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Bighorn Substation Extension
Draft Basic Assessment Report
in terms of National Environmental Management Act, 1998
(Act No. 107 of 1998)

Version - Draft for Public Review

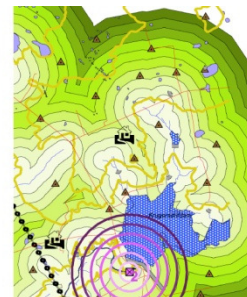
April 2013



GCS Project Number: 12-429

DEA Reference number: 14/12/16/3/3/1/751

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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:
Application Number:
Date Received:

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

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 September 2012**. 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 on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

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

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

Eskom Holdings Limited proposes to extend the existing Bighorn 400/132kV 2X500MVA substation in Rustenburg, North West Province. The Bighorn substation receives power from the 400kV Midas line. Eskom currently supplies the mines through the Bighorn substation and there is a distribution substation to the east of the Bighorn substation which distributes power to the surrounding residential areas.

In the Rustenburg area it used to be common practice for Eskom to shift loads between substations when there was a capacity problem at any particular substation. However the Customer Load Network (CLN) has come to a point where load shifting cannot provide a medium to longer-term solution. This has lead Eskom to consider the expansion of transformation capacity. This situation has arisen due to load growth on the entire Eastern Limb of the Bushveld Igneous Complex (BIC) which puts all of Rustenburg CLN's transmission stations at risk in the area. Hence substations to the west of Bighorn cannot be utilised to deload Bighorn and create capacity for the impending load growth.

The proposed project will be situated on the following farm portions:

- Middelkraal 466 JQ Portion 75
- Rooikoppies 297 JQ Portion 84
- Rooikoppies 297 JQ Portion 94
- Rooikoppies 297 JQ Portion 87
- Rooikoppies 297 JQ Portion 371

Proposed activities that will form part of project will include:

- Tar and widen the gravel road that runs south of the Substation.
- Divert the road on the North of the Substation to accommodate the expansion.
- Relocate the 275kV Feeder-2 to the vacant 275kV Feeder-1.
- Reposition the exit direction of the 400kV Feeder-1.
- Establish 275kV and 400kV Transformer bays in the then vacant 275kV Feeder-2 position.
- Relocate the new 400/275 500MVA to former 275kV Feeder-2 overpass.
- Deviate the 88Kv mine Tailings lines within the proposed 132Kv Yard.
- Terrance the remaining 275kV Yard and extend existing fence to the west.
- Establish a 132kV tubular busbar.
- Establish 3x132Kv Feeder Bays (plus 1 future spare bay).
- Establish 132kV Bus Coupler.
- Establish 2x132Kv Transformer Bays.
- Establish 1x400kV Transformer Bays.
- Install 2x400/132kV 500MVA Transformers.

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- Establish 132kV overpass from the 500MVA transformers to 132kV Transformer Bay.
- Swing Makokokwe and Excarbo 1&2 88kV lines to new 132kV Bays.
- Install all necessary Secondary Plant Equipment.

The detailed layout plan is attached in Appendix C

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

Listed activity as described in GN R.544, 545 and 546	Description of project activity
GN R544 Item 22(i)(ii): The construction of a road, outside urban areas, <i>i. with a reserve wider than 13.5 meters; or</i> <i>ii. where no reserve exist where the road is wider than 8 meters.</i>	The gravel to the northern boundary of the site has to be diverted in order to allow for the expansion to take place.
GN R544 Item 38: The expansion of facilities for the transmission of and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase.	Eskom proposes the expansion of transformation capacity of the Bighorn Substation.
GN R544 Item 47(i)(ii): The widening of a road by more than 6 meter, or the lengthening of a road by more than one kilometre <i>iii. where the existing reserve wider than 13.5 meters; or</i> <i>iv. where no reserve exist where the existing road is wider than 8 meters</i>	The gravel road that runs South of the Substation from Marikana will be tarred and possibly widened to accommodate the construction vehicles during the construction phase.

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.

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

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

a) Site alternatives

NOTE: Alternative sites have not been explored as the project is the

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The proposed project entails the expansion of the existing bighorn substation to accommodate the increased electricity demands in the area. The proposed activities that will form part of project will include; <ul style="list-style-type: none"> • Relocating and repositioning various feeders and transformers; • Deviating the mine Tailings lines within the proposed Yard; • Extending existing fence to the west. • Establishing a tubular busbar, feeder bays (plus 1 future spare bay), a Bus Coupler, and a Transformer Bays; • Swinging the Makokokwe and Excarbo lines to new the Bays, and • Installing all necessary Secondary Plant Equipment. 	25°40'55.81"	27°30'31.51"
Alternative 2 (No Go Alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
There is currently a high demand on electricity throughout the Rustenburg area and this has led to many blackouts and cases of load shedding. The immediate solution to this increasing problem is to increase capacity of existing infrastructure in order to speed up the process of Eskom meeting demands. If the substation is not upgraded then Eskom will continue to experience issues relating to power supply and there will be continued load shedding in the area. Bighorn is one of Eskom's largest substations in the area and therefore it is ideal to increase capacity because some of the existing infrastructure can be utilised and this minimises the need for all new infrastructure or a new substation all together.		

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In the case of linear activities:

Alternative:

	Latitude (S):	Longitude (E):
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
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 (Related to associated roads) Widening the road south of the substation

Alternative 1 (preferred alternative) (Widen and Tar Road)			
Description		Lat (DDMMSS)	Long (DDMMSS)
The project involves tarring a 250m stretch and of the gravel road widening by approximately 4m that runs south of the Substation to enable easier access to the site. This will prevent the build up of traffic on the main road caused by construction vehicles and trucks tuning into to the site.	Start	25°41'6.21"S	27°30'31.91"E
	Middle	25°41'7.63"S	27°30'27.66"E
	End Point	25°41'9.55"S	27°30'23.45"E
Alternative 2 (Widen Road only)			
Description		Lat (DDMMSS)	Long (DDMMSS)
The project involves widening a 250m stretch and of the gravel road by approximately 4m that runs south of the Substation to enable easier access to the site. This option will also prevent the build up traffic caused by construction vehicles and trucks tuning into to the site. By not tarring the road this will cause further deterioration of the road.	Start	25°41'6.21"S	25°41'6.21"S
	Middle	25°41'7.63"S	25°41'7.63"S
	End Point	25°41'9.55"S	25°41'9.55"S

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Alternative 3 (No go alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The no go alternative will imply that the road remains in the same state and unpaved. The road is currently in a very poor condition. Increased vehicle movements especially that of construction vehicles on the road by large trucks will further degrade the road during the construction phase. Widening the road has the advantage that vehicles turning into the site will not obstruct traffic. The no go option will create more traffic during the construction phase of the project.		

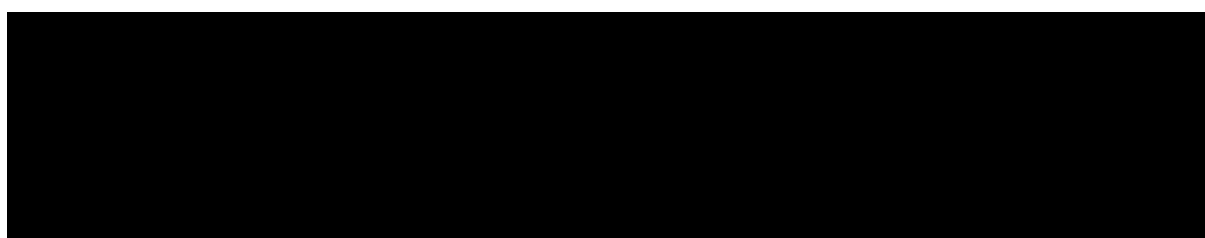
Road diversion on the north of the substation

Alternative 1 (preferred alternative) route closest to the substation			
Description		Lat (DDMMSS)	Long (DDMMSS)
A portion of area of the proposed layout plan expands into the road that is on the north of the substation. The road will be diverted in order to accommodate the expansion. The portion of the road that is to be diverted will go around the substation on the east of the proposed terrace line and rejoin the original path close to the rocky outcrop. The road diversion will be an estimated distance of 450m. This is the shortest route that can be used for the diversion. This alternative is the most economical route to use as it will also cause the least disturbance to the surrounding environment. The road on the south of the outcrop already exists and thus there will be no further disturbance to the outcrop.	Start	25°40'56.80"S	27°30'18.55"E
	Middle	25°40'49.22"S	27°30'18.57"E
	End Point	25°40'48.53"S	27°30'25.15"E
Alternative 2 (Route outside the proposed terrace line)			
Description		Lat (DDMMSS)	Long (DDMMSS)
A portion of area of the proposed layout plan expands into the road that is on the north of the substation. The road will be diverted in order to accommodate the expansion. The portion of the road that is to be diverted will go around the substation on the west of the terrace line, around the rocky outcrop and rejoin the original path on the east of the outcrop. The road diversion will be an estimated distance of 900m. This route is longer and may cause more disturbances to the surrounding environment.	Start	25°40'58.43"S	27°30'15.88"S
	Middle	25°40'47.62"S	27°30'19.49"S
	End Point	25°40'46.74"S	25°30'33.23"S

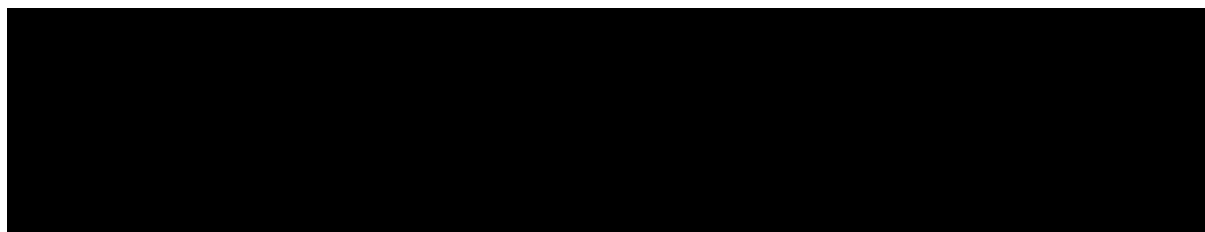
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Alternative 3 (No go alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
A portion of area of the proposed layout plan expands into the road that is on the north of the substation. The no go alternative will imply that the layout of the proposed project will have to be altered. The layout is currently limited by the rocky outcrops on the north and east of the substation and the main road as well as Lonmin mine on the south of the substation. Thus this option is not feasible.		

c) Technology alternatives



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



e) No-go alternative

The electricity demand in the Rustenburg area has placed immense pressure on Eskom. The option of shifting loads through a Customer Load Network was a temporary solution in order to address the electricity pressures. These pressures are caused by load growth on the entire Eastern Limb of the Bushveld Igneous Complex (BIC) which has placed all of Rustenburg CLN's transmission stations at risk in the same period. The no go option would thus mean that Eskom would have to continue using the CLN in the Rustenburg area which in the in the near future it will no longer be feasible. This has lead Eskom to consider the expansion of transformation capacity.

The road that leads to the substation is in a very poor condition. The project also includes upgrading a section of the road which will enable easier access to the site. Improving on that section of the road may set a precedent for future projects in order to improve the condition of the road.

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:

34200m ²

or, for linear activities:

Widening the road south of the substation

Alternative:

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

Length of the activity:

800m
800m
0m

Road diversion on the north of the substation

Alternative:

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

Length of the activity:

450m
900m
0m

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:

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4. SITE ACCESS

Does ready access to the site exist?

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

YES	

Describe the type of access road planned:

The gravel road that runs south of the Substation from the Marikana town will be widened and possibly tarred. The road currently has an existing turnoff from the main road into the substation and Eskom will upgrade the road in order to allow for construction and maintenance vehicles to access the site with ease.

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

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

5. LOCALITY MAP

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

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

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

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

7. SENSITIVITY MAP

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

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);

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- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

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

8. SITE PHOTOGRAPHS

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

9. FACILITY ILLUSTRATION

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

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES		Four of the five farms affected by the proposed development are owned by Eskom (the applicant) and Eskom has servitude rights over the land.
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		The PSDF recognises energy as one of the key pillars of growth and economic development. One of the goals set by the PSDF is the eradication of poverty and to balance out the basic needs such as electricity and water backlog. The provision and distribution of larger amounts of energy will lead to the economic growth of the province.
(b) Urban edge / Edge of Built environment for the area		NO	The project area does not fall within the urban edge. Most of the Bojanala district is classified as rural areas.

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<p>(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?).</p>	<p align="center">NO</p>	<p>According to the Rustenburg IDP, the municipality aims to prioritise the capital expansion of electricity until 2017 to ensure that the towns grow in line with the 2025 vision. This project will therefore contribute on a smaller scale to the expansion of electricity as the transformer output will be larger. According to the Rustenburg IDP for 2012, money has been invested into upgrading various substations such as the Wisteria and the lilac substation. Money has also been invested by the municipality towards the establishment of the new Waterkloof Substation. This was all in effort to curb the Energy crisis faced by the Rustenburg municipality. The project will help to reduce the risks associated with the increased load demands on the Eastern Limb of the Bushveld Igneous Complex (BIC) that the Rustenburg Customer Load Network transmission faces.</p>
<p>(d) Approved Structure Plan of the Municipality</p>	<p align="center">YES</p>	<p>No formal document for the structure plan of the municipality has been published, however, according to the municipal Infrastructure Development and Management functions, Electricity Reticulation, which is the bulk supply of electricity, is regarded as one of the functions. This includes supply, transmission, distribution and where applicable generation of electricity to areas where the municipality has been providing this services. This is also recognised in the Bojanala Platinum District Growth And Development Strategy.</p>

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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>	<p>NO</p>	<p>An EMF for the Rustenburg local municipality has not yet been published. For the purposes of this section the State of the Environment Assessment (SoER) for the North West province has been used. The SoER acknowledges that the population growth in the Rustenburg area has placed increased pressures on infrastructure and services including electricity supply. The project was proposed in order to address the increased load demands on the Eastern Limb of the Bushveld Igneous Complex (BIC) which has placed all of Rustenburg CLN's transmission at risk.</p>
<p>(f) Any other Plans (e.g. Guide Plan)</p>	<p>YES</p>	<p>The Bojanala Platinum District Growth And Development Strategy recognizes that there is an inability of the public sector to provide the necessary bulk infrastructure (e.g. roads, electricity, water) to support the potential expansion programme of mining groups in the area. The bighorn substation mainly provides electricity for the neighbouring mine's operation. The expansion project will therefore fall in line with the goals of the district which is to ensure that there is bulk infrastructure development to support mining group programmes.</p> <p>The document also recognises that lack of Infrastructure development and access to basic services in the Rustenburg municipality with specific attention to the rural areas. As the Marikana area is rural, this project will indirectly contribute to the infrastructure requirements as recognised by the Bojanala Platinum District Growth And Development Strategy</p>

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<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>	<p>YES</p>	<p>The proposed project will take place on an existing Eskom substation. Four of the five farms affected by the proposed development are owned by Eskom (the applicant) and Eskom has servitude rights over the land. The SDF and IDP have prioritised the capital expansion of electricity until 2017. According to the Rustenburg IDP for 2012, large amount of money have been invested into upgrading various substations such as the Wisteria and the lilac substation. Money has also been invested by the municipality towards the establishment of the new Waterkloof Substation. This was all in effort to curb the Energy crisis faced by the Rustenburg municipality. The project will help to reduce the risks associated with the increased load demands on the Eastern Limb of the Bushveld Igneous Complex (BIC) that the Rustenburg Customer Load Network transmission faces.</p>
<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>	<p>YES</p>	<p>South Africa as a whole faces an energy crisis. This is also the case in the Rustenburg municipality. The increasing population and informal settlements in the area has also placed pressures on the electricity demands. The project will help to reduce the risks associated with the increased load demands on the Eastern Limb of the Bushveld Igneous Complex (BIC) that the Rustenburg Customer Load Network transmission faces.</p>

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<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>	<p>YES</p>	<p>The proposed project will use some of the services, such as disposing off the rubble or construction waste and disposing it off at a registered landfill site. Municipal water will be used during the construction phase of the project.</p>
<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>	<p>YES</p>	<p>Infrastructure Development and Management of the Rustenburg district Municipality recognises electricity reticulation, is regarded as one of the priorities for the municipality. This includes supply, transmission, distribution and where applicable generation of electricity to areas where the municipality has been providing this services. This is also recognised in the Bojanala Platinum District Growth And Development Strategy.</p>
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	<p>YES</p>	<p>South Africa as a whole faced an electricity shortage crisis from 2008 and is still working on resolving it currently to avoid future shortages. Also, there is shortfall in terms of infrastructure and basic services in rural areas and informal settlements as a whole. The government also recognises the need for bulk infrastructure supply for mining industries which lies at the core of the country's economic development. The project will aid in addressing these issues.</p>

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<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>	<p>YES</p>	<p>The proposed expansion will take place on an existing substation. The land use is already for electricity transmission. Four of the five farms affected by the proposed development are owned by Eskom (the applicant) and Eskom has servitude rights over the land.</p>
<p>9. Is the development the best practicable environmental option for this land/site?</p>	<p>YES</p>	<p>The proposed expansion will take place on an existing substation. The land use is already for electricity transmission. Other than the rocky outcrops on the north and east of the site, the area around the site is deemed as degraded and holds very little ecological value due to past poor agricultural practices. The project, with the mitigation plans implemented, will have very little impacts on the surrounding environments.</p>
<p>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</p>	<p>YES</p>	<p>The negative impacts that have been envisaged do have mitigation measures. If the mitigation measures are properly implemented and managed, the impacts will have a low rating. The main benefit of the proposed upgrade include reducing energy supply constraints in the Eastern Limb of the BIC that the Rustenburg Customer Load Network.</p>
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>	<p>YES</p>	<p>The development is on an existing Substation and involves expanding the substation for increase transformer output. This aspect of the project may not set a precedent for similar activities in the area as it has existed for years and has not done so in the past. However, widening and tarring the road on the south of the substation may trigger similar projects in the municipality and motivate for upgrading the entire road later by the municipality. The roads in the area are not tarred and are in a poor condition.</p>

BASIC ASSESSMENT REPORT

<p>12. Will any person's rights be negatively affected by the proposed activity/ies?</p>	<p>NO</p>	<p>The project is to take place on an existing substation. Four of the five farms affected by the proposed development are owned by Eskom (the applicant) and Eskom has servitude rights over the land.</p>
<p> </p>		
<p>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</p>	<p>NO</p>	<p>The area where the proposed project is to take place is not part of the urban edge.</p>
<p> </p>		
<p>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</p>	<p>YES</p>	<p>SIPS 9 and 10 address the Energy SIPS. SIP 9 refers to the generation of electricity to support socioeconomic development and SIP 10 refers to the transmission of electricity and distribution for all. This involves expanding the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development. The expansion of the substation will in this way contribute to the 17 SIPS.</p>
<p> </p>		
<p>15. What will the benefits be to society in general and to the local communities?</p>	<p>The project will have a positive impact in job creation in the area in the long run. With the additional capacity, the mines depending on the substation will be able to raise their production to optimal rates, which could lead to the growth and development of the mine, its workforce.</p>	
<p> </p>		
<p>16. Any other need and desirability considerations related to the proposed activity?</p>	<p>The project will lead to gain on a regional level, whereas the local communities will not necessarily benefit directly. Widening and tarring the road on the south of the substation may trigger similar projects which are needed in the area.</p>	
<p> </p>		

<p>17. How does the project fit into the National Development Plan for 2030?</p>	<p>The National Development plan for 2030 includes addressing the electricity issues that the country is faced with. The plan is aimed at improving service infrastructure in the country as a whole. Electricity problems are recognised to place pressures on the country's economy and need to be avoided. The project will lead to the reduction of transmission load on the CLN in the Rustenburg area and in this way it will contribute to the improvement of the infrastructure.</p>
<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>	<p>The potential impacts caused by the proposed project were assessed in an impact assessment based on risk assessment approach. Previous relevant specialists' studies and EMPs were referred to where necessary in order to ensure that a holistic environmental approach is adopted for the substation. Site alternatives, process alternatives and layout alternatives were considered in order to ensure that the best environmental practices were considered and where feasible recommended as part of the EMP. In order to give effect to an open and transparent stakeholder engagement process. The public participation process was taken in accordance to the NEMA guidelines this included giving notification and a BID to all identified stakeholders and placing an advertisement in the local newspaper. Allowance was made for comments and responses over a 40 day period.</p>

BASIC ASSESSMENT REPORT

<p>19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.</p>	<p>The proposed activity is undertaken as a mitigation action for the impact of spills that occur as a result of mining activities. The proposed project takes into account the best environmental practices and has taken into account the cost implications associated with the various alternatives associated with the project as a way of ensuring that the activity is a sustainable solution and the most environmentally. The potential impacts caused by the proposed project were assessed in an impact assessment based on risk assessment approach and based on the results the project will have minimal negative impacts on the environment if managed appropriately and also produces no waste.</p>

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
<p>GN R544 Item 22(i)(ii): The construction of a road, outside urban areas,</p> <p><i>v. with a reserve wider than 13.5 meters; or where no reserve exist where the road is wider than 8 meters;</i></p>	<p>The gravel to the northern boundary of the site has to be diverted in order to allow for the expansion to take place.</p>	<p>Department of Environmental Affairs</p>	<p>July 2010</p>
<p>GN R544 Item 38: The expansion of facilities for the transmission of and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase.</p>	<p>Eskom proposes the expansion of transformation capacity of the Bighorn Substation.</p>	<p>Department of Environmental Affairs</p>	<p>July 2010</p>
<p>GN R544 Item 47(i)(ii): The widening of a road by more than 6 meter, or the lengthening of a road by more than one kilometre</p> <p><i>vi. where the existing reserve wider than 13.5 meters; or</i></p> <p><i>vii. where no reserve</i></p>	<p>The gravel road that runs South of the Substation from Marikana will be tarred and possibly widened to accommodate the construction vehicles during the construction phase.</p>	<p>Department of Environmental Affairs</p>	<p>July 2010</p>

BASIC ASSESSMENT REPORT

<i>exist where the existing road is wider than 8 meters</i>			
---	--	--	--

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	
18m ³	

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

The solid waste produced during the construction phase will be transported by means of a truck to the Townlands landfill site for disposal.

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

At the existing regional landfill site, Townlands landfill site.

Will the activity produce solid waste during its operational phase?

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

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

	NO
--	----

Currently the substation does not produce any waste. Solid waste produced by this project will be limited to the Construction phase. The proposed substation expansion will not produce any waste during its operational phase

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

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

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?

	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.

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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?

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:

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

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:

Dust and carbon emissions from the construction vehicles will be emitted and isolated to the construction phase of the project.

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

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

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.

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

Noise will be generated only during the construction phase of the project. Noise will be generated by the construction vehicles and the equipment used to clear the area.

13. WATER USE

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

Municipal

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?

NO

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

14. ENERGY EFFICIENCY

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

Very little energy will be required for the construction phase of the project. The project will be utilising energy obtained from generators during this phase.

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

No alternative sources of energy have been considered as there will be very little energy required during the construction phase of the project.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

Section B Copy No. (e.g. A): ████████

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

- Has a specialist been consulted to assist with the completion of this section? YES ████████
 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	North West Province																																																																																																														
District Municipality	Bojanala District Municipality																																																																																																														
Local Municipality	Rustenburg District Municipality																																																																																																														
Ward Number(s)																																																																																																															
Farm name and number	Middelkraal 466 Rooikoppies 297																																																																																																														
Portion number	Middelkraal 466 JQ Portion 75 Rooikoppies 297 JQ Portion 84 Rooikoppies 297 JQ Portion 94 Rooikoppies 297 JQ Portion 87 Rooikoppies 297 JQ Portion 371																																																																																																														
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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:

Industrial

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? NO

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	
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Alternative S2 (if any):

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Alternative S3 (if any):

--

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	X
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain		2.9 Seafront	

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)	NO		
Dolomite, sinkhole or doline areas	NO		
Seasonally wet soils (often close to water bodies)	NO		
Unstable rocky slopes or steep slopes with loose soil	NO		
Dispersive soils (soils that dissolve in water)	NO		
Soils with high clay content (clay fraction more than 40%)	YES		
Any other unstable soil or geological feature	NO		
An area sensitive to erosion	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. GROUNDCOVER

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

Cultivated land	Building or other structure

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

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

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	
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Informal residential ^A		Agriculture
		River, stream or wetland
Heavy industrial ^{AN}	Railway line ^N	
		Graveyard
		Archaeological site

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

The proposed expansion of the substation will not have any direct impacts on the railway line as it is not in close proximity. The substation and the railway line have a cumulative visual impact on the surrounding landscape and developments.

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:

The proposed expansion of the substation will not have any negative impacts on the mines that are in area. The expansion will however supply additional power to the mines.

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)		NO
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		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	
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The remains of different buildings which may have a farm or residential origin are found close to the farm. They are in a bad state and has no unique features, but is likely to be older than 60 years.

The koppie where the Marikana Massacre took place on 16 August 2012 lies on the northern border of the substation expansion. This is the site where the Marikana miners' strike against Lonmin Mine erupted resulting in the death of more than 40 mine workers. Although the site is not older than 60 years it has a vast importance in the struggle of the mine workers for their right. It is foreseen that the site will be deemed as an important one for future generations. It therefore needs to be preserved and is deemed as having a high cultural significance.

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:

[REDACTED]

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

YES

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

NO

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

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

According to the 2011 statistics, the unemployment rate in the Bojanala Platinum District Municipality (BPDM) is 19.1% and 18.6% in the Rustenburg Local Municipality (RLM). The RLM unemployment rate has dropped slightly between 2006 and 2011 from 22%. This, in addition to the increase in population for the Rustenburg LM indicates that there is a major influx of jobseekers to the area, placing a burden on the municipal infrastructure as well as leading to higher levels of unemployment.

Economic profile of local municipality:

Mining

According to the Bojanala Platinum IDP (2011/2) platinum is the main mineral mined within the DM, however, granite, tin, chrome, lead, slate, diamonds and gold are also mined. Majority of the Rustenburg LM population found employment in mining and quarrying industries.

Tourism

Tourism in the Rustenburg area has become a large industry, the second largest within the LM representing 10.44% of the employment opportunities. This is attributed to the vast cultural, natural (Pilanesberg National Park) and even man-made resources (Sun City resorts).

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Wholesale and retail

Rustenburg's wholesale and retail trade catering and accommodation industry has, however, been declining (27.55%) over the past 15 years. This trend is followed through in the district municipality with the sector representing 14.31% of the labour force, but declining in growth (30.66%) from 1996.

Agriculture

The agriculture sector has shown a decline across all three regions, with the decline in the LM being 224.93%. The reasons for the decline in the agricultural sector include amongst others uncertainty due to land reform, high input costs, high risk compared to return, water quality and scarcity, competition for land usage from mining industry and insufficient support.

Electricity

Majority of households across all regions used electricity for cooking LM – 80.24%. Households have transformed into a more formal nature, relying on the municipal and bulk supply of electricity for their daily needs. The use of electricity has increased in the RLM as well as in the district. The use of alternative sources of energy in the Province and DM has decreased across the board. The use of solar energy and paraffin has, however, increased by 6.42% and 54.35% respectively for the LM.

Level of education:

Twenty nine point five seven percent (29.57%) of the Rustenburg LM population has obtained some secondary schooling. However, 4.74% of the population have not received any form of schooling. Only 4.72% of the population achieved an academic level higher than Grade 12.

Data from the Census 2011 indicates that 21.55% of the Rustenburg LM population obtained a Grade 12 qualification, higher than that of the DM (19.22%) and the Province as a whole (15.96%).

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R0
What is the expected yearly income that will be generated by or as a result of the activity?	R0
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	5
What is the expected value of the employment opportunities during the development and construction phase?	R
What percentage of this will accrue to previously disadvantaged individuals?	20%
How many permanent new employment opportunities will be created during the operational phase of the activity?	none
What is the expected current value of the employment opportunities during the first 10 years?	R0
What percentage of this will accrue to previously disadvantaged individuals?	0%

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)	The site is made up of the Marikana Thornveld which is endangered and vulnerable ecological types. The Marikana Thornveld comprises a large area in the North-West Province and 47.8% of this ecological type is already transformed due to mining practices and agricultural activities. The size remaining intact of this vegetation type is less than 60%. Any further transformation of these vegetation types should be limited to existing transformed or heavily degraded areas.

- 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	10%	The North and the east of the substation have isolated rocky outcrops. These are relatively pristine, and are regarded as marginal habitat for common fauna or animal species of conservation importance. These areas are relative small and are unlikely to host significant numbers of either common or less abundant fauna species. However, their importance as ecological contributors cannot be over-emphasised. Within a larger environment where habitat transformation and degradation is rife, their role as 'stepping stones' between suitable areas of natural

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		habitat is important, providing access between populations that might be located some distance apart.
Degraded (includes areas heavily invaded by alien plants)	40%	The vegetation of the area is classified as a stunted woodland (grazed bushveld) with a woody layer comprising of <i>Acacia tortilis</i> , <i>A. nilotica</i> and <i>Dichrostachys cinerea</i> . The project area corresponds to the Savanna Biome and more particularly to the Central Bushveld Bioregion. It comprehends an ecological type known as Marikana Thornveld. The Marikana Thornveld comprises a large area in the North-West Province and 47.8% of this ecological type is already transformed. However, the existing vegetative layers in the study area do not appear to be representative of the original Marikana Thornveld. Most of the land has been degraded due to the agricultural activities and the grazing cattle in the area. The likelihood of conservation important fauna taxa persisting in these areas are regarded minimal.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	50%	The proposed project lies on the existing substation. Majority of the site is taken up by the substation. The dominant land use in the area consists primarily of platinum mining activities (operated by Lonmin's Western Platinum Mine), residential housing and cattle farming, which is responsible for the stunted and overgrazed condition of the grassy layer.

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)		Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary	Coastline
	Vulnerable		NO	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)

Marikana Thornveld ecological type is spatially represented in the study site which has a vulnerable conservation status. The following habitat types were identified:

- Degraded Woodland;
- Rocky Outcrop; and
- Transformed **Woodland**

Natural woodland has been degraded and the woody stratum, in particular, has been affected significantly. Although these areas are regarded moderately/severely degraded, a number of conservation important plant taxa (specifically *Stenostelma umbelluliferum* which has been classified as near threatened) could potentially persist within these parts. The tree *Prunus Africana* has been classified as a vulnerable species and is likely to occur in this vegetation type.

A number of topographically important rocky outcrops are situated in close proximity to the existing substation and is likely to be affected by the planned development. These outcrops appear as embedded units within the larger regional ecological type (Marikana Thornveld) and is regarded outlying representations of neighbouring ecological types (Norite Koppies Bushveld), representing important and localised areas of high biodiversity. Floristic characteristics of these areas appear to be relatively intact, which is typical within transformed environments like these.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Daily Sun and The Rustenburg Herald		
Date published	Daily Sun – 22 November 2012; The Rustenburg Herald- 23 November 2012		
Site notice position	Latitude	Longitude	
	Wonderkoppies Stadium	25°40'38.71"S	27°31'8.16"E
	Hospital	25°40'41.08"S	27°31'43.34"E
	Shoprite checkers	25°41'33.39"S	27°29'21.68"E
	Engen Garage	25°41'44.99"S	27°29'20.13"E
Date placed	26 November 2012		

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.

The existing comprehensive list of I&AP's / Stakeholders from the Eskom's Bighorn previous projects was updated by GCS through a process of networking, press advertisements and notices. Notification was given to all registered I&AP's by means of e-mail, faxes, and registered mail. Flyers were handed out to the public at the locations of the site notices.

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)
Ms Hazel Feihn	Lonmin	Hazel.Feihn@lonmin.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.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No comments were raised so far in the process.	

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4. COMMENTS AND RESPONSE REPORT

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

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

BASIC ASSESSMENT REPORT

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Department of Environmental Affairs	Mr Vincent Chauke	27123953859	27123207539	vchauke@environment.gov.za	
Economic Development, Environment, Conservation and Tourism	S Mukhola	27183895959	27183895006	Smukhola@nwpg.gov.za	Private Bag X2029 Mmabatho 2735
SAHRA	Sir/Madam	27183812032	27183816953	somar@nw.sahra.org.za	P O Box 3054,Mmabtho ,2735
Rustenburg Local Municipality	Cllr Babe	27734693091		tshehlanew@rustenburg.gov.za	P O Box 16,Rustenburg,0300
Rustenburg Local Municipality	Clr Baloi	27838098952		-	
Rustenburg Local Municipality	Clr Banda	27796444702		-	
Rustenburg Local Municipality	Mr Bele	27145903454		sbele@rustenburg.gov.za	P O Box 16,Rustenburg,0300
Rustenburg Local Municipality	Cllr Bogopane	27843132728		tshethlanew@rustenburg.gov.za	P O Box 5074,Phokeng,0300
Rustenburg Local Municipality	Mr Boshoff	27145903551		munman@rustenburg.gov.za	P O Box 16,Rustenburg,0350
Rustenburg Local Municipality	Clr Bothomane	27735016126		-	
Bojanala Platinum District Municipality	Mr Daya	27145904603		geeteshd@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum District Municipality	Cllr Diremelo	27145904500	27145926085	secretary@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum District Municipality	Mr Kanjee			-	
Bojanala Platinum District Municipality	Cllr Khupe			-	
Bojanala Platinum District Municipality	Cllr Lebelo	27145904500	27865585596	secretary@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum District Municipality	Ms Masekwane	27145904633	27145921942	nozim@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum District Municipality	Mr Matshego	27145904600		thamim@bojanala.gov.za	P O Box 1993,Rustenburg,0301
Bojanala Platinum District Municipality	Ms Matsheko	27145904606		thamim@bojanala.gov.za	
Bojanala Platinum District Municipality	Mr Mnisi	27145942332	27145943949	FannieMn@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum District Municipality	Mr Molokwane	27145904502	27145970306	susanr@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum District Municipality	Cllr Molotsi	27145904500	27145926085	PalesaM@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum District Municipality	Cllr Monewe	27145904500	27145926085	Tsholofelom@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Rural Development & Land Reform	Ms Mongae	27183979700	27183811875	-	P Bag X74,Mafikeng,2745
Bojanala Platinum Distict Municipality	Cllr Morukhu	27145904500	27145926085	Thatelom@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum Distict Municipality	Cllr Motsepe	27145904507	27145926085	secretary@bojanala.gov.za	P O Box 1993,Rustenburg,0301
NW Local Government and Traditional Affairs	Mr Ramakgaka	27183875082	27183881833	sramagaga@nwpg.gov.za	P Bag X2099,Mmabatho,2735
Bojanala Platinum Distict Municipality	Cllr Ratlhaga	27145904500	27145926085	Ratlhaga@webmail.co.za	P O Box 1993,Rustenburg,0300
Rustenburg Local Municipality	Cllr Segale		27145903015	tshethlanew@rustenburg.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum Distict Municipality	Cllr Selebogo	27145904500	27145926085	Annetjies@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum Distict Municipality	Mrs Surty	27145904580	27145921053	alicep@bojanala.gov.za	P O Box 1993,Rustenburg,0300
Bojanala Platinum Distict Municipality	Cllr Tshite	27145904500	27145926085	secretary@bojanala.gov.za	P O Box 1993,Rustenburg,0301
Rustenburg Local Municipality	Clr Baloi	27838098952		-	
Rustenburg Local Municipality	Clr Banda	27796444702		-	

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Rustenburg Local Municipality	Clr Coetzee	27824010799		-	
Rustenburg Local Municipality	Clr Dlunge	27733152815		-	
Rustenburg Local Municipality	Clr Du Plessis	27827371650		-	
Rustenburg Local Municipality	Clr Haasbroek	27824513220		-	
Rustenburg Local Municipality	Clr Kgaladi	27728848322		-	
Rustenburg Local Municipality	Clr Khunou	27732839908		-	
Rustenburg Local Municipality	Clr Klaas	27746381975		-	
Rustenburg Local Municipality	Clr Makhaula	27765593114		-	
Rustenburg Local Municipality	Clr Makopo	27835194440		-	
Rustenburg Local Municipality	Clr Malan	27829503395		-	
Rustenburg Local Municipality	Clr Maqwane	27737072355		-	
Rustenburg Local Municipality	Clr Mashishi-Ntsime	27716892219		-	
Rustenburg Local Municipality	Clr Mhlungu	27825523078	27145903015	mphetiro@webmail.co.za	
Rustenburg Local Municipality	Clr Miny	27828785964		-	
Rustenburg Local Municipality	Clr Molatlhegi			-	
Rustenburg Local Municipality	Clr Motlhasedi	27721348964		-	
Rustenburg Local Municipality	Clr Motshegwe	27728624944		-	
Rustenburg Local Municipality	Clr Motsoadi	27828407929		-	
Rustenburg Local Municipality	Clr Mputle	27823619052		-	
Rustenburg Local Municipality	Clr Mzizi	27736660161		-	
Rustenburg Local Municipality	Clr Ndlovu	27727673047		-	
Rustenburg Local Municipality	Clr Ntshole	27725119697		-	
Rustenburg Local Municipality	Clr Phologane	27834557100		-	
Rustenburg Local Municipality	Clr Pitsoe	27716753452		-	
Rustenburg Local Municipality	Clr Plessis	27827371650		-	
Rustenburg Local Municipality	Clr Putu	27735227662		-	
Rustenburg Local Municipality	Clr Sephai	27837082501		-	
Rustenburg Local Municipality	Clr Seriteng	27732406267		-	
Rustenburg Local Municipality	Clr Tlhapi	27836229675		-	
Rustenburg Local Municipality	Clr Willemse	27843708649		-	

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

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

6. CONSULTATION WITH OTHER STAKEHOLDERS

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

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

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

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

SECTION D: IMPACT ASSESSMENT

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

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

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

The following sections provide the reader with a view on how the potential impacts will be rated in terms of their significant and what the contents of the EIA/EMP will entail.

1.1.1 Environmental Impact Significance Rating Methodology

The following sections provide the reader with a view on how the potential impacts will be rated in terms of their significant and what the contents of the EIA/EMP will entail.

1.1.2 Environmental Impact Significance Rating Methodology

To ensure uniformity, the assessment of potential impacts will be addressed in a standard manner so that a wide range of impacts is comparable. For this reason a clearly defined rating scale will be provided to the specialist to assess the impacts associated with their investigation.

Each impact identified will be assessed in terms of probability (likelihood of occurring), scale (spatial scale), magnitude (severity) and duration (temporal scale). To enable a scientific approach to the determination of the environmental significance (importance), a numerical value will be linked to each rating scale.

The following criteria will be applied to the impact assessment for the EIA/EMP:

Occurrence

- Probability of occurrence (how likely is it that the impact may occur?); and
- **Duration of occurrence (how long may impact last?).**

Severity

- Magnitude (severity) of impact (will the impact be of high, moderate or low severity?); and
- Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?).

Status of Impact

- +: Positive impact
- -: Negative impact
- N: Neutral (**no impact**)

In order to assess each of these factors for each impact, the following ranking scales were used:

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Probability:=P

- 5 – Definite/don't know
- 4 – Highly probable
- 3 – Medium probability
- 2 – Low probability
- 1 – Improbable
- 0 – None

Duration:=D

- 5 – Permanent
- 4 - Long-term (ceases with the operational life)
- 3 - Medium-term (5-15 years)
- 2 - Short-term (0-5 years)
- 1 – Immediate

Scale:=S

- 5 – International
- 4 – National
- 3 – Regional
- 2 – Local
- 1 – Site only
- 0 – None

Magnitude:=M

- 10 - Very high/don't know
- 8 – High
- 6 – Moderate
- 4 – Low
- 2 – Minor

Status of Impact

- +: Positive
- : Negative
- N: Neutral

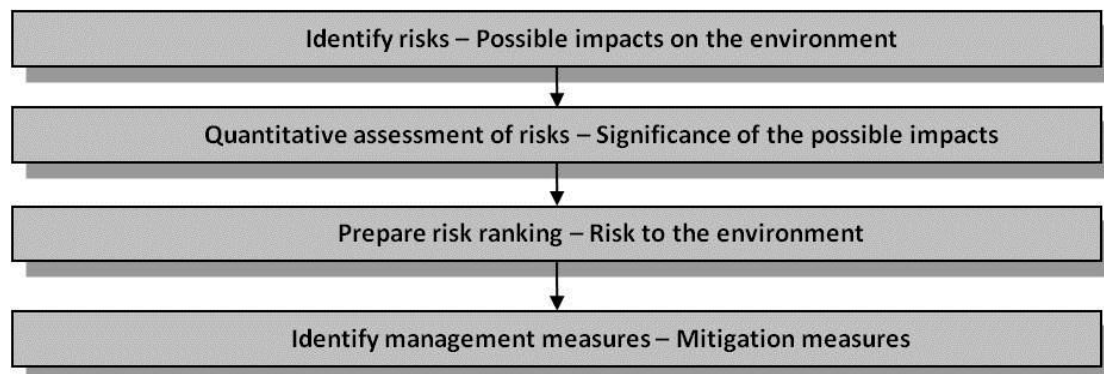
Once the above factors have been ranked for each impact, the environmental significance of each was assessed using the following formula:

$$SP = (\text{magnitude} + \text{duration} + \text{scale}) \times \text{probability}$$

The maximum value that can be achieved is 100 Significance Points (SP). Environmental effects were rated as follows:

Significance	Environmental Significance Points	Colour Code
High (positive)	>60	H
Medium (positive)	30 to 60	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -60	M
High (negative)	<-60	H

The following process will be followed



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)

Site Alternative:

The substation upgrade is currently vital for Eskom to stabilise the electricity demand in the area. This will minimise shifting of loads and increased load shedding and blackouts. The capacity of the substation will increase to allow for the increase in electricity demand. Though the proposed activity is adjacent to the “Marikana Massacre” hill, the developer has enough buffer to avoid the area and not have any impact on it. The upgrade of the substation is therefore recommended to continue by the EAP as the benefits of it outweigh the negative impacts due to the small scale of the project.

Layout Alternative (preferred alternative) (Widen and Tar Road on the Southern Border of the Site)

The upgrade of the main road to the southern boundary of the site will be a positive impact, and improving some sections of the road which may motivate the municipality to look further into upgrading the entire stretch of the road. Widening and tarring the road will reduce dust generation especially during the construction phase. The widened road will allow traffic to continue flowing even with the addition of the construction vehicles. Therefore this option is the most favourable and it is recommended by the EAP.

Alternative 1 (preferred alternative) route closest to the substation

A portion of area of the proposed layout plan expands into the road that is on the northern of the substation. Therefore the road has to be diverted in order to accommodate the proposed expansion.. The road diversion will be an estimated distance of 450m this is the shortest route that can be used

for the diversion. The diversion will ensure that the road is still operation for users. The area of diversion is in close proximity to the site but it allows for Eskom to encroach on the adjacent koppie and extend further beyond its boundaries into other land. Therefore this alternative is most suitable for the proposed upgrade and will have less negative impacts.

Alternative B

Layout Alternative (Widen Only Southern Border of the Site)

The upgrade of the main road to the southern boundary of the site will be a positive impact. The widened road will allow traffic to continue flowing even with the addition of the construction vehicles. However not tarring the road will increase dust generation especially during the construction phase of the project. This will further degrade the road and therefore this option is not recommended by the EAP.

Alternative 2 (Route outside the proposed terrace line)

This alternative suggests that the portion of the road that is to be diverted will go around the substation on the west of the terrace line, around the rocky outcrop and re-join the original path on the east of the outcrop. The road diversion will be an estimated distance of 900m. This route is longer and may cause more disturbances to the surrounding environment. The rocky outcrop represents important and localised areas of high biodiversity and thus should not be disturbed. The area of the outcrop and beyond is also deemed as a potential Heritage site of national significance as this is where the Marikana Massacre took place. It is therefore not recommended as an option after due consideration and specialist studies.

Alternative C

No-go alternative (compulsory)

The no-go alternative involves not going ahead with the required upgrade of the existing bighorn substation. This will cause Eskom to continue with load shedding and blackouts in order to accommodate the increase demand in the eastern bushveld complex. Eskom currently need a short to mid-term solution and upgrading the substation will afford Eskom this opportunity to stabilise electricity supply and demand in the area. .

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

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.

The majority of impacts from the proposed activity will be during the construction and operations phases of the project. As a result the mitigation measures are listed hereunder:

- Vehicle movements during the construction phase should be limited to a low speed. Vehicles should also stick to the designated routes;
- Construction personnel or vehicles may not leave the demarcated construction site except those authorised to do so. Those areas surrounding the construction sites, especially north of the Bighorn substation should be considered as "no-go" areas for employees and machinery;
- Continuous dust suppression will be required in order to limit the amount of dust being blown away from the roads and construction site;
- Removal of soils during construction should be done with caution removing only what is needed;
- The koppie to the northern boundary of the site is deemed to have national importance as the site for the so called Marikana Massacre. The upgrade of the substation should be kept at a distance of 50 m from the hill;
- A fence should be erected around the construction site to prohibit movement beyond these fences;
- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence;
- The presence of several plants of conservation importance within the general surrounds should be established;
- Rocky outcrop habitat within the proposed development areas are regarded potentially sensitive and should be excluded from the planned development;
- Killing or poaching of any bird species should be avoided by means of awareness programmes presented to the construction personnel;
- Power lines should be made more visible to birds that are prone to collide with them. Install flappers on power lines where a collision hazard is a risk;
- Unskilled and unemployed labour should be sourced from the surrounding local communities as far as possible. Skills development opportunities should be granted to community members and local job seekers;
- Consult with households living in informal settlements next to the main road leading to the substation, prior to construction, to determine ways to mitigate any negative effect on them;
- All employees (including contractors) should undergo health and safety training on a regular basis;

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- Educational posters and flyers should be distributed at local schools, educational establishments and clinics, warning community members of the general risks and dangers of electricity;
- A Health and Safety Plan should be implemented and it must be ensured that all site managers are trained in First Aid and other relevant safety courses;
- Construction related noise is generally intermittent and should be limited to daylight hours when ambient noise levels are highest;
- Appropriate traffic management measures should be planned for and implemented. Signs placed to indicate road works ahead prior to commencement of construction. Stop and Go traffic control to be used during road upgrade; and
- The applicant should, in liaison with the relevant Roads and Traffic Department and the mines operating in the area (Lonmin, Rowland Concentrator Plant and Marikana Mining Division – Process Division), identify problem areas and assist with the regular maintenance of the roads frequently used by construction traffic.

Is an EMPr attached?

YES

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.

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