

info@ekogroup.co.za  
t +27(0)51 444 4700  
f +27(0)86 697 6132  
Suite 158 - Private Bag X01  
BRANDHOF 9324  
21 Dromedaris Street  
Dan Pienaar  
BLOEMFONTEIN 9301



AMENDED FINAL BASIC ASSESSMENT REPORT:

**ELECTRIFICATION OF TRANSNET INFRASTRUCTURE:  
NEW WITLOOP AND VLERMUISLAAGTE SUBSTATIONS  
AND ASSOCIATED LOOP-IN AND LOOP-OUT 132KV  
POWER LINES, HOTAZEL, NORTHERN CAPE**

Ref: 14/12/16/3/3/1/1375

**October 2015**

**Applicant: ESKOM**

Contact person  
Postal Address

Mr. A. Van Gensen  
P.O. Box 606  
Kimberley  
8301

Tel:

053 830 5775

# BASIC ASSESSMENT REPORT

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## Prepared by:

info@ekogroup.co.za  
t • +27(0)51 444 4700  
f • +27(0)86 697 6132  
Suite 158 • Private Bag X01 • BRANDHOF 9324  
21 Dromedaris Street • Dan Pienaar  
BLOEMFONTEIN 9301  
Company Reg No • 2002/058636/23  
VAT No • 4020225811



## PROJECT TEAM

Environmental Assessment Practitioner(s): Louis De Villiers  
Gys Hoon

Postal address: Suite 158  
Private Bag X01  
Brandhof  
9324

Contact person(s): Louis De Villiers

Tel: 051 444 4700

Fax: 086 697 6132

E-mail: louis@ekogroup.co.za

# BASIC ASSESSMENT REPORT

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## environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

(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 on 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

Transnet needs to upgrade their infrastructure to export more manganese per annum. In the future Transnet will have to export 16 MT of manganese per annum. This project is a Strategic Infrastructure Project as described in the National Development Plan of 2011 in terms of infrastructure upgrade for the distribution of electricity.

The Project entails the upgrades in electricity supply to run longer rails.

The proposed project will include the following:

- Construction of a 1km single circuit single Wolf Mono structure Loop-in from the Hotazel Traction line towards proposed Witloop Traction substation.
- Construct a 1km single circuit single Wolf Mono structure Loop out from the Mamatwane Traction line towards proposed Witloop Traction substation.
- Construct a new Witloop Traction substation complete
- Construct a 1km single circuit single Wolf Mono structure Loop in from Wincanton Traction line towards proposed Vlermuislaagte Traction substation.
- Construct a 1km single circuit single Wolf Mono structure Loop out line from Proposed Vlermuislaagte Traction towards Mamatwane Traction line
- Construct a complete new Vlermuislaagte Traction substation.

To construct the above-mentioned infrastructure, the following activities will be undertaken:

- Vegetation will be cleared 8 m either side of the centre line as per Eskom vegetation maintenance standard. The total area of clearance of the vegetation for the entire project will be a maximum of 5.08 ha. This is 1.832 ha for the Witloop line, 2.67 ha for the Vlermuislaagte line and each substation will be 0.18 ha in extent.
- Servitudes with a width of 31 m will be registered for the areas under the lines.
- The monopoles will be erected a distance of +/-250 m apart.
- When substations are constructed, the vegetation will be cleared and topsoil removed and stockpiled before construction occurs.

*Note that the two substations to be constructed has Environmental Authorisation. This was applied for by Transnet.*

#### **Assumptions**

None

#### **Uncertainties**

The completion of the project may be influenced by weather conditions (rainy conditions may bring the process to a halt for a period)

#### **Knowledge gaps**

As this document will be forwarded to the registered Interested and / or affected parties, final comments from these parties are unknown.

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**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
<p><b>Example:</b>  <b>GN R.544 Item 11(3): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</b></p>	<p><b>A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river</b></p>
<p>GN R. 544 Item 10: Construction of facilities and infrastructure for the transmission and distribution of more than 33 but less than 275 kV outside urban areas or industrial complexes.</p>	<p>Two separate loop-in and loop-out 132 kV power lines will be constructed. Each will be connected to a substation (i.e. Vlermuislaagte and Witloop substations). This activity will be undertaken to upgrade the Transnet infrastructure in order to export more Manganese.                      The area of clearance of vegetation for the Witloop power line will be 1.823 ha and Vlermuislaagte line is 2.67 ha.                      The areas of each substation is 0.18 ha.</p>
<p>GN R. 546 Item 13: The clearance of an area of 1 ha or more of vegetation where 75% or more is indigenous vegetation.</p>	<p>An area of 5.08 ha will be cleared of vegetation where 75% or more of the vegetation is indigenous. The clearance will be done to construct two 132 kV loop-in and loop-out power lines which will connect to the Witloop and Vlermuislaagte substation, which will also be constructed.                      1.832 ha of vegetation will be cleared for the Witloop line and 2.67 ha will be cleared for the Vlermuislaagte line. Each substation will cover an area of 0.18 ha of which the vegetation will be cleared.</p>
<p>GN R. 546 Item 14: The clearance of an area of 5 ha or more of vegetation where 75% or more is indigenous vegetation.</p>	<p>An area of 5.08 ha will be cleared of vegetation where 75% or more of the vegetation is indigenous. The clearance will be done to construct two 132 kV loop-in and loop-out power lines which will connect to the Witloop and Vlermuislaagte substation, which will also be constructed.                      1.832 ha of vegetation will be cleared for the Witloop line and 2.67 ha will be cleared for the Vlermuislaagte line. Each substation will cover an area of 0.18 ha of which the vegetation will be cleared.</p>

**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.

**a) Site alternatives**

<b>Alternative 1 (preferred alternative)</b>		
<b>Description:</b>	Lat (DDMMSS)	Long (DDMMSS)
The preferred alternatives for both substations (i.e. Witloop and Vlermuislaagte) are located on the western side of the existing Transnet rail and each will have an area of 0.18 ha. These positions were identified as the preferred alternatives as the new power lines to be connected to the substations will not have to cross the existing railway and overhead cables as the existing ESKOM infrastructure to which the cables will be connected are located on the western side of the railway. This location also ensures that the distance of the power lines are the shortest to connect to the existing infrastructure.		
Preferred Witloop Substation	27°17'53.20"	22°58'50.42"
Preferred Vlermuislaagte Substation	27°29'28.71"	22°57'18.32"
Preferred Witloop line Preferred Alternative:	Refer to Linear Activities	Refer to Linear Activities

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Preferred Vlermuislaagte line Preferred Alternative:	Refer to Linear Activities	Refer to Linear Activities
<b>Alternative 2</b>		
<b>Description:</b> Witloop alternative substation site: The alternative site for the Witloop substation is located on the eastern side of the existing railway line. Vlermuislaagte alternative substation site: The alternative site for the establishment of the Vlermuislaagte substation is located on the eastern side of the existing railway. Considering these alternatives will result in the power lines crossing the railway to be connected to the substations. The distance of the lines will also be longer. The footprint of the substations will be the same as the preferred site (i.e. 0.18 ha).	Lat (DDMMSS)	Long (DDMMSS)
Witloop Substation Alternative	27°17'40.41"	22°58'52.66"
Vlermuislaagte Substation Alternative	27°29'12.03"	22°57'28.62"
Witloop line Alternative:	Refer to Linear Activities	Refer to Linear Activities
Vlermuislaagte line Alternative:	Refer to Linear Activities	Refer to Linear Activities
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

**Alternative:**

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred)

**Description of preferred alternative lines:**

Witloop:

The preferred line to be connected to the Witloop substation will be a length of 600 m and will start at the proposed Witloop substation and connect to the existing Eskom infrastructure located to the south - southwest. A servitude area of 31 m will be registered under the proposed line.

Vlermuislaagte:

The preferred line to be connected to the Vlermuislaagte substation will be a length of 860 m and will start at the proposed Vlermuislaagte substation and connect to the existing Eskom infrastructure located to the west - northwest. A servitude area of 31 m will be registered under the proposed line.

**Witloop**

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

27°17'53.48"	22°58'49.33"
27°18'2.56"	22°58'46.27"
27°18'11.74"	22°58'42.96"

Alternative S2 (if any)

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

27°17'53.48"	22°58'49.33"
27°17'54.34"	22°58'46.69"
27°18'15.19"	22°58'53.44"



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Alternative S1 (preferred)

**Vlermuislaagte**

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

27°29'17.25"	22°56'50.92"
27°29'22.93"	22°57'5.08"
27°29'28.71"	22°57'18.32"

Alternative S2 (if any)

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

27°29'17.25"	22°56'50.92"
27°29'16.24"	22°57'23.43"
27°29'28.71"	22°57'18.32"

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.

List of co-ordinates taken every 250 meters along the Witloop preferred route

Number	Latitude (S):	Longitude (E):
1	27°17'53.48"	22°58'49.33"
2	27°18'2.56"	22°58'46.27"
3	27°18'11.74"	22°58'42.96"

List of co-ordinates taken every 250 meters along the Vlermuislaagte preferred route

Number	Latitude (S):	Longitude (E):
1	27°29'17.25"	22°56'50.92"
2	27°29'20.74"	22°56'59.22"
3	27°29'24.01"	22°57'7.65"
4	27°29'27.36"	22°57'15.94"
5	27°29'28.71"	22°57'18.32"

**b) Lay-out alternatives**

**Note:**

**Alternative 1 (Preferred):**

The project entails the construction of two substations at Witloop and Vlermuislaagte and a loop-in and loop-out power line to connect from the existing line to the substations. These lines will be erected on monopoles.

A servitude of 31 m in width under every line will be registered in Eskom's' name.

Alternative 1 (preferred alternative)		
Description: <i>Refer to note above.</i>	Lat (DDMMSS)	Long (DDMMSS)
<b>Witloop Substation Lay-out points: 1</b>	27°17'53.75"	22°58'51.21"
2	27°17'53.32"	22°58'51.13"
3	27°17'53.30"	22°58'51.08"
4	27°17'52.91"	22°58'51.20"

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5	27°17'52.94"	22°58'50.98"
6	27°17'51.89"	22°58'50.77"
7	27°17'52.04"	22°58'49.80"
8	27°17'53.03"	22°58'50.00"
9	27°17'53.07"	22°58'49.80"
10	27°17'53.87"	22°58'49.97"
<b>Vlermuistlaagte Substation lay-out points: 1</b>		
2	27°29'29.02"	22°57'18.81"
3	27°29'29.07"	22°57'18.95"
4	27°29'28.69"	22°57'19.10"
5	27°29'28.63"	22°57'18.89"
6	27°29'27.61"	22°57'19.30"
7	27°29'27.32"	22°57'18.37"
8	27°29'28.27"	22°57'17.99"
9	27°29'28.21"	22°57'17.80"
10	27°29'29.05"	22°57'17.46"
<b>Alternative 2</b>		
<b>Description:</b> The only layout alternative for the power lines is that they can be buried underground and not suspended in the air by monopoles as indicated as the preferred alternative. This will occur on the same locality as the preferred location and alternative location.  It should be noted that this method is very dangerous for humans and animals and the impact on the environment will be greater as more land will be disturbed. Furthermore, this alternative makes it easier for cable theft to occur. More vegetation and soil will be disturbed if this alternative is considered.	Lat (DDMMSS) Refer to power lines coordinates.	Long (DDMMSS)
	Same as preferred site location of line	
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

**c) Technology alternatives**

<b>Alternative 1 (preferred alternative)</b>
The construction of substations and power lines entails that the power lines will be connected to existing lines passing the proposed sites to the west. This electricity is available in the national grid as it has been generated at existing plants. There are thus no reasonable/feasible alternatives with regards to technological alternatives as alternatives to generate and distribute electricity to these lines will have a larger impact on the environment than the preferred alternative. The preferred alternative is the most effective alternative for this project as it is readily available.
<b>Alternative 2</b>
There are no technological alternatives which will have less of an impact on the environment and which

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will be feasible. Establishing new facilities to generate and distribute electricity to increase the Transnet transportation of Manganese is too costly and will have an enormous impact on the environment and natural resources.

### Alternative 3

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

#### Alternative 1 (preferred alternative)

#### Alternative 2

No other alternatives.

#### Alternative 3

**e) No-go alternative**

The No-go alternative will entail that no substations and/or power lines will be constructed as mentioned in the project description.

This will however result in the loss of direct and indirect job opportunities in the construction phase of the project as no people will be employed on site and the opportunity by other companies to supply products (i.e. building material) will be lost. Furthermore, there will be no increase in capacity of Transnet to transport more manganese to other areas. This will lead to less Manganese being exported which will have a negative impact on the national economy.

**Note:**

With the above in mind the following should be considered:

Although alternatives were provided in terms of the locality, layout of the power lines and an explanation given to the lack of technological alternatives, it is suggested that the preferred alternatives be authorised due to the following reasons:

1. Locality

The preferred locations of the sub stations are on the western side of the existing railroad and its overhead power lines, as are the existing Eskom infrastructure (lines) to which the new lines will connect. These preferred locations for the substations were therefore chosen as the new lines will not have to be extended over the railway as the case would be if the alternatives on the eastern side of the track is decided on.

Connecting the power lines to a substation located on the eastern side of the railway would result in unnecessary expenses and a very large safety risk during the construction phase.

Furthermore, the preferred power lines were chosen as the line with the shortest route from the substation to the existing Eskom infrastructure to which it will connect. Therefore, the footprint of the activity will be less than if the alternative locations are decided on.

2. Layout

There are no alternatives for the layout of the substations. However, an alternative for the layout of the power lines is that instead of them being suspended on monopoles above the surface, they can be

buried underground. However, this poses a major safety risk to people and animals and the cables may be subject to cable theft which will cost the applicant money. Burying the cables will also have a greater impact on the environment than the preferred alternative as more land will be disturbed during construction as a trench has to be dug over the entire distance of the line. Eskom Distribution does not have the expertise/technologies to assist with fault finding on underground cable thus outages on the underground cable will take long to restore and digging up of the cable will be necessary. Also Eskom does not have the expertise in house to maintain underground cables.

3. Technology

The only technological advantage to connecting the proposed power lines to the existing Eskom line to the west of the railway is to generate and distribute electricity from a new source. Due to very high costs and a very large impact on the environment and natural resources, this alternative will not be feasible.

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

3. PHYSICAL SIZE OF THE 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)

**Size of the activity:**

Witloop Substation: 1 850m <sup>2</sup>
Witloop Proposed Line: 18 230m <sup>2</sup>
Vlermuistlaagte Substation: 1 850 m <sup>2</sup>
Vlermuistlaagte Line: 26 700 m <sup>2</sup>
Witloop Alternative Substation: 1 850 m <sup>2</sup>
Witloop Alternative Line: 22 847 m <sup>2</sup>
Vlermuistlaagte Substation: 1 850 m <sup>2</sup>
Vlermuistlaagte Line: 40 362 m <sup>2</sup>
m <sup>2</sup>

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

**Alternative:**

**Length of the activity:**

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

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Alternative A1 (preferred activity alternative)

Witloop Proposed Line: 600 m Vlermuistaagte Proposed Line: 860 m
Witloop Alternative Line: 754 m Vlermuistaagte Alternative Line: 1 353 m
m

Alternative A2 (if any)

Alternative A3 (if any)

**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:**

	m <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:

Witloop: A gravel road is available from the R380 to the Witloop substation and end of the power line.
Vlermuistaagte: A gravel road is available to gain entry to the substation.

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;
- 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
<p>The areas where both substations will be constructed are located on Transnet owned property which is currently used for railways.</p> <p>However, the power lines will be erected on privately owned land. These lands are zoned for agricultural use and servitudes will therefore be registered.</p>			
<b>2. Will the activity be in line with the following?</b>			
<b>(a) Provincial Spatial Development Framework (PSDF)</b>	YES	NO	Please explain
<p>The Northern Cape PSDF recognizes the cost and availability of sustainable transport systems as one of the major factors inhibiting further development in the mining industry of the province. The electrification of the infrastructure will ensure that the capacity to transport material is increased.</p>			
<b>(b) Urban edge / Edge of Built environment for the area</b>	YES	NO	Please explain
<p>The substations and power lines are located outside the urban edge.</p>			
<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
<p>With regard to transport, the IDP and SDF of the local municipality is in line with that of the district: The SDF of the district mentions that the significant portion of transport on the roads, in addition to the Sishen-Saldana railway line, resulted in numerous congestion issues on the roads. The upgrade of the Transnet infrastructure to increase transport capacity will alleviate this problem.</p>			
<b>(d) Approved Structure Plan of the Municipality</b>	YES	NO	Please explain
<p>The infrastructure falls outside the structure planning of any municipality.</p>			
<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
<p>The EMF for the municipality indicates that the railways has negative impacts on the area in the form of fragmentation and dust emissions from the railways.</p> <p>It should be noted that all transport infrastructure and activities will have negative impacts which will be managed and mitigated.</p>			

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<b>(f) Any other Plans (e.g. Guide Plan)</b>	YES	NO	Please explain
<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>	YES	NO	Please explain
The project falls outside the plans of the municipality as it is an SIP project.			
<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>	YES	NO	Please explain
The local community will benefit from the development of infrastructure as this may lead to indirect job opportunities.			
<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>	YES	NO	Please explain
<p>The nature of the project entails that power lines and substations be constructed in order for Transnet to increase its capacity on rails. Therefore, the adequate capacity will only be available on completion of the project.</p> <p>However, ESKOM has sufficient capacity to supply the substations from existing lines once the additional lines have been constructed.</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>	YES	NO	Please explain
The railway and ESKOM infrastructure is regarded as imperative to the transport manganese to the rest of South Africa via Kimberley.			
<b>7. Is this project part of a national programme to address an issue of national concern or importance?</b>	YES	NO	Please explain
The increase in capacity of transportation of coal will ensure more exports of raw material.			
<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
All major infrastructure is already available from which to connect the proposed lines.			



BASIC ASSESSMENT REPORT

<b>9. Is the development the best practicable environmental option for this land/site?</b>	YES	NO	Please explain
<p>The infrastructure from which the proposed power lines will be connected is already available.</p> <p>This option will result in the smallest area to be cleared of vegetation.</p>			
<b>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b>	YES	NO	Please explain
<p></p>			
<b>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b>	YES	NO	Please explain
<p>It has always been the case that when the railway needs to increase its capacity, the electrification to the railway will have to increase. Therefore, this activity will not set a precedent.</p>			
<b>12. Will any person's rights be negatively affected by the proposed activity/ies?</b>	YES	NO	Please explain
<p>Landowners will be compensated for the use of the land.</p>			
<b>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</b>	YES	NO	Please explain
<p>Located outside the urban edge.</p>			
<b>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b>	YES	NO	Please explain
<p>The project is for the transmission and distribution of electricity.</p>			
<b>15. What will the benefits be to society in general and to the local communities?</b>	Please explain		
<p>The construction of the infrastructure will result in the creation in direct job opportunities for both Eskom employees in specialized fields and local residents who will be employed as general workers. Indirect job/business opportunities will be created with the supply of material for the construction of the infrastructure. A part of the materials to be used will be purchased locally which will have a positive impact on local businesses. Furthermore, more people will be located in the region during construction whom will spend money at local businesses.</p> <p>The increase in the capacity of Transnet to transport more manganese to the rest of South Africa will have a positive impact on the economy as more raw materials will be exported.</p>			
<b>16. Any other need and desirability considerations related to the proposed activity?</b>	Please explain		
<p>This project is a Strategic Infrastructure Project as described in the National Development Plan of 2011 in terms of infrastructure upgrade for the distribution of electricity and is therefore very important i.t.o. infrastructure and economic development as more manganese will be exported.</p> <p>Refer to point 15.</p>			

## BASIC ASSESSMENT REPORT

<b>17. How does the project fit into the National Development Plan for 2030?</b>	Please explain
<p>The NDP indicates that an increase in rail infrastructure will increase the benefit of the mineral resources of the country.</p> <p>This project is a Strategic Infrastructure Project as described in the National Development Plan of 2011 in terms of infrastructure upgrade for the distribution of electricity and is therefore very important i.t.o. infrastructure and economic development as more manganese will be exported.</p>	
<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 application for environmental authorization (EA) and the Basic Assessment (BA) process that is followed ensures that all impacts associated with the development are assessed and mitigation measures are developed that must be implemented during all phases. Furthermore, a Public Participation Process is followed according to GN R. 543 of the 2010 EIA Regulations in terms of NEMA to ensure that the public is aware of the project.</p>	
<b>19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.</b>	
<p>The necessary studies have been conducted to ensure that the disturbance of ecosystems and biological diversity over the development area are avoided where possible and if not possible, to be minimized. Furthermore, a specialist was appointed to ensure that the disturbance of landscapes and sites of national cultural heritage is avoided by identifying such sites, if any.</p> <p>Through the BA process mitigation and management measures will be developed which must be implemented during all phases of the project to ensure that impacts on the environment or society as a result of the proposed project are identified, eliminated and, if not possible to eliminate, to minimize impacts that may occur.</p>	

**Note:**

This is a project of national importance as the transportation and export of manganese depends on the further electrification of the railway at the two points as indicated in this report.

There are other points along the same line which are electrified. However, further electrification is necessary to ensure that more and heavier loads can be transported.

### 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:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (Act No 107 of 1998)	Compliance to environmental legislation and to minimize impacts on the environment.	Department of Environmental Affairs	1998
National Heritage Resources Act (Act 25 of 1999)	Discovery and protection of significant cultural heritage or palaeontological artefacts	South-African Heritage Resource Agency	1999
National Biodiversity Act (Act 10 of 2004)	Identification and protection of endangered species.	Department of Environmental Affairs	2004
Conservation of Agricultural Resources Act (Act 43 of 1983)	Land currently used for agriculture will be used for the	Department of Agriculture	1983

## BASIC ASSESSMENT REPORT

1983)	power lines		
Nationa Water Act (Act 36 of 1998)	Watercourses may be impacted by the development for which a water use license must be obtained.	Department of Water and Sanitation	1998

### 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
	2 m <sup>3</sup>

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

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

It is not anticipated that large volumes of solid construction waste will be produced during the construction phase as there are no existing infrastructure that will be demolished. However, any excess concrete will be used as filling and faulty equipment and supplies will be disposed of at the landfill in Hotazel.

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

If any, construction solid waste will either be used as filling, depending on its nature, or be disposed of at an authorised landfill site in the region (i.e. Hotazel, Kathu, Kuruman).  
If any part of the excess waste consists of recyclable material, it will be recycled (i.e. excess steel).

Will the activity produce solid waste during its operational phase?

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

YES	NO
A monthly volume cannot be indicated as waste will only be generated during repair and/or maintenance of the substations and lines.	

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

The development should not produce any solid waste during the operational phase. However, during the maintenance and/or repair of the substations and power lines, some infrastructure may be removed and replaced. This will however not be large volumes and will not occur on a monthly basis.

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

An authorized landfill site in Hotazel, Kathu or Kuruman

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

## BASIC ASSESSMENT REPORT

N/A

*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? 

YES	NO
-----	----

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? 

YES	NO
-----	----

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? 

YES	NO
-----	----

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

m <sup>3</sup>	
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Will the activity produce any effluent that will be treated and/or disposed of on site? 

YES	NO
-----	----

*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? 

YES	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 on the site.

### c) Emissions into the atmosphere

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

YES	NO
-----	----

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

YES	NO
-----	----

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:

N/A

**d) Waste permit**

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

YES	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?

YES	NO
YES	NO

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

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.

If NO, describe the noise in terms of type and level:

The activity will not generate noise. However, some noise will be generated during the construction phase. This noise will be associated with power tools and machinery.

**13. WATER USE**

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

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
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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:

litres	
--------	--

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

YES	NO
-----	----

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, that have been taken to ensure that the activity is energy efficient:

The location of the proposed site of the substation and the power lines were determined to be closest to the railway. The shortest possible route was determined for power lines to connect to existing power lines.

This also includes that the locations of the preferred sites for the substations were determined in such a manner that power lines will not have to cross the existing railway or roads. Less fossil fuel will therefore be used during the project.

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

## BASIC ASSESSMENT REPORT

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Due to the availability of the existing Eskom power lines from which the new proposed lines can be connected, no other energy sources were taken into account.  
The implementation of other energy sources on the proposed sites will result in a larger impact on the environment and a larger footprint to be disturbed.

## 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): 1

- 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  
 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.

**Note:**  
 The two areas are divided into the separate local municipal areas as the alternatives for each site is located in close proximity to the preferred alternative.

**Property description/physical address:**

<b>Province</b>	Northern Cape
<b>District Municipality</b>	John Taolo Gaetsewe District Municipality
<b>Local Municipality</b>	Gamagara Local Municipality
<b>Ward Number(s)</b>	1
<b>Farm name and number</b>	Walton 390
<b>Portion number</b>	RE, 4 and 5
<b>SG Code</b>	C0410000000039000000 C0410000000039000004 C0410000000039000005

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:**

Walton 390/RE is used for agricultural activities.  
 Portions 4 and 5 of the farm Walton 390 is Transnet properties and contains their infrastructure.

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

## 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
------	-------------	-------------	-------------	--------------	-------------	------------------

### 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 type="checkbox"/>	2.9 Seafront <input checked="" type="checkbox"/>

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

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

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
	YES	NO	YES	NO	YES	NO
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	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>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	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.

Refer to the ecological assessment report by Mr. Darius Van Rensburg in Appendix D.

### 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.

N/A

### 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:

Natural area	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

## BASIC ASSESSMENT REPORT

High density residential	Tertiary education facility	Plantation
Informal residential <sup>A</sup>	Church	Agriculture
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
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?

The proposed project is intended to supply electricity to the railway line, therefore the railway line will be positively impacted upon.

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:

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:

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	

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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:

In the HIA done by Dr. Lloyd Rossouw, he indicated that the impact on palaeontology and archaeology as a result of access to the proposed sites and the installation of pylons to support power lines is regarded as low.  
The lithic component (i.e. Flake blade and core with striking platforms) at the Vlermuislaagte site was recorded and mapped.  
In the event that any artefacts of palaeontological and/or archaeological significance be uncovered during construction, all activities will cease and SAHRA will be contacted immediately.

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

YES	NO
YES	NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

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 number of people unemployed within the Gamagara local municipality is 3 323. The unemployment rate in the local municipality is 18.1. This number is lower than that of 2001. The above is based on the 2011 Census data obtained from Stats SA reports.

Economic profile of local municipality:

According to the 4th Reviewed IDP of Gamagara Local Municipality, the fastest growing sectors on average in the municipality are trade, transport, finance and agriculture.  
The unemployment rate has been declining since 2004 with more than 45% of the population being Economically Active.  
The majority of employed people in the municipality is employed in the mining and quarrying sectors (40.21%).

Level of education:

The following level of education information was obtained from the Stats SA 2011 census data:

No schooling: 2 756  
Some primary: 2 959  
Completed primary: 1 437  
Some secondary: 8 685  
Grade 12: 6 946

## BASIC ASSESSMENT REPORT

Higher: 3 298
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### b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R28 215 154.59		
What is the expected yearly income that will be generated by or as a result of the activity?	R Unsure		
Will the activity contribute to service infrastructure?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
Is the activity a public amenity?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Eskom does an open tender to employ suitable contractors to carry out the construction. Contractors are required to employ local unskilled labourers for non specialized work		
What is the expected value of the employment opportunities during the development and construction phase?	R This can only be established once the contractor is appointed		
What percentage of this will accrue to previously disadvantaged individuals?	>/= 90%		
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown		
What is the expected current value of the employment opportunities during the first 10 years?	R Unknown – It should be noted however that most of the employment and income generated by this project is short-term		
What percentage of this will accrue to previously disadvantaged individuals?	% Unknown		

## 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 or 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)	

- 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	85%	80% of the proposed area consist of natural vegetation
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	
Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	15%	A railway has been constructed on both sites. There are also roads next to the railway. Furthermore, there is a previously used borrow pit at the proposed alternative site at Witloop.

- 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							
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	YES	NO	UNSURE	Estuary		Coastline	
	Endangered								
	Vulnerable								
	Least Threatened								
					YES	NO	YES	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)

The vegetation type is the Kathu Bushveld and is considered to be least threatened.

There are no endangered species. However, two protected tree species were identified, namely the *Vachelia haematoxylon* (Grey Camel Thorn) and *Vachelia erioloba* (Camel Thorn). Please refer to the ecological report by Mr. Darius Van Rensburg in Appendix D.

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

### Important notes:

4. 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):

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

6. Has a specialist been consulted to assist with the completion of this section?  YES  NO

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.

### Note:

The two areas are divided into the separate local municipal areas as the alternatives for each site is located in close proximity to the preferred alternative.

## BASIC ASSESSMENT REPORT

**Property description/physical address:**

<b>Province</b>	Northern Cape
<b>District Municipality</b>	John Taolo Gaetsewe District Municipality
<b>Local Municipality</b>	Joe Morolong Local Municipality
<b>Ward Number(s)</b>	4
<b>Farm name and number</b>	Smartt 314 Kameel Aar 315 Perth 276
<b>Portion number</b>	Smartt 314/RE Smartt 314/1 Kameel Aar 315/RE Kameel Aar 315/2 Perth 276/RE <b>(Note that all properties are adjacent to each other and in close proximity. The area is therefore homogenous).</b>
<b>SG Code</b>	C04100000000031400000 C04100000000031400001 C04100000000031500000 C04100000000031500002 C04100000000027600000

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:**

A portion of Smartt 314/RE is used for agricultural activities while another portion is owned by Transnet and is used for their infrastructure.  
Kameel Aar 315/RE is used for agriculture while Kameel Aar 315/2 has the railway infrastructure.  
Perth 276/RE is used for agriculture.

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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### 10. 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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**11. 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"/>

**12. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

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

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

**13. 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>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “<sup>E</sup>” 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.



## BASIC ASSESSMENT REPORT

Refer to the ecological report by Mr. Darius Van Rensburg in Appendix D.
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### 14. 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.

N/A

### 15. 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:

Natural area	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	Agriculture
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
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)

## BASIC ASSESSMENT REPORT

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

The proposed project is intended to supply electricity to the railway line, therefore the railway line will be positively impacted upon.

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:

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:

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.

### 16. 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	

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:

In the HIA done by Dr. Lloyd Rossouw, he indicated that the impact on palaeontology and archaeology as a result of access to the proposed sites and the installation of pylons to support power lines is regarded as low.  
 The lithic component (i.e. Flake blade and core with striking platforms) at the Vlermuislaagte site was recorded and mapped.  
 In the event that any artefacts of palaeontological and/or archaeological significance be uncovered during construction, all activities will cease and SAHRA will be contacted immediately

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

YES	NO
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## BASIC ASSESSMENT REPORT

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.

### 17. 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 number of people unemployed within the Joe Morolong local municipality is 4 891. The unemployment rate in the local municipality is 38.7. This number is lower than that of 2001. The above is based on the 2011 Census data obtained from Stats SA reports.

Economic profile of local municipality:

According to the IDP five year plan for Joe Morolong Local Municipality, the identified focus areas or sectors in the municipality are the following:

- Agriculture,
- Infrastructure Development,
- Manufacturing,
- Mining,
- SMME Development, and
- Tourism

Level of education:

The following level of education information was obtained from the Stats SA 2011 census data:

No schooling: 10 204  
 Some primary: 11 887  
 Completed primary: 2 324  
 Some secondary: 12 384  
 Grade 12: 5 986  
 Higher: 1 823

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

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

R28 215 154.59	
R Unsure	
YES	NO
YES	NO

## BASIC ASSESSMENT REPORT

How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Eskom does an open tender to employ suitable contractors to carry out the construction. Contractors are required to employ local unskilled labourers for non specialized work
What is the expected value of the employment opportunities during the development and construction phase?	R This can only be established once the contractor is appointed
What percentage of this will accrue to previously disadvantaged individuals?	>= 90%
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown
What is the expected current value of the employment opportunities during the first 10 years?	R Unknown – It should be noted however that most of the employment and income generated by this project is short-term
What percentage of this will accrue to previously disadvantaged individuals?	% Unknown

### 18. 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 or 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.

- 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	Ecological	Other	No Natural	

BASIC ASSESSMENT REPORT

Biodiversity Area (CBA)	Support Area (ESA)	Natural Area (ONA)	Area Remaining (NNR)	

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	85%	80% of the proposed area consist of natural vegetation
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	
Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	15%	A railway has been constructed on both sites. There are also roads next to the railway. Furthermore, there is a previously used borrow pit at the proposed alternative site at Witloop.

**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 unchannelled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline			
	Endangered									
	Vulnerable									
	Least Threatened									
		YES	NO	UNSURE	YES	NO	YES	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)**

The vegetation type is the Kathu Bushveld and is considered to be least threatened. There are no endangered species. However, two protected tree species were identified, namely the *Vachelia haematoxylon* (Grey Camel Thorn) and *Vachelia erioloba* (Camel Thorn). Please refer to the ecological report by Mr. Darius Van Rensburg in Appendix D.

## SECTION C: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT AND NOTICE

<b>Publication name</b>	The Bullitin	
<b>Date published</b>	12 March 2015	
<b>Site notice position WITLOOP</b>	<b>Latitude</b>	<b>Longitude</b>
	27°17'51.34"	22°58'57.66"
<b>VLERMUISLAAGTE</b>	27°24'26.50"	22°59'22.58"
<b>Date placed</b>	4 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. Eben Anthonissen (Adjacent Landowner - Landowner of alternative line)	Perth 276/RE	Cell: 073 163 4665 ebenanthonissen@hotmail.com
Transnet LTD	Smartt 314/RE	Hennie.Schoeman@transnet.net 053 838 3000 (Tel) 083 283 7018 (Cell) Jos.Koekemoer@mottmac.com 011 052 2409 (Tel) 079 898 0578 (Cell) Irvin.Mashabane@transnet.net 082 496 2069 (Cell)
Mr. Cupido Love - Terra Nominees (Landowner of proposed lines)	Smartt 314/RE	Cupido.Love@UMK.co.za 6 Hollard Street Johannesburg 2001
Mr. H. P. Venter - MD of Saltrim Ranches (Pty) Ltd (Adjacent Landowner - Landowner of alternative line)	Kameel Aar 315/RE	082 507 7716 (c) Camel@vodamail.co.za Hanmar Building 32 Stewart Street Kuruman 8460 P.O. Box 8 Hotazel 8490
Transnet LTD	Kameel Aar 315/2	Hennie.Schoeman@transnet.net

BASIC ASSESSMENT REPORT

		053 838 3000 (Tel) 083 283 7018 (Cell) Jos.Koekemoer@mottmac.com 011 052 2409 (Tel) 079 898 0578 (Cell) Irvin.Mashabane@transnet.net 082 496 2069 (Cell)
Pieter Johannes Swannepoel (Adjacent Property)	Kameel Aar 315/1	082 575 2238 (Cell) 053 741 1619 (Tel) 15 Wilson Avenue Hotazel 8490 P.O. Box 256 Hotazel 8490
Mr. Hugo Van Dyk (Landowner)	Walton 390/RE	053 739 2149 (Tel) 23 Kerk Street Messina 4MT Messina 0900 P.O. Box 1593 Messina 0900
Transnet LTD (Landowner)	Walton 390/5 Walton 390/4	Hennie.Schoeman@transnet.net 053 838 3000 (Tel) 083 283 7018 (Cell) Jos.Koekemoer@mottmac.com 011 052 2409 (Tel) 079 898 0578 (Cell) Irvin.Mashabane@transnet.net 082 496 2069 (Cell)
Mr. Johannes Mathuas Hendrik Fleming (Adjacent Property)	Chertsey 430/RE	073 245 0821 (Cell) 053 791 0505 (Tel) P. O. Box 1429 Kathu 8446
MCJ Boerdery CC	Flatlands 429/1	Posbus 648 Kathu 8446
Mr. Peter Andre Pienaar (Adjacent Property)	Walton 390/3	082 399 0691 (Cell) 011 908 3392 (Tel) 013 485 0080 (Work tel) 38 Huis Crysbestos 1307 P.O. Box 66 Crysbestos 1307
Mr. Johannes Mathuas Hendrik Fleming	Walton 390/1	073 245 0821 (Cell) 053 791 0505 (Tel)

## BASIC ASSESSMENT REPORT

(Adjacent Landowner)		P. O. Box 1429 Kathu 8446
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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

Summary of main issues raised by I&APs	Summary of response from EAP
No comments were received from any of the identified I&AP. However, Mr. Eben Antonissen registered as an I&AP.	The Draft and Final BAR was sent to all registered I&AP.

### 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
Ms. M. Bokgwathile (Municipal Manager)	John Taolo Gaetsewe District Municipality	053 712 8700	053 712 2502	bokgwathilem@taologaetsewe.gov.za	P.O. Box 1480 Kuruman 8460
Mr. Tshepo Bloom (Municipal Manager)	Joe Morolong Local Municipality	053 773 9300	053 773 9350	bloomt@joemorolong.gov.za	D320 Cardington Road Churchill Village Kuruman 8460
Ward councillor	Joe	053 773	053 773	No available e-mail.	D320



**BASIC ASSESSMENT REPORT**

(Ward 4)	Morolong Local Municipality	9300 / 076 411 8956	9350		Cardington Road Churchill Village Kuruman 8460
Mr. Clement Itumeleng (Municipal Manager)	Gamagara Local Municipality	053 723 6000	053 723 2021	clementi@gamagara.co.za	P.O. Box 1001 Kathu 8446
Ward Councillor (Ward 1)	Gamagara Local Municipality	053 723 6000	053 723 2021	Could not get.	P.O. Box 1001 Kathu 8446
Mr. P. Mabilo / Mr. Brian Fischer	Department of Environment Affairs and Conservation	053 807 7303	053 807 7367	pmabilo@parliament.gov.za bfisher@ncpg.gov.za	P/Bag X6010 Kimberley 8301
Mr. Viljoen Mothibi (HOD – Agricultural and Rural Development)	Department of Agriculture, Land reform and Rural Development	053 838 9159	053 832 4328	cfortune@agri.ncape.gov.za	Private Bag X 5018 Kimberley 8300 162 George Street Kimberlite Building
Mr. A. Abrahams (Chief director)	Department of Water affairs – Water Management Area 10	053 830 8803 082 883 6741 (C)	053 831 4534	AbrahamsA@dwa.gov.za	Private Bag X6101 Kimberley 8300
Mr. A. Salomon	South-African Heritage Resource Agency	021 462 4502		asalomon@sahra.org.za	PO Box 4637 Cape Town 8000

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>Witloop substation and power lines</b>			
<b>Alternative 1 (preferred alternative)</b>			
Clearance of vegetation and topsoil	<b>Direct impacts:</b>		
	• Loss of topsoil	Low - Medium	Topsoil will be stored correctly in order to be used for levelling of the site after construction
	• Destruction of habitat	Low - medium	No animals will be harmed or killed during the clearance of the site. Any endangered species will be
	• Loss of endangered plant species (i.e. Camel Thorn Tree)	Medium	A permit will be obtained for the removal of endangered plant species.
	• Change in natural storm water drainage	Insignificant	The site will be levelled.
	• Noise	Low	• A speed limit will be enforced on vehicles, • Work will only be conducted during daytime.
	• Dust	Low	• A speed limit will be enforced on vehicles, • If dust is problematic, roads must be sprayed.
	<b>Indirect impacts:</b>		
• Erosion	Low	• All construction areas will be levelled. • No construction will occur on very steep slopes.	

## BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation	
	<ul style="list-style-type: none"> <li>• Damage to palaeontological and/or archaeological artefacts</li> </ul>	Low	<ul style="list-style-type: none"> <li>• SAHRA will be notified should traces of any palaeontological heritage be found during construction</li> </ul>	
	<ul style="list-style-type: none"> <li>• Possible dumping of construction rubble and general waste on site</li> </ul>	Low	<ul style="list-style-type: none"> <li>• If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel,</li> <li>• Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination</li> </ul>	Low	<ul style="list-style-type: none"> <li>• All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> <li>• Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.</li> </ul>	
	<b>Cumulative impacts:</b> None			
Construction of substations and power lines	<b>Direct impacts:</b>			
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• Work will only be conducted during daytime.</li> </ul>	
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• If dust is problematic, roads must be sprayed.</li> </ul>	
	<b>Indirect impacts:</b>			
	Possible dumping of construction rubble and general waste on site	Low Medium	-	<ul style="list-style-type: none"> <li>• If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel,</li> <li>• Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</li> </ul>
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil	Low medium	-	<ul style="list-style-type: none"> <li>• All petrochemical, or other spills of potentially hazardous substances will be cleaned</li> </ul>

## BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
	contamination		<p>immediately by removing the spilled product and contaminated soil.</p> <ul style="list-style-type: none"> <li>Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.</li> </ul>
	Spillage of sewage	Low	<ul style="list-style-type: none"> <li>Temporary chemical toilets will be placed on site for use by contractors. Toilets will be serviced and replaced by a certified contractor.</li> </ul>
	<b>Cumulative impacts:</b> None.		
Transportation of material to construction sites	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> <li>Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> <li>If dust is problematic, roads must be sprayed.</li> </ul>
	Destruction of vegetation and animal habitat	Low	<ul style="list-style-type: none"> <li>Existing roads will be used where possible.</li> <li>If new areas has to be cleared for roads, the area will be kept to a minimum.</li> </ul>
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>Vehicles will be maintained in a good condition to prevent petrochemical spills.</li> <li>If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.</li> </ul>
	Damage to palaeontological and/or archaeological artefacts.	Low	<ul style="list-style-type: none"> <li>SAHRA will be notified if any artefacts of palaeontological or archaeological significance are found on the site. No artefacts will be removed or damaged by the contractors.</li> </ul>
	<b>Cumulative impacts:</b>		
Deterioration of access roads due to the increase in traffic.	Low - medium	-	Access roads will be maintained throughout the project.

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
Maintenance on substations and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• If dust is problematic, roads must be sprayed.</li> </ul>
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>• Vehicles will be maintained in a good condition to prevent petrochemical spills.</li> <li>• If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.</li> </ul>
	Spillage of petrochemical products and other potentially hazardous substances	Low	<ul style="list-style-type: none"> <li>• Any spill of potentially hazardous substance will be cleaned immediately.</li> </ul>
	Dumping of general waste in the veld.	Low	<ul style="list-style-type: none"> <li>• Any waste generated during the maintenance at the facilities will be collected in receptacles and/or bags and disposed of at the landfill site in Hotazel.</li> </ul>
	<b>Cumulative impacts:</b>		
None			
Operation of power lines and substations	<b>Direct impacts:</b>		
	Collision of birds with power lines	Low	<ul style="list-style-type: none"> <li>• Implement bird flappers on power lines</li> </ul>
	<b>Indirect impacts:</b>		
	None		<ul style="list-style-type: none"> <li>•</li> </ul>
	<b>Cumulative impacts:</b>		
None			
<b>Alternative 2 (Location alternative in terms of Witloop Substation and lines)</b>			
Clearance of vegetation	<b>Direct impacts:</b>		
	Loss of topsoil	Low Medium	- Topsoil will be stored correctly in order to be used for levelling of the site after construction
	Destruction of habitat	Low Medium	- No animals will be harmed or killed during the clearance of the site. Any endangered species will be
	Loss of endangered plant species (i.e. Camel Thorn Tree)	Medium	A permit will be obtained for the removal of endangered plant species.

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Activity	Impact summary	Significance	Proposed mitigation
	Change in natural storm water drainage	Insignificant	The site will be levelled.
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• If dust is problematic, roads must be sprayed.</li> </ul>
	Pollution of surface water in the stream.	Medium	<ul style="list-style-type: none"> <li>• Any spillages should be cleaned immediately,</li> <li>• No hazardous substances may be stored in close proximity to the watercourse,</li> <li>• Sewage and other effluent may not be disposed of in the watercourse.</li> </ul>
	<b>Indirect impacts:</b>		
	Erosion	Low	<ul style="list-style-type: none"> <li>• All construction areas will be levelled.</li> </ul> <p>No construction will occur on very steep slopes.</p>
	Damage to palaeontological and/or archaeological artefacts	Low	SAHRA will be notified should traces of any palaeontological heritage be found during construction
	Possible dumping of construction rubble and general waste on site	Low	<ul style="list-style-type: none"> <li>• If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel,</li> </ul> <p>Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</p>
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low	<ul style="list-style-type: none"> <li>• All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> </ul> <p>Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.</p>
	<b>Cumulative impacts:</b>		
	None		

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Activity	Impact summary	Significance	Proposed mitigation
Construction of substation and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, If dust is problematic, roads must be sprayed.</li> </ul>
	Unsafe working conditions for employees	Low - medium	Care should be taken when connecting the new power lines over the existing power lines of the railway to ensure that injuries/fatalities do not occur as a result of electric shock.
	<b>Indirect impacts:</b>		
	Possible dumping of construction rubble and general waste on site	Low - Medium	<ul style="list-style-type: none"> <li>• If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel,</li> <li>• Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</li> </ul>
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low - medium	<ul style="list-style-type: none"> <li>• All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> <li>• Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.</li> </ul>
	Spillage of sewage	Low	Temporary chemical toilets will be placed on site for use by contractors. Toilets will be serviced and replaced by a certified contractor.
	<b>Cumulative Impacts:</b>		
None			
Transportation of material to construction sites	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, Work will only be conducted</li> </ul>



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Activity	Impact summary	Significance	Proposed mitigation
			during daytime.
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> If dust is problematic, roads must be sprayed.
	Destruction of vegetation and animal habitat	Low	<ul style="list-style-type: none"> <li>Existing roads will be used where possible.</li> </ul> If new areas has to be cleared for roads, the area will be kept to a minimum.
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>Vehicles will be maintained in a good condition to prevent petrochemical spills.</li> </ul> If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.
	Damage to palaeontological and/or archaeological artefacts.	Low	SAHRA will be notified if any artefacts of palaeontological or archaeological significance are found on the site. No artefacts will be removed or damaged by the contractors.
	<b>Cumulative impacts:</b>		
Deterioration of access roads due to the increase in traffic.	Low - medium	Access roads will be maintained throughout the project.	
Maintenance on substations and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> Work will only be conducted during daytime.
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> If dust is problematic, roads must be sprayed.
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>Vehicles will be maintained in a good condition to prevent petrochemical spills.</li> </ul> If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.
	Spillage of petrochemical products and other potentially hazardous substances	Low	Any spill of potentially hazardous substance will be cleaned immediately.
Dumping of general waste in the veld.	Low	Any waste generated during the maintenance at the facilities	

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Activity	Impact summary	Significance	Proposed mitigation
			will be collected in receptacles and/or bags and disposed of at the landfill site in Hotazel.
	<b>Cumulative impacts:</b>		
	None		
Operation of power lines and substations	<b>Direct impacts:</b>		
	Collision of birds with power lines	Low	Implement bird flappers on power lines
	<b>Indirect impacts:</b>		
	None		
	<b>Cumulative impacts:</b>		
	None		
<b>Vlermuislaagte substation and power lines</b>			
<b>Alternative 1 (Preferred alternative)</b>			
Clearance of vegetation and topsoil	<b>Direct impacts:</b>		
	Loss of topsoil	Low - Medium	Topsoil will be stored correctly in order to be used for levelling of the site after construction
	Destruction of habitat	Low - medium	No animals will be harmed or killed during the clearance of the site. Any endangered species will be
	Loss of endangered plant species (i.e. Camel Thorn Tree)	Medium	A permit will be obtained for the removal of endangered plant species.
	Change in natural storm water drainage	Insignificant	The site will be levelled.
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> Work will only be conducted during daytime.
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> If dust is problematic, roads must be sprayed.
	<b>Indirect impacts:</b>		
	Erosion	Low	<ul style="list-style-type: none"> <li>All construction areas will be levelled.</li> </ul> No construction will occur on very steep slopes.
	Damage to palaeontological and/or archaeological artefacts	Low	SAHRA will be notified should traces of any palaeontological heritage be found during construction
	Possible dumping of construction rubble and general waste on site	Low	<ul style="list-style-type: none"> <li>If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
			landfill site in Hotazel, Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low	<ul style="list-style-type: none"> <li>• All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> </ul> Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.
	<b>Cumulative impacts:</b> None		
Construction of substations and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, If dust is problematic, roads must be sprayed.</li> </ul>
	<b>Indirect impacts:</b>		
	Possible dumping of construction rubble and general waste on site	Low - Medium	<ul style="list-style-type: none"> <li>• If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel, Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</li> </ul>
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low - medium	<ul style="list-style-type: none"> <li>• All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> </ul> Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.
	Spillage of sewage	Low	Temporary chemical toilets will be placed on site for use by contractors. Toilets will be

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Activity	Impact summary	Significance	Proposed mitigation
			serviced and replaced by a certified contractor.
	<b>Cumulative impacts:</b> None.		
Transportation of material to construction sites	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, If dust is problematic, roads must be sprayed.</li> </ul>
	Destruction of vegetation and animal habitat	Low	<ul style="list-style-type: none"> <li>• Existing roads will be used where possible. If new areas has to be cleared for roads, the area will be kept to a minimum.</li> </ul>
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>• Vehicles will be maintained in a good condition to prevent petrochemical spills. If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.</li> </ul>
	Damage to palaeontological and/or archaeological artefacts.	Low	SAHRA will be notified if any artefacts of palaeontological or archaeological significance are found on the site. No artefacts will be removed or damaged by the contractors.
	<b>Cumulative impacts:</b>		
	Deterioration of access roads due to the increase in traffic.	Low - medium	Access roads will be maintained throughout the project.
Maintenance on substations and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles, If dust is problematic, roads must be sprayed.</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>Vehicles will be maintained in a good condition to prevent petrochemical spills.</li> <li>If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.</li> </ul>
	Spillage of petrochemical products and other potentially hazardous substances	Low	Any spill of potentially hazardous substance will be cleaned immediately.
	Dumping of general waste in the veld.	Low	Any waste generated during the maintenance at the facilities will be collected in receptacles and/or bags and disposed of at the landfill site in Hotazel.
	<b>Cumulative impacts:</b>		
	None		
Operation of power lines and substations	<b>Direct impacts:</b>		
	Collision of birds with power lines	Low	Implement bird flappers on power lines
	<b>Indirect impacts:</b>		
	None		
	<b>Cumulative impacts:</b>		
	None		
<b>Alternative 2 (Location alternative of substation and power lines)</b>			
Clearance of vegetation and topsoil	<b>Direct impacts:</b>		
	Loss of topsoil	Low - Medium	Topsoil will be stored correctly in order to be used for levelling of the site after construction
	Destruction of habitat	Low - medium	No animals will be harmed or killed during the clearance of the site. Any endangered species will be
	Loss of endangered plant species (i.e. Camel Thorn Tree)	Medium	A permit will be obtained for the removal of endangered plant species.
	Change in natural storm water drainage	Insignificant	The site will be levelled.
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> <li>Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> <li>If dust is problematic, roads</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
			must be sprayed.
	<b>Indirect impacts:</b>		
	Erosion	Low	<ul style="list-style-type: none"> <li>All construction areas will be levelled.</li> </ul> No construction will occur on very steep slopes.
	Damage to palaeontological and/or archaeological artefacts	Low	SAHRA will be notified should traces of any palaeontological heritage be found during construction
	Possible dumping of construction rubble and general waste on site	Low	<ul style="list-style-type: none"> <li>If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel,</li> </ul> Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low	<ul style="list-style-type: none"> <li>All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> </ul> Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.
	<b>Cumulative impacts:</b> None		
Construction of substations and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> Work will only be conducted during daytime.
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> If dust is problematic, roads must be sprayed.
	Unsafe working conditions for employees	Low - medium	<ul style="list-style-type: none"> <li>Care should be taken when connecting the new power lines over the existing power lines of the railway to ensure that injuries/fatalities do not occur as a result of electric shock.</li> </ul>
	<b>Indirect impacts:</b>		

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Activity	Impact summary	Significance	Proposed mitigation
	Possible dumping of construction rubble and general waste on site	Low - Medium	<ul style="list-style-type: none"> <li>If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel, Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</li> </ul>
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low - medium	<ul style="list-style-type: none"> <li>All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil. Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.</li> </ul>
	Spillage of sewage	Low	Temporary chemical toilets will be placed on site for use by contractors. Toilets will be serviced and replaced by a certified contractor.
	<b>Cumulative impacts:</b> None.		
Transportation of material to construction sites	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles, Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles, If dust is problematic, roads must be sprayed.</li> </ul>
	Destruction of vegetation and animal habitat	Low	<ul style="list-style-type: none"> <li>Existing roads will be used where possible. If new areas has to be cleared for roads, the area will be kept to a minimum.</li> </ul>
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>Vehicles will be maintained in a good condition to prevent petrochemical spills. If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.</li> </ul>
Damage to palaeontological and/or archaeological artefacts.	Low	SAHRA will be notified if any artefacts of palaeontological or	

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Activity	Impact summary	Significance	Proposed mitigation
			archaeological significance are found on the site. No artefacts will be removed or damaged by the contractors.
	<b>Cumulative impacts:</b>		
	Deterioration of access roads due to the increase in traffic.	Low - medium	Access roads will be maintained throughout the project.
Maintenance on substations and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> Work will only be conducted during daytime.
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> If dust is problematic, roads must be sprayed.
	Unsafe working conditions for employees	Low - medium	<ul style="list-style-type: none"> <li>Care should be taken when servicing or maintaining power lines over the existing power lines of the railway to ensure that injuries/fatalities do not occur as a result of electric shock.</li> </ul>
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	Vehicles will be maintained in a good condition to prevent petrochemical spills. If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.
	Spillage of petrochemical products and other potentially hazardous substances	Low	Any spill of potentially hazardous substance will be cleaned immediately.
	Dumping of general waste in the veld.	Low	Any waste generated during the maintenance at the facilities will be collected in receptacles and/or bags and disposed of at the landfill site in Hotazel.
	<b>Cumulative impacts:</b>		
	None		
Operation of power lines and substations	<b>Direct impacts:</b>		
	Collision of birds with power lines	Low	Implement bird flappers on power lines
	<b>Indirect impacts:</b>		
	None		
	<b>Cumulative impacts:</b>		



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Activity	Impact summary	Significance	Proposed mitigation
	None		
<b>No-go option</b>			
	<b>Direct impacts:</b> Direct job opportunities will be lost	Low - Medium	In order to create direct job opportunities associated with the construction phase of the project, construction will have to occur.
	<b>Indirect impacts:</b>		
	<ul style="list-style-type: none"> <li>The opportunity for local businesses to supply construction material during the construction phase will be lost.</li> </ul>	Medium	Construction will have to occur in order for local companies to be able to supply Eskom with construction material, equipment and services.
	<ul style="list-style-type: none"> <li>The opportunity to increase Transnet capacity to transport manganese, and thereby ensure a positive impact on the regional and national economy, will be lost.</li> </ul>	Medium	The capacity of the line will have to be increased to ensure that more manganese can be transported.
	<b>Cumulative impacts:</b> None		
<b>Layout alternative: Burying of lines</b>			
Clearance of vegetation and topsoil	<b>Direct impacts:</b>		
	Loss of topsoil	Medium	Topsoil will be stored correctly in order to be used for levelling of the site after construction
	Destruction of habitat	Medium	No animals will be harmed or killed during the clearance of the site. Any endangered species will be relocated.
	Loss of endangered plant species (i.e. Camel Thorn Tree)	Medium	A permit will be obtained for the removal of endangered plant species.
	Change in natural storm water drainage	Insignificant	The site will be levelled.
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> Work will only be conducted during daytime.
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> </ul> If dust is problematic, roads must be sprayed.
	<b>Indirect impacts:</b>		
	Erosion	Low	<ul style="list-style-type: none"> <li>All construction areas will be levelled.</li> <li>No construction will occur on very steep slopes.</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
	Damage to palaeontological and/or archaeological artefacts	Low	SAHRA will be notified should traces of any palaeontological heritage be found during construction
	Possible dumping of construction rubble and general waste on site	Low	<ul style="list-style-type: none"> <li>If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel,</li> <li>Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</li> </ul>
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low	<ul style="list-style-type: none"> <li>All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> <li>Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.</li> </ul>
	<b>Cumulative impacts:</b> None		
Burying of power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> <li>Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>A speed limit will be enforced on vehicles,</li> <li>If dust is problematic, roads must be sprayed.</li> <li>Excavation of trenches cannot occur during very windy conditions.</li> </ul>
	Unsafe working conditions for employees.	Low - medium	Care should be taken when connecting power lines to existing lines and substations to avoid electric shock.
	Safety risks for landowners and other individuals.	Medium	Cables will have to be buried very deep to avoid electrification of people.
	Loss/damage to property (i.e. cables)	Medium	Cables should be buried very deep and guards to be appointed to prevent theft.

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Activity	Impact summary	Significance	Proposed mitigation
	<b>Indirect impacts:</b>		
	Possible dumping of construction rubble and general waste on site	Low Medium	- <ul style="list-style-type: none"> <li>• If construction occurs, bins will be provided for the disposal of general waste. Bins will be emptied and general waste disposed of at the authorized landfill site in Hotazel,</li> <li>• Construction solid waste will be used as filling material or disposed of at the landfill in Hotazel.</li> </ul>
	Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination	Low medium	- <ul style="list-style-type: none"> <li>• All petrochemical, or other spills of potentially hazardous substances will be cleaned immediately by removing the spilled product and contaminated soil.</li> <li>• Potentially hazardous substances will be stored inside a bunded area with an impermeable surface and bund walls to contain 110% of the volume of the substance.</li> </ul>
	Spillage of sewage	Low	Temporary chemical toilets will be placed on site for use by contractors. Toilets will be serviced and replaced by a certified contractor.
	<b>Cumulative impacts:</b> None.		
Transportation of material to construction sites	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• If dust is problematic, roads must be sprayed.</li> </ul>
	Destruction of vegetation and animal habitat	Low	<ul style="list-style-type: none"> <li>• Existing roads will be used where possible.</li> <li>• If new areas has to be cleared for roads, the area will be kept to a minimum.</li> </ul>
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	<ul style="list-style-type: none"> <li>• Vehicles will be maintained in a good condition to prevent petrochemical spills.</li> <li>• If a vehicle and/or machine is prone to spillage, a drip tray</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
			will be used to collect the spill.
	Damage to palaeontological and/or archaeological artefacts.	Low	SAHRA will be notified if any artefacts of palaeontological or archaeological significance are found on the site. No artefacts will be removed or damaged by the contractors.
	<b>Cumulative impacts:</b>		
	Deterioration of access roads due to the increase in traffic.	Low - medium	Access roads will be maintained throughout the project.
Maintenance on substations and power lines	<b>Direct impacts:</b>		
	Noise	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• Work will only be conducted during daytime.</li> </ul>
	Dust	Low	<ul style="list-style-type: none"> <li>• A speed limit will be enforced on vehicles,</li> <li>• If dust is problematic, roads must be sprayed.</li> </ul>
	Loss of soil and disturbance to vegetation as a result of unearthing of cables.	Medium	<ul style="list-style-type: none"> <li>• Only the area of servicing must be unearthed.</li> </ul>
	Unsafe working conditions for employees	Low - medium	Care should be taken when servicing or maintaining power lines over the existing power lines of the railway to ensure that injuries/fatalities do not occur as a result of electric shock.
	<b>Indirect impacts:</b>		
	Contamination of soil as a result of petrochemical spills.	Low	Vehicles will be maintained in a good condition to prevent petrochemical spills. If a vehicle and/or machine is prone to spillage, a drip tray will be used to collect the spill.
	Spillage of petrochemical products and other potentially hazardous substances	Low	Any spill of potentially hazardous substance will be cleaned immediately.
	Dumping of general waste in the veld.	Low	Any waste generated during the maintenance at the facilities will be collected in receptacles and/or bags and disposed of at the landfill site in Hotazel.
	<b>Cumulative impacts:</b>		

## BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
	None		
Operation of power lines and substations	<b>Direct impacts:</b>		
	Impact on burrowing animals habitat.	Medium - Low	Ensure that cables are properly isolated.
	<b>Indirect impacts:</b>		
	None		
	<b>Cumulative impacts:</b>		
	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)

The likelihood of the expected impacts actually occurring will be small and limited if all the recommended mitigation measures are implemented throughout all the phases of the project. Impacts associated with the Construction Phase will be temporary of nature and local if all mitigation measures are implemented. If the area is properly sloped, storm water is diverted around the site and all potentially hazardous substances are managed appropriately, the likelihood of the potential impacts actually occurring will be low. Furthermore, permits must be obtained for the removal of endangered plant species (i.e. Camel Thorn trees).

#### **Witloop and Vlermuislaagte substation and power line:**

The Witloop substation and power lines at the proposed site will entail the clearance of vegetation and removal of topsoil. This include the removal of endangered plant species (i.e. Camel Thorn trees). It should be noted that the impacts associated with these activities will be temporary. The likelihood that these activities will occur is high. However, the impacts associated with the construction of the substation and power lines will not be significant if proper mitigation measures are implemented, as these (possible erosion, loss of vegetation, etc) will be localised and no damming of water will occur.

The following mitigation measures will be implemented:

- Strict erosion control measures and storm water control measures are to be implemented.
- Permits for the removal of the endangered plant species will be obtained before any of these species are removed.
- Removal of alien vegetation.
- Precautionary measures will be taken to prevent the accidental discharge or spill of any product.
- If spillages do occur, measures will be implemented to clean the spill appropriately.

In conclusion, if all the recommended measures are implemented, the significance of the impacts expected to be associated with the proposed substations and power lines should be low.

**Alternative B**

Due to the alternative being a location alternative for both the Witloop and the Vlermuislaagte site, the impacts will not differ from the proposed alternative in terms of the environment as the area is very homogenous and the alternative sites are not located far from the proposed site.

However, it should be noted that at both sites, the alternative location for the substations are located on the opposite side of the railway. This will entail that the power lines will have to cross the existing railway and roads which has complications in terms of safety for humans and it will be much more expensive.

Both alternative lines at both sites is longer than the proposed lines, and will therefore result in more vegetation to be cleared and soil to be disturbed.

It appears that the impacts at the alternative sites will have a greater significance than at the proposed sites.

**Alternative C**

As indicated before, the only layout alternative is to bury the cables. However, this will entail trenching throughout the entire length of the cable which will disturb much larger areas of vegetation and soil. This will also have a greater impact on animal habitat.

Buried cables will result in a higher likelihood for cable theft and dangerous conditions for people as electrification might occur.

**No-go alternative (compulsory)**

No environmental impact will occur if the no-go alternative is decided on. However, the opportunity to create jobs and an opportunity to transport more manganese, with the economic advantages this has, will be lost.

**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
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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.

<p>In addition to the recommended mitigation and management measures described in Part 1 of Section D, the following conditions are recommended:</p> <ul style="list-style-type: none"> <li>• The site where the substations will be constructed, must be levelled and all vegetation and topsoil must be removed from the site.</li> <li>• Measures to manage storm water and waste will be implemented and maintained to limit and/or prevent erosion and pollution.</li> <li>• Receptacles should be placed on site for the collection of general waste during construction and maintenance. These receptacles should be emptied on a regular basis and waste be disposed of at an authorised landfill site in Hotazel.</li> <li>• No construction and / or any other waste will be dumped in the veld or on site.</li> <li>• SAHRA will be notified should traces of any paleontological heritage be found during construction.</li> <li>• Permits will be obtained for the removal of any endangered plant species (i.e. Camel Thorn trees)</li> <li>• Temporary chemical toilets will be placed on site during the construction phase and any sewage should be managed appropriately and should not be disposed of on site or the surrounding environment.</li> </ul>
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Is an EMPr attached?

YES	NO
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The EMPr 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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Louis De Villiers

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

27 October 2015

\_\_\_\_\_  
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