



**ENVIRONMENTAL PROGRAMME FOR THE  
PROPOSED ELECTRIFICATION PROJECT AT  
NTLANJANA LOCATION IN LUSIKISIKI WITHIN  
INGQUZA HILL LOCAL MUNICIPALITY, EASTERN  
CAPE**

**A PROJECT FOR INGQUZA HILL LOCAL  
MUNICIPALITY**

**September 2015**



## DOCUMENT DESCRIPTION

**Client:**

Ingquza Hill Local Municipality

**Proposal Name:**

Environmental Programme for the Proposed Electrification Project at Ntlanjana Location In Lusikisiki within Ingquza Hill Local Municipality, Eastern Cape

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## Glossary of Terms

### **ACCIDENT:**

A road vehicle accident.

### **CONTRACTOR:**

Companies appointed on behalf of the Client to undertake activities, as well as their sub-contractors and suppliers.

### **CONSTRUCTION PROJECT MANAGEMENT TEAM:**

The team consists of a Project Manager as well as a Safety, Health and Environmental officer.

### **DEGRADATION**

The lowering of the quality of the environment through human activities e.g. river degradation, soil degradation.

### **EMERGENCY:**

An undesired event that results in a significant environmental impact and requires the notification of the relevant statutory body such as a local or provincial authority.

### **ENVIRONMENT:**

In terms of the National Environmental Management Act (NEMA) (No 107 of 1998)(as amended), "Environment" means the surroundings within which humans exist and that are made up of:

- (i) the land, water and atmosphere of the earth;
- (ii) micro-organisms, plants and animal life;
- (iii) any part or combination of (i) of (ii) and the interrelationships among and between them; and
- (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

### **ENVIRONMENTAL CONTROL OFFICER:**

An individual nominated through the Client to be present on site to act on behalf of the Client in matters concerning the implementation and day to day monitoring of the EMP and conditions stipulated by the authorities.

### **ENVIRONMENTAL IMPACT:**

A change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

### **ENVIRONMENTAL MANAGEMENT PROGRAMME:**

A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive environmental impacts and limiting or preventing negative environmental impacts are implemented during the life-cycle of the project.

### **GENERAL WASTE:**

General waste means waste that does not pose an immediate hazard or threat to health or to the environment, and includes -

- (a) domestic waste;
- (b) building and demolition waste;
- (c) business waste; and
- (d) inert waste.

### **GENERAL WASTE LANDFILL SITE:**

A waste disposal site that is designed, managed and permitted to allow for the disposal of general waste.

### **IMPACT:**

A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

### **INCIDENT:**

An undesired event which may result in a significant environmental impact but can be managed through internal response.

### **MITIGATION:**

Measures designed to avoid, reduce or remedy adverse impacts.

**PRINCIPAL AGENT:**

The principal agent is appointed by the Client to oversee the overall project management and the management of the professional project team.

involved in activities related to the project, or person present at or visiting the construction area, including permanent contactors and casual labour.

**RECOVERY:**

The controlled extraction of a material or the retrieval of energy from waste to produce a product.

**RE-USE:**

To utilise articles from the waste stream again for a similar or a different purpose without changing the form or properties of the articles.

**RECYCLE:**

A process where waste is reclaimed for further use, this involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material.

**WASTE:**

Waste means any substance, whether or not that substance can be reduced, re-used, recycled and recovered -

- (a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
- (b) which the generator has no further use of for the purposes of production;
- (c) that must be treated or disposed of; or
- (d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but—
  - (i) a by-product is not considered waste; and
  - (ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste.

**WASTE DISPOSAL FACILITY:**

Waste disposal facility means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premises.

**WORKFORCE:**

The entire project team including people employed by the Principal Agent or the Contractor, persons

## Acronyms

DAEA	Department of Agriculture, Environmental Affairs
DAFF	Department of Agriculture, Fisheries & Forestry
DWA	Department of Water Affairs
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
ECPHRA	Eastern Cape Provincial Heritage Resources Authority
ECO	Environmental Control Officer
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act (No 107 of 1998)
NEMAQA	National Environmental Management Air Quality Act (No 39 of 2004)
NEMWA	National Environmental Management Waste Act (No 59 of 2008)
NHRA	National Heritage Resources Act No.25 of 1999
PPE	Personal Protective Equipment
SANS	South African National Standard
TBA	To Be Announced

## 1 INTRODUCTION

### 1.1 Project Background

Ingquza Hill Local Municipality proposes to construct a 1300 km of MV and LV line to supply Households. This Environmental Management Programme (EMPr) has been prepared to provide specific environmental guidance for Planning, Construction and Operational phase of the proposed Ntlanjana MV line. The proposed MV line servitude will be accessible as most of the line servitude will be along the fence boundaries of households and close to access roads.

### 1.2 Purpose

In terms of The Constitution of the Republic of South Africa (Act No. 108 of 1996) everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for benefit of present and future generations, through reasonable legislation and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The needs of the environment as well as affected parties should thus be integrated into overall project management. The Environmental Management Programme (EMPr) ensures that management of maintenance activities meets the requirements of existing environmental legislation and good environmental practice in terms of international norms and practice

### 1.3 Scope of the Environmental Management Programme

In accordance with the requirements of the NEMA Environmental Impact Assessment (EIA) Regulations, 2014, and the requirements of the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), this EMPr is to be implemented by Ingquza Hill Local Municipality as well as any employee, contractor, agent or sub-contractor appointed to act on behalf of the Ingquza Hill Local Municipality in the execution of the project, in order to ensure environmental compliance on site.

The specifications outlined in this EMPr are thus applicable to all activities undertaken by Ingquza Hill Local Municipality as well as appointed contractors and all persons involved in the execution of the works including sub-contractors, the workforce, suppliers and volunteers for the duration of construction, operation and future maintenance.

An EMPr is focused on sound environmental management practices, which will be undertaken to minimise adverse impacts on the environment through the lifetime of a development. In addition, an EMPr identifies what measures will be in place or will be done to manage any incidents and emergencies that may occur during operation of the MV line.

As such the EMPr provides specifications that must be adhered to, in order to minimise adverse environmental impacts associated with the operations of the MV line.

An Environmental Code of Conduct has also been developed that provides a simplified set of rules that should be adhered to by all persons involved with the project at all times. This is to be displayed at strategic points to ensure constant environmental awareness.

In order to ensure a holistic approach to the management of environmental impacts during the construction and operation of the proposed MV line, this EMPr sets out the methods by which proper environmental controls are to be implemented by the Contractor and all other parties involved.



## 2 Training and Environmental Awareness

It is important to ensure that the Contractor has the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and on-going minimisation of environmental harm. Training needs should be identified based on the available and existing capacity of site personnel (including the Contractors and Sub-contractors) to undertake the required EMPr management actions and monitoring activities. It is vital that all personnel are adequately trained to perform their designated tasks to an acceptable standard.

The environmental training is aimed at:

- Promoting environmental awareness;
- Informing the Contractor of all environmental procedures, policies and programmes applicable;
- Providing generic training on the implementation of environmental management specifications; and
- Providing job-specific environmental training in order to understand the key environmental features of the construction site and the surrounding environment.

Training will be done in a verbal format. The training will be a once-off event. In addition to training, general environmental awareness must be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout its duration. This ensures that environmental accidents are minimised and environmental compliance maximized.

### 2.1.1 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 satisfaction of the Project Coordinator and Environmental Control Officer.

### 2.1.2 Operational and Maintenance 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 Ingquza Hill Local Municipality during the operation and maintenance phase are specified.

It should be noted that this EMPr is a dynamic document that should be continually updated, as and when required.

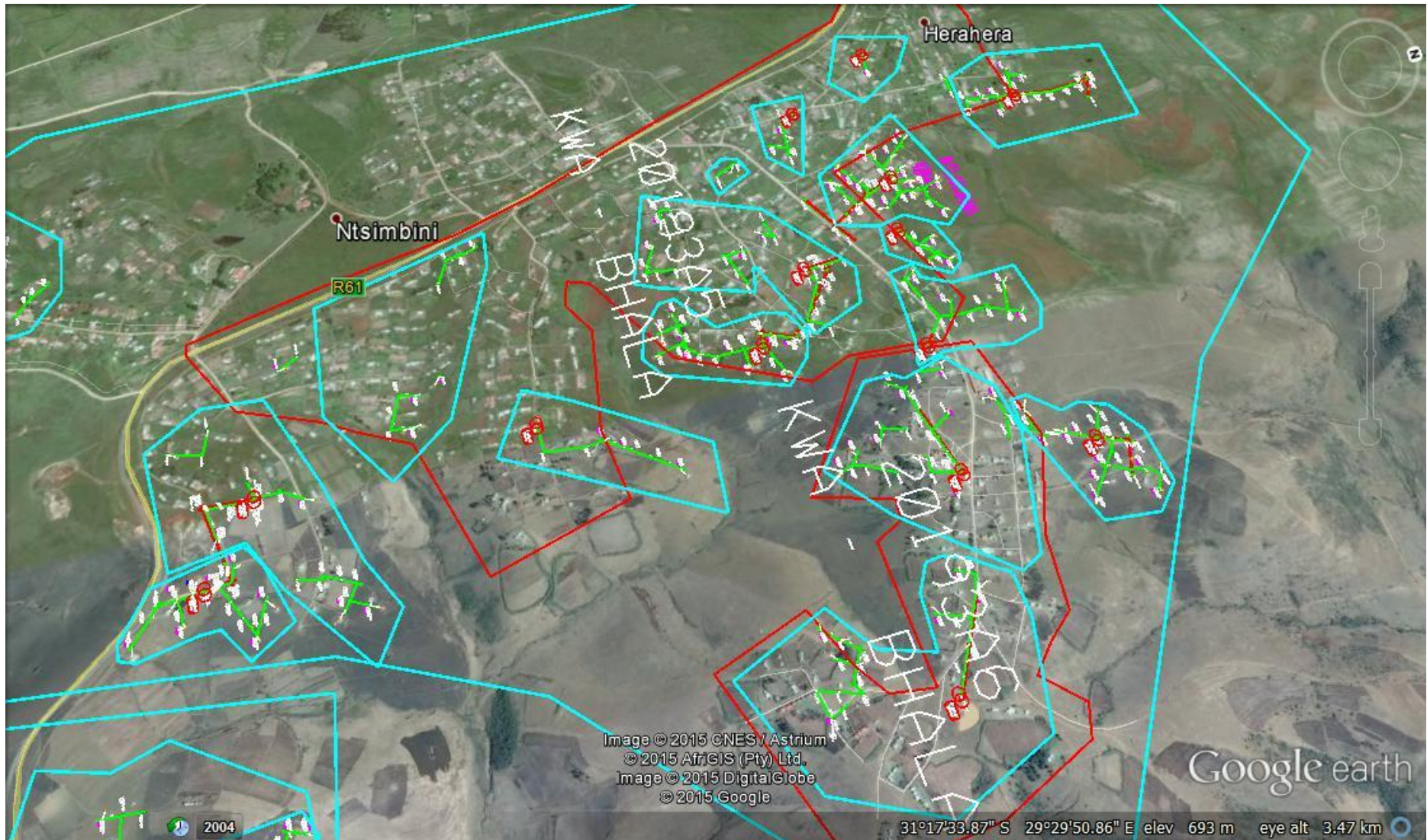


Figure 1: Proposed Project Area

## 2.2 Objectives of the Environmental Management Programme

The Environmental Management Programme (EMPr) has the following objectives:

- To provide a brief description of the proposed project, including the location and objectives as well as the need for the proposed project.
- Ensuring compliance with regulatory authority stipulations and guidelines which may be local, provincial, national and/or international.
- To outline functions and responsibilities of responsible persons.
- To state standards and guidelines, which are required to be achieved in terms of environmental legislation.
- To outline mitigation measures and environmental specifications which are required to be implemented for all phases of the project in order to minimise the extent of environmental impacts, and to manage environmental impacts associated with the proposed project.
- To identify measures that could optimize beneficial impacts.
- To prevent long-term or permanent environmental degradation.
- To establish a method of monitoring and auditing environmental management practices during all phases of development.
- Detail specific actions deemed necessary to assist in mitigating the environmental impact of the project.
- Ensure that the safety recommendations are complied with.
- Propose mechanisms for monitoring compliance with the EMPr and reporting thereon.
- Specify time periods within which the measures contemplated in the draft environmental management programme must be implemented, where appropriate.
- To provide an environmental awareness plan.
- Provide rational and practical environmental conditions / requirements to:
  - Minimise disturbance of the natural environment;
  - Ensure water resource protection;
  - Prevent or minimise all forms of pollution;
  - Protect indigenous flora and fauna;
  - Prevent soil and sand erosion and facilitate the re-vegetation of affected areas;
  - Maintenance of newly re-vegetated areas;
  - Restrict noise disturbance;
- Ensure compliance with all applicable laws, regulations, standards and guidelines for the protection of the environment (specifically the coastal and marine environment); and
- Adopt the best practical means available to prevent or minimise adverse environmental impacts.
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of waste.
- Train the Developer, its employees and contractors with regard to their environmental obligations.

## 3 LEGAL REQUIREMENTS

Construction of the MV line must be according to the best industry practices. This EMPr, which will form an integral part of the contract documents, informs the contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The Contractor should note that obligations imposed by the approved EMPr are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

The Contractor shall identify and comply with all South African national and provincial environmental legislation, including associated regulations and all local by-laws relevant to the project. Key legislation currently applicable to the design, construction and implementation phases of the project must be complied with. The list of applicable legislation provided below is intended to serve as a guideline only and is not exhaustive:-

## Environmental Programme for the Proposed Electrification Project

- The Constitution of the Republic of South Africa Act 108 of 1996
- Environment Conservation Act 73 of 1989
- National Environmental Management Act 107 of 1998
- National Environmental Management: Protected Areas Act 57 of 2003
- National Environmental Management: Biodiversity Act 10 of 2004
- National Forests Act 43 of 1983
- National Water Act 36 of 1998
- Conservation of Agricultural Resources Act 43 of 1983
- National Veld and Forest Fire Act 101 of 1998
- Hazardous Substances Act 15 of 1973
- National Heritage Resources Act 25 of 1999
- National Environmental Management: Air Quality Act 39 of 2004
- Health Act 63 of 1977
- Occupational Health and Safety Act 85 of 1993
- White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity
- All relevant provincial legislation, Municipal by-laws and ordinances.

## 4 MANAGEMENT AND MONITORING PROCEDURES

### 4.1 Project Structure

Below Gives an Indication of the Organisational and Team Structure for the Project

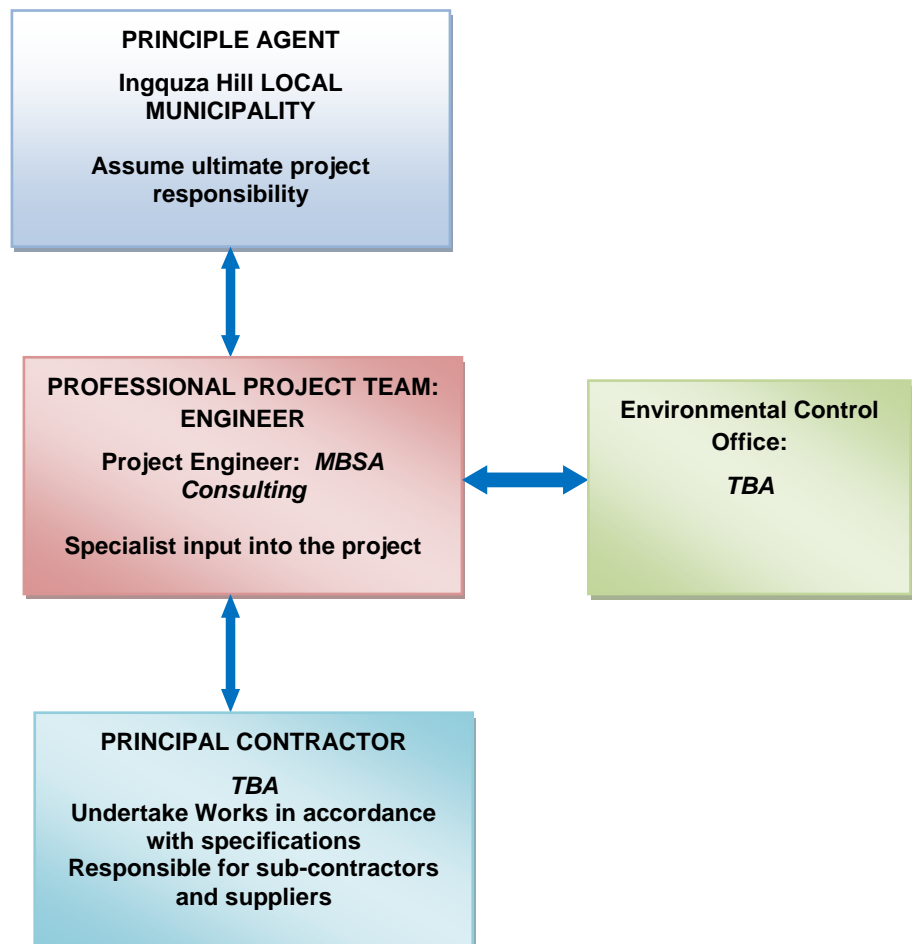


Figure 2: Organisational Structure and Responsibilities

#### 4.1.1 The Project Proponent / Project Manager

- Ensure that the Site Manager/Engineer and the Contractor/Operator are aware of all specifications, legal constraints, standards and procedures pertaining to the project specifically with regard to the environment;
- Ensure that all stipulations within the EMP<sub>r</sub> are communicated and adhered to by the Site Manager/Engineer and the Contractor/Operator;
- Monitor the implementation of the EMP<sub>r</sub> throughout the project by means of regular site visits and meetings; and
- Order the removal of any person(s) and/or equipment in contravention of the specifications of the EMP<sub>r</sub>.

## Environmental Programme for the Proposed Electrification Project

The Project Manager should be fully conversant with the EMPr for the project, as well as all applicable environmental legislation.

### 4.1.2 The Site Manager/ Engineer

- Be fully conversant with the EMPr;
- Be fully conversant with all environmental legislation and ensure compliance;
- Have overall responsibility for the implementation of the EMPr;
- Liaise with the Project Manager and Contractor/Operator on matters concerning the environment;
- Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution on the site;
- Implement remedial measures in the event of pollution incidents or environmental impacts;
- Monitor and verify that environmental impacts are kept to a minimum;
- Review and approve construction methods where necessary; and
- Order the removal of any person(s) and/or equipment in contravention of the specifications of the EMPr.

### 4.1.3 The Contractor

- Be fully conversant with the EMPr;
- Be fully conversant with all environmental legislation and ensure compliance;
- Ensure that all the environmental specifications contained within this EMPr are adhered to at the site;
- Regularly liaise with the Site Manager on matters relating to the environment; and
- Confine activities to the demarcated construction site.

The above responsibilities listed for the Contractor will also apply to any appointed sub-consultants.

### 4.1.4 The Environmental Control Officer (ECO):

- Be fully conversant with the EMPr;
- Be fully conversant with all environmental legislation and ensure compliance;
- Ensure that all the environmental specifications contained within this EMPr are adhered to the site;
- Regularly liaise with the Site Manager on matters relating to the environment; and
- Compile monthly reports as to the progress of the construction phases and report to all parties involved (Site Manager, Project Proponent).

## 4.2 Reporting Procedures

### 4.2.1 Documentation

The following documentation must be kept on site in order to record compliance with the EMPr:

- Record of Complaints
- Non-conformance Reports
- Written Corrective Action Instructions
- Notification of Emergencies and Incidents.

### 4.2.2 Environmental Register

The Principal Agent will put in place an Environmental Register. The contractor will ensure that the following information is recorded for all complaints/incidents:

- Nature of complaint/incident.
- Causes of complaint/incident.
- Party/parties responsible for causing complaint/incident.
- Immediate actions undertaken to stop/reduce/contain the causes of the complaint/incident.
- Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint/incident.

## Environmental Programme for the Proposed Electrification Project

- Timeframes and the parties responsible for the implementation of the corrective or remedial actions.
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented.
- Copies of all correspondence received regarding complaints/incidents.

The above records will form an integral part of the Contractors' Records. These records will be kept with the EMPr, and will be made available for scrutiny if so requested by the Principal Agent.

## 5 ACTIVITIES AND ASPECTS CAUSING IMPACTS

Potential negative environmental impacts that may occur during the construction and operational phases of the proposed project could include:

- environmental pollution;
- deformation of the landscape;
- soil / sand erosion;
- visual disturbance;
- destruction of natural vegetation;
- restriction of access;
- reduction of air quality due to dust liberation ;
- noise pollution; and
- negative social impacts; e.g., disruption of traffic and aesthetic value, potential increase in crime.

In order to minimise these impacts, care must be taken with, inter alia, the disposal of waste, spillage, storage, noise and dust control, selection of sites, preservation and re-establishment of indigenous vegetation and sediment management, the demarcation of sensitive areas and management of the construction process.

## 6 DETAILED ENVIRONMENTAL MANAGEMENT PROGRAMME

To simplify the EMPr requirements, each aspect related to the EMPr has been addressed in the table below. Each action within the EMPr is supported by the priority of when the specific action will need to be implemented. Each of these aspects is briefly described below for ease of reference.

### 6.1.1 Environmental Aspect

This section highlights the various aspects associated with the project i.e. the Developer / Contractor's activities that will interact with the environment.

### 6.1.2 Environmental Measures and Action Plans

This section indicates the actions required to either prevent and/or minimise the potential impacts on the environment that is associated with the project.

### 6.1.3 Responsibility

This section indicates the party responsible for implementing the environmental measures and action plans laid out in the EMPr.

**DO NOT POLLUTE THE ENVIRONMENT**





Environmental Programme for the Proposed Electrification Project

ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
<b>PLANNING PHASE</b>			
<b>1.1 Design</b>			
<b>POLICY COMPLIANCE</b>	<ul style="list-style-type: none"> <li>Power line routing should coincide with relevant legislation and/or policy, e.g. Municipal By-laws, SDFs, etc.</li> </ul>	Project Engineer/Client/Developer	<b>Prior to Construction</b>
<b>Routing of Powerline Line</b>	<ul style="list-style-type: none"> <li>Ensure that as far as possible, lines are routed to avoid sensitive environments.</li> <li>Ensure that as far as possible, lines are routed to avoid high-lying areas and ridgelines.</li> <li>Ensure that as far as possible, pole structures are sited to avoid areas of inappropriate geological or soil structure.</li> <li>Ensure that as far as possible, lines are routed to avoid placing pole structures within 32m of drainage lines, within wetlands or on river banks.</li> <li>Ensure that as far as possible, lines are routed to avoid known bird migration corridors.</li> <li>Ensure that as far as possible, lines are routed to avoid crossing wetlands and rivers.</li> </ul>	Project Engineer/Client/Developer	<b>Prior to Construction</b>

Environmental Programme for the Proposed Electrification Project

ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
<p><b>Planning of Access Roads</b></p>	<ul style="list-style-type: none"> <li>• No vehicle tracks may be designed for slopes steeper than 1:6, where practical.</li> <li>• Appropriate and effective storm water management plans, especially for the access tracks beneath or associated with the power lines, must be included into the final engineering design.</li> <li>• Planning of access routes must be done in conjunction with the Contractor, Developer and the Landowner. All agreements reached shall be documented in writing and no verbal agreements should be made. The condition of existing access / private roads to be used shall be documented with photographs.</li> <li>• Newly constructed access roads must be adequately maintained so as to minimise dust, erosion or undue surface damage.</li> </ul>	<p>Project Engineer/Client/Developer</p>	<p><b>Prior to Construction</b></p>

Environmental Programme for the Proposed Electrification Project

ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
<b>Routing of powerline Line</b>	<ul style="list-style-type: none"> <li>• Appropriate stormwater routing and attenuation must be implemented to avoid onsite erosion and downstream sedimentation.</li> <li>• No vegetation beyond powerline line centre line corridor (NOT the reserve, only the corridor directly below the powerline) should be damaged or removed</li> <li>• All graves identified should be protected and conserved:</li> <li>• A proper fence is to be built around all graves 5 metres away from the perimeter of the graves, including entry gates to allow visitors</li> <li>• No development is allowed within 10-15 metres from the fence line surrounding the graves</li> <li>• A Municipality and community representative should walk through the finalised route to point out any graves that may have not been identified already and the outcome of the consultation should be sent to SAHRA Burial Grounds and Graves Unit. (jkitto@sat.sahra.org.za).</li> </ul>	Project Engineer/Client/Developer	<b>Prior to Construction</b>
<b>CONSTRUCTION PHASE</b>			
<b>Environmental Training and Induction</b>	In terms of section 2(h) and (j) of the National Environmental Management Act (No. 107 of 1998), the Contractor has the responsibility to ensure all personnel involved in the project are aware of, and familiar with, the EMPr, the key environmental issues and consequences of non-compliance to the EMPr.	Contractor	<b>Prior to and During Construction</b>

Environmental Programme for the Proposed Electrification Project

ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	<p>The EMPr forms part of the formal site induction for all contractors, sub-contractors and casual labourers, preferably in their native language. The induction training will, as a minimum, include the following: bout</p> <ul style="list-style-type: none"> <li>• The importance of conformance with all environmental policies;</li> <li>• The environmental impacts, actual or potential, of their work activities;</li> <li>• The environmental benefits of improved personal performance;</li> <li>• their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Consultant’s environmental management systems, including emergency preparedness and response requirements; and</li> <li>• The mitigation measures required to be implemented when carrying out their work activities.</li> <li>• The potential consequences of departure from specified operating procedures.</li> </ul>	Client/Developer	<b>Prior to and During construction</b>
	All contractors, sub-contractors and casual labourers must acknowledge their understanding of the EMPr and environmental responsibilities by signing an induction attendance record.	Client/Developer	<b>Prior to Construction</b>
	Environmental Toolbox Talks are to be conducted twice a week with every personnel on site.	Contractor	<b>During Construction</b>

Environmental Programme for the Proposed Electrification Project

ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
Environmental Awareness	An Environmental Awareness programme shall be implemented for all site personnel describing the key environmental issues and potential impacts thereof.	ECO	During Construction
<b>1.2 Layout and Site Establishment (Construction Camp)</b>			
Contractor	<b>Prior to and running construction</b>	Contractor	<b>Prior to Construction</b>
	The contractor shall submit a method statement for site clearance for approval by the Project Coordinator in consultation with the ECO. 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.	Contractor	<b>Prior to Construction</b>
	The Construction camp shall have the necessary ablution facilities with chemical toilets at commencement of construction activities to the satisfaction of the Project Coordinator. The Contractor shall inform all site staff to make use of supplied ablution facilities and under no circumstances shall indiscriminate sanitary activities be allowed other than in supplied facilities.	Contractor	<b>Prior to Construction</b>
	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.	Contractor	<b>During Construction</b>

Environmental Programme for the Proposed Electrification Project

ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	The contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings.	Contractor	<b>Prior to Construction</b>
	The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.	Contractor	<b>During Construction</b>
	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.	Contractor	<b>Prior to and running construction</b>
	Site clearing must take place in phased matter, 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.	Contractor	<b>During Construction</b>
	Spoil that is removed from the site must be removed to an approved spoil site or municipal licensed landfill site.	Contractor	<b>During Construction</b>

Environmental Programme for the Proposed Electrification Project

ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Silt fences and erosion control measures must be implemented in areas where these risks are more prevalent. These include wetlands and steep areas.	Contractor	<b>During Construction</b>
	Topsoil from the Right of Way must be neatly stockpiled adjacent to the excavations ready for backfill when required.	Contractor	<b>During Construction</b>
	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 Coordinator. The method of marking will be specified by the Project Coordinator, and the Contractor will be informed in writing; and no tree outside the area of the Works shall be burned for any purpose		<b>During Construction</b>
<b>Fires</b>	Fires will only be allowed in facilities or equipment specially constructed for this purpose. If required by applicable legislation, a fire-break must be cleared around the perimeter of the Construction Camp.	Contractor	<b>During Construction</b>
	No open fires or uncontrolled fires will be permitted on site.	Contractor	<b>During Construction</b>
	Fire fighting measures such as fire extinguishers must be located on site.	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	The workforce must be made aware of fire prevention and fire fighting measures.	Contractor	During Construction
<b>Sanitation</b>	Sufficient ablution facilities are to be constructed and linked into the existing water bourne sewage system.	Contractor	Prior to Construction
	In cases where facilities are linked to existing sewerage structures, all necessary regulatory requirements concerning construction and maintenance should be adhered to.	Contractor	Prior to and during Construction
	Chemical toilet facilities or other approved toilet facilities such as a septic drain must not be within the 1:100 year floodline.	Contractor	Prior to and During Construction
	All effluent water from the Construction Camp washing facility must be disposed of in a properly constructed french drain.	Contractor	During Construction
	Roads must be ripped or ploughed, and if necessary, appropriately fertilised (based on soil analyses) to ensure the re-growth of vegetation. Imported road construction materials, which may hamper re-growth of vegetation must be removed and disposed of in an approved manner prior to rehabilitation.	Contractor	After Construction
<b>1.3 Vehicle Maintenance Yard and Secured Storage Areas</b>			
	The vehicle maintenance yard and secured storage area will be above the 1 in 5 year flood level mark within the boundaries of the Construction Camp.	Contractor	Prior to Construction



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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	The area chosen for these purposes must be the minimum required and involve the least disturbance to trees and plant life.	Contractor	<b>During Construction</b>
	The storage area must be securely fenced and all hazardous substances such as fuel, oils, chemicals, etc., must be stored therein. Drip trays, a thin concrete slab or a facility with PVC lining, must be installed in such storage areas with a view to prevent soil and water pollution.	Contractor	<b>Prior to and During Construction</b>
	The location of both the vehicle maintenance yard and the storage areas are to be indicated on the layout plan determined by the Contractor.	Contractor	<b>Prior to Construction</b>
	No vehicle may be extensively repaired in any place other than in the maintenance yard.	Contractor	<b>During Construction</b>
	The maintenance of vehicles and equipment used for any purpose during the operation will take place only in the maintenance yard area within the construction camp.	Contractor	<b>During Construction</b>
	Equipment used for excavations at the structures must be adequately maintained so that during operations there is no spillage of oil, diesel, fuel, or hydraulic fluid.	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Machinery or equipment used on site must not constitute a pollution hazard in respect of the above substances. The Constructor must order such equipment to be repaired or withdrawn from use if they consider the equipment or machinery to be polluting and irreparable.	Contractor	<b>During Construction</b>
	Suitably covered receptacles must be available at all times and conveniently placed for the disposal of waste. All used oils, grease or hydraulic fluids must be placed therein and these receptacles will be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.	Contractor	<b>During Construction</b>
	All spills should be cleaned up immediately to the satisfaction of the ECO by removing the spillage together with the polluted soil and by disposing of them at a recognised Hazardous Waste facility.	Contractor	<b>During Construction</b>
<b>1.4 Pollution Control Measures</b>			
	Material Safety Data Sheets (MSDS) for on site chemicals, hydrocarbon materials and / or waste and hazardous substances must be readily available. MSDS's should include information pertaining to environmental impacts and measures to minimise and mitigate against any potential environmental impacts which may result from a spill.	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	The Contractor should prepare a method statement and plans for the storage of hazardous substances and emergency procedure.	Contractor	<b>Prior to and During Construction</b>
	Storage of hazardous substances must not be within 100m of any drainage lines;	Contractor	<b>During Construction</b>
	Static tanks containing fuel, oil or grease material should be confined to specific secure areas under lock and key	Contractor	<b>During Construction</b>
	These containment facilities should be checked and maintained at all times.	Contractor	<b>During Construction</b>
	Provide proper warning signage to make people aware of the activities within the designated areas.	Contractor	<b>During Construction</b>
	In the event of rain, water collected within these containment facilities, can be released if not contaminated. If the contents of containment facilities are contaminated the material should be removed and disposed of as hazardous waste.	Contractor	<b>During Construction</b>
	In the case of a spill of hydrocarbons and chemicals material in the Construction camp or on the construction site, the spill should to be contained and the material together with any contaminated soil collected and disposed of as hazardous waste.	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	<p>Should a pollution incident occur on site the Contractor must:</p> <ul style="list-style-type: none"> <li>• Implement reasonable measures immediately to contain and minimise the impacts of the incident;</li> <li>• Notify all persons whose health may be affected by the incident;</li> <li>• Undertake clean up procedures immediately;</li> <li>• Notify the ECO of the incident immediately who will advise the employee as to the measures that should be implemented;</li> <li>• Record the incident in the Environmental Incident Register; and</li> <li>• Implement measures to prevent similar incidents from occurring in the future.</li> </ul>	Contractor	<b>During Construction</b>
	Spills should be cleaned up immediately to the satisfaction of the ECO by removing the spillage together with the polluted soil and by disposing of it at a recognised facility.	Contractor	<b>During Construction</b>
	Soil and construction material stockpiles are to be bermed to prevent leachate and polluted run-off water from leaving the Construction Camp.	Contractor	<b>During Construction</b>
	Concrete mixing must be confined to as few areas as possible and ad hoc mixing is to be avoided. Areas where concrete was mixed must be cleaned up after use. Concrete mixing is to be undertaken on an impervious surface and any run-off contained.	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	A security officer should be on duty at the Construction Camp after hours and over weekends, in order to prevent unauthorized people from entering and tampering with equipment and materials.	Contractor	During Construction
<b>1.5 Solid Waste Management</b>			
<b>General Waste</b>	General waste produced on site includes: <ul style="list-style-type: none"> <li>• Office waste (e.g. food, waste, paper, plastic);</li> <li>• Operational waste (clean steel, wood, glass); and</li> <li>• General domestic waste (food, cardboards, paper, bottles, tins).</li> </ul>	Contractor	During Construction
	An adequate number of general waste receptacles must be arranged around the Construction Camp on site to collect all domestic refuse, and to minimise littering.	Contractor	During Construction
	Bins should be clearly marked and lined for efficient control and safe disposal of waste.	Contractor	During Construction
	Different waste bins, for different waste streams must be provided to ensure correct waste separation.	Contractor	During Construction
	General waste produced on site is to be collected in skips for disposal at the Ingquza Hill local municipal waste site. Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at the municipal landfill site.	Contractor	During Construction
	No general waste is to be disposed of at the spoil area.	Contractor	During Construction

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Under no circumstances is waste to be burnt or buried on site.	Contractor	<b>During Construction</b>
	Waste bins should be cleaned out on a regular basis to prevent any windblown waste and/or visual disturbance.	Contractor	<b>During Construction</b>
	All general waste must be removed from the construction areas on a daily basis and disposed of in suitable waste receptacles at the Construction Camp.	Contractor	<b>During Construction</b>
	A waste disposal certificate must be obtained from the municipal landfill site as evidence of correct disposal.	Contractor	<b>During Construction</b>
<b>Hazardous waste</b>	Hazardous waste produced on site includes: <ul style="list-style-type: none"> <li>• Oil and other lubricants, diesel, paints, solvent;</li> <li>• Containers that contained chemicals, oils or greases; and</li> <li>• Equipment, steel, other material (rags), soils, gravel and water contaminated by hazardous substances (oil, fuel, grease, chemicals or bitumen).</li> </ul>	Contractor	<b>During Construction</b>
	Hazardous waste is to be disposed at a Permitted Hazardous Waste Landfill Site. The Contractor must identify an approved waste disposal site at the inception of the project.	Contractor	<b>During Construction</b>
	Hazardous waste bins must be clearly marked, stored in a contained area (or have a drip tray) and covered (either stored under a roof or the top of the container must be covered with a lid).	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	A hazardous waste disposal certificate must be obtained from the waste removal company as evidence of correct disposal.	Contractor	<b>During Construction</b>
	<p>It may be feasible for the waste to be transported to a central point where it can be collected in bulk by the waste disposal company. It should however be noted that:</p> <ul style="list-style-type: none"> <li>• Transport of hazardous materials must be done in accordance with legislative control; and</li> <li>• Relevant SABS Codes of Practice should be adhered to.</li> </ul>	Contractor	<b>During Construction</b>
<b>Wastewater</b>	All waste water generated at the proposed development must be disposed off in a suitable manner so as not to cause any surface or sub surface water pollution or health hazard. Waste water including cement-contaminated water shall not enter any water course and shall be managed by the site manager to ensure that the existing water resources on and of site are not polluted by activities emanating from the above development.	Contractor	<b>Prior and during construction</b>
<b>1.6 No-Go Areas</b>			
	No-go areas include areas such as rocky outcrops, wetland areas, pans, Protected trees and etc.	Contractor	<b>During Construction and After Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	No-go areas must be cordoned off prior to any access roads construction and or any other construction activities begin in the area.	Contractor	<b>During Construction</b>
	All construction activities must remain within the boundaries of the development area, as demarcated at the start of construction.	Contractor	<b>During Construction</b>
	The demarcation of these areas is to be maintained by the contractor throughout the construction phase. Under no circumstances may construction activities, vehicles, contractors' personnel and workforce enter or utilise these areas at any time. Strict management of this aspect must be closely monitored by the ECO.	ECO	<b>During Construction</b>
	The contractor is discouraged from using plastic warning tape unless in consultation with the ECO. Warning tape is a health hazard to landowners' livestock and becomes a litter problem if not maintained during windy conditions.	Contractor	<b>During Construction</b>
	"No entry" signs must also be erected at strategic points around all, wetlands, streams and rivers" which are in close proximity to access roads the servitude and structure locations.	Contractor	<b>During Construction</b>
<b>1.7 Earthworks, Spoil, Topsoil and Erosion</b>			



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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
<b>Topsoil</b>	The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas.	Contractor	<b>During Construction</b>
	The removed topsoil must be stored in a bund wall on the high ground side of the construction camp area.	Contractor	<b>During Construction</b>
	Topsoil must be kept separate from overburden and must not be used for building or maintenance of access roads	Contractor	<b>During Construction</b>
	The contractor must exercise suitable precautions with the storage, handling and transport of all materials that could adversely affect the environment. If pollution of any surface or groundwater occurs, it shall immediately be reported to the ECO and appropriate mitigation measures must be employed.	Contractor	<b>During Construction</b>
<b>Stockpiles</b>	Stockpiles should not exceed 2m in height	Contractor	<b>During Construction</b>
	If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or cloth.	Contractor	<b>During Construction</b>
	Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Stockpiles may further be protected by the construction of berms or low brick walls around their bases.	Contractor	<b>During Construction</b>
	The stockpiling of soil or any other materials shall not be allowed near a watercourse or water body to prevent pollution or impediment to surface runoff. The contractor must control and establish suitable mitigation measures to prevent the erosion of the stockpiles.	Contractor	<b>Prior to, during and after construction</b>
<b>Soil Erosion</b>	<p>Soil erosion on site must be prevented at all times, i.e. pre, during and post construction activities. Suitable erosion control measures must be implemented in areas sensitive to erosion such as near water supply points and edges of slopes. These measures could include:</p> <ul style="list-style-type: none"> <li>• The suitable use of sand bags or Hessian sheets.</li> <li>• The prompt rehabilitation of exposed soil areas with indigenous vegetation to ensure that soil is protected from the elements.</li> <li>• The removal of vegetation, only as it becomes necessary for work to proceed.</li> <li>• Preventing the unnecessary removal of vegetation especially on steep areas. Taking necessary precautions in terms of design and construction and earthworks, cuts and fills must be taken.</li> </ul> <p>Constant cognisance of the inherent high erosion risk potential of all soils and sites on the property should be taken and appropriate control and preventative measure put in place.</p>	Contractor	<b>Prior to, during and after construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
<b>1.8 Water Management</b>			
<b>Surface water</b>	The flow direction of any surface water run-off must be established prior to disturbing any area.	Contractor	<b>Prior to and During Construction</b>
	Berms are to be constructed to divert clean water around any dirty area i.e. the construction camp and on the construction site.	Contractor	<b>During Construction</b>
	Dirty water originating from the construction camp and on the construction site is to be contained and disposed of correctly, to prevent the contamination of soil and/or any watercourses.	Contractor	<b>During Construction</b>
	The construction camp must have adequate drainage and the development of areas of standing water must be prevented.	Contractor	<b>During Construction</b>
	Washing of vehicles, equipment, machinery or materials is prohibited at the construction camp or on the construction site, unless done in a contained area that has a suitable impervious floor and is designed for this purpose.	Contractor	<b>During Construction</b>
	Bathing or washing of clothes, equipment or machinery within any watercourse is prohibited.	Contractor	<b>During Construction</b>
	Erosion and loss of soil must be prevented by minimising the construction areas exposed to surface water run-off.	Contractor	<b>During Construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	The potential increase in catchment runoff must be balanced against the combined effects of evapo-transpiration from catchment vegetation, evaporation from water bodies plus the retention and re-use of both storm runoff and treated wastewater.	Contractor	<b>During and after construction</b>
<b>1.9 Air Quality</b>			
	Stockpiles may become sources of wind generated dust. These must be covered during windy periods or watered.	Contractor	<b>During construction</b>
	Areas under construction may become sources of wind generated dust and dust suppression techniques must be implemented when necessary.	Contractor	<b>Prior to and during construction</b>
	Dust entrained from vehicular movement must be minimised by road wetting and by implementing speed limits.	Contractor	<b>During Construction</b>
	Construction vehicles should be covered in order to minimise dust entrainment.	Contractor	<b>During Construction</b>
	No burning of waste, such as plastic bags, cement bags and litter, is permitted on site.	Contractor	<b>During Construction</b>
	A complaints register should be provided to report any excessive dust incidents.	Contractor	<b>During construction</b>
<b>1.10 Noise</b>			

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Construction activities should be undertaken according to during daylight working hours between the hours of 07:00 – 17:00 on weekdays.	Contractor	<b>During construction</b>
	Construction vehicles and equipment generating excessive noise should be fitted with appropriate noise abatement measures.	Contractor	<b>During Construction</b>
	Construction workers must be provided with the appropriate PPE i.e. ear plugs	Contractor	<b>During Construction</b>
	A complaints register should be provided to report any excessive noise.	Contractor	<b>During Construction</b>
<b>1.11 Protection of Fauna and Flora</b>			
	The extent of the area disturbed should be kept to the minimum required to successfully implement the road upgrading activities, thus minimising the destruction of any fauna and flora.	Contractor	<b>Prior to and during construction</b>
	Mowing of grass should be restricted to the road reserve.	Contractor	<b>Prior to, during and after construction</b>
	No natural vegetation is to be collected for use as firewood.	Contractor	<b>During construction</b>
	No animals are to be disturbed unnecessarily and no animals are allowed to be shot, trapped or caught for any reason.	Contractor	<b>During construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Protected trees may not be removed or cut without a permit from the Department of Forestry and Fisheries (DAFF).	Contractor	During construction
	Invader species and weeds must be removed and disposed of in accordance with existing legislation on a regular basis.	Contractor	Prior to and during construction
	The removal of indigenous/endemic shrubs and small trees should be kept to a minimum and only be removed if absolutely necessary.	Contractor	During construction
	Fires for cooking must be kept within designated areas at the construction camp. All fires are to be contained.	Contractor	During construction
	Workers are to be provided with firewood for cooking and are not permitted to cut down any vegetation for this purpose.	Contractor	During construction
<b>1.12 Archaeological Sites</b>			
<b>Excavations</b>	If an artefact on site is uncovered, work in the immediate vicinity must be stopped immediately.	Contractor	During construction
	The contractor must take reasonable precautions to prevent any person from removing or damaging any such article and must immediately, upon discovery thereof, inform the Construction Engineer of such discovery.	Contractor/ Engineer	During Construction

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	The Eastern Cape Provincial Heritage Resources Authority (ECPHRA) is to be contacted if any artefacts are uncovered in the affected area and mitigation measures recommended by ECPHRA should be followed.	Contractor	<b>During Construction</b>
	The contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken.	Contractor	<b>During Construction</b>
	Any discovered artefacts shall not be removed under any circumstances. Any destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted.	Contractor	<b>During Construction</b>
	Work may only resume once clearance is given in writing by the ECPHRA.	Contractor	<b>During Construction</b>
<b>1.13 Public Safety</b>			
	Members of the public adjacent to the construction area should be notified of construction activities in order to limit unnecessary disturbance or interference	Contractor	<b>During construction</b>
	Dedicated pathways for pedestrians should be developed to ensure safe passage around construction activities.	Contractor	<b>During construction</b>
	Construction activities should be undertaken according to during daylight working hours between the hours of 07:00 – 17:00 on weekdays.	Contractor	<b>During construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	A safety officer is to be appointed who will continuously monitor safety conditions during construction activities.	Contractor	<b>During construction</b>
	Flag men should be appointed and provide ample warning of road hazards.	Contractor	<b>During construction</b>
	The dangers associated with entry and exit points for the construction camp should be given special consideration.	Contractor	<b>During construction</b>
	The construction camp should be sited so as to minimise the potential hazard to motorists travelling on the main roads. The dangers associated with entry and exit points should be given special consideration.	Contractor	<b>Prior to and during construction</b>
	All members of the construction workforce working on the site or near the roads are to be provided with the appropriate high visibility clothing to ensure that they are seen by motorists.	Contractor	<b>During construction</b>
	All construction workers handling chemical or hazardous substances must be trained in the use of such substances and the environmental, health and safety consequences of incidents.	Contractor	<b>Prior to and during construction</b>
	The workforce is to be provided with sufficient potable water and under no circumstances are they to use untreated water from local watercourses for drinking.	Contractor	<b>During construction</b>



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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
Traffic and Transport	Potential damage by construction vehicles to the access roads will need to be addressed accordingly. Any damage caused must be appropriately rehabilitated (i.e. to a state comparable with the roads initial condition). Liaison must take place with the local roads agency or authority in this regard.	Contractor	During Construction
	Controls should be imposed on construction traffic to ensure minimal disturbance to neighbours and fellow road users	Contractor	During Construction
<b>1.14 Complaints and Environmental Incident Register</b>			
	Complaints received from the community and other I&AP's must be registered and recorded by the ECO and also brought to the attention of the Contractor. Both parties will respond accordingly. The following information must be recorded in the case of any complaint/incident: <ul style="list-style-type: none"> <li>• – Time, date and nature of complaint;</li> <li>• – Response and investigation undertaken; and</li> <li>• – Actions taken and by whom.</li> </ul>	Contractor	During construction
	All complaints will be investigated and a response is to be given to the complaint within 7 days of receipt.	Contractor	During construction
<b>1.15 Social Impacts</b>			
	Construction vehicles and equipment must have appropriate noise abatement measures.	Contractor	During construction

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Contractors should use labour intensive construction methods where possible. Local labourers should be used for such methods.	Contractor	During construction
<b>1.16 Monitoring, Reporting and Record Keeping</b>			
<b>Environmental Monitoring</b>	Environmental monitoring will be undertaken by the ECO on a monthly basis.	ECO	During construction
	This monitoring will be undertaken in order to ensure compliance with all aspects or requirements of the EMPr.	ECO	During construction
	The results of the monthly assessments will be made available to Ingquza Hill Local Municipality, Eskom and DEDEAT upon request.	ECO	During construction
	The ECO is to inspect and monitor on and off-site operations and to implement the necessary actions to ensure compliance with the EMPr.	ECO	During construction
	The ECO should review and modify the EMPr on an annual basis or as required.	ECO	During construction
<b>1.17 Emergency Procedures</b>			
	To avoid the occurrence of any incidents, the contractor will ensure that the entire workforce that will be responsible for the operation are trained on the operation of the facility.	Contractor	Prior to and during construction

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	The ECO will ensure that all the emergency procedures relevant to the above mentioned incidents are developed and the workforce is trained on these procedures to ensure that correct actions are followed during emergency situations.	ECO	<b>During construction</b>
	The list of the emergency telephone numbers will be maintained on site.	Contractor	<b>During construction</b>
<b>1.18 Rehabilitation and Closure</b>			
	The applicant is responsible for compliance with the provisions for Duty of Care and Remediation of Damage in accordance with Section 28 of National Environmental Management Act (NEMA), Act No. 107 of 1998.	Applicant/ Contractor	<b>During and After construction</b>
	All remaining construction infrastructure, building rubble and waste are to be removed from the site.	Contractor	<b>After construction</b>
	All disturbed surfaces compacted by construction and operation activities including the ablutions and loading areas should be ripped to a minimum depth of 30cm to allow organic contaminants to breakdown and promote vegetation establishment.	Contractor	<b>After construction</b>
	The construction camp site should be landscaped to ensure efficient drainage of the site. Water should not be allowed to pond on the site.	Contractor	<b>After construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Re-seeding shall be done on disturbed areas as directed by the Environmental Control Officer.	Contractor	<b>After construction</b>
	The area designated for the deposition of spoil material is to be levelled and shaped to ensure efficient drainage of the site. Water should not be allowed to pond on site. Under no circumstances is general or hazardous waste to be disposed of at this site.	Contractor	<b>After construction</b>
	Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from construction camp and disposed of at a recognised landfill facility.	Contractor	<b>After construction</b>
	Final rehabilitation must be completed within a period specified by the Engineer.	Contractor	<b>After construction</b>
	On completion of all operations, the areas must be cleared of any contaminated soil, which must be handled.	Contractor	<b>After Construction</b>
	All buildings, structures or objects in the vehicle maintenance yard and secured storage areas must be dealt with removed according to the relevant legislated procedures.	Contractor	<b>After Construction</b>
	The construction camp area and access road surfaces must then be ripped or ploughed to a depth of at least 300mm and the topsoil previously stored adjacent the site, must be spread evenly to its original depth over the whole area. The area must then be fertilised if necessary (based on a soil analysis) and re-vegetated.	Contractor	<b>After construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	Upon completion of the stringing operations and before handover, the servitude must be inspected and all vegetation interfering with the safe operation of the line shall be removed / cut down. All alien vegetation in the total servitude and densifiers creating a fire hazard shall be cleared and treated with herbicides.	Contractor	<b>After construction</b>
<b>Closure</b>	Where a Construction Camp has been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface must be ripped and vegetated.	Contractor	<b>After Construction</b>
	Areas containing french drains must be compacted and covered with a final layer of topsoil to a height of 10cm above the surrounding ground surface.	Contractor	<b>After Construction</b>
	The site must be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.	Contractor	<b>After Construction</b>
	If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the contractor may require that the soil be analyzed and any deleterious effects on the soil arising from the construction be corrected and the area be seeded with a vegetation seed mix to his or her specification.	Contractor	<b>After Construction</b>
	Photographs of the Construction Camp, and Road sites, before and during the operation and after rehabilitation, must be taken at selected fixed points and kept on record for the information of the Construction.	Contractor	<b>Prior to, during and after construction</b>

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the contractor may require that the soil be analyzed and any deleterious effects on the soil arising from the construction be corrected and the area be seeded with a vegetation seed mix to his or her specification.	Contractor	<b>After Construction</b>
	<p>Earthworks To take into consideration:</p> <p>Soils compacted during the construction of the powerline should be deeply ripped to loosen compacted layers and re-graded to even running levels. Topsoil should be spread over landscaped areas. The area should be re-vegetated upon completion of construction activities.</p>	Contractor	<b>After Construction</b>
<b>OPERATIONAL AND MAINTENANCE PHASE</b>			
<b>1.19 Monitoring and Maintenance</b>			

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ENVIRONMENTAL ASPECTS	ENVIRONMENTAL MEASURES AND ACTION PLANS	AREA APPLICABLE	PRIORITY
	<p>The conditions of the development must be monitored for a period of one year after the development is complete to ensure that:</p> <ul style="list-style-type: none"> <li>• Erosion is not taking place;</li> <li>• The stormwater run-off measures are working;</li> <li>• An Environmental Complaints Register should be kept detailing complaints received, date, response and action taken;</li> <li>• Any maintenance where intrusive works are necessary should adhere to the mitigation measures put in place in the EMP; and</li> <li>• Where such measures are impractical due to the nature, duration and extent of maintenance works, a maintenance method statement should be developed prior to maintenance works being undertaken.</li> </ul>	Developer and Public Open Space Management Committee	<b>During Maintenance</b>
	The surrounding community should be encouraged to report any unexpected fault/failure to Ingquza Hill Local Municipality as soon as possible	Public	<b>During Maintenance</b>
	No faunal species must be harmed by maintenance staff during any routine checks of the power line.	Developer	<b>During Maintenance</b>
	Mark certain sections of the line with anti-collision marking devices on the earth wire to increase the visibility of the line and reduce likelihood of collisions	Developer	<b>During Maintenance</b>

*ENVIRONMENTAL CLOSURE CHECKLIST*

**TO BE COMPLETED AT PROJECT CLOSURE BY PROJECT MANAGEMENT AND ATTACHED TO CLOSURE CERTIFICATE (A complete copy must also be sent to Environmental Management)**

**PROJECT:** .....

**6.1 BRIEF PROJECT DESCRIPTION:**

.....

		N/A	YES	NO
1.	Did you obtain a copy of an EIA Report or DESD Report from Land Development (Environmental Management Section)?			
2.	Did you obtain a copy of an Environmental Management Programme (EMP) from Environmental Management Section, Contracts Department?			
3.	Has the EMP been included in the contract specification?			
4.	Have you given copies to the bush clearing contractor (If applicable) and explained the content of the EMP?			
5.	Have you given copies to the Construction contractor (If applicable) and explained the contents of the EMP?			
6.	Have the above signed and understood the EMP?			
7.	Was any part of the EMP not followed? If yes, please specify. ..... ..... .....			
8.	Was any part of the EMP not practical to follow? If yes, please specify. ..... ..... .....			



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<b>9.</b>	Were any environmental problems encountered during bush clearing and / or construction phase? What were these problems?.....			
<b>10.</b>	Were these problems addressed?  What action was taken to address the environmental problems?  ..... .....			
<b>11.</b>	Did you report these problems to Environmental Management Section?			
<b>12.</b>	Have you ensured that Field Services is aware of and have a copy of the EMP for this project including all specific environmental information on the project.			

General comments:

.....

Signed by: (Project manager/co-ordinator): ..... Date: .....

(Clerk of Works): ..... Date: .....

***Copy of completed checklist to be placed in Closure File of all projects & another forwarded to Environmental Management Section.***

**SPILL REPORT FORM****(ESKOM SOUTHERN REGION)**

1) LOCATION OF SPILL:

2) DATE & TIME OF SPILL:

3) HOW LONG BEFORE DISCOVERED:

4) DESCRIPTION OF INCIDENT:

4.1) CONTAMINATED AREA :

4.2) VOLUME SPILT:  RECOVERED:

5) SPILL DUE TO:

6) STEPS TAKEN:

7) INITIAL CONTAINMENT:

8) RECOVERY:

9) CLEAN UP:

10) BIOREMEDIATION:

11) REPORTED TO (NAME & CONTACT NO):

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11.1) ESKOM:

11.2) DEPT.WATER AFFAIRS:

11.3) LOCAL AUTHORITY:

11.4) OTHER:

12)REMARKS:

.....  
.....  
.....

SIGNATURE: .....DATE: .....

## 7 ENVIRONMENTAL CODE OF CONDUCT

One of the objectives of the EMP is to ensure that all the workforce, contractors, sub-contractors and construction staff have an understanding of environmental issues and potential impacts on site activities. This environmental code of conduct provides the basic rules that should be strictly adhered to. It is the responsibility of the ECO to ensure that each contractor, sub-contractor and workforce understand and adhere to the Code of Conduct.

### ENVIRONMENTAL CODE OF CONDUCT

***ALL PERSONS ARE OBLIGED TO KEEP TO THE RULES OF THIS CODE OF CONDUCT***

**You must study and keep to the rules – ignorance, negligence, recklessness or a general lack of commitment will not be tolerated!**

#### ***ENVIRONMENTAL RULES***

- Preventing Pollution
- Littering will not be tolerated.
- Put all waste in the correct waste containers provided.
- Use the toilet facilities provided.
- Immediately report to your supervisor when you spill, or notice a hazardous substance being spilled or when you see a vehicle, piece of machinery or container that is leaking fuel, oil or other hazardous substances.
- Do not Trespass
- Never climb over any fence or trespass on private property. You are not allowed to enter neighbouring properties.
- Maintaining the Character and Visual Quality of the Area
- Never deface, draw or cut lettering or any other markings on trees, rocks or buildings in the area.
- Digging, excavation and the erection of any permanent or semi-permanent structures of any kind are prohibited.
- If you spot any litter lying around – please pick it up and throw it in the correct waste container.
- Fire Control
- Make sure you are familiar with fire fighting procedures.
- Make sure you are aware of the locations of all fire fighting equipment.
- No fires are allowed outside the confines of the Construction Camp.
- No burning of waste is allowed.
- Caring for Plants and Animals
- Strictly leave all animals alone – never tease, catch or set devices to trap or kill any animal.

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- Never damage, chop down or remove any tree or shrub (unless you are instructed to do so).
- Use commercially bought firewood.

