



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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File Reference Number:
Application Number:
Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, 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, 2014 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 **08 December 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 coal line currently delivers close to 70 million tonnes per annum (mtpa) of export coal from about 48 mine loading sites situated mainly in Mpumalanga Province to the Richards Bay coal terminal. Subsequently, the 81 mtpa rail expansion programme is designed to meet the increasing international market demand for export coal. Currently the coal line is composed of two electrification systems namely, the 3kV DC and 25kV DC from Blackhill to Ermelo and Ermelo to Richards Bay respectively. Hundreds of wagon trains operate between these locations; therefore the program aims to increase rail capacity of the coal line and to address the bottleneck which impacts on the stable flow of train traffic.

Consequently, Transnet Freight Rail (TFR) has appointed Transnet Capital Projects (TCP) to provide a new substation and associated infrastructure. The proposed development will entail construction of a new Transnet 5MW 3kV DC Traction Substation wherein Eskom will provide 132kV AC which will be stepped down to 3kV DC. From the Eskom transmission line, a Transnet-owned 132kV power line/substation bay will run on Transnet property to a transformer where the step-down will take place. The aforementioned 132 kV infrastructure is the specific component of the proposed development requiring Environmental Authorisation. The proposed upgrade will strengthen the traction power supply for both Eskom and Transnet to reduce thermal overloading.

The proposed development will be located on Farm Leeufontein 431JS, Portion 6 in Leeufontein within the jurisdiction of Emakhazeni Local Municipality in Mpumalanga Province, South Africa. The proposed development footprint is approximately 5600m².

The aforementioned development triggers a listed activity under GNR 983 (Listing Notice 1) Activity 11(i), therefore Environmental Authorisation must be obtained in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations of December 2014.

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

Listed activity as described in GN 734, 735 and 736	Description of project activity
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<p>Example: GN 734 Item xx xx): 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.</p>	<p>A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river</p>
<p>GNR 983 (Listing Notice 1) Activity 11(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.</p>	<p>Development of a new 5MW 3kV DC Traction Substation outside urban areas wherein Eskom will provide 132kV AC supply which will be stepped down to 3kV DC.</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 Appendix 1 (3)(h), Regulation 2014. 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 new infrastructure will be located on Farm Leeufontein 431JS, Portion 6 in Leeufontein within the jurisdiction of Emakhazeni Local Municipality in Mpumalanga Province, South Africa. The proposed site will be approximately 5600m², located adjacent the existing Transnet Leeufontein Traction Feeder Station (TFS).</p>	25°50'38.89"S	29°51'48.63"E
<p>Figure1: Locality Map</p> <p>The baseline characteristics of the site are as follows:</p> <p><u>Surface and Ground Water</u></p> <p>The proposed substation site is not located in proximity to any wetlands however; wetland type of habitat is located within a 60m distance from site. A non-perennial water body (pan) is located 360m from the site.</p> <p><u>Geology</u></p> <p>The geology is dominated by Arenite which consist of mainly sandstone, shale, shaly sandstone and grit of the Ecca Group, Karoo Sequence. Some gabbro, norite and granophyre of the Bushveld Igneous Complex, as well as rhyolite of the Damwal Formation, Rooiberg Group, Transvaal Sequence also occur within the vicinity.</p> <p><u>Topography</u></p> <p>The landscape is relatively flat. The gradient of the site is 1:39 east to west and the proposed site does not have any steep slopes.</p>		

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<u>Soil</u> The soil on site is sandy and classified as Plinthic catena dystrophic and/or mesotrophic.		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
Site alternatives have not been assessed due to the requirement to construct next to the existing Transnet traction feeder station.		

In the case of linear activities:

Alternative:

Alternative S1 (preferred)

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

Latitude (S):

Longitude (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 of this form.

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)
<p>Transnet proposes to construct the new Transnet Leeufontein substation and associated infrastructure. The proposed development will entail construction of a new Transnet 5MW 3kV DC Traction Substation wherein Eskom will provide 132kV AC which will be stepped down to 3kV DC. The proposed upgrade will strengthen the traction power supply for Transnet to reduce thermal overloading.</p> <p>The operation of the new substation will rely on Eskom (Supplying the new 132kV feed from the adjacent existing 132kV line) constructing the new 132kV substation. Should it occur that Eskom does not provide the required 132kv power line within the time frame, the proposed Leufontein Substation will steel be able to provide without such line.</p>
Alternative 2
<p>Transnet proposes to construct the new Transnet Leeufontein substation and associated infrastructure. An alternative to using Eskom's 132kV Transmission line will be the use of a containerised power plant. The plant will consist of a diesel heavy fuel oil (HFO) generator capable of continuous supply. The capacity will be 5MW, 50Hz and 11kV. The design will be modular with an acoustic enclosure. The power output will be fed to a 50Hz, 11kV/2x1.22kV/2.36kV, and 4.95MVA rectifier transformer. Beyond the transformer the design will be the same as the standard Transnet's 3kV DC traction substation.</p> <p>From a technical perspective the advantages include the following:</p> <ul style="list-style-type: none"> • Modular System; and • Transnet is in full control of the power supply. <p>The disadvantages of this technology include:</p> <ul style="list-style-type: none"> • Not a standard design and therefore requires specialist knowledge; • Requires intensive maintenance schedule; • Uses diesel which in not environmentally friendly; • Diesel is expensive and therefore will result in high operational costs; and • Susceptible to fire.
Alternative 3

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

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

e) No-go alternative

In accordance with the requirements of GN R982, 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 no-go alternative would be the option not to undertake the proposed development of the new Transnet Leeufontein 5MW 3kV DC Substation. If the proposed development is not undertaken, Transnet will not be able to enhance its operational capacity which implies that the increasing international market demand for export coal will not be met. Subsequently, the economy of the Country will be negatively impacted.

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:

5600m 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:

m
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:

5600m ²
m ²
m ²

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

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

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Describe the type of access road planned:

Access road to site already exists. The primary access to the site will be the National Route N11 and direct access will be through the Transnet railway line service road which is a gravel track.

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 in 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 Map 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 DWS);
- 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 project entails the development of the new Transnet Leeufontein 5MW 3kV DC Substation within the rail reserve, adjacent the existing Leeufontein TFS and alongside a railway line. Therefore it can be deduced that the proposed activity is well within the existing land use rights.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES ✓	NO	Please explain
The proposed development is in line with Mpumalanga's Economic Growth and Development Path (MEGDP) of which the primary objective is to foster economic growth that creates jobs, reduce poverty and inequality in the province. Accordingly, one of the MEGDP key economic growth opportunities include rail development and revitalisation of freight rail, therefore the proposed development aligns with the PSDF.			
(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, SDF and MEGDP is anchored on a number of parameters including sector development e.g. freight rail revitalization, inclusive & shared growth, spatial distribution, regional integration, sustainable human development and environmental sustainability with clearly defined strategic targets over the medium to long term.			
The approval of this application would promote the aims and objectives of the aforementioned policies and programmes by promoting economic growth, upgrading engineering and social infrastructure in the area.			
(d) Approved Structure Plan of the Municipality	YES	NO ✓	Please explain
It is not within the Municipality's mandate to approve Transnet's proposed structure plan; however, the Municipality has been identified as a primary stakeholder eligible to comment.			

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<p>(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?)</p>	YES ✓	NO	Please explain
The proposed project will have various environmental impacts of varying significance as outlined in Appendix F that to an extent may compromise the integrity of the EMF if not well managed. 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 increasing capacity of coal export, justifies the project.			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	YES	NO ✓	Please explain
None identified.			
<p>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)?</p>	YES ✓	NO	Please explain
The proposed development forms part of MEGDP key economic growth opportunities that include rail development and revitalisation of freight rail which is a priority for the Municipality and the Country at large. Further, the proposed project is a Strategic Infrastructure Project (SIP) and it is well aligned with the Municipality's IDP.			
<p>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.)</p>	YES ✓	NO	Please explain
The coal export industry which operates from Mpumalanga to Richards Bay needs the activity to operate at maximum capacity in order to meet the international market demand for coal export. On completion of all the 81mtpa rail expansion program packages, there will be a stable flow of train traffic to Richards Bay which will have significant benefits for the South African economy.			
<p>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.)</p>	YES ✓	NO	Please explain
The necessary services are available to cater for the proposed development.			

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<p>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.)</p>	YES ✓	NO	Please explain
The proposed project has been identified by the Municipality as a SIP; therefore it is much needed as it will add support to 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.			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	YES ✓	NO	Please explain
The proposed development forms part of the national programme and SIP 1 which emphasises on mining-related investment and infrastructure development. The proposed development involves increasing the rail capacity of the coal line and addressing operational bottlenecks that impact on the stable flow of train traffic which will in turn increase capacity for export coal and thus strengthen the country's economy.			
<p>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.)</p>	YES ✓	NO	Please explain
The proposed construction of new Leeufontein 5MW 3kV DC Traction substation is located in close proximity to the existing Leeufontein TFS; therefore the proposed location favours the proposed land use.			
<p>9. Is the development the best practicable environmental option for this land/site?</p>	YES ✓	NO	Please explain
The proposed site is already disturbed due to existing infrastructure, mining and industrial activities.			
<p>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</p>	YES ✓	NO	Please explain
The proposed project will have positive economic spinoffs for the industry, Municipality, Province and the Country at large. The negative impacts identified will be managed according to the recommendations from the specialists as well as the EMP approved by the DEA. The benefits of the proposed project will far outweigh the negative impacts.			
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>	YES	NO ✓	Please explain
The proposed development will be located close to the existing Leeufontein (TFS), thus will not set a precedent but will complement the existing activities in the area.			

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12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO ✓	Please explain
<p>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 process is in line with the state's obligations as outlined in the Constitution in its effort to ensure sustainability.</p>			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO ✓	Please explain
<p>The proposed project is outside the urban edge.</p>			
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 1 which entails:</p> <ul style="list-style-type: none"> • Unlocking mineral resources; • Rail, water pipelines, energy generation and transmission infrastructure; • Thousands of direct jobs across the areas unlocked; • Urban development in Waterberg - first major post-apartheid new urban centre will be a "green" development project; • Rail capacity to Mpumalanga and Richards Bay; • Shift from road to rail in Mpumalanga; and • Logistics corridor to connect Mpumalanga and Gauteng. 			
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 as it will allow for the proposed increase in capacity and efficient operation. Further, the project will aid economic growth which will in turn benefit the locals, society in general and the Country.</p>			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
<p>None.</p>			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
<p>The New Growth Path has set a goal of creating five million new jobs by 2020 and highlights opportunities in specific sectors and markets 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 benefitting key social and economic objectives for sustained growth and meaningful transformation.</p> <p>It is expected that the completion of the 81mtpa rail expansion program will ensure a stable flow of train traffic to Richards Bay which will have benefits for the South African economy.</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.

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 to minimise the negative impacts, enhance the positive impacts and promote compliance with environmental management principles.

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. This Basic Assessment Report (BAR) ensures that the impacts of the proposed activity on the environment are thoroughly and comprehensively assessed to ensure sustainability. Further, successful implementation of the EMPr will aid in minimising pollution and environmental degradation.

The undertaking of the Basic Assessment process has been transparent in approach and as such involves involved Interested and Affected Parties (I&AP), landowners, Organs of State and other key stakeholders, which will ensure that a well informed decision is 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; and b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that - Prevent pollution and ecological degradation; • Promote conservation; and Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”	National Government	1996

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	<p>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.</p>		
<p>National Environmental Management Act, Act 107 of 1998 (as amended in 2009)</p>	<p>The overarching principles of sound environmental 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 & Provincial Government</p>	<p>1998</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.</p> <p>The site is located within Eastern Highveld Grassland which is considered Threatened Ecosystem (Vulnerable) further, it falls within a Class 5 (least concerned) category according to the Terrestrial Biodiversity Areas.</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. Part 6 of the Act makes provision for measures to control dust, noise and offensive odours.</p> <p>The assessment of impacts relating to air quality control and management,</p>	<p>National & Provincial Government</p>	<p>2004</p>

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	<p>where appropriate, will form part of the environmental impact assessment report and environmental management plan.</p> <p>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. There are no identified streams and wetlands in proximity to the proposed therefore the requirements of the Act may not necessarily apply directly. It is however, recommended that the resources be protected at all times.</p> <p>The proposed substation site is not located in proximity to any water bodies, wetlands, streams (perennial/ Non-perennial).</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 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>No obvious signs of cultural or historical significance elements were identified within or around the proposed site.</p>	National & Provincial Government	1999
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>	Local Authority	1989

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		The occupation of sites by contractors may generally increase the ambient noise levels in the area. Additional noise may be expected from the increased heavy duty traffic as well as construction equipment.		
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)		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. This Act will be read together with relevant policies and management plans. No protected sites were identified in proximity to the proposed site.	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?

YES ✓	NO
Unknown m ³	

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

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

The proposed substation development will generate general construction waste which will be removed by a waste contractor and disposed of at a registered waste disposal site. Any solid waste generated on site will be collected in suitable containers and removed from site by means of a waste disposal vehicle. Further, details on solid waste management are provided in the Environmental Management Programme (EMPr). Solid waste could include the following:

- Excess construction material;
- concrete rubble from structure foundations;
- any vegetation cleared; and
- general waste produced by the construction force.

All waste will be transported to a registered waste site. Should any hazardous waste be generated, it shall be disposed of appropriately at a registered waste disposal site. Records of the type and quantity of waste disposed site will be kept on site.

BASIC ASSESSMENT REPORT

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

Solid waste will be managed and disposed of in accordance with the attached EMPr 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, which 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 be appropriately disposed.
- Records of the type and quantity of waste disposed will be kept on 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 be minimal and primarily from maintenance and general waste from employees (site security guards and other). Waste generated will be managed according to the requirements of the EMPr, which will include proper disposal of waste at a registered site as well as recycling were 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 registered waste disposal site will be used.

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 waste 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.

BASIC ASSESSMENT REPORT

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.

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:

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 EMPr.

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

BASIC ASSESSMENT REPORT

e) Generation of noise

Will the activity generate noise?

YES	NO
✓	

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

YES	NO
	✓

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.

Further details on noise management are provided in the EMPr.

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
----------------	-------------	-------------	-------------------------------	-------	------------------------------------

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?

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

None.

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): 0

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
✓	

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	Mpumalanga Province
District Municipality	Nkangala District Municipality
Local Municipality	Emakhazeni Municipality
Ward Number(s)	Ward 1
Farm name and number	Farm Leeufontein 431JS
Portion number	Portion 6
SG Code	T 0 J S 0 0 0 0 0 0 0 0 0 0 4 3 1 0 0 0 0 6

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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1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

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

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

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

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

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

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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.

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.

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

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

No perennial river is located close to the site. A non-perennial water body is located 360m north from site, while wetland type habitat is located 60m south west from site.

The proposed site is located within Category 5 (Ecosystem Maintenance) aquatic biodiversity sub catchment.

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 ✓
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)

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

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:

BASIC ASSESSMENT REPORT

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:

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

YES	NO ✓
-----	---------

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

YES	NO ✓
-----	---------

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

The source of information provided hereunder is the Integrated Development Plan 2014/2015 for the Emakhazeni Local Municipality.

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 within the Emakhazeni Local Municipality is 25.9%.

Economic profile of local municipality:

The leading sectors in terms of percentage contribution to Emakhazeni economy is mining at 28.7% transport at 25.2% and community services at 14.2%. Mining has recorded growth in GDP contribution in the Municipality between 2001 and 2010.

Level of education:

The level of education within the Emakhazeni Local Municipality is relatively low as depicted in the stats below:

- No Schooling – 15%
- Higher Education – 7,4%
- Matric – 28.6%

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 12.5M		
What is the expected yearly income that will be generated by or as a result of the activity?	Undetermined.		
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?	10		
What is the expected value of the employment opportunities during the development and construction phase?	R260 000.00		
What percentage of this will accrue to previously disadvantaged individuals?	100%		

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How many permanent new employment opportunities will be created during the operational phase of the activity?	2
What is the expected current value of the employment opportunities during the first 10 years?	Undetermined
What percentage of this will accrue to previously disadvantaged individuals?	Undetermined

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 (NNA) ✓	

- 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	0%	The site falls within a class 6 category, where no natural habitat is remaining. The closest class 4 area is located 220m from site.
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	None identified.
Degraded (includes areas heavily invaded by alien plants)	10%	The proposed is highly degraded and consists of alien plants.
Transformed	90%	The site has been transformed as a result of current and

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(includes cultivation, dams, urban, plantation, roads, etc)		historic activities. The proposed site is surrounded by mines; railway lines power lines and roads.
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c) Complete the table to indicate:

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

Terrestrial Ecosystems		Aquatic Ecosystems						
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)

Due to the highly disturbed nature of the site no specialist studies were undertaken.

Flora

The site is located within a Threatened Ecosystem considered Vulnerable. The site fall within the Eastern Highveld Grassland. According to the EMF for the Olifants and Letaba river catchment areas, this vegetation type occurs on slightly to moderately undulating planes, including some low hills and pan depressions. The vegetation is a short dense grass land dominated by the usual highveld grass composition (*Arsitida*, *Digitaria*, *Erafrosts*, *Themeda*, *Tristachya* etc.) with small scattered rocky outcrops with, wiry sour grasses and some woody species. Some 44% transformed primarily by cultivation, plantations, mines, urbanisation and by building of dams. No serious alien invasions are reported.

- Graminoids: *Aristida aequiglumis* (d), *A. congesta* (d), *A. junciformis* subsp. *Galpini* (d), *Brachiaria serrata* (d), *Cynodon dactylon* (d), *Digitaria monodactyla* (d), *D. tricholaenoides* (d), *Elionurus muticus* (d), *Eragrostis chloromelas* (d), *E. curvula* (d), *E. plana* (d), *E. racemosa* (d), *E. sclerantha* (d), *Heteropogon contortus* (d), *Loudetia simplex* (d), *Microchloa caffra* (d), *Monocymbium cereiiforme* (d), *Setaria sphacelata* (d), *Sporobolus africanus* (d), *S. pectinatus* (d), *Themeda triandra* (d), *Trachypogon spicatus* (d), *Tristachya leucothrix* (d), *T. rhmanni* (d), *Alloteropsis semialata* subsp. *eckloniana*, *Andropogon appendiculatus*, *A. schirensi*, *Bewsia biflora*, *Ctenium concinnum*, *Diheteropogon amplexans*, *Eragrostis capensis*, *E. dummiiflua*, *E. patentissima*, *Harpochloa falx*, *Panicum natalense*, *Rendlia altera*, *Schizachyrium sanguineum*, *Setaria nigrirostris*, *Urelytrum agropyroides*;

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- Herbs: *Berkheya setifera* (d), *Haplocarpha scaposa* (d), *Justicia anagalloides* (d), *Acalyha angusta*, *Cahmaecrista mimosoides*, *Dicoma anomala*, *Euryops gifillani*, *E. transvalensis* subsp. *setilobus*, *Helichrysum aureonitens*, *H caespitium*, *H. callicomum*, *H. oreophilum*, *H. caespitium*, *H. oerophilum*, *H rugulosum*, *Ipomoea crassipes*, *Pentanisia prunelloides* subsp. *latifolia*, *Selago densiflora*, *Senecio coronatus*, *Vernonia oligocephala*, *Wahlenbergia undulata*;
- Geophytic herbs: *Gladiolus crassifolius*, *Haemanthus humilis* subsp. *hirsutus*, *Hypoxis rigidulua* var. *pilosissima*, *Ledebouria ovatifolia*;
- Succulent herb: *Aloe ecklonis*; and
- Low shrubs: *Anthospermum rigidum* subsp. *pumilum*, *Atoebe plumose*.

Rivers and Wetlands:

A non-perennial river is located 360m north from site.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Middleburg Observer	
Date published	15 May 2015 04 June 2015 (Addendum)	
Site notice position	Latitude	Longitude
	26°03'45.46"S	29°35'09.95"E
Date placed	13 May 2015 09 June 2015	

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

Proof of placement of notice is attached as Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Tinkie Holl	Eskom Holdings SOC Limited	Cell: 082 331 2131 Email: hollk@eskom.co.za
Mr Steel	Land Owner	Cell: 083 654 6076

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		Email: jmsbouerdery@gmail.com
Chris Galliers	Wildlife and Environment Society of South Africa (Mpumalanga Province)	Tel: 033 330 3931/2126 Cell: 079 504 4296 Email: chris@wessa.co.za P.O Box 394 Howick, 3290

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 written notification to key stakeholders 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
Steve Tshwete Local Municipality acknowledged receipt of the notification sent via sms on 12/05/2015. No issues were raised. No response has been received from Emakhazeni Local Municipality.	EAP will forward the Municipality the Draft BAR to allow them an opportunity to comment meaningfully.

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 Response 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
Department of Water and Sanitation	Ms Lillian Siwelane	012 392 1411	012 336 8850	lilianl@dwa.gov.za	P/Ba X995 Pretoria 0001

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Mpumalanga Department of Agriculture and Rural Reform	Mr Selby Hlatswayo	013 759 4000		mmoffice@stlm.gov.za	18 Jones Street, Nelspruit 1200
Mpumalanga Department of Water and Sanitation	Ms Madi Moloto	013 759 7440		molotom@dwa.gov.za	P/Bag X10580 Bronkhorstspuit 1020
Emakhazeni Local Municipality	Mrs Elizabeth Tshabalala	013 253 7628		tshalalaek@emakhazeni.gov.za	PO Box 17, Emakhazeni (Belfast), 1100
Emakhazeni Local Municipality	Ward Councillor: Ward 1	013 249 7263			P.O.Box 14 Middleburg 1050
South African Heritage Resources	Philip Hine	021 462 4502	021 462 4509	phine@sahra.org.za	P.O. Box 4637 Cape Town 8000

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.

List of Registered I&AP attached as Appendix E5.

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

Refer to Appendix 6. No meetings have been held with stakeholders and I&APs to date.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 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)			
Direct Impacts : Pre-Construction			
	Employment Creation The planning and design of the proposed development requires input from various specialists, resulting in employment opportunities. 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 Competent Authorities). The extent and magnitude of this impact is relatively low compared to the other economic impacts, and is typically restricted to a limited number of professionals. The identified technical alternatives are likely to result in the same level of significance for this impact. The impact is definite, short term and of medium significance.	Medium	<ul style="list-style-type: none"> No mitigation measures have been identified.
Direct impacts: Construction – Alternative 1			
	Cultural and heritage resources No heritage resources were	Low	Should the heritage or

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Activity	Impact summary	Significance	Proposed mitigation
	<p>recorded on the proposed site. The potential impact of the proposed project on cultural heritage sites is considered to be low and therefore insignificant.</p>		<p>archaeological artefacts be discovered during construction or operational phases, all works must be stopped at the affected area and SAHRA must be contacted.</p>
	<p>Flora and Fauna</p> <p>The development of the site would not generate any impacts of significance as the site is already disturbed. The potential loss of the disturbed vegetation from the site is not deemed to be significant.</p> <p>No floral and faunal species of conservation concern were observed within and around the development footprint; it is highly unlikely that any such species would be affected by the development.</p>	<p>Low</p>	<ul style="list-style-type: none"> • The proposed development area should be demarcated and cordoned off. • Should any protected or listed plant species be discovered on the working area, and this cannot be avoided, they must be trans-located to safe sites nearby. • Existing tracks should be used for access where possible. • The vegetation clearance with the proposed development footprint must be kept to a minimum. • Excavations must be barricaded and clearly marked to avoid animals and humans from falling in.
	<p>Surface and Ground Water</p> <p>There is general absence of water bodies in the immediate vicinity of the site. It can therefore be deduced that the impact on surface water will be relatively low.</p>	<p>Low</p>	<ul style="list-style-type: none"> • Care must be taken not to spill fuels or oil during service or re-fuelling of construction equipment. • In the event of a spillage of a hazardous substance, the requirements of the EMPr must be implemented. • No activities should occur within a 100m or within a 1:100 year flood line whichever is greatest without approval from the DWS. • Care must be taken to

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Activity	Impact summary	Significance	Proposed mitigation
			avoid destruction of water courses.
	<p>Traffic</p> <p>During construction, increase in traffic is likely to result from delivery of construction material 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 being negative with low significance. However, with the implementation of proper mitigation measures, it can be reduced to be lower.</p>	Low	<ul style="list-style-type: none"> The delivery of construction material and equipment should be limited to hours outside peak traffic times (including weekends). Delivery vehicles must comply with all traffic laws and bylaws. A speed limit of 40km per hour must be adhered to at all times.
	<p>Indirect impacts: None Identified</p>		
	<p>Cumulative impacts: None identified</p>		
Pre-Construction and construction phase impacts for Alternative 2 are similar to Alternative 1.			
Direct Impact: Operational Phase			
Alternative 1			
	<p>Socioeconomic</p> <p>The operational phase of the proposed project will have significant positive socioeconomic impacts that are long term.</p>	High	<ul style="list-style-type: none"> A proper maintenance program must be implemented to ensure efficient operation.
Alternative 2 (Technical)			
	<p>Direct impacts:</p> <p>Soil, Surface and Ground Water</p> <p>The proposed diesel technology will have relatively higher impacts on soil, ground and surface water due to the large quantity that will be stored on site. The potential impact is highly probable, with long term impacts of high significance. With proper mitigation, the impact can be reduced to medium.</p>	Medium	<ul style="list-style-type: none"> All national, regional and local legislations with regard to the storage, transport, use and disposal of petroleum, chemical, harmful and hazardous substances and materials must be adhered to. Training and education of all personnel on site who will be handling the material about its proper

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Activity	Impact summary	Significance	Proposed mitigation
			<p>use, handling and disposal must be undertaken.</p> <ul style="list-style-type: none"> • An emergency procedure for with the management of spills or toxic substances must be established. • Storage of all hazardous material is to be safe, tamper proof and under strict control. • Petroleum, chemical, harmful and hazardous waste throughout the site must be stored in appropriate, well maintained containers. • Exercise extreme care with the handling of diesel and other toxic solvents to ensure that spillage is minimised. • Any accidental chemical / fuel spills have to be corrected immediately.
	<p>Fire</p> <p>The proposed diesel alternative is more susceptible to fire. The potential impact is highly probable, negative with medium significance.</p>	<p>Medium</p>	<ul style="list-style-type: none"> • Fuels or chemicals must be stored at the designated storage area. • Gas and liquid fuels may not be stored in the same storage area. • Adequate fire-fighting equipment at the fuel stores must be provided all the time. • No open fires for heating or cooking will be permitted on site. • The site must be protected against fire, and a sufficient fire break must be constructed.

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
	<p>Socioeconomic</p> <p>Alternative 2 will yield similar result at a relatively higher cost. This will be long term and will have a significant bearing on Transnet's operational cost, which can be considered negative and of high significance. With proper mitigation and management it can be reduced to medium.</p>	Medium	None identified.
	<p>Indirect impacts: None identified.</p>		
	<p>Cumulative impacts: None Identified.</p>		
<p>Alternative 3</p> <p>Direct impacts:</p> <p>Indirect impacts:</p> <p>Cumulative impacts:</p>			
<p>No-go option</p>			
	<p>Direct impacts:</p> <p>Socioeconomic</p> <p>Should the proposed project not proceed Transnet will not be able to increase the rail capacity of the coal line and address operational bottlenecks which impact on the stable flow of train traffic. On completion of all the packages in the 81mtpa rail expansion program, a stable flow of train traffic to Richards Bay will be maintained which will have significant benefits for the South African economy.</p>	High	<ul style="list-style-type: none"> The proposed development must proceed to allow for the identified benefits to be realised.
	<p>Indirect impacts: None identified.</p>		
	<p>Cumulative impacts: None Identified.</p>		

A complete impact assessment in terms of Regulation 19(3) of GN 733 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 1

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

PLANNING AND DEVELOPMENT PHASE

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

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 significance. And such includes the following:

- Floral and Faunal impacts;
- Heritage;
- Traffic; and
- Surface and ground water.
-

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 development. Positive impacts include 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 development since decommissioning is not expected to take place in the in the foreseeable future. However, if decommissioning were to take place it would have negative impacts on soil (potential

erosion and biofuel spillages) and significant amount of waste would be generated.

Alternative 2

PLANNING AND DEVELOPMENT PHASE

Impacts associated with the planning and development phase of the proposed development are similar to Alternative 1 and they include the creation of job opportunities for skilled engineers and planning professionals. This positive impact will be definite and short term in duration. No significant negative impact has been associated with this phase and the proposed development.

CONSTRUCTION PHASE

Impacts for the construction phase are similar to those of technical Alternative 1. 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 this phase are of low significance.

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

OPERATIONAL PHASE

Both positive and negative impacts have been identified for the operational phase of the proposed development. Positive impacts include enhanced and improved operations for the end user and a positive benefit for the Country at large in terms of GDP. Another advantage is that Transnet does not have to rely on Eskom for this option to run. However, negative impacts of medium significance have been identified and these include the following:

- Impact on soil, surface and groundwater
- Higher fire risk ; and
- Socioeconomic.

DECOMMISSIONING PHASE

No significant impacts have been identified for the decommissioning phase of the proposed development since decommissioning is not expected to take place in the foreseeable future. However, if decommissioning were to take place it would have a negative impact on soil (potential erosion and biofuel spillages) and significant amount of waste would be generated.

Alternative 3

No-go alternative (compulsory)

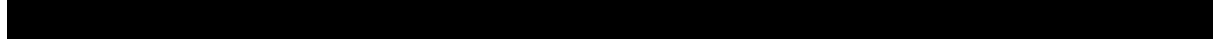
The no-go alternative was assessed and considered not to be a feasible alternative given the economic and social benefits of the proposed project which far outweigh other identified negative impacts. If the no-go alternative is considered none of the identified impacts will be realised, including the increase in the rail capacity of the coal line.

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 construction of the new Transnet Leeufontein Traction substation at the proposed Site Alternative1. Further it is recommended that Technology Alterntiave 1 which entails development of a new 5MW 3kV DC Substation wherein Eskom will provide 132kV AC supply which will be stepped down to 3kV DC be authorised.

The recommendation is based on the following:

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

Environmental Management Programme (EMPr) has been prepared by the consultant and it will serve as the key reference of the EAPs recommendations jointly with Transnet’s policies such as the TCP Construction Environmental Management Plan that is already in place and has been approved by the DEA for several other projects. The EMPr has included measures proposed to mitigate any adverse impacts of the activities and the monitoring. Some of the key recommendations include:

- Notwithstanding the absence of wet areas, ensure that the site is not within the 1:100 year flood line and further ensure strict compliance with the requirements of the National Water Act and associated legislation.
- A storm Water Management plan must be implemented to prevent pollution and runoff
- Disturbance of the agricultural field must be avoided.
- Whilst the proposed project is not anticipated to add significantly to the current ambient noise levels it is recommended that noise be reduced at all times.
- It is recommended that should an archaeological artefact be found during excavations, an archaeologist be called for further investigation.
- 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.

Is an EMPr attached?

YES ✓	NO
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The EMPr must be attached as Appendix G.

BASIC ASSESSMENT REPORT

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.

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

- E1a: Proof of Placement of Site Notices
- E1b: Newspaper Advertisement
- E2: Proof of Written Notifications to key Stakeholders
- E3a: Comments and Response Report
- E3b: Public Participation Report
- E4: Proof of Written Notices to Organs of State
- E5: I&APs Database
- E6: Copies of Correspondence and minutes of meetings
- E7: Background Information Document

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