed activities associated with the project as applied for**

Listed activity as described in GN R.544, 545 and 546	Description of project activity
GN R.544 Activity 10 (i): the construction of facilities or infrastructure for the transmission and distribution of electricity outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.	A 132kV loop in line of approximately 500 metres in length will be constructed outside an urban area.

## 2. FEASIBLE AND REASONABLE ALTERNATIVES

**“alternatives”**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives 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.

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

## BASIC ASSESSMENT REPORT

**Note:** For the proposed project, the following technology two alternatives were assessed:

- Monopole structures
- Steel Lattice Towers

**a) Site alternatives**

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

**Alternative:**

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

26° 21' 51.597" S	27 °35' 19.221" E
26° 21' 55.815" S	27° 35' 15.132" E
26° 21' 59.728" S	27° 35' 20.034" E

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity


Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity


For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in **Appendix A**.


**b) Lay-out alternatives**

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Only the preferred layout exists, refer to Figure 2.	26° 21' 51.597" S	27 °35' 19.221" E
	26° 21' 55.815" S	27° 35' 15.132" E
	26° 21' 59.728" S	27° 35' 20.034" E

## BASIC ASSESSMENT REPORT

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

### c) Technology alternatives

Alternative 1 (preferred alternative)
<p><u>Monopole Structures</u></p> <p>It is envisaged that monopole structures (refer to Figure 6) will be used for the proposed project. The following advantages and disadvantages exist for monopoles:</p> <p>Advantages:</p> <ul style="list-style-type: none"> <li>• More cost effective than lattice structures</li> <li>• Have a smaller footprint compared to lattice</li> <li>• Monopoles are more difficult to vandalise and remove members therefore less susceptible to theft</li> <li>• less visually obtrusive</li> <li>• Potentially less attractive to bird perching</li> </ul> <p>Disadvantages</p> <ul style="list-style-type: none"> <li>• May require stay wires for strength and stability on bends</li> </ul> <div style="text-align: center;">  </div> <p>Figure 6: Example of a Monopole Structure</p>
Alternative 2
<p><u>Steel Lattice Towers</u></p> <p>Should monopoles be considered not feasible during the design phase lattice towers (refer to Figure 7) will be used. The following advantages and disadvantages exist for lattice towers:</p> <p>Advantages:</p> <ul style="list-style-type: none"> <li>• Self-supporting structure</li> </ul> <p>Disadvantages:</p> <ul style="list-style-type: none"> <li>• Costs are higher with lattice structures</li> <li>• Have a larger footprint as there are 4 legs</li> <li>• At a higher risk of theft</li> <li>• More visually obtrusive</li> </ul>

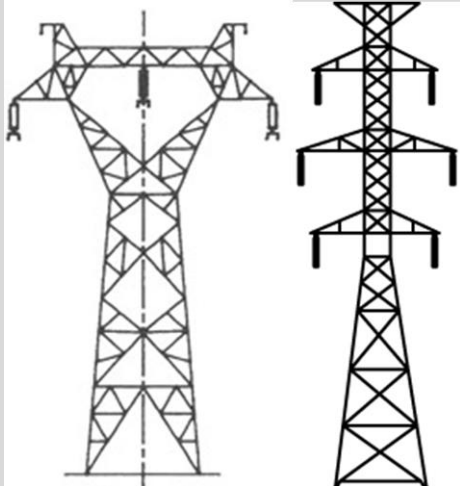


Figure 7: Examples of Lattice Structures

It should be noted that if lattice towers are considered over monopoles the impacts in this report will remain the same. Both technologies have the same impact on the environment and should be managed appropriately.

Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

e) No-go alternative

The No-go option implies that the proposed project does not proceed, and Eskom does not go ahead with the construction of the 132kV power line. The implications of No-go alternative include:

- There is no change to current landscape;
- Electricity supply to the area will be negatively affected;
- New Eskom customers cannot be accommodated; and
- Maintenance cannot be done without disrupting supply.

Paragraphs 3 – 13 below should be completed for each alternative.

**3. PHYSICAL SIZE OF ACTIVITY**

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

- Alternative A1<sup>1</sup> (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

Size of the activity:

	m <sup>2</sup>
	m <sup>2</sup>
	m <sup>2</sup>

or, for linear activities:

Alternative:

- Alternative A1 (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

Length of the activity:

	500m
	m
	m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

- Alternative A1 (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

Size of the site/servitude:

	15 500m <sup>2</sup>
	m <sup>2</sup>
	m <sup>2</sup>

**4. SITE ACCESS**

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

YES ✓	NO
m	

Describe the type of access road planned:

N/A. The site can be accessed through the existing Eskom Libanon entrance. Access tracks will remain within the Eskom servitude.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

**5. LOCALITY MAP**

An A3 locality map must be attached to the back of this document, as **Appendix A**. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;

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<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.



- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

### 6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as **Appendix A** to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

### 7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in **Appendix A**.

### 8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under **Appendix B** to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

## 9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as **Appendix C** for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

## 10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

<b>1. Is the activity permitted in terms of the property's existing land use rights?</b>	YES✓	NO	Please explain
The proposed power line will be constructed in terms of Eskom's existing land use rights.			
<b>2. Will the activity be in line with the following?</b>			
<b>(a) Provincial Spatial Development Framework (PSDF)</b>	YES✓	NO	Please explain
The Gauteng Spatial Development Framework, 2011 (GSDF), the province expressed the need to establish efficient services such as the provision of electricity as electricity is essential for the growth and operation of the province. This project therefore in line with the GSDF as it aims to provide the Westonaria area as well as surrounding mining industries with electricity.			
<b>(b) Urban edge / Edge of Built environment for the area</b>	YES	NO✓	Please explain
The proposed distribution line falls outside the urban edge.			
<b>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</b>	YES✓	NO	Please explain
The IDP identifies the installation and upgrading electricity as a priority for the municipality, this project is therefore in line with the IDP and SDF of the Westonaria Local Municipality.			
<b>(d) Approved Structure Plan of the Municipality</b>	YES✓	NO	Please explain
The proposed project entails electricity infrastructure, which is compatible with Provincial and Local Municipality objectives to provide access to electricity.			
<b>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</b>	YES	NO✓	Please explain
The approval of this application will not compromise the integrity of the existing environmental management priorities for the area as the project will not impact the environment significantly. The proposed project is expected to have a low impact on the environment.			
<b>(f) Any other Plans (e.g. Guide Plan)</b>	YES	NO✓	Please explain
N/A			

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<p><b>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</b></p>	YES ✓	NO	Please explain
<p>The Westonaria Local Municipality IDP (2014/2015) does include and support electricity upgrades. It is an objective of the municipality to provide electricity.</p>			
<p><b>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</b></p>	YES ✓	NO	Please explain
<p>The community consists of a large mining industry. The need for the project is to provide needed spare capacity and improving back-feed capabilities to provide power to the surrounding mining companies. The area requires additional electricity capacity for the surrounding mining industries. Therefore the area is in need of the proposed project.</p>			
<p><b>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></p>	YES ✓	NO	Please explain
<p>The proposed project is the construction of a 132kV distribution line. It will not require any capacity for services such as water and sanitation from relevant municipalities. It will however provide additional electricity capacity.</p>			
<p><b>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></p>	YES ✓	NO	Please explain
<p>The Westonaria Local Municipality IDP as well as the West Rand District Municipality IDP does speak of electricity and the supply thereof to the surrounding areas. Therefore the project can possibly be considered as infrastructure planning for the municipality. However it should be noted that the project is on a small scale and it is focussed on providing additional power to surrounding mining industries. It is therefore anticipated that it will have none too little impact on the infrastructure planning of the municipality.</p>			
<p><b>7. Is this project part of a national programme to address an issue of national concern or importance?</b></p>	YES ✓	NO	Please explain
<p>The proposed development is in line with the National Development Plan, which related to the provision of infrastructure such as electricity supply.</p>			

## BASIC ASSESSMENT REPORT

<b>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</b>	YES ✓	NO	Please explain
The power line will be located within Eskom's servitude. The current ecological status of the site is considered not important and unlikely to be significantly impacted on by the proposed project. The specialist did however locate an important plant species on site and recommended the relocation of these specimens. See the specialist study (Appendix X) for more information.			
<b>9. Is the development the best practicable environmental option for this land/site?</b>	YES ✓	NO	Please explain
There are no major environmental impacts that are anticipated as a result of the development. However, it should be highlighted that the site is underlain by dolomitic land and therefore this should be considered and taken into account during planning and designing.			
<b>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b>	YES ✓	NO	Please explain
The positive impacts include: electricity, job creation, providing support for the mining industry. The proposed activity is not fatally flawed and all potential impacts can be mitigated to an acceptable level.			
<b>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b>	YES ✓	NO	Please explain
Similar projects have already been undertaken within the municipality, and will continue to be undertaken as and when funding is available.			
<b>12. Will any person's rights be negatively affected by the proposed activity/ies?</b>	YES	NO ✓	Please explain
All stakeholders and adjacent landowners have been informed about the proposed development and the BAR has been placed on public review. This allowed stakeholders and I&APs to express their views and concerns. The Final BAR is in the public domain for review for a period of 21 days from 22 April to 13 May 2015.			
<b>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</b>	YES	NO ✓	Please explain
The proposed development site does not fall within or in close proximity to the urban edge.			
<b>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b>	YES	NO ✓	Please explain
The proposed project does not form part of any Strategic Integrated Projects.			
<b>15. What will the benefits be to society in general and to the local communities?</b>	Please explain		
The proposed construction of the new power line will enable reliable and continued power supply to the surrounding communities and area.			

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<b>16. Any other need and desirability considerations related to the proposed activity?</b>	Please explain
The proposed project will ensure that economic growth continues in the region through providing surrounding mining industries with additional power.	
<b>17. How does the project fit into the National Development Plan for 2030?</b>	Please explain
This activity seeks to address a number of the nine challenges addressed by the National Development Plan for 2030 as it seeks to provide access to electricity, expand infrastructure, create jobs and improve livelihoods.	
<b>18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.</b>	
<p>The proposed development has been adequately considered by trained and competent Environmental Assessment Practitioners (EAPs) and identified specialist, and all potential impacts that may have a significant impact on the receiving environment have been considered and mitigated to acceptable levels as required by the NEMA 2010 EIA regulations. The conclusions of the environmental impact assessment have been concisely summarised to adequately inform decision-making by the competent authority. A comprehensive Public Participation Process will be undertaken, which conforms to requirements in Chapter 6 of the Environmental Impact Assessment Regulations. Further all Interested and Affected Parties were given ample time to review and comment on all documents and reports.</p> <p>The EAP has thus endeavoured to integrate of the principles of environmental management in all considerations for this application by:</p> <ul style="list-style-type: none"> <li>• identifying, predicting and evaluating the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management</li> <li>• ensuring that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them</li> <li>• ensuring adequate and appropriate opportunity for public participation in decisions that may affect the environment</li> <li>• ensuring the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and</li> <li>• identifying and employing the modes of environmental management best suited to ensuring that the activity is pursued in accordance with the principles of environmental management</li> </ul> <p>Lastly is it is assumed that the template for a Basic Assessment Report, as prepared by the Department, adheres to all provisions of the National Environmental Management Act in terms of Integrated Environmental Management (including the objectives and principles of NEMA) and the EAP has therefore endeavoured to provide as much detailed information as possible in the sections above and below.</p>	

**19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**

The provision of electricity ensures that social and economic rights defined in Chapter 2 of the Constitution are respected, protected and fulfilled. Through the undertaking of a Basic Assessment, specialist investigations and public participation processes the social and economic rights defined in the constitution are further respected, protected and fulfilled. People and their needs are considered paramount when undertaking the Basic Assessment process.

The principals of environmental management as set out in Section 2 of NEMA have therefore been taken into account through the following:

- Through the implementation of the EMP there will be no loss to biodiversity
- Pollution and degradation of the environment will avoided where possible and where unavoidable they will be minimised and remedied.
- The disturbance to areas of cultural heritage was assessed through the undertaking of a Heritage (Archaeological and Paleontological) Specialist Investigation and any possible impacts avoided, minimised and remedied.
- Minor quantities of waste will be generated during the construction phase only. All waste generated will be reused or recycled where possible and the remaining waste disposed of at a registered landfill site utilised by the Municipality.
- The proposed activity will reduce the exploitation of non-renewable resources; and
- Where the proposed activity will impact the environment or people's environmental rights, the project specific EMPr will attempt to prevent, minimise and remedy the possible impacts

**11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES**

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

<b>Title of legislation, policy or guideline</b>	<b>Applicability to the project</b>	<b>Administering authority</b>	<b>Date</b>
National Environmental Management Act EIA Regulations (2010) – List 1(GN 544)	Listing Notice 1 activities are triggered	National and Provincial	18 June 2010
The Constitution of the Republic of South Africa (1996)	Protection of the Environment.	National and Provincial	18 December 1996
The Conservation of Agricultural Resources Act (No 43 of 1983)	Conservation of the Agricultural Resources.	National and Provincial	21 April 1983
South African Heritage Resources Act (No 25 of	The requirement of a Heritage Impact Assessment to protect	National and Provincial	14 April 1999

## BASIC ASSESSMENT REPORT

1999)	areas and artefacts of archaeological and paleontological significance.		
National Environmental Management: Air Quality Act (No. 39 of 2004)	Protection of the Environment and Air Quality.	National and Provincial	11 September 2005
Occupational Health and Safety Act (No 85 of 1993)	Protection of the labour on site.	National and Provincial	23 June 1993
Nature Conservation Ordinance (Transvaal) (No 12 of 1983)	Conservation of the Environment.	National and Provincial	1 November 1983
National Water Act (Act 36 of 1998)	Protection of water resources.	National and Provincial	26 August 1998
National Environmental Management Biodiversity Act (Act 10 of 2004)	Conservation and protection of fauna and flora.	National and Provincial	07 June 2004

## 12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

### a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES ✓	NO
+ 1 m <sup>3</sup>	

If YES, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

Small quantities of solid waste will be generated during the construction phase of the project. This waste will be the responsibility of the contractor and should either be collected and removed to a registered landfill site by an appropriate waste contractor, or disposed at a licensed waste facility by the contractor.

Where will the construction solid waste be disposed of (describe)?

Waste will be disposed of at a registered appropriate landfill site.

Will the activity produce solid waste during its operational phase?

YES	NO ✓
m <sup>3</sup>	

If YES, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

## BASIC ASSESSMENT REPORT

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*If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? 

<del>YES</del>	NO ✓
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*If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.*

Is the activity that is being applied for a solid waste handling or treatment facility? 

<del>YES</del>	NO ✓
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*If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.*

### b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

<del>YES</del>	NO ✓
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*If YES, what estimated quantity will be produced per month?*

m <sup>3</sup>	
----------------	--

Will the activity produce any effluent that will be treated and/or disposed of on site?

<del>YES</del>	NO ✓
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*If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Will the activity produce effluent that will be treated and/or disposed of at another facility?

<del>YES</del>	NO ✓
----------------	------

*If YES, provide the particulars of the facility:*

<b>Facility name:</b>			
<b>Contact person:</b>			
<b>Postal address:</b>			
<b>Postal code:</b>			
<b>Telephone:</b>	<b>Cell:</b>		
<b>E-mail:</b>	<b>Fax:</b>		

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

No water will be used during operational phase
--

### c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

<del>YES</del>	NO ✓
----------------	------

*If YES, is it controlled by any legislation of any sphere of government?*

<del>YES</del>	NO
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*If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

*If NO, describe the emissions in terms of type and concentration:*



## BASIC ASSESSMENT REPORT

During the construction phase, dust and exhaust emissions will be generated from the movement of vehicles accessing the site. However, these emissions are considered minor and do not pose a significant risk to the immediate and surrounding environment. Management measures to minimise vehicle entrained dust and exhaust emissions will be addressed in the EMPr.

**d) Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
------------------------------	--

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

**e) Generation of noise**

Will the activity generate noise?

<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
------------------------------	--

If YES, is it controlled by any legislation of any sphere of government?

<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
------------------------------	--

Describe the noise in terms of type and level:

A limited amount of noise would be generated during the construction phase by construction vehicles and construction activities. It will however be short term, localised and will last during the construction phase. In order to minimise the impacts of noise during the construction phase, construction activities should be restricted to between 07H00 and 17H00 Monday to Friday. This is required in order to avoid noise and lighting disturbances outside of normal working hours. All construction equipment must be maintained and kept in good working order to minimise associated noise impacts. If required, adequate noise suppression measures (i.e. screens, etc) must be erected around the point source of construction and/or operational noise pollution to reduce noise to an acceptable level.

### 13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

<input type="checkbox"/> Municipal	<input type="checkbox"/> Water-board	<input type="checkbox"/> Groundwater	<input type="checkbox"/> River, stream, dam or lake	<input type="checkbox"/> Other	<b>The activity will not use water</b>
------------------------------------	--------------------------------------	--------------------------------------	---	--------------------------------	--

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

0 litres	
<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

### 14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

## BASIC ASSESSMENT REPORT

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The project is the construction of a distribution line and does not use energy. Eskom however has introduced and champions the 49m campaign which aims to reduce National energy usage by 10%, which would be as effective as the construction of a new power station, without the potential carbon emission or cost.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

The project is the construction of a distribution line and does not use energy. Eskom however has introduced and champions the 49m campaign which aims to reduce National energy usage by 10%, which would be as effective as the construction of a new power station, without the potential carbon emission or cost.

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

**Important notes:**

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section? 

YES	NO
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If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

**Property description/physical address:**

<b>Province</b>	Gauteng
<b>District Municipality</b>	West Rand District Municipality
<b>Local Municipality</b>	Westonaria Local Municipality
<b>Ward Number(s)</b>	Ward 5 and Ward 2
<b>Farm name and number</b>	Uitval 280
<b>Portion number</b>	Portion 0 and 6
<b>SG Code</b>	T0IQ00000000280000000
	T0IQ00000000280000006

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

**Current land-use zoning as per local municipality IDP/records:**

Agricultural
--------------

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? 

YES	NO ✓
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## BASIC ASSESSMENT REPORT

### 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

**Alternative S1:**

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**Alternative S2 (if any):**

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**Alternative S3 (if any):**

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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### 2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input checked="" type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<input type="checkbox"/>				<input type="checkbox"/>

### 3. GROUNDWATER, SOIL, GEOLOGICAL STABILITY OF SITE

Is the site(s) located on any of the following?

	Alternative S1:	NO	YES	Alternative S2 (if any):	NO	YES	Alternative S3 (if any):	NO	YES
Shallow water table (less than 1.5m deep)	YES	NO	✓	YES	NO	YES	YES	NO	NO
Dolomite, sinkhole or doline areas	YES	NO	✓	YES	NO	YES	YES	NO	NO
Seasonally wet soils (often close to water bodies)	YES	NO	✓	YES	NO	YES	YES	NO	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	✓	YES	NO	YES	YES	NO	NO
Dispersive soils (soils that dissolve in water)	YES	NO	✓	YES	NO	YES	YES	NO	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	✓	YES	NO	YES	YES	NO	NO
Any other unstable soil or geological feature	YES	NO	✓	YES	NO	YES	YES	NO	NO
An area sensitive to erosion	YES	NO	✓	YES	NO	YES	YES	NO	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

## BASIC ASSESSMENT REPORT

### 4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld — good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	<b>Natural veld with heavy alien infestation<sup>E</sup></b>	Veld — dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	<b>Building or other structure</b>	Bare soil

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

### 5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	NO ✓	UNSURE
Non-Perennial River	YES	NO ✓	UNSURE
Permanent Wetland	YES	NO ✓	UNSURE
Seasonal Wetland	YES	NO ✓	UNSURE
Artificial Wetland	YES	NO ✓	UNSURE
Estuarine / Lagoonal wetland	YES	NO ✓	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

No watercourses are within the vicinity of the existing Libanon site as well as the development area. It should be noted however, that there appears to be a drainage line that originates west of the Libanon site and runs south of the development footprint where it appears to join a non-perennial river.

### 6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

<b>Natural area</b>	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station <sup>H</sup>
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential <sup>A</sup>	Church	<b>Agriculture</b>
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant <sup>A</sup>	Nature conservation area
Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup>	Mountain, koppie or ridge
Heavy industrial <sup>AN</sup>	Railway line <sup>N</sup>	Museum

## BASIC ASSESSMENT REPORT

Power station	Major road (4 lanes or more) <sup>N</sup>	Historical building
Office/consulting room	Airport <sup>N</sup>	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam <sup>A</sup>	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO ✓
Core area of a protected area?	YES	NO ✓
Buffer area of a protected area?	YES	NO ✓
Planned expansion area of an existing protected area?	YES	NO ✓
Existing offset area associated with a previous Environmental Authorisation?	YES	NO ✓
Buffer area of the SKA?	YES	NO ✓

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

### 7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

YES

NO ✓

Uncertain

N/A

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

## BASIC ASSESSMENT REPORT

A Heritage Impact Assessment was undertaken for the proposed development site however, there were no signs of culturally or historically significant elements. The study concluded that no sites, features or objects of cultural heritage significance were identified in the development area and therefore there will be no impact on cultural or heritage resources as a result of the construction of the power line. It was however recommended that if archaeological sites or graves are exposed during development activities, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made. The study therefore concluded that the proposed development would not impact on cultural or historical aspects. Refer to Appendix D for the Heritage Impact Assessment report.

Will any building or structure older than 60 years be affected in any way?

YES	NO ✓
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Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO ✓
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If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

### 8. SOCIO-ECONOMIC CHARACTER

#### a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The 2011 Census results show a population of 111,767 for the Westonaria Local Municipality (WLM), with a low growth rate from a population of 109,799 in 2001. In 2011, a total of 16,990 people were considered unemployed which amounts to 29.5% of the population down from the 31.8% unemployment rate in 2001 (Westonaria Local Municipality IDP, 2014).

The WLM has put plans in place and set targets to reduce the unemployment rate within the municipality. Some of these plans include the following: job creation, supporting small business initiatives and implementing social development programmes (Westonaria Local Municipality IDP, 2014).

Economic profile of local municipality:

The Westonaria Local Municipality is mainly driven by its mining sector, which contributes 52% of the local economy. The tertiary sector also contributes to some extent, however limited, with a total of 35% across all tertiary sub-sectors (Westonaria Local Municipality IDP, 2014).

Level of education:

According to the Census 2011 statistics, the education levels within the WLM are as follows:

	1996	2001	2011
Attending	12,214	17,624	21,872
Not Attending	13,796	14,652	13,664
<b>Total</b>	<b>26,010</b>	<b>32,266</b>	<b>35,536</b>

## BASIC ASSESSMENT REPORT

Within the WLM, the population that has completed Grade 12 equates to 26.6 %, this percentage is the lowest of all the Local Municipalities within the greater district. As a result of this inadequate training and skills people within the municipality struggle to find jobs therefore contributing to unemployment. In order to alleviate the issue of education the municipality is implementing initiatives to provide skills and training, these include:

Portable Skills Programme (PSP): The Municipality, in collaboration with Goldfields, coordinated capacity building initiatives through the PSP. To this day a total number of 456 community members have benefited from this programme in different courses since June 2012. The various skills imparted include Electrical Domestic Installer, Basic Carpentry, Basic Building Techniques, Mechanical Maintenance, Welding Cutting Techniques, Broiler Production, Garment Marking, and Home Textiles (Westonaria Local Municipality IDP, 2014).

Library Outreach Programme (LOP):

- Readathon for Grade three learners,
- Reading and writing skills development programmes for grade four learners,
- National government week for Grade six learners,
- Reading and writing competitions for Grade seven learners (Westonaria Local Municipality IDP, 2014).

### b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 21 045 743.78	
What is the expected yearly income that will be generated by or as a result of the activity?	N/A	
Will the activity contribute to service infrastructure?	YES ✓	NO
Is the activity a public amenity?	YES	NO ✓
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	10 – 15	
What is the expected value of the employment opportunities during the development and construction phase?	R 200 000	
What percentage of this will accrue to previously disadvantaged individuals?	60%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	0	
What is the expected current value of the employment opportunities during the first 10 years?	R N/A	
What percentage of this will accrue to previously disadvantaged individuals?	% N/A	

## 9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or [BGIShelp@sanbi.org](mailto:BGIShelp@sanbi.org). Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.



BASIC ASSESSMENT REPORT

- a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	N/A. The development site does not fall within any biodiversity planning categories.

- b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	5%	A small portion of the development footprint comprises vegetation impacted due to edge effects from the main road and the power line servitude. The diversity and abundance of alien floral species is high within this habitat unit. Very little natural or indigenous vegetation is present. It should be highlighted that <i>Hypoxis hemerocallidea</i> (a Red Data List species) was encountered within this habitat unit. Refer to Appendix D for the ecological assessment. The vegetation types present are discussed below.
Degraded (includes areas heavily invaded by alien plants)	95%	The majority of the development footprint comprises vegetation that has undergone severe levels of transformation as a result of vegetation clearance for agricultural activities and alien floral species encroachment. The Transformed Habitat Unit is considered to have a very low ecological sensitivity due to this habitat unit being completely cleared of vegetation and high levels of alien proliferation. No RDL or protected floral species were identified within this habitat unit during the site assessment, and it is unlikely that any of such species would be present due to the degree of transformation.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	%	

BASIC ASSESSMENT REPORT

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**c) Complete the table to indicate:**

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems								
<b>Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</b>	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline			
	Endangered									
	Vulnerable									
	<b>Least Threatened</b>	<del>YES</del>	NO✓	UNSURE	<del>YES</del>	NO✓	<del>YES</del>	NO✓		

- d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

**Carletonville Dolomite Grassland vegetation type**

Distribution

Carletonville Dolomite Grassland distribution is limited to North-West (mainly) and Gauteng and marginally into the Free State Province. It is found in the region of Potchefstroom, Ventersdorp and Carletonville, extending westwards to the vicinity of Ottoshoop. It also occurs in the far east of Centurion and Bapsfontein in Gauteng Province (Mucina and Rutherford, 2006).

Climate

Carletonville Dolomite Grassland falls within a summer-rainfall region. The mean annual precipitation (MAP) is 593mm. High summer temperatures occur with severe frost in the winter (Mucina and Rutherford, 2006).

Geology and Soils

The geology of the Carletonville Dolomite Grassland is dominated by Malmani Subgroup (Transvaal Supergroup) supporting mostly shallow Mispah and Glenrosa soil forms typical of the Fa land type. Deeper red and yellow apedal soils occur sporadically, representing the Ab land type (Mucina and Rutherford, 2006).

Conservation Status

This vegetation type is formally classified as an Vulnerable vegetation type (provincial conservation target is 24%) of it conserved in statutory reserves (Sterkfontein Caves – part of the Cradle of Humankind World Heritage Site, Oog van Malmanie, Abe Bailey, Boskop Dam, Schoonspruit, Krugersdorp, Olifantvlei, Groenkloof). Almost a quarter of the vegetation unit has already undergone transformation mostly due to urbanisation, cultivation, mining activity or the building of the Boskop and Klerkskraal Dams. Erosion is very low (84%) and low (15%). No Critical Biodiversity Areas (CBAs) are indicated in the vicinity of the study area and no Ecological Supporting Areas (ESAs) were located within a 500m radius of the study area. According to the Gauteng C-Plan v3.3(Refer to Appendix A) the study area does not contain areas of conservation importance in the form of wetland buffer areas or ridges

No other important features were identified within the development footprint.

## Section C: public participation

### 1. ADVERTISEMENT AND NOTICE

<b>Publication name</b>	Randfontein herald	
<b>Date published</b>	24 February 2015	
<b>Site notice position</b>	<b>Latitude</b>	<b>Longitude</b>
	26°21'57.88"S	27°35'25.26"E
<b>Date placed</b>	25 February 2015	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

### 2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

<b>Title, Name and Surname</b>	<b>Affiliation/ key stakeholder status</b>	<b>Contact details (tel number or e-mail address)</b>
Mr Phillip Jacobs	Landowner (Far West Rand Dolomitic Water Association)	phillip.jacobs@sibanyegold.co.za 011 278 9647
Ms Elsabe Iding	Landowner (Gauteng Department of Roads and Transport)	Elsabe.iding@gauteng.gov.za
Mr Wynand Oosthuysen	Landowner (Sibanye Gold)	wynand.oosthuysen@sibanye.co.za 011 278 9738

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

### 3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

<b>Summary of main issues raised by I&amp;APs</b>	<b>Summary of response from EAP</b>
No major issues have been received from I&APs please refer to the comments and response report for a summary of the comments received.	

### 4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

## 5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Westonaria Local Municipality	Ms Keitumetse Lankholu	011 278 3000	--	klankholu@westonaria.gov.za	--
Westonaria Local Municipality	Mr Patrick Mkungekwana	082 434 2192	--	pmkungekwana@westonaria.gov.za	--
West Rand District Municipality	Ms Susan Stoffberg	011 411 5131	--	sstoffberg@wrdm.gov.za	--
South African Heritage Resources Agency	Ms Katie Smuts	021 462 4502	--	info@sahra.org.za	--
Department of Environmental Affairs	Ms Mmatlala Rabothata	012 399 9372	--	mrabothata@environment.gov.za	--
Gauteng Department of Agriculture and Rural Development	Mr Bongani Shabangu	--	--	bongani.shabangu@gauteng.gov.za	--
Department of Land and Reform	Ms K Nchabeleng	082 419 5265	--	KNchabeleng@ruraldevelopment.gov.za	--
Department of Agriculture, Forestry and Fisheries	Mr M.E. Tau	--	--	MmaphakaT@daff.gov.za	--
Department of Agriculture, Forestry and Fisheries	Mr R.D Dredge	--	--	RodneyD@daff.gov.za	--
Department of Water and Sanitation	Mr K Khorommbi	--	--	khorombik@dwa.gov.za	--
Department of Water and Sanitation	Ms M Musekene	--	--	MusekeneM@dwa.gov.za	--

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

## **6. CONSULTATION WITH OTHER STAKEHOLDERS**

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

## SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### 1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
<b>Planning and Design</b>			
Clearing of Flora	<b>Direct impacts:</b> Removal of vegetation leading to loss of floral habitat and diversity	Low	<ol style="list-style-type: none"> <li>1. During planning and design, ensure that all infrastructures are placed outside of more sensitive habitat areas, particularly site camps and other temporary infrastructure.</li> <li>2. Areas of increased ecological importance and sensitivity such as wetlands, ridges and buffer areas should be considered during all phases of planning.</li> <li>3. Develop plans to control alien plant proliferation and erosion within the disturbed areas.</li> <li>4. Ensure planned vegetation clearing is kept to a minimum.</li> <li>5. Rehabilitation plan must allow for re-vegetation of disturbed areas upon completion of construction works.</li> <li>6. Relocation of red data species identified by specialist study must be adhered to.</li> </ol>
	<b>Indirect impacts:</b> Erosion of soil	Very Low	<ol style="list-style-type: none"> <li>1. To prevent the erosion of top soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas susceptible to erosion.</li> <li>2. Edge effects of all development</li> </ol>

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
			activities including erosion and alien control need to be strictly managed throughout the development.
	<b>Cumulative impacts:</b> Potential loss of protected species and associated habitat.	Very Low	<ol style="list-style-type: none"> <li>1. Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.</li> <li>2. Proliferation of alien and invasive species is expected within any disturbed areas. These species should be eradicated and controlled to prevent their spread beyond the power line servitude.</li> <li>3. Reseeding of indigenous grasses should be implemented in all impacted areas.</li> <li>4. Rescue and relocate medicinal species (<i>Hypoxis hemerocallidea</i>) within any proposed infrastructure area.</li> </ol>
The potential development of sinkholes (rapid subsidence) or dolines (gradual settlement movements)	<b>Indirect impacts:</b> Potential impact for dolomitic areas since the study area is underlain by chert and dolomite of the Malmani Subgroup	Very Low	<ol style="list-style-type: none"> <li>1. Assess dolomite stability during detailed planning to minimise potential impact.</li> <li>2. If deemed necessary detailed geotechnical investigations identify high-risk areas dolomite areas should be undertaken prior to construction.</li> </ol>
<b>Construction</b>			
Compacting and contamination of Soils  Soil Erosion	<b>Direct impacts:</b> Compaction of soils due to construction activities and erosion.	Very Low	<ol style="list-style-type: none"> <li>1. To prevent the erosion of top soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas susceptible to erosion.</li> <li>2. Edge effects of all development activities including erosion and alien control need to be strictly managed throughout the development.</li> <li>3. All soils compacted as a result of construction activities falling outside of the footprint area should be ripped and profiled.</li> </ol>
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A



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Activity	Impact summary	Significance	Proposed mitigation
	<b>Direct impacts:</b> Risk of spillages and dumping of construction waste into surrounding natural areas.	Very Low	<ol style="list-style-type: none"> <li>1. In the event of a vehicle breakdown, maintenance of vehicles must be performed with care and drip trays used to contain the oil spillages. This will prevent the contamination of the soil.</li> <li>2. Ensure effective waste management is undertaken on site. Demarcated areas for waste storage with adequate waste bins must be provided, if necessary.</li> </ol>
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Erosion within natural areas as a result of construction activities	Low	<ol style="list-style-type: none"> <li>1. Use of berms and drainage channels to direct water away from the construction areas where necessary.</li> <li>2. Minimise earthworks and levelling at tower sites.</li> <li>3. Use existing access roads wherever possible</li> <li>4. Edge effects need to be strictly managed throughout the development.</li> <li>5. Rehabilitate and re-vegetate disturbed areas as soon as possible after construction</li> </ol>
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> The disturbance of soils due to construction activities leading to increased erosion.	Very Low	<ol style="list-style-type: none"> <li>1. Removal and disturbance of soil during construction should be kept to a minimum to avoid excessive erosion.</li> <li>2. Should erosion occur measures such as re-vegetation should be implemented.</li> </ol>
	<b>Indirect impacts:</b> Soil erosion	Very Low	As for Direct impacts
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A

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Activity	Impact summary	Significance	Proposed mitigation
Clearing of flora	<b>Direct impacts:</b> Alien plant species invading and transforming natural flora habitat	Moderate	<ol style="list-style-type: none"> <li>1. Proliferation of alien and invasive species is expected within disturbed areas. The area is already highly transformed and therefore alien species do dominate the study area. However, these species should be eradicated as far as possible and/or controlled to prevent their spread beyond the boundary of the development area.</li> <li>2. Alien and invasive vegetation control should take place throughout the all phases of the development.</li> </ol>
	<b>Indirect impacts:</b> Potential loss of protected species and associated habitat.	Low	As for Direct impacts
	<b>Cumulative impacts:</b> Potential loss of protected species and associated habitat.	Low	As for Direct impacts
	<b>Direct impacts:</b> Potential loss of Habitat for floral species as a result of removal of vegetation, invasion of alien species, movement of construction vehicles outside the proposed footprint area, dumping of material outside designated areas and compaction of soils.	Low	<ol style="list-style-type: none"> <li>1. Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.</li> <li>2. Proliferation of alien and invasive species is expected within any disturbed areas. These species should be eradicated and controlled to prevent their spread beyond the power line servitude.</li> <li>3. Reseeding of indigenous grasses should be implemented in all impacted areas.</li> <li>4. Rescue and relocate medicinal species (<i>Hypoxis hemerocallidea</i>) within any proposed infrastructure area.</li> </ol>
	<b>Indirect impacts:</b> Removal of vegetation leading to increased runoff and erosion.	Very Low	<ol style="list-style-type: none"> <li>1. Limit vegetation removal to the construction development area. No unnecessary vegetation removal should be permitted.</li> </ol>
	<b>Cumulative impacts:</b> Potential loss of protected species and associated habitat.	Very Low	As for Direct impacts
	<b>Direct impacts:</b> Potential loss of	Low	<ol style="list-style-type: none"> <li>1. Ensure that the proposed development footprint area</li> </ol>

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Activity	Impact summary	Significance	Proposed mitigation
	floral diversity as a result of the movement of construction vehicles outside the proposed footprint area, dumping of material outside designated areas, increased anthropogenic activity and an increase in the collection of medicinal floral species and changes to floral communities due to alien invasion.		remain as small as possible. 2. Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities. 3. Prohibit the collection of plant material for medicinal purposes. 4. Reseeding of indigenous grasses should be implemented in all impacted areas. 5. Rescue and relocate medicinal species ( <i>Hypoxis hemerocallidea</i> ) within any proposed infrastructure area. 6. Species specific and area specific eradication recommendations: <ul style="list-style-type: none"> <li>• Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used; and</li> <li>• Footprint areas should be kept as small as possible when removing alien plant species.</li> </ul>
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> Potential loss of protected species and associated habitat.	Very Low	As for Direct impacts
	<b>Direct impacts:</b> Potential loss of species of conservational concern as a result of Site clearance and removal of species of conservational concern and increased anthropogenic activity and an increase in the collection of plant material for medicinal purposes	Moderate	1. Rescue and relocate medicinal species ( <i>Hypoxis hemerocallidea</i> ) within any proposed infrastructure area. 2. Prohibit the collection of plant material for medicinal purposes. 3. Edge effect control needs to be implemented to ensure no further degradation outside of the proposed footprint area.
	<b>Indirect impacts:</b> Potential loss of protected species and associated habitat.	Low	As for Direct impacts
	<b>Cumulative impacts:</b> Potential loss of protected species and associated habitat.	Very Low	As for Direct impacts
Disturbance to Fauna habitat	<b>Direct impacts:</b> Site clearing and removal of faunal habitat	Very Low	1. The study area is considered to have a low ecological potential and therefore fauna species are not expected to inhabit the site

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Activity	Impact summary	Significance	Proposed mitigation
			for long periods of time. It is important however to limit the removal of vegetation at the construction site. Vegetation not interfering with the construction activities should not be removed.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Migratory corridors altered due to construction of infrastructure	Low	1. Avifaunal species flying between the two CBA areas are likely to fly through the study area. Due to this risk, bird diverters/ flappers should be used to help mitigate bird strikes with the power lines.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Fire hazards within the study area; collision of construction vehicles with faunal species	Very Low	1. Fires should be prohibited on site. 2. Construction vehicles should be restricted to travelling only on designated roadways to limit the disturbance of ecological footprint of the proposed development activities. Speed limits must be adhered to.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Potential loss of faunal habitat as a result of disturbance within the project footprint and surrounding adjacent areas, collision of fauna with construction vehicles and fire hazard from informal fires.	Low	1. No areas falling outside of the study area may be cleared for construction purposes. 2. Edge effects of all operational activities, such as erosion and alien plant species proliferation, which may affect faunal habitat within surrounding areas, need to be strictly managed in all areas of increased ecological sensitivity. 3. Restrict vehicles to designated roadways to limit the ecological footprint of the proposed

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Activity	Impact summary	Significance	Proposed mitigation
			development activities as well as to reduce the possibility of collisions. 4. Fires should be prohibited on site.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Potential loss of faunal diversity as a result of disturbance within the project footprint and surrounding adjacent areas, collision of fauna with construction vehicles and fire hazard from informal fires.	Low	1. No areas falling outside of the study area may be cleared for construction purposes. 2. Edge effects of all operational activities, such as erosion and alien plant species proliferation, which may affect faunal habitat within surrounding areas, need to be strictly managed in all areas of increased ecological sensitivity. 3. Restrict vehicles to designated roadways to limit the ecological footprint of the proposed development activities as well as to reduce the possibility of collisions. 4. No trapping or hunting of fauna is to take place. 5. Fires should be prohibited on site
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Potential loss of faunal species of conservational concern as a result of Site clearing and the removal of vegetation, Collision of construction vehicles with potential species of conservational concern and increased fire hazards.		1. Edge effects of all construction activities, such as erosion and alien plant species proliferation, which may affect faunal habitat within surrounding areas, need to be strictly managed in all areas of increased ecological sensitivity. 2. Should any RDL faunal species or species of conservational concern be found within the development footprint area, these species should be relocated to similar habitat within the vicinity of the study area with the assistance of a suitably qualified specialist.

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Activity	Impact summary	Significance	Proposed mitigation
			<p>3. Restrict vehicles to designated roadways to limit the ecological footprint of the proposed development activities as well as to reduce the possibility of collisions.</p> <p>4. Fires should be prohibited on site.</p>
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
Disturbance to Heritage features	<b>Direct impacts:</b> Impact on heritage features	Very Low	<p>1. Report any potential heritage features uncovered during the construction activities to the ECO / South African Heritage Resources Agency and follow any instructions they may give.</p> <p>2. Report all confirmed heritage finds to the Gauteng Department of Agriculture and Rural Development.</p>
	<b>Indirect impacts:</b> No heritage resources identified	N/A	N/A
	<b>Cumulative impacts:</b> No heritage resources identified	N/A	N/A
Air quality	<b>Direct impacts:</b> Emissions from vehicles resulting in an increase in air pollution	Low	1. Ensure all vehicles and machinery is in good working order and properly maintained.
	<b>Indirect impacts:</b> N/A	N/A	N/A
	<b>Cumulative impacts:</b> N/A	N/A	N/A
	<b>Direct impacts:</b> Dust generation as a result of construction activities.	Low	1. Dust suppression methods should be utilised on site to prevent increased PM10 from affecting air quality e.g. wetting of exposed surfaces and speed limits.
	<b>Indirect impacts:</b> N/A	N/A	N/A
	<b>Cumulative impacts:</b> N/A	N/A	N/A

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Activity	Impact summary	Significance	Proposed mitigation
	<b>Direct impacts:</b> Noise generation from vehicles resulting in an increase in noise pollution	Very Low	1. Ensure all vehicles and machinery is in good working order and properly maintained. 2. Ensure construction activities only take place during working hours of 7h00 – 17h00.
	<b>Indirect impacts:</b> No heritage resources identified	N/A	N/A
	<b>Cumulative impacts:</b> No heritage resources identified	N/A	N/A
<b>Operational</b>			
Flora	<b>Direct impacts:</b> Vehicles driving through sensitive areas.	Very Low	1. Vehicles should be restricted to travelling only on designated roadways to limit the disturbance of ecological footprint of the proposed development
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> On-going edge effects such as erosion within natural areas.	Very Low	1. Edge effects need to be strictly managed during the operational phase of the activities e.g. monitoring of erosion, monitoring and control of alien infestation.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Loss of habitat for floral species as a result of increased introduction and proliferation of alien plant species and further transformation of natural habitat	Very Low	1. Ensure that operational related activities are kept strictly within the footprint area. 2. Alien and invasive vegetation control should take place throughout the operational phase of the development.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Loss of floral diversity as a result of an increase in alien plant species leading to altered plant community structure and composition.	Very Low	1. Ensure that operational related activities are kept strictly within the footprint area. 2. Alien and invasive vegetation control should take place

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Activity	Impact summary	Significance	Proposed mitigation
			throughout the operational phase of the development.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Loss of floral species of conservational concern as a result an increase in alien plant species leading to loss of medicinal plant species by outcompeting these species and Ongoing collection of medicinal floral species	Very Low	1. Ensure that operational related activities are kept strictly within the footprint area. 2. Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities. 3. Prohibit the collection of plant material for medicinal purposes.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
Fauna	<b>Direct impacts:</b> Collision of construction vehicles with faunal species.	Very Low	1. Vehicles should be restricted to travelling only on designated roadways to limit the faunal fatalities. Speed limits must be adhered to.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Potential loss of faunal habitat as a result of further decline in faunal diversity due to the associated operational activities within the project footprint and Fire hazard from informal fires.	Very Low	1. Ensure that operational related activities are kept strictly within the footprint area. 2. Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Potential loss of faunal diversity as a result of further decline in faunal diversity due to the associated operational activities within the project footprint, fire hazard from informal fires and bird strikes with power lines and associated	Very Low	1. Ensure that operational related activities are kept strictly within the footprint area. 2. Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development



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Activity	Impact summary	Significance	Proposed mitigation
	avifaunal mortalities.		activities. 3.Placement of bird diverters/flaps and anti-roosting spikes on power lines and associated structures to mitigate power line related mortalities to avifauna moving through the study area.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
	<b>Direct impacts:</b> Potential loss of faunal species of conservational concern as a result of habitat loss and modification, collision of species of concern with construction vehicles and bird strikes with power lines and associated avifaunal mortalities	Very Low	1.Ensure that operational related activities are kept strictly within the footprint area. 2.Placement of bird diverters/flaps and anti-roosting spikes on power lines and associated structures to mitigate power line related mortalities to avifauna moving through the study area.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
Air quality	<b>Direct impacts:</b> Emissions from vehicles resulting in an increase in air pollution.	Very Low	1. Traffic not expected to increase substantially in the area. Thus there will be less or no pollution impacts. 2.Ensure all vehicles and machinery is in good working order and properly maintained
	<b>Indirect impacts:</b> None anticipated	N/A	N/A
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
Other	<b>Direct impacts:</b> Increased run-off from impervious surfaces effecting surrounding water resources and causing increased erosion.	Very Low	1.It is not anticipated that there will be large impervious surfaces and therefore excessive run off from impervious surfaces is not expected. 2.However, should increase run-off be experienced storm water channels to prevent run-off from contaminating surrounding water resources and causing erosion should be implemented.
	<b>Indirect impacts:</b> None anticipated	N/A	N/A

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Activity	Impact summary	Significance	Proposed mitigation
	<b>Cumulative impacts:</b> None anticipated	N/A	N/A
<b>Alternative 2</b>			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
<b>Alternative 3</b>			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
<b>No-go option</b>			
	<b>Direct impacts:</b> The environmental status-quo will remain the same in the No-go option. The No-go option will have a negative impact on the electricity supply to the region and will impact negatively on economic growth	Low	None
	<b>Indirect impacts:</b> The No-go option will have a negative impact on the electricity supply to the Region and will impact negatively on economic growth.	Low	None

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Activity	Impact summary	Significance	Proposed mitigation
	<b>Cumulative impacts:</b> The environmental status-quo will remain the same in the No-go option. The No-go option will have a negative impact on the electricity supply to the region and will impact negatively on economic growth	Low	None

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

## 2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### Alternative A (preferred alternative)

Overall environmental impact is considered to be of low significance if all mitigation measures are implemented. Furthermore specialist studies undertaken identified that there are no fatal flaws for the proposed project. However the following impacts should be noted, recommendations have been included in the section below.

- **Avifauna**

Potential impacts on bird species that are present in the area are associated with the construction of a power line includes collisions, electrocutions, the removal and destruction of vegetation, and disturbance during the construction and maintenance of the power line. Bird diverters should be utilised to prevent bird collisions with the power line.

- **Flora**

No sensitive habitats occur on site. Only one protected plant species was identified on site, namely: *Hypoxis hemerocallidea*.

- **Heritage**

No heritage resources were identified onsite and it is not envisaged that there will be a significant impact in terms of cultural and heritage resources.

- **Geotechnical**

The desktop geotechnical study did not identify any fatal flaws that would prevent the construction of the proposed power line. However, it should be noted that area under investigation is underlain by chert and dolomite of the Malmani Subgroup, Chuniespoort Group of the Transvaal Supergroup. The site is therefore classified as "dolomite land" in terms of SANS 1936 (Development of Dolomite Land).

- **Social**

The impact on social aspects is expected to be low and of minor significance. No residential areas surround the site and as a result of the nature of the project it is not likely to create many jobs. The proposed project is however important for the surrounding mining activities in order to sustain their power needs and requirements.

Alternative B

Alternative C

**No-go alternative (compulsory)**

The no development alternative in the context of this project implies that the power line will not be constructed and the area will remain as it is.

The positive impact associated with the project not proceeding would be that all negative impacts associated with the development of power line would be avoided. However, should the development not proceed, Eskom will not be able to meet electricity demand requirements of the surrounding mining environment

The benefits of the no-go alternative are that most of the negative impacts associated with the proposed development option will be prevented. In particular, the following negative impacts will be prevented by the implementation of the no-project alternative:

- Impacts on ecological processes;
- Impacts on soil from construction activities; and
- Visual impacts.

Prevention of the above impacts will therefore have an ecological, social and economic benefit. However the ability for Eskom to provide surrounding mining industries with power as a result of the proposed project will also be of benefit.

Since the proposed project is considered to have a low impact on the environment provided management measures are implemented, proceeding with the development of the power line while ensuring the protection of the environment is considered a feasible and reasonable option. For this reason, the proposed development, with the recommended mitigation measures, is considered to be the best option.

## SECTION E: RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES ✓	NO
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If “NO”, indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

If “YES”, please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

Based on the overall low environmental impact, it is recommended that this activity receives a positive authorisation. Best management and construction practices must be implemented, by the Contractor, from the onset of the project to ensure that disturbances to the surrounding area are kept to a minimum. The environmental management programme and other conditions of environmental authorisation must be adhered to. The following recommendations are also made:

- All mitigation measures proposed in the report form part of the EMPr and adherence to the specifications of the EMPr should form part of the conditions of the environmental authorisation, should this be granted;
- An Environmental Control Officer (ECO) must be appointed for the construction of the proposed development to monitor compliance to EMPr.
- The EMPr must be adhered to by the Contractor under the supervision of the Engineer and an ECO.
- The ECO audits must include:
  - Monthly compliance audits - with the first audit being conducted prior to construction activities. Monthly audits will continue until the completion of the construction activities. ; and
  - A post construction (rehabilitation) compliance audit is to be conducted no later than two weeks before the Contractor hands over the completed project.
- In addition the ecological specialist is of the opinion that the proposed development can be considered favorably provided that the following essential mitigation measures are adhered to:
  - Construction
    - Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities as well as to reduce the possibility of collisions.
    - Proliferation of alien and invasive species is expected within any disturbed areas. These species should be eradicated and controlled to prevent their spread beyond the power line servitude.
    - Reseeding of indigenous grasses should be implemented in all impacted areas.
    - Rescue and relocate medicinal species (*Hypoxis hemerocallidea*) within any proposed infrastructure area (See specialist report Appendix D for GPS locations of *Hypoxis hemerocallidea*).
    - Ensure that the proposed development footprint area remain as small as possible.
    - Prohibit the collection of plant material for medicinal purposes.
    - Species specific and area specific eradication recommendations:
      - Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used; and
      - Footprint areas should be kept as small as possible when removing alien plant species.

## BASIC ASSESSMENT REPORT

<ul style="list-style-type: none"> <li>▪ Edge effect control needs to be implemented to ensure no further degradation outside of the proposed footprint area.</li> <li>▪ No areas falling outside of the study area may be cleared for construction purposes.</li> <li>▪ No trapping or hunting of fauna is to take place.</li> <li>▪ Should any RDL faunal species or species of conservational concern be found within the development footprint area, these species should be relocated to similar habitat within the vicinity of the study area with the assistance of a suitably qualified specialist</li> <li>○ Operation             <ul style="list-style-type: none"> <li>▪ Ensure that operational related activities are kept strictly within the footprint area.</li> <li>▪ Alien and invasive vegetation control should take place throughout the operational phase of the development.</li> <li>▪ Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.</li> <li>▪ Prohibit the collection of plant material for medicinal purposes.</li> <li>▪ Edge effects of all operational activities, such as erosion and alien plant species proliferation, which may affect faunal habitat within surrounding areas, need to be strictly managed in all areas of increased ecological sensitivity.</li> <li>▪ Placement of bird diverters/ flaps and anti-roosting spikes on power lines and associated structures to mitigate power line related mortalities to avifauna moving through the study area.</li> </ul> </li> <li>• The geotechnical specialists discovered that the area under investigation is underlain by chert and dolomite of the Malmani Subgroup, Chuniespoort Group of the Transvaal Supergroup. The site is therefore classified as “dolomite land” in terms of SANS 1936 (Development of Dolomite Land). The potential development of sinkholes (rapid subsidence) or dolines (gradual settlement movements) are risks that must be taken into account during the development of dolomite land. It is recommended that if deemed necessary detailed geotechnical investigations identify high-risk areas dolomite areas should be undertaken prior to construction.</li> <li>• It should also be highlighted that the heritage specialist considered the project favourably as no no sites, features or objects of cultural heritage significance were identified in the development area, therefore there will be no impact as a result of the construction of the power line. The heritage specialist did however recommend that if archaeological sites or graves are exposed during development activities, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.</li> </ul> <p>Based on the overall low environmental impact it is recommended that this activity receives authorisation. Mitigation measures contained within the Basic Assessment Report, Specialist studies and Environmental Management Programme must be implemented in order to mitigate negative impacts to the bio-physical environment, particularly during the construction phase of the project.</p>
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Is an EMP attached?	YES ✓	NO
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The EMP must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

BASIC ASSESSMENT REPORT

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\_\_\_\_\_  
NAME OF EAP

\_\_\_\_\_  
SIGNATURE OF EAP

\_\_\_\_\_  
DATE

**SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information