



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.

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.

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14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

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

YES	NO
✓	

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

The Sishen-Saldanha line, Transnet Freight Rail’s (TFR) export iron ore corridor, forms the backbone of the company’s growth strategy. As part of the Transnet Orex expansion, TFR will be replacing the 9E Electrical Locomotives and Diesel Locomotives with the new energy efficient 15E Electrical Locomotives.

Consequently, to enable TFR to expand their operations without overloading and interruption of supply, the proposed development entails the following:

- Construction of approximately 5km of 50 kV power line in parallel to the existing line from Eskom Aries substation to the proposed new Transnet Traction Feeder substation. The new line will have three single phase supplies each rated at 60MVA;
- Installation of 1x60 MVA 400/50 kV transformer; and
- Connect in parallel the existing 2x40 MVA 400/50kV transformers and make them to feed south of the substation.

The proposed line will require approximately 30 m servitude however; the environmental assessment will earmark a 200m corridor.

The proposed project will be located on Farm Klein Zwart Bast 188 Portion 1, 2 and 4 within the jurisdiction of Kai !Garib Local Municipality in the Northern Cape Province of South Africa.

The aforementioned activities are listed activities under GNR 544 (Listing Notice 1) Activity 10 (i), therefore an Environmental Authorization must be obtained in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2010.

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	Description of project activity
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and 546 Example: <i>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.</i>	<i>A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river</i>
GN R 544 Activity 10(i): The construction of facilities or infrastructure for the transmission and distribution of electricity outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.	Approximately 5km of 50kV line will be built parallel to the existing line from Eskom Aries Substation to the proposed new Transnet Traction Feeder Substation.

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.

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a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>The proposed project will be located on Farm Klein Zwart Bast 188 Portion 1, 2 and 4 within the jurisdiction of Kai !Garib Local Municipality in the Northern Cape Province of South Africa as depicted below.</p> <div style="text-align: center;"> </div> <p>The proposed project will entail minor upgrade within the existing Aries substation to accommodate the construction of the proposed 5km of 50kV power line which will be built parallel to the existing power line from the existing Eskom Aries Substation to the proposed Transnet Traction Feeder Substation. The power line will consist of monopole structures that require an 11 metre servitudes and 30 metres clearance between the towers. Other types of towers such as self-supporting may be used on the bends and as may be required by the terrain.</p>	29° 30' 58.31" S	20° 46' 54.25" E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>The proposed project aims to strengthen capacity to ensure efficient operation of the existing infrastructure therefore, the siting is highly reliant on the existing infrastructure, hence no site alternatives where considered as it would defeat the purpose.</p>		

In the case of linear activities:

Alternative:

Alternative S1 (preferred)

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

Latitude (S):

Longitude (E):

29° 29' 38.85" S	20° 47' 35.00" E
29° 30' 58.31" S	20° 46' 54.25" E

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• End point of the activity	29° 32' 08.35"S	20° 46' 57.40"E
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

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

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

b) Lay-out alternatives

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

c) Technology alternatives

Alternative 1 (preferred alternative)
Installation of bird friendly structures on new lines. Self-supporting structures i.e. no stays. Use of SF6 gas insulated circuit breakers instead of oil insulated circuit breakers; oil insulated auxiliary, voltage and current transformers.
Alternative 2
Use SF6 gas insulated auxiliary, voltage and current transformers. However, this is not preferred due to excessive costs and practical constraints.
Alternative 3

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

Alternative 1 (preferred alternative)
Use of power quality metering and SCADA, to assist in power demand optimization. Fibre optic communications, for remote operations, to minimise travelling of operational personnel.
Alternative 2
Alternative 3

e) No-go alternative

In accordance with GN R543, consideration must be given to the option not to develop. This option is usually considered when the proposed development is envisaged to have such significant negative environmental impacts that mitigation measures cannot ameliorate the identified impacts effectively.

The no-go option would be the option of not undertaking the proposed project but maintaining the status quo. This means that the 9E Electrical Locomotives and Diesel Locomotives will continue to operate making room for overloading and interruption of power supply. Furthermore, this will have the potential of inhibiting the TFR's growth.

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 A1¹ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

55000m ²
m ²
m ²

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Length of the activity:

5000m
m
m

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

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

55000m ²
m ²
m ²

¹ "Alternative A.." refer to activity, process, technology or other alternatives.

4. SITE ACCESS

Does ready access to the site exist?

YES ✓	NO
m	

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

Describe the type of access road planned:

Access road to site already exists. The primary access will be through the Sishen-Saldanha railway line service road which is a gravel track (see Appendix A).

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.

The position of the road is depicted on the site plan attached as Appendix A.

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).

Locality Map is attached as Appendix A.

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.

Layout Plan is attached as Appendix A.

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.

Sensitivity Map is attached as 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.

Eight - directional Colour photographs are attached as Appendix B.

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.

Facility Illustration is attached as Appendix C.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES ✓	NO	Please explain
The proposed activity entails the construction of a 5km 50kV power line adjacent the existing infrastructure.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES ✓	NO	Please explain
According to the Northern Cape SDF, an effective, competitive and responsive infrastructure network is imperative for on-going economic development of the province. Much of the province's primary agricultural and mineral production is produced in localities distant from markets and from points of export. The proposed project is part of the programme of increasing electricity supply capacity to allow for improved infrastructure.			
(b) Urban edge / Edge of Built environment for the area	YES ✓	NO	Please explain
The proposed project is outside the urban edge.			
(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?).	YES	NO ✓	Please explain
The current IDP and SDF promote industrial development and it is very specific about supply of power in its clearly stated support of National and Provincial Government's key projects. Further it supports Strategic Infrastructural Project.			
(d) Approved Structure Plan of the Municipality	YES	NO ✓	Please explain
It is not within the Municipality's mandate to approve Eskom Structure Plan; however, the Municipality has been identified as a primary stakeholder eligible to comment.			
(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?)	YES ✓	NO	Please explain
The proposed project will have various environmental impacts, which will to an extent compromise the integrity of the EMF. However, the long term developmental and sustainability goals coupled with increased economic activity and overarching benefits to both the region and the country in terms of power supply justifies the project.			

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(f) Any other Plans (e.g. Guide Plan)	YES	NO ✓	Please explain
None identified.			
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)?	YES ✓	NO	Please explain
The proposed project entails the construction of 5km 50kV power line and it forms part of the SDF approved by the Department. Therefore, the proposed project is in line with the land use associated with the activity being applied for.			
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.)	YES ✓	NO	Please explain
The industrial community need the activity to be able to operate at maximum capacity, thus enhancing the country's economy.			
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.)	YES ✓	NO	Please explain
The required services for the proposed activities include primary access roads which already exist. The roads that are currently used for maintenance for the existing substation, power and railway lines will be used during the construction phase. Confirmation with this regards will be sought from the Municipality and attached accordingly in the final BAR.			
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.)	YES ✓	NO	Please explain
The proposed project is specifically needed by Transnet, without which they will not be able to proceed with the proposed locomotive upgrade to allow the Iron Ore line to realise its full potential. The proposed project has been identified by the Municipality as a SIP; therefore it is much needed as it will add support and form part of a link to strengthen the economy. This project will allow for load growth and will improve reliability of supply to the end user thus allowing the municipality to achieve their plan as set out in the IDP.			

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7. Is this project part of a national programme to address an issue of national concern or importance?	YES ✓	NO	Please explain
The Sishen-Saldanha line forms the backbone of South Africa's economy; it is part of the Strategic Infrastructure Projects (SIP) which particularly emphasise on mining-related investment. Therefore the proposed project is a customer application from Transnet to Eskom with the objective being to enhance the operation of the Sishen-Saldanha line.			
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.)	YES ✓	NO	Please explain
The proposed expansion of Aries substation and 50kV power line is located in close proximity to the Sishen-Saldanha Iron Ore line and close to the proposed new Traction Feeder Substation; therefore the proposed location favours the land use.			
9. Is the development the best practicable environmental option for this land/site?	YES ✓	NO	Please explain
The proposed site is already disturbed due to existing infrastructure and activities.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES ✓	NO	Please explain
The proposed project will have economic benefits for the community, municipality and the country at large. The identified impacts will be managed according to the recommendations from the specialist as well as the EMP approved by the Department.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO ✓	Please explain
The proposed project will not set a precedent as it will follow suite to the existing electrical infrastructure in the area.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO ✓	Please explain
The Constitution of South Africa Act No. 108 of 1996 provides for an environmental right (contained in the Bill of Rights, Chapter 2). In terms of Section 7, the state has an obligation to respect, promote and fulfil the rights as defined in the Bill of Rights. The undertaking of the Basic Assessment is in line with the State's obligation as outlined in the Constitution in its effort to ensure sustainability.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO ✓	Please explain
The proposed project is outside the urban edge.			

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14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
<p>The proposed project is SIP 5 which entails:</p> <ul style="list-style-type: none"> • Integrated rail and port expansion; • Back-of-port industrial capacity (including an industrial development zone); • Strengthening maritime support capacity for oil and gas along the African West Coast; and • The expansion of iron ore mining production and beneficiation. The Saldanha Port iron ore infrastructure and operations will be expanded to increase South Africa's iron ore export capacity. <p>The mining industry which the proposed project directly serve plays a vital role in the growth and development of South Africa and its economy.</p>			
15. What will the benefits be to society in general and to the local communities?	Please explain		
<p>The proposed project will directly benefit Transnet Freight Rail as it will allow them to undertake their proposed upgrades and allow them to operate more efficiently.</p> <p>Further the project will aid economic growth which will in turn benefit society in general, the locals and the country at large.</p>			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
None.			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
<p>The Government's New Growth Path (incorporated within the NDP) sets a goal of creating five million new jobs by 2020 and highlights opportunities in specific sectors and markets to drive job creation. Despite the industry current challenges including the recent labour unrest, falling productivity levels and increasing input price pressure, the mining sector has been identified as one of the most significant sectors to drive job creation. Mining continues to be one of the most significant sectors of the South African economy, providing jobs, contributing 8.6% to gross domestic product (GDP) and building relations with international trading partners. It is critical that South Africa's mineral resources be directed to benefit key social and economic objectives for sustained growth and meaningful transformation.</p> <p>It is expected that the proposed project will enhance the operation of the industry and ensure continued growth and hence a stronger economy for the benefit for all.</p>			
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.			
<p>The general objectives of IEM have been taken into account by means of identifying, evaluating, and predicting the actual and potential impacts on the natural, cultural and social environment. The risks, consequences and mitigation measures have been considered with the aim to minimise the negative impacts, enhance the positive impacts and promote compliance with environmental management principles.</p>			

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

The principles of NEMA have been considered in this assessment through compliance with the requirements of the applicable legislation. This BAR ensures that the impacts of the proposed activity on the environment are thoroughly and comprehensively assessed to ensure sustainability. Further, successful implementation of this project will aid in minimising pollution and environmental degradation. The undertaking of the BAR has been transparent in approach and has as such involved interested and affected parties, landowners, organs of state and other key stakeholders, which will ensure that well informed decision be undertaken by the Authority.

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
Republic of South Africa – Constitution, Act 108 of 1996	The Constitution of South Africa Act No. 108 of 1996 provides for an environmental right (contained in the Bill of Rights, Chapter 2). In terms of Section 7, the state has an obligation to respect, promote and fulfil the rights as defined in the Bill of Rights. The environmental right states that: “Everyone has the right - a) To an environment that is not harmful to their health or well-being; b) To have the environment protected in order to enjoy that environment for themselves and their posterity; • Prevent pollution and ecological degradation; • Promote conservation; and • Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.” The undertaking of the BA process is in line with the state’s obligations as outlined in the constitution in its effort to ensure sustainability.	National Government	1996
National Environmental Management Act, Act 107	The overarching principles of sound environmental	National & Provincial Government	1998

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<p>of 1998 (as amended in 2009)</p>	<p>responsibility are reflected in the National Environmental Management Act (NEMA The principles set out in the National Environmental Management Act, 1998 (Act No. 107 of 1998), hereafter referred to as NEMA, applies to all listed projects. Construction and operation have to be conducted in line with the generally accepted principles of sustainable development, integrating social, economic and environmental factors.</p>		
<p>National Environmental Management: Biodiversity Act, Act 10 of 2004</p>	<p>The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed. The diversity of ecological processes for the application sites was determined through the specialist studies conducted previously in the area.</p> <p>No listed or protected species were observed within the new traction substation site or within any affected areas of the Aries substation.</p>	<p>National & Provincial Government</p>	<p>2004</p>
<p>National Environmental Management: Air Quality Act, Act 39 of 2004</p>	<p>The objective of the Act is to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air and to prevent pollution of air and ecological degradation.</p> <p>Part 6 of the Act makes</p>	<p>National & Provincial Government</p>	<p>2004</p>

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	<p>provision for measures to control dust, noise and offensive odours.</p> <p>The assessment of impacts relating to air quality control and management, where appropriate, will form part of the environmental impact assessment report and environmental management plan. The Proposed Area has not been declared as a dust control area in terms of section 27 of the APPA. The proposed project may create minimal dust during excavations which is expected to be short term and site specific.</p>		
National Water Act, Act 36 of 1998	<p>The Act ensures protection of water resources.</p> <p>There are four non-perennial streams within the corridor; therefore the requirements of the Act may not necessarily apply directly. It is however, recommended that the resources be protected at all times.</p>	National & Provincial Government	1998
National Heritage Act, Act 25 of 1999	<p>The Act legislates the necessity for cultural and heritage impact assessments in areas earmarked for development, which exceed 0.5ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).</p> <p>Stone age artefacts were identified on site, therefore mitigation measures will need</p>	National & Provincial Government	1999

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	to be put in place.		
Noise Control Regulations in terms of the Environmental Conservation Act 73 of 1989	<p>The assessment of impacts relating to noise pollution management and control, where appropriate, forms part of the environmental impact assessment report and environmental management plan. Applicable laws regarding noise management and control refers to the national noise control regulations issued in terms of the Environment Conservation Act 73 of 1989.</p> <p>The inhibition of sites by contractors may generally increase the ambient noise levels in the area and this is expected to vary along the route. Additional noise may be expected from the increased heavy duty traffic as well as construction equipment.</p>	Local Authority	
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)	<p>The purpose of this Act is to provide for the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes. The diversity of ecological processes was determined throughout the study.</p> <p>This Act will be read together with relevant policies and management plans.</p>	National	2003

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

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

YES ✓	NO
Unknown	m ³

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

The construction of the proposed project will generate general construction waste which will be removed by a Waste company and be disposed of at a registered waste disposal site. Any solid waste produced on site will be collected in suitable containers and removed from site by means of waste disposal trucks. Additional details on solid waste management are provided in the Environmental Management Programme (EMPr). Solid waste could include the following:

- conductor off-cuts, steel;
- concrete rubble from structure foundations;
- any vegetation cleared; and
- general waste produced by construction workers.

All waste will be taken to registered waste sites. Should any hazardous waste be produced, it shall be disposed of appropriately at a registered waste disposal site.

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

Solid waste will be managed and disposed of in accordance with the attached Environmental Management Programme and may include:

- General waste, consisting of non-hazardous substances and substances that cannot be recycled. Examples include (but not limited to) rubble that cannot be reused and food waste. This will be disposed and collected in a waste skip and disposed of at a registered site.
- Re-usable and excess material can be used at construction sites will be carefully packaged and delivered to other sites for reuse.
- Hazardous waste will be disposed of accordingly at a registered hazardous waste disposal site.
- Refuse will at all times be disposed of at a registered site, which is also approved by the local authority. Refuse will not be burned or buried on or near the site.

Will the activity produce solid waste during its operational phase?

YES	NO
✓	
Unknown m ³	

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

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

Waste produced during the operational phase will primarily be from maintenance as well as domestic waste from employees (securities and other). Waste produced will be managed according to the requirements of the EMP, which will include proper disposal of waste at a registered site as well as recycling where feasible. A record of waste generated and disposed of will be kept and managed accordingly to encourage waste reduction.

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

A registered landfill site will be used and permission will be sought from the Municipality before commencement of the construction activities. It is assumed that the closest waste disposal site to the approved site and alignment will be used.

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

Waste that does not fit into the municipal waste stream will be disposed of at a registered hazardous waste disposal site while recyclable and reusable will be treated as such.

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?

m³

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:

Facility name:

Contact

person:

Postal

address:

Postal code:

Telephone:

E-mail:

Cell:

Fax:

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

None identified.

BASIC ASSESSMENT REPORT

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
	✓
YES	NO
	✓

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

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:

Low levels of dust emissions may also be expected from excavations during the construction phase; this will be site specific and low in significance, provided that mitigation measures are in place. Appropriate dust control measures such as dampening of surfaces will be put in place as may be required. Further detail on dust management is provided in the Environmental Management Programme.

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?

Describe the noise in terms of type and level:

Noise pollution will occur as a result of construction activities and movement of vehicles on site; the impact will be highly localised and of a temporary nature.

The potential noise impact will be mitigated by restricting construction activities to normal working hours, which will result in an impact of low significance.

Additional detail on noise management is provided in the Environmental Management Programme.

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,	Other	The activity will
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BASIC ASSESSMENT REPORT

✓			dam or lake		not use water
---	--	--	-------------	--	---------------

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:

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

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

litres	
YES	NO ✓

14. ENERGY EFFICIENCY

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

TFR will be replacing the 9E Electrical Locomotives and Diesel Locomotives with the new energy efficient 15E Electrical Locomotives.

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

None.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. 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):

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

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

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

Property description/physical address:

Province	Northern Cape																																																																					
District Municipality	ZF Mgcawu District Municipality																																																																					
Local Municipality	Kai !Garib Local Municipality																																																																					
Ward Number(s)	Ward 3																																																																					
Farm name and number	Klein Zwart Bast 188																																																																					
Portion number	1, 2, 4																																																																					
SG Code	<table border="1" style="font-size: small;"> <tr> <td>C</td><td>0</td><td>3</td><td>6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>8</td><td>8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td> </tr> <tr> <td>C</td><td>0</td><td>3</td><td>6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>8</td><td>8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>2</td> </tr> <tr> <td>C</td><td>0</td><td>3</td><td>6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>8</td><td>8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>4</td> </tr> </table>	C	0	3	6	0	0	0	0	0	0	0	0	0	0	0	1	8	8	0	0	0	0	1	C	0	3	6	0	0	0	0	0	0	0	0	0	0	0	1	8	8	0	0	0	0	2	C	0	3	6	0	0	0	0	0	0	0	0	0	0	0	1	8	8	0	0	0	0	4
C	0	3	6	0	0	0	0	0	0	0	0	0	0	0	1	8	8	0	0	0	0	1																																																
C	0	3	6	0	0	0	0	0	0	0	0	0	0	0	1	8	8	0	0	0	0	2																																																
C	0	3	6	0	0	0	0	0	0	0	0	0	0	0	1	8	8	0	0	0	0	4																																																

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

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

Agricultural

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

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

YES	NO ✓
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BASIC ASSESSMENT REPORT

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

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

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

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

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

BASIC ASSESSMENT REPORT

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.

4. GROUND COVER

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 ^E	Natural veld with scattered aliens ^E ✓	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	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.

Vegetation Studies was undertaken by Simon Todd and the report is attached as Appendix D-1.

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.

BASIC ASSESSMENT REPORT

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 ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture ✓ (Stock Farming)
Retail commercial & warehousing	Old age home	River, stream or wetland ✓
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge
Heavy industrial ^{AN}	Railway line ^N ✓	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe) ✓ IPP (Solar Plant)

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

The proposed upgrade is meant for the enhancement of the railway line operation.

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 ✓	

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:

The heritage specialist study was undertaken by Munyadziwa Magoma of Vhubvo Archaeo-Heritage Consultants and the report is attached as Appendix D3. A number of stones (river pebbles) are scattered across the proposed power line corridor, and some were identified as Stone Age tools. A small outcrop was also noted along the corridor which is associated with stone tools, mostly Middle Stone Age. Considering that a number of the identified sites and features are of high significance and will be negatively impacted by the proposed development, it is thus recommended that the area proposed for power line is subjected to heritage walk down once all the final tower placements have been done. The walk down will focus on the individual tower positions to see if any towers will negatively impact on any archaeological sites.



View of some MSA tools found scattered in the area and a small outcrop (Vhubvo:2014)

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

YES	NO ✓
YES	NO ✓

8. SOCIO-ECONOMIC CHARACTER

The source of information provided hereunder is Census 2011 Municipal Fact Sheet, published by Statistics South Africa.

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 official unemployment rate in the Kai !Garib Local Municipality is 10.0 %. This is a 6.1% decrease when compared to the previous census (16.1%).

Economic profile of local municipality:

In comparison to the 2001 data of 58 671 the population of Kai !Garib increased by 1.16 %. The total households is estimated at 16 703 and of these 34.6% is female headed households. The Statistics further indicate that the female population is dominated by male.

The Municipality's household dynamics are as follows:

- Households: 16 703.
- Average Household Size: 2.9
- Female Headed Households: 34.6%
- Formal Dwellings: 88.4 %
- Housing Owned: 43.1 %

Level of education:

The level of education within the Municipality is very low as depicted in the stats below:

- No Schooling – 9.0 % (14.7 % in 2001 = decrease by 5%)
- Higher Education – 3.9 % (3.7 % in 2001 = increase by 0.2 %)
- Matric – 15.5 % (11.2 % in 2001 = increase by 4%)

b) Socio-economic value of the activity

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

Undetermined.
Cost estimations have not been calculated as they strongly depend on current construction costs and the site selected for use.

BASIC ASSESSMENT REPORT

What is the expected yearly income that will be generated by or as a result of the activity?	It is not expected that the proposed development will earn any income – it is primarily to provide reliable bulk services to the customer (Transnet).	
Will the activity contribute to service infrastructure?	YES ✓	NO
Is the activity a public amenity?	YES	NO ✓
How many new employment opportunities will be created in the development phase of the activity?	During the development phase of the proposed project it is not envisaged that any direct employment will be created. However, the local community may benefit indirectly by providing service to the contractor	
What is the expected value of the employment opportunities during the development phase?	This cannot be quantified as it is not foreseen that any significant employment opportunities will be generated by the project.	
What percentage of this will accrue to previously disadvantaged individuals?	None - it is not foreseen that any additional employment opportunities will be created by the project.	
How many permanent new employment opportunities will be created during the operational phase of the activity?	None – due to the nature of the project no permanent employees will be required on site to manage the operational phase.	

BASIC ASSESSMENT REPORT

What is the expected current value of the employment opportunities during the first 10 years?

No direct employment opportunities will be generated by the project, in any of the phases. However it is estimated that numerous indirect employment opportunities might be generated as a result of the additional bulk infrastructure which the project proposes to install in the area.

What percentage of this will accrue to previously disadvantaged individuals?

None –it is not foreseen that any additional employment opportunities will be generated by the project.

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. 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 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	Description and additional Comments and Observations (including additional insight into condition, e.g. poor
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BASIC ASSESSMENT REPORT

	class (adding up to 100%)	land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	0%	No critical and endangered vegetation was identified on site.
Near Natural (includes areas with low to moderate level of alien invasive plants)	50%	The area has naturally low species richness, this total is still quite low given that it covers four quarter degree squares and indicates that the area has probably not been well sampled. Only two listed species are known from the area, <i>Hoodia gordonii</i> which is classified as DDD (Data Deficient – Insufficient Information) and <i>Aloinopsis luckhoffii</i> which is classified as DDT (Data Deficient – Taxonomically Problematic). Only <i>Hoodia gordonii</i> was observed at the site, which occurs as occasional scattered individuals across the study area. Aside from the listed species, a number of protected species are present at the site, including <i>Aloe claviflora</i> .
Degraded (includes areas heavily invaded by alien plants)	20%	Alien species abundance at the site was low and alien plant species observed at the site include scattered individuals of <i>Prosopis glandulosa</i> and occasional <i>Salsola kali</i> in disturbed locations
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	30%	The site has been transformed as a result of historic farming, railway line, IPP project and substation.

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)			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 site lies entirely within the Bushmanland Basin Shrubland vegetation type. As a result of the arid nature of the area, very little of this vegetation type has been affected by intensive agriculture and it is classified as Least Threatened. There are few endemic and biogeographically important species present within this vegetation unit and only *Tridentea dwequensis* is listed by Mucina and Rutherford as biogeographically important while *Cromidon minimum*, *Ornithogalum bicomutum* and *Ovatum subsp oliverorum* are listed as being endemic to the vegetation type.

Other vegetation types which occur in the area include Bushmanland Arid Grassland which occurs on sandy pediments north and east of the site, as well as *Bushmanland Vloere* which occupies the low-lying flat pan systems of the area. Neither of these vegetation types occurs in proximity to the site and would be affected by the development.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Volksblad	
Date published	25 August 2014	
Site notice position	Latitude	Longitude
	29° 29.548' S	20° 47.472' E
	29° 29.505' S	20° 47.380' E
	29° 32.103' S	20° 46.939' E
	29° 32.114' S	20° 46.933' E
Date placed	02 September 2014	

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:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mr Johan Mouton	Land Owner	15 Swartberg Road, Stellenburg, Durbanville, 7550
Suzanne Erasmus	Wildlife and Environment Society of South Africa	wessanc@yahoo.com

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.

Proof of stakeholder notification is attached as Appendix E2.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
None to date	

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.

Comments and responses have been attached 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
Northern Cape Department of Environment and Nature Conservation	Mrs T. Makaudi	053 807 7430	0538313530		90 Long street, Sasko Building, Kimberely
Kai !Garib Local Municipality	The Municipal Manager: Ward 3				Private Bag X6, Kakamas, 8870
Department of Roads and Public Works	The MEC	053 839 2100	053 839 2190/1		P.O Box 3132, Squarehill Park, Kimberley
Northern Cape Department of Water Affairs	Abe Abraham	(054) 338 5800	(054) 334 0205	warmsorange@dwa.gov.za	Private Bag X5912 Upington 8800
Department of Water and Sanitation	The MEC	012 336 8733	012 336 8850		Private Bag X313, Pretoria,0001
Northern Cape Department of Agriculture and Land Affairs	The MEC	053 838 9106	053 832 4328		Private Bag X5018, Kimberley

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

Proof has been included 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.

A list of registered I&APs is included as Appendix E5.

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

No meetings have been held to date, however copies of correspondence and minutes are attached as 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
Alternative 1 (preferred alternative)			
	<p>Direct impacts:</p> <p>Cultural and heritage resources</p> <p>Several archaeological sites with high significance dating to the Stone Age were noted along the area proposed for the power line corridor. A potential negative impact of medium significance can be expected on the Stoneage artefacts identified. However, with proper mitigation the impact can be reduced to low.</p>	Medium	<ul style="list-style-type: none"> The area proposed for the construction of the power line is subjected to heritage walk down study once all the final pylon placements have been done. Identified sites of heritage significance must be avoided as far as practically possible during the alignment. Should heritage artefact be discovered during construction, all works must be stopped and proper measures put in place.
	<p>Avifauna</p> <p>It is inevitable that birds will be killed through interaction with power infrastructure, despite the best possible mitigation measures.</p> <ul style="list-style-type: none"> Habitat destruction during the construction phase of the proposed activities is inevitable and this will have an 	Low	<ul style="list-style-type: none"> Care must still be taken to reduce the impact of habitat destruction to an absolute minimum. The already disturbed servitude and all existing roads must be used if possible.

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
	<p>impact on birds breeding, foraging and roosting in or in close proximity of the servitude, both through modification of habitat and disturbance. Given the absence of sensitive bird habitat on site, this impact is definite and of low significance.</p> <p>Further electrocution and collision of birds during the operational phase is highly likely. This impact is also of low significance with proper mitigation.</p>		<ul style="list-style-type: none"> • Construction activities must be limited to the site and surroundings and not be allowed to spill over to adjacent habitat. • The steel monopole design should be used for the new power line towers. This will mitigate for the impact of electrocutions as well as the impact of bird induced faulting. • All poles must be fitted with a Bird Perch on top to provide safe perching space for large birds. • The new power line must be built adjacent to the existing power line to mitigate for the impact of collisions. • In addition the new line must be marked with anti-collision flappers to further reduce the impact of collision. • An avifaunal walk down should be commissioned once the line has been surveyed and pegged to indicate the exact spans requiring marking.
	<p>Fauna</p> <p>Increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to fauna resident or utilising the site. Sensitive and shy fauna would move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species would not be able to avoid the construction activities and might be killed. Some mammals and reptiles would also be vulnerable to illegal collection or poaching.</p>	<p>Low</p>	<ul style="list-style-type: none"> • Any active faunal burrows within the development footprint should be located and marked before construction and avoided until the occupant animals can be excluded or have moved away due to the nearby construction activities. • Any fauna threatened by construction activities should be removed to safety by the ECO or other suitably qualified person.

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Activity	Impact summary	Significance	Proposed mitigation
			<ul style="list-style-type: none"> • Existing roads and access routes should be used wherever possible. • During construction all vehicles should adhere to demarcated tracks or roads and the speed limit should not exceed 40km/h on larger roads and should be 20-30km/h on smaller access tracks.
	<p>Flora (Vegetation)</p> <p>There are some listed and protected species confirmed present at the site and these may be impacted by the development. In addition, loss of currently intact habitat resulting from site clearing within the development footprint is an inevitable consequence of the development.</p>	Low	<ul style="list-style-type: none"> • There must be a preconstruction walk-through of the power line route to identify species of conservation concern that should be avoided or translocated. • Individuals of protected species which cannot be avoided should be translocated to safe sites nearby. • A permit from DENC is required for any vegetation clearing, destruction or translocation of listed or protected plant species. • Existing tracks should be used for access wherever possible. No open fires are permitted within naturally vegetated areas. • Formalise access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas. • A vegetation rehabilitation plan should be implemented.
	<p>Hydrological</p>		

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Activity	Impact summary	Significance	Proposed mitigation
	<p>Construction phase disturbance within or near washes and drainage lines may impact on hydrological function and ecological integrity of the drainage systems. Although the area is arid, it may experience occasional intense summer thunder showers and capture of overland flow along vehicle tracks or through disturbed areas, may result in large amounts of erosion and silt movement into drainage lines with negative consequences for fauna and flora in these areas.</p> <p>An impact of medium significance is expected, with proper mitigation it can be reduced to low.</p>	Medium	<ul style="list-style-type: none"> • Disturbance within or near the drainage lines should be kept to a minimum. No pylons should be located within drainage lines or the adjacent floodplains. • Any roads along slopes should have water diversion structures placed at regular intervals to ensure that they do not capture overland flow and become eroded. The existing access route along the existing power line should be used during operation and it should not be necessary to construct an additional permanent access route.
	<p>Employment</p> <p>The planning and design of the proposed development requires input from various individuals, resulting in the employment opportunities for such persons. This additional employment would include both direct (e.g. Environmental Consultants, Engineers, Project Managers, Planners, etc.) and indirect (e.g. reviewing and commenting authorities such as the local authority planning authorities and the environmental authorities). This is a positive impact of medium significance.</p>	Medium	<ul style="list-style-type: none"> • Use local labour as far as possible • Create opportunities for the employment of women. • Where possible use labour-intensive methods of construction. • Go beyond the minimum wage rate and invest in local staff. • Where possible provide training to ensure skill transfers.
	<p>Soil Erosion</p> <p>Movement of heavy machinery across the land as well as vegetation clearance and traffic during the construction phase may leave it susceptible to erosion.</p>	Low	<ul style="list-style-type: none"> • Implementation of anti-erosion measures such as the construction of berms to reduce the water velocity is essential. • Storm water runoff shall be considered and its flow controlled on the

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
			<p>construction site.</p> <ul style="list-style-type: none"> • Stockpiles should not be higher than two meters. • Foundation excavations must be regularly inspected during construction to avoid erosion and associated impacts.
	<p>Traffic</p> <p>During construction, increase in traffic is likely to result from delivery of construction materials to and from the construction works. The impact of increased traffic can be considered local in extent, short term in duration with the overall impact been negative with low significance.</p>	<p>Low</p>	<ul style="list-style-type: none"> • The delivery of construction material and equipment should be limited to hours outside peak traffic times (including weekends) prevailing on the surrounding roads. • Delivery vehicles must comply with all traffic laws and by laws
	<p>Fire Hazards</p> <p>Onsite storage of fuel and other flammable solvents, during construction, increase the risk of fire. It is anticipated that the uncontrolled fires on site could cause damage to infrastructure and the biophysical environment and impact on the social environment. This impact is considered to be of medium significance. Should the recommended mitigation measures be implemented, the significance of the impact will remain negative but low in significance.</p>	<p>Low</p>	<ul style="list-style-type: none"> • Areas where flammable substances are kept must have proper warning signs on display (highly flammable, No smoking etc.) to warn personnel on site of risk associated with such areas. • No burning of waste or cooking will be allowed on site • Contracting personnel must be well versed in the relevant existing fire and safety management procedures and activities on site. • Implement fire hazard sensitive on- and offloading

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
			procedures. Designate a site safety official and ensure that personnel are adequately trained regarding fire hazards and procedures.
	<p>Socio-Economic</p> <p>The proposed project will result in a positive socio-economic impact as the proposed upgrade will ensure that the proposed upgrade of diesel locomotives is undertaken. This will have positive economic spinoffs during the operational phase.</p>	High	<ul style="list-style-type: none"> • No mitigation identified. It is recommended that the project progresses provided all mitigation is in place.
	<p>Direct impacts:</p> <p>Cultural and heritage resources</p> <p>Several archaeological sites with high significance dating to the Stone Age were noted along the area proposed for the power line corridor. A potential negative impact of medium significance can be expected on the Stone age artefacts identified. However, with proper mitigation the impact can be reduced to low.</p>	Medium	<ul style="list-style-type: none"> • The area proposed for the construction of the power line is subjected to heritage walk down study once all the final pylon placements have been done. Identified sites of heritage significance must be avoided as far as practically possible during the alignment. • Should heritage artefact be discovered during construction, all works must be stopped and proper measures put in place.
	<p>Indirect Impacts</p> <p>None identified.</p>		
	<p>Cumulative Impact</p> <p>Habitat Loss & Fragmentation</p> <p>The site is not located within a CBA and the cumulative loss of habitat resulting from the</p>		None

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Activity	Impact summary	Significance	Proposed mitigation
	development would be very low in context of the landscape which is overwhelmingly intact. As a result, cumulative habitat loss resulting from the development is not likely to be significant and this is not considered to be an impact that warrants assessment and as such it is not assessed.		
Alternative 2 <i>Direct impacts:</i> <i>Indirect impacts:</i> <i>Cumulative impacts:</i>			
Alternative 3			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
No-go option			
<p>In accordance with GN R543, consideration must be given to the option not to develop. This option is usually considered when the proposed development is envisaged to have such significant negative environmental impacts that mitigation measures cannot ameliorate effectively.</p>			
<p>The no-go option would be the option of not undertaking the proposed project but maintaining the status quo. This means that the 9E Electrical Locomotives and Diesel Locomotives will continue to operate making room for overloading and interruption of power supply. Furthermore, this will have the potential of inhibiting the TFR's growth.</p>			
<p>Further all identified negative and positive impacts will not be realised.</p>			

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)

Certain factors have been taken into account when assessing the impact of the proposed activity on the environment.

FACTORS	COMMENTS
Environmental impact on the ecosystems of the locality.	The proposed activity is not expected to have any long-term impacts on the ecosystems of the locality. Mitigation measures are proposed to protect surrounding environment.
Possible reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality.	No reduction of the environmental quality of the locality is expected in the long term.
Any possible effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations.	No obvious heritage sites were noted, except for stone age tools in along the proposed power line corridor.
Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974);	The proposed site is not expected to have an impact on any habitat of protected fauna as it is highly disturbed.
Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air.	No species of animal or plant is expected to be endangered as a result of the proposed activities.
Any long-term effects on the environment	No long term effect on the environment is expected.
Possible degradation of the quality of the environment.	Mitigation measures would be employed to ensure no significant degradation of the environment.
Any pollution of the environment.	The proposed activity is not expected to result in long term pollution of the environment. Mitigation measures are proposed to ensure pollution is restricted to short term localised effects.
Any environmental problems associated with	

the disposal of waste	No long term environmental problems associated with the disposal of waste material are expected.
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PLANNING AND DEVELOPMENT PHASE

Impacts associated with the planning and development phase of the proposed activity include the creation of job opportunities for skilled engineers and planning professions. This positive impact will be definite and short term in duration. No significant negative impact has been associated with this phase and the proposed activity.

CONSTRUCTION PHASE

The positive impacts identified for this phase include job creation and a positive economic outlook for the municipality and the country at large, these impacts will be enhanced in order to maximise the benefits. Impacts associated with the construction phase of the proposed activity can be regarded as being of low to medium significance. Impacts associated with the construction phase of the proposed activity can be regarded as being of medium to low significance. These includes impacts of low significance on the following:

- vegetation and species of conservation concern;
- fauna and avifauna;
- Heritage; and
- Visual, noise, air pollution and traffic.

Negative impacts of medium significance have been identified as follows:

- Hydrological; and
- Degradation of ecosystems.

With corrective measures in place none of the identified negative impacts are considered to be a fatal flaw.

OPERATIONAL PHASE

No significant negative impact can be associated with the operational phase of the proposed activity. However, possible impact on avifauna due to electrocution and collision as a result of the proposed powerline has been identified. Positive impact includes enhanced and improved operations for Transnet the end user and a positive benefit for the country at large in terms of GDP.

DECOMMISSIONING PHASE

No significant impacts have been identified for the decommissioning phase of the proposed activity since decommissioning will not take place for the proposed activity in the foreseeable future. However, if decommissioning were to take place it will have a negative impact due to job losses, soil erosion and waste generation.

Alternative B

The recommendations are the same as Alternative 1.

Alternative C

No-go alternative (compulsory)

The no-go alternative was assessed not to be an option given the economic and social benefits of the proposed project which far outweigh other identified impacts. If the no-go alternative is considered none of the identified impacts will be realised, including the following;

- The diesel locomotives will continue operating as is, which implies that the opportunity to improve towards more energy efficient locomotives will be missed. Given the current energy crisis the No-go alternative should not be considered as it prevents Transnet from becoming energy efficient in their operations as proposed.
- Further, the Sishen-Saldanha Iron Ore line forms the backbone of the country's mining industry, therefore any enhancement and improvement benefits the country at large; and if the No-go alternative is considered the benefits will not be realised.

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).

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.

It is recommended that the proposed project be authorised i.e. the proposed upgrade of the Aries 50kV 5km powerline including associated structures and infrastructure as proposed. The recommendation is based on the following:

- The identified environmental impacts are of low significance given the disturbed nature of the proposed project;
- The identified positive impacts far outweigh the negative impacts; and
- The proposed upgrade of locomotives will yield significant socioeconomic benefits for the region and country at large.

Environmental Management Programme (EMPr) has been prepared by the consultant and it is hoped that it will serve as the key reference of the EAPs recommendations jointly with Eskom’s policies that are already in place. The EMPr has included measures proposed to mitigate any adverse impacts of the activities and the monitoring. Some of the key recommendation include:

- Areas outside of the footprint and reasonable construction access to be marked as no-go areas.
- Implement erosion control measures where applicable.
- The steel monopole design should be used for the new power line towers. This will mitigate for the impact of electrocutions as well as the impact of bird induced faulting.
- Whilst the proposed project specifically is not anticipated to add significantly to the current ambient noise levels and air pollution it is recommended that noise and dust be reduced at all times respectively.
- It is recommended that the identified archaeological artefacts and site be protected as per the requirements of the Act and proposed mitigation measures as recommended by the specialist.
- The identified non-perennial streams and pans must be protected and further ensure strict compliance with the requirements of the National Water Act and associated legislation.

The attached construction EMPr must be implemented and adhered to in order to minimise all potential negative impacts and to enhance positive impacts where applicable.

BASIC ASSESSMENT REPORT

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.

MUNYADZIWA RIKHOTSO

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information