DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

For the Construction of a new 35km 132 KV Powerline from Mbahe Substation to Mhinga Substation in Thohoyandou, within the Thulamela Local Municipality of the Limpopo Province, South Africa.

Commissioned by:

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Acronyms

CLO	Community Liaison Officer
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EO	Environmental Officer
I&AP	Interested and Affected Parties
NEMA	National Environmental Management Act (NEMA), 1998 (Act No.107 of 1998).
SAHRA	South African Heritage Resources Agency
SAPS	South African Police Service
SHE	Safety Health and Environment
Shumani SHE	Shumani Safety Health and Environment Specialists

Operational Definitions

Act means the National Environmental Management Act (NEMA), 1998 (Act No.107 of 1998).

Activity means an activity identified-

a) In Government Notice No. R. 544 of 18 June 2010 as a listed activity; or

b) In any other notice published by the Minister or MEC in terms of section 24D of the Act as a listed activity or specified activity?

Applicant means a person who has submitted or intends to submit an application.

Affected environment refers to those parts of the socio-economic and biophysical environment impacted on by the development.

Interested and Affected Party (ies) refers to the individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, customers and consumers, environmental interest groups and the public.

Construction means the building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such activity, structure or infrastructure that does not result in a change to the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure.

Development refers to the act of altering or modifying resources in order to potential benefits.

Environment refers to the surroundings within which humans exist and that are made up of

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of a) and b) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being National Environmental Management (NEMA) Act. No. 107 of 1998.

Environmental audit refers to a systematic, documented verification process of objectively obtaining and evaluating audit evidence to determine whether specified environmental activities, events, conditions, management systems, or information about these matters conform with audit criteria, and communicating the results of this process to the client. (SABS ISO 14001).

Environmental Impact refers to the degree of change in an environment resulting from the effect of an activity on the environment, whether desirable or undesirable.

Environmental Impact Assessment refers to a process of examining the environmental effects of a development.

Environmental Management Programme means an environmental management programme in relation to identified or specified activities envisaged in Chapter 5 of the Act and described in regulation 34.

Mitigation refers to measures designed to avoid, reduce or remedy impacts.

Monitoring refers to the repetitive and continued observation, measurement and evaluation of environmental data to follow changes over the period of time to assess the efficiency of control of measures.

1. EXECUTIVE SUMMARY

Shumani SHE Specialists herein referred to as Shumani SHE has been appointed by Eskom Holdings SOC, Limpopo Operating Unit as an independent Environmental Assessment Practitioner (EAP) to conduct an Environmental Impact Assessment (EIA) and to compile an Environmental Management Programme(EMPr) for the construction of an approximately 35km 132 kV Powerline from Mbahe Substation to Mhinga Substation within the Thulamela Local Municipality of the Limpopo Province.

Section 24 of the constitution of the Republic of South Africa (No. 108 of 1996) gives everyone a right to an environment which is not harmful to their health or wellbeing and to have their environment protected for the benefit of present and the future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and the sustainable use of natural resources while promoting justifiable economic and social development. This EMPr is designed to prevent and/or mitigate the potential environmental impacts, which the proposed powerlines could incur during the construction and operational phases. This EMPr has been designed as a tool to be used in order to ensure that sound environmental practices are incorporated during the project lifecycle. This EMPr must form part of the contract documents and shall always be on site for references and in case of environmental audits.

2. INTRODUCTION

This draft EMPr has been compiled for use as a guide by the contractor, his/her sub-contractors and their employees during all phases of the development. It has been compiled as per the principles of National Environmental Management Act (Act 107 of 1998) in application to the Department of Environmental Affairs (DEA). As part of the Eskom's Integrated Environmental Management System, development and implementation of an EMP is required in all projects. This EMPr must be viewed as a contract document to which Eskom employees and outside contractors involved in the construction and must be committed to. All parties should note that obligations imposed by the EMPr are legally binding in terms of the environmental authorisation granted by the relevant environmental permitting authority.

2.1. **Legal obligations**

A copy of the EMPr must be kept on site at all times during the construction period. The EMPr shall be binding to the Contractor and all contractors operating on the site and must be included within the *Contractual Clauses*. It should be noted that in terms of the NEMA (Section 28) those responsible for environmental damage must pay the repair costs both to the environment and human health and the preventative measures to reduce or prevent further pollution and/or environmental damage (The 'polluter pays' principle).

2.2. **Objectives of the EMPr**

This EMPr informs all relevant parties (i.e. the Contractor, the sub-contractor, the Environmental Control Officer (ECO) and all other staff employed by Eskom at the site as to their duties in the fulfilment of the legal requirements for the development with particular reference to the prevention and mitigation of anticipated potential environmental impacts. The main purpose of the EMPr is to ensure sustainable management of the environment during construction and operation of the proposed powerline. The aims and objectives of this EMPr are to:

- Detail specific actions deemed necessary to assist in mitigating the environmental impact of the project;
- Ensure that the construction staff is familiar with environmental procedures to be followed and comply with all recommendations as stipulated in this document;
- To set out the mitigation measures and environmental specifications which are required to be implemented for all phases of the project in order to minimise the extent/intensity and

significance of environmental impacts, and to manage environmental impacts and where possible to improve the condition of the environment;

- To establish a method of monitoring and auditing environmental management practices during all phases of the activity;
- Ensure that the construction and operational phases of the project continues within the principles of Integrated Environmental Management (IEM); and to
- Ensure compliance and that all mitigations measures and recommendations are complied with.

3. PROJECT DESCRIPTION AND LOCATION

Eskom is proposing to build a new 35km 132kV powerline from Mbahe Substation to Mhinga Substation to strengthen the capacity in the area. The area falls under the jurisdiction of Thulamela Local Municipality within the Vhembe District, Limpopo province (See Figure 1 for the Locality Map).

The proposed alignment runs in an East-westerly direction from Siduo Village passing through Tshikonelo, Xikundu, Hlangeni, Saselamani, Nyavhani, Phawani/Bannatyne, Shigalo villages to an area in Mhinga village. The proposed powerline route will traverse a number of farms namely:
Farms Mangundi 279 MT, Strekstroom 277 MT, Skgalos 286 MT, Graham 276 MT, Lock 270 MT, Hattingh 275 MT, Bannatyne 271 MT, Tshikundu 262 MT, Saselami 260 MT and Mhinga 288 MT.

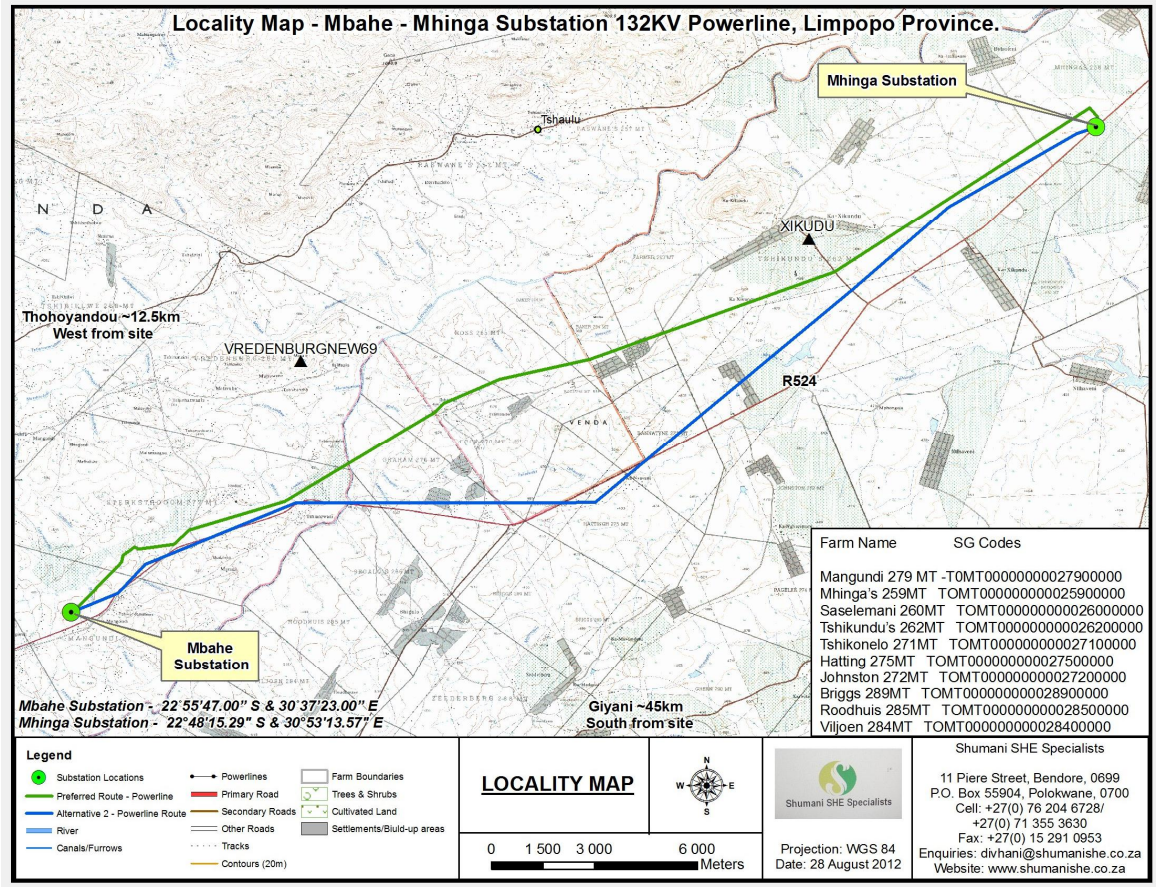

Figure 1: Map indicating the location of the proposed site.

4. RISKS AND KEY ISSUES

A number of potential impacts associated with the development were identified during the EIA phase. Of all the impacts identified, mitigation measures were suggested. These impacts included the following:

4.1. **Construction phase**

Loss of breeding, foraging and roosting habitat - During the construction phase and maintenance of power line, some habitat destruction and alteration inevitably takes place. This happens with the upgrading of access roads, and the clearing of servitudes. These activities have an impact on birds breeding, foraging and roosting in or in close proximity of the site, through the modification of habitat.
Visual intrusion - The presence of the powerline is likely to have aesthetic impacts on the surrounding environment especially to the residents. However the impact is considered not to be a nuisance as there are existing powerlines in the vicinity.
Bird collision and electrocution - The proposed construction of the new 132kV line from Mbahe to Mhinga Substations will pose a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a low-medium collision risk, mostly to non Red Data species and a low-medium electrocution risk, in particular to vultures.
Electromagnetic fields and radiation - Power lines, electrical wiring, and appliances produce EMFs. Electric fields exist whenever a positive or negative electrical charge is present. Any electrical wire that is charged will produce an associated electric field. The higher the voltage, the stronger the electric field at a given distance from the wire. The proposed powerline will be constructed at a reasonable distant from residential dwellings. And all equipment will be constructed according to industry accepted practices. On this basis, the possibility of human health effects due to EMFs is not considered to be an issue for the project.
Vegetation disturbance – Movement of maintenance vehicle could impact badly on the vegetation along the powerline route.
Removal of alien species - If not properly managed, spread of alien and invasive species may become a problem.
Risk of fire breakouts - Fire break outs can be traced to overloading circuits and poor maintenance. As with any tall structure, the powerline structures being in an exposed location it can be anticipated that, from time to time, the connectors could be struck by lightning.
Improved energy supply – Power outage has been a serious concern recently in the area. The new powerline will extend the available electricity distribution infrastructure within the area, thus reducing further power shortages.
Water pollution - Oils spills are anticipated to occur during the powerline construction from vehicle leaks. If not attended to, oils spills could result in water pollution especially during rainy season when washed off.

Impact on wetlands and riparian areas – movement of construction vehicles and personnel is likely to impact on sensitive areas, that is river crossings.
Removal of alien species – during construction, alien and invasive species will be identified.
Spread of alien/invasive species - Though there were no alien plants infestations observed on the site or in the near vicinity. Clearing of soil can always lead to some alien infestations, but no near seed source was observed. The chance of that happening is low, unless seeds are imported. It is suggested that the "maintenance plan" of the site must include regular inspections to ensure no alien or exotic plants establish itself on site.
Disruption of fauna – clearing of vegetation and removal of large trees will result in loss of faunal habitat.
Disruption of heritage and archaeological artefacts – during construction, heritage resources of significance may be exposed although now where identified at this stage. Burial places identified must not be tempered with..
Soil disturbance and erosion - Vegetation clearing could result in soil loss and erosion. Exposed soils could be eroded if not covered. This impact is however expected to be limited to the site only. Provided that adequate measures are implemented in the construction phase of the development this impact can be deemed to have a low significance.
Air pollution - Vegetation clearing will leave large areas of exposed soils. These areas are prone to dust which can result in air pollution**.** The movement of construction vehicles to and from the site can contribute to excessive dust emissions. Vehicles and machinery fumes may also contribute to air pollution if not serviced regularly.
Noise – construction activities and movement of construction vehicles will contribute to noise generation.
Waste generation - Construction waste (cement bags, concrete mix etc) will be generated. Potential damage to untransformed land by dumping of surplus building rubble as well as littering may impact negatively on the environment. Domestic waste (food parcels and water bottles brought on site by construction workers) may accumulate on-site.
Veld fires – cooking and use of flammable substance could result to fires.

4.2. **Operational phase**

Visual intrusion - The presence of the powerline is likely to have aesthetic impacts on the surrounding environment especially to the residents. This is however considered not to be a nuisance as there are other powerlines in the area.
Bird collision and electrocution - The proposed construction of the new 132kV line from Mbahe to Mhinga Substation will pose a limited threat to the birds occurring in the vicinity of the new infrastructure. The power line poses a low-medium collision risk, mostly to non Red Data species and a low-medium electrocution risk, in particular to vultures.
Electromagnetic fields and radiation - Power lines, electrical wiring, and appliances produce EMFs. Electric fields exist whenever a positive or negative electrical charge is present. Any electrical wire that is charged will produce an associated electric field. The higher the voltage, the stronger the electric field at a given distance from the wire.
Vegetation disturbance – Movement of maintenance vehicle could impact badly on the vegetation along the powerline route.
Removal of alien species - If not properly managed, spread of alien and invasive species may become a problem.
Risk of fire breakouts - Fire break outs can be traced to overloading circuits and poor maintenance. As with any tall structure in an exposed location it can be anticipated that, from time to time, the connectors could be struck by lightning.
Improved energy supply – Power outage has been a serious concern in the area. The new powerline improve the situation and the available electricity distribution infrastructure within the area, thus reducing load shedding.
Water pollution **-** Oils spills from maintenance vehicles is anticipated to occur during the powerline operation. If not attended to, oils spills could result in water pollution especially during rainy season when washed off.

4.3. **Decommissioning phase**

NB: No decommissioning planned at this stage. It is recommended that the responsible party prepares a decommissioning plan prior decommissioning.

5. ROLES AND RESPONSIBILITIES

5.1. Applicant

- The applicant shall ensure that the EMPr forms part of all contract documents;
- The applicant must ensure that the contractor and his/her subcontractors comply with all the environmental specifications outlined in this document;
- Assume overall responsibility for the effective implementation and administration of the EMPr;
- Ensure construction personnel are trained in accordance of the requirements of the EMPr.

5.2. Contractor

The Contractor is responsible for the overall execution of the activities envisioned in the construction phase including the implementation and compliance with recommendations and conditions of the EMPr. The Contractor must therefore ensure compliance with the EMPr at all times during construction activities and maintain an environmental register which keeps a record of all environmental incidents which occur on the site during construction of transmission lines. These incidents may include:

- Public involvement / complaints
- Health and safety incidents
- Incidents involving Hazardous materials stored on site and any spills that may occur
- Non compliance incidents as highlighted by audit reports

The Contractor is also responsible for the implementation of corrective actions issued by the ECO and Project Manager within a reasonable or agreed period of time.

5.3. Environmental Control Officer (ECO)

- Conduct regular site visits to be able to report on and respond to any environmental issues;
- Report compliance and non-compliance issues to the municipal representative and authorities as applicable;
- Advise the Contractor on environmental issues within the defined work areas;
- Review access and incidents records that may pertain to the environment and reconcile the entries with the observations made during site inspection, monitoring and auditing;
- Recommend corrective action when required for aspects of noncompliance the EMPr;

- Take immediate action on site where clearly defined and agreed “no-go” areas are violated or in danger of being violated and to inform Eskom representative of the occurrence immediately and to take action; Be contactable by the public regarding matters of environmental concern as they relate to the operation of the works; and
- Take immediate action on site when prescriptive conditions are violated, or in danger of being violated and to inform the Eskom representative of the occurrence and action taken.

6. COMPLIANCE AND MONITORING

6.1. Non-Compliance

The Developer (Eskom) will within 48 hours, report to the ECO on the following:

- Difficulties encountered with carrying out the EMPr control measures
- Areas of non-compliance; and
- Amendments that may be required to any of the EMPr conditions.

6.1.1. Reporting procedure

Within 24 hours of becoming aware of any environmentally related problems, the ECO should be notified and the following documented:

- Nature and cause of the problem;
- Parties responsible for causing the problem; and
- Immediate actions taken to stop/reduce/contain the causes of the problem.

The applicant's (Eskom) Environmental Officer shall be given the responsibility to inventory all the environmental aspects of the operation including documentation for specific environment-related activities. These may include amongst others, lists of spill response, incidence reporting etc.

7. ENVIRONMENTAL MANAGEMENT

The EMPr covers all three phases of development, i.e. construction, operational and the decommissioning phase. Each phase has specific issues unique to that period of the construction and operation of the powerline line and associated infrastructure.

7.1. Construction Phase

This section of the EMPr provides management principles for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer.

7.1.1. Environmental awareness and training

The Contractor must ensure that all site personnel have a basic level of environmental awareness training. Topics covered should include but not limited to;

- What is meant by "Environment" and why it needs to be protected;
- How construction activities can impact on the environment;
- What actions can be taken to mitigate against such impacts; and
- Awareness of emergency and spills response provisions.

It is the ECO's responsibility to provide the site foreman and the workers with environmental training and to ensure that the foreman has sufficient understanding to pass this information onto the construction staff regularly. Training should be provided to the staff members in the use of the appropriate fire-fighting equipment. Translators are to be used where necessary. The need for a "clean site" policy also needs to be explained to the workers. Staff operating equipment need to be trained and well equipped for the job.

7.1.2. Emergency preparedness

A site specific emergency preparedness plan must be undertaken for by the Contractor/Applicant. The Contractor shall ensure that a copy of the site specific emergency preparedness plan is easily accessible to all relevant staff and the CLO or a suitable community representative. The Contractor and

all the sub-contractors must inform the staff of the risk of fires and fire prevention and emergency procedures in the event of a fire. Fire fighting equipment shall be supplied by the Contractor at suitable locations. Activities which may pose a risk of fire must be identified and suitable measures must be put in place to prevent any possible damage by fire. The Contractor shall display numbers for emergency services, hospitals etc.

7.1.3. Construction camp

The contractor shall establish his construction camps, offices, workshops and any other infrastructure in a manner that does not adversely affect the environment. Site establishment shall take place in an orderly manner and all required amenities shall be installed at camp sites before the main workforce move onto site. The construction camp shall have the necessary facilities required for the day to day running of the site including the following:

- Ablution facilities with chemical toilets at commencement of construction activities to the satisfaction of the ECO.
- Safe drinking water for human consumption shall be available at the site offices and at other convenient locations on site. All water used on site must be taken from a legal source and comply with the recognised standards for potable and other uses.
- Adequate storage facility with impermeable floors to prevent soil and ground water contamination.
- Designated fuelling places with impermeable floor to prevent contamination.

7.1.4. Site clearing

Site clearing must take place in phased manner, as and when required. Areas which are not to be affected by construction within two months of time must, in order to reduce erosion risks, not be cleared. The area to be cleared must be clearly demarcated and this footprint strictly maintained. Spoil that is removed from the site must be removed to an approved spoil site or municipal licensed landfill site. Silt fences and erosion control measures must be implemented in areas where these risks are more prevalent. These include wetlands and steep areas.

Topsoil must be neatly stockpiled adjacent to the excavations ready for backfill when required. The Contractor shall ensure that all work is undertaken in a manner which minimises the impact on vegetation outside the immediate area of the Works. No tree or shrub outside the area of the Works shall be felled, topped, cut or pruned until it has been clearly marked for this purpose by the Project Manager. The method of marking will be specified by the Project Manager, and the Contractor will be informed in writing; and no tree outside the area of the Works shall be burned for any purpose.

7.1.5. Access routes

Existing access routes are to be utilized during construction. Should additional access be required, this should be done in an environmental friendly manner and in consultation with the relevant land/property owner. A written consent/agreement with the landowner must be in place prior to any construction of such access routes. Should any damage occur to the access route road resulting from construction activities, such must be rehabilitated to its original state.

7.1.6. Vegetation clearing and removal of alien invasive species

The contractor must on advice from the ECO ensure all alien plants along the construction sites are removed and must be cleared on a regular basis. Disturbed areas around the construction sites should be re-vegetated using a specified seed mix and/or appropriate indigenous grasses, forbs, shrubs or trees. Lists of plant species must be approved by a qualified vegetation ecologist and/or appropriate government authorities.

7.1.7. Restriction to working areas

Working areas are defined as those areas required by the contractor to undertake construction. It is important that activities are conducted within a limited area to facilitate control and to minimize impacts on the natural environment. For this reason, no-go areas and working areas must be identified. This must be done to ensure minimal disturbance to the surrounding environment. The following measures must be applied to minimize disturbance to the surrounding environment:

- All plant, machinery and construction material must remain within the boundaries of the working area; and

- From the outset, working areas are to be demarcated and well defined by danger tapes or any other appropriate method.

7.1.8. Ablution facilities

The Contractor shall make provision of chemical toilets on the site. Staff shall be sensitised to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed. Ablution facilities shall be within 100m from workplaces but not closer than 100m from any natural water bodies or boreholes. There should be enough toilets available to accommodate the workforce. Male and females must be accommodated separately where possible. Alternatively ablution facilities may be located in a place approved by the ECO. Toilets shall be serviced regularly and the ECO shall inspect toilets regularly.

7.1.9. Soils disturbances and erosion

Special care needs to be taken during the construction phase to prevent surface storm water rich in sediments and other pollutants from entering the natural drainage systems. In order to prevent erosion, mechanisms are required for dissipating water energy. An on site ecological management plan must be implemented for rivers including management recommendations as well as potential rehabilitation of severely disturbed areas.

Any stockpiling of gravel, cut and fill or any other material including spoil shall be in areas approved by the ECO within the defined working area. The Contractor shall ensure that the material does not blow or wash away. If the stockpiled material is in danger of being washed or blown away, the Contractor shall cover it with a suitable material, such as hessian or plastic. Stockpiles of topsoil shall not be covered with plastic. No stockpiling of any material shall be allowed within 20m of any “no go” area including wetland areas.

7.1.10. Refuse and waste management

The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at a municipal registered landfill. A certificate of disposal shall be obtained by the contractor and kept on file. Where a registered waste site is not available close to the

construction site, the contractor shall provide a method statement with regard to waste management. The disposal of waste shall be in accordance with all relevant legislation. Under no circumstances may solid waste be burnt on site.

Construction rubble shall be disposed of registered waste disposal facility approved by the relevant Municipality. The contractor must provide sufficient waste bins at the construction site for collection of different types of waste and for recycling purposes. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site. No littering by the employees of the Contractor shall be allowed under any circumstances.

The ECO shall monitor the neatness of the work sites as well as the Contractor campsite. All waste hazardous materials must be carefully stored as advised by the ECO, and then disposed of off site at a licensed landfill site. All temporary stockpile areas, litter and rubble must be removed on completion of construction. All dumped material must be taken to an approved dump site in the area. Soil stockpiling areas and storage facilities must follow environmentally sensitive practices and be situated a sufficient distance away from drainage areas or drainage line. The careful position of soil piles, and runoff control, during all phases of development, and planting of some vegetative cover after completion (indigenous groundcover, grasses etc.) will limit the extent of erosion occurring on the site.

7.1.11. Heritage sites and features

It is likely that the transmission line could have impacts on heritage and cultural resources in the project area. No archaeological or heritage sites have been uncovered on this site, except for the burial grounds identified. These must not be tempered with and should be clearly condoned during construction. However the likeliness of sub-surface heritage and cultural resources occurring cannot be ruled out. If any heritage resources of significance are exposed during the construction, the South African Heritage Resources Agency (SAHRA) should be notified immediately, all activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds.

7.1.12. Air quality

No burning of waste or any other material from any clearing operations will be allowed. Dust suppression measures must be implemented in areas susceptible to wind erosion. Construction vehicle must travel at maximum speed of 40km/h allowed within the area so as to generate less dust in exposed areas. All construction vehicles and machinery must be well maintained and kept in good order so as not to release excessive emissions.

7.1.13. Noise pollution

Construction site yards, workshops, and other noisy fixed facilities should be located well away from noise sensitive areas. The use of sound amplifying devices is strictly prohibited. These areas include educational facilities and residential dwellings. Heavy vehicle traffic should be routed away from noise sensitive areas, where possible. Noise levels must be kept within acceptable limits. All noise and sounds generated must adhere to SABS 0103 specifications for maximum allowable noise levels for residential areas.

With regard to unavoidable very noisy construction activities in the vicinity of noise sensitive areas, the contractor and ECO should liaise with local residents on how best to minimise impact, and the local population should be kept informed of the nature and duration of intended activities. Noisy activities must be scheduled to take place during allocated construction hours only as per section 25 of the Noise Control Regulations of the Environment Conservation Act, 1989 (Act No. 73 of 1989).

7.1.14. Safety and security

A health and safety plan should be developed in respect of construction worker safety. Community safety concerns should be addressed by the Contractor, such that the construction team must stay in the designated area without venturing into private community property without authority. A Health and Safety Officer must be employed to monitor project activities for any potential problems. He or she must be always at site throughout the construction phase. The Contractor shall ensure the implementation of the following safety and security measures:

- Marking dangerous areas and restrict access to these areas;
- Ensure compliance with the Occupational Health and Safety Act (No 85 of 1993);

- Ensure that no person under the influence of alcohol or narcotic substances is permitted to work on the site;
- Ensure adequate signage is provided along the major roads and at the entrance of the construction site; and
- The Contractor must be obliged to ensure that workers are educated about HIV/AIDS and other related diseases and that safety measures are readily available and implemented.
- Construction vehicle must maintain maximum speed of 40km/hour for community member's safety especially children, the elderly and livestock.

7.1.15. Ground and Surface WaterPollution and Spills management

Spills may occur during construction as vehicles are fuelled and or vehicle leaks. The contractor must therefore keep spill cleaning kits on site at all times in case of spills in the case where this spill role is sub-contracted, the response period to a spill call must be minimal. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site. The ECO must determine the precise method of treatment of polluted soil. This could involve the application of soil absorbent materials or oil-digestive powders to the contaminated soil. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent materials. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment, and stored in adequate containers until appropriate disposal. Contaminants are to be stored safely to avoid spillage. Machinery must be properly maintained to keep oil leaks in check.

7.1.16. Site rehabilitation

The contractor should commence rehabilitation of exposed soil surfaces such as pylon hole excavations as soon as practical after completion of earthworks.

7.1.17. Socio-economic impacts

A complaints register should be kept on site. Details of complaints should be incorporated into the audits as part of the monitoring process. This register is to be tabled during monthly site meetings. Damage to existing infrastructure shall not be tolerated and any damage shall be rectified immediately

by the Contractor. A record of all damage and remedial actions shall be kept on site. Construction traffic should only make use of approved routes.

Were possible, unskilled job opportunities should be offered to local community members. Equal opportunities for employment should be created to ensure that the local female population also have access to these opportunities. Females should be encouraged to apply for positions. Payment should comply with applicable Labour Law legislation in terms of minimum wages.

7.2. Operational Phase

This section of the EMPr provides management principles for the operation and maintenance phase of the project. Environmental actions, procedures and responsibilities as required from Eskom during the operation and maintenance phase are specified.

7.2.1. Maintenance

Regular inspection of the powerline must take place to monitor its operational status. The surrounding community should be encouraged to report any unexpected fault/failure to Eskom as soon as possible.

7.2.2. Vegetation Disturbance

Maintenance vehicles must use access routes strictly reserved for that purposes. Encroachment into undisturbed areas of vegetation should be avoided at all times. All weeds and invasive vegetation should be removed regularly. Maintenance vehicles must be limited to already available access routes and servitudes

7.2.3. Fauna protection

No faunal species must be harmed by maintenance staff during any routine checks of the power line. No hunting or pouching of wild animals allowed. Maintenance vehicles must travel at maximum speed of 40km/hour for safety of human and domestic and wild animals.

7.2.4. Bird Collusion and Electrocution

Anti-collision devices such as bird flappers must be installed where powerlines crosses avia-faunal corridors. The span that crosses major drainage lines should be marked with Bird Flight Diverters on the earth wire of the line, five metres apart, alternating black and white. The removal of large trees should be avoided as much as possible. The poles should be fitted with bird perches on top of the poles to draw birds, particularly vultures, away from the potentially risky insulators.

7.2.5. Removal of Alien Species

Proper strategy to prevent invasive alien plants from establishing and this will further prevent pollution and erosion must be implemented. Regular maintenance and inspections and removal of alien plants must be undertaken. Alien vegetation must be cleared on a regular basis.

7.2.6. Electromagnetic field and radiation

Metal conductors must be used. Trees provide some form of shielding capability, where practical large trees must be left intact. All equipment must be constructed according to industry accepted practices.

7.2.7. Refuse and waste management

Faulty cables and damaged electrical equipments, conductors etc. shall be disposed of correctly. Littering of waste by maintenance personnel is strictly prohibited.

7.2.8. Risk of Fire Breakouts

Fire-breaks should be maintained regularly. Strict measures must be in place to prevent public access to the live electrical equipment along the powerline.

7.2.9. Decommissioning Phase

Should decommissioning be considered, a proper decommissioning plan must be prepared.

8. CONCLUSION

The EMPr should be used as an on-site reference document during all phases of the development. This Draft EMPr has been prepared to meet the requirements of the EIA Regulations and to address the entire project cycle, from planning – construction - operation - decommissioning. The purpose of the EMP is to ensure that impacts associated with the various phases of the project are kept to a minimum. In this regard, the EMPr sets reasonable standards against which Eskom and Contractor's performance can be measured during the proposed project. It should be noted that the management and mitigation measures listed hereunder are not to be considered finite, as other impacts are likely to result during the construction phase. For this reason, the EMPr should be updated accordingly. Potential impact on the environment can be mitigated to an acceptable level if the provisions of this EMPr are maintained and adhered to.