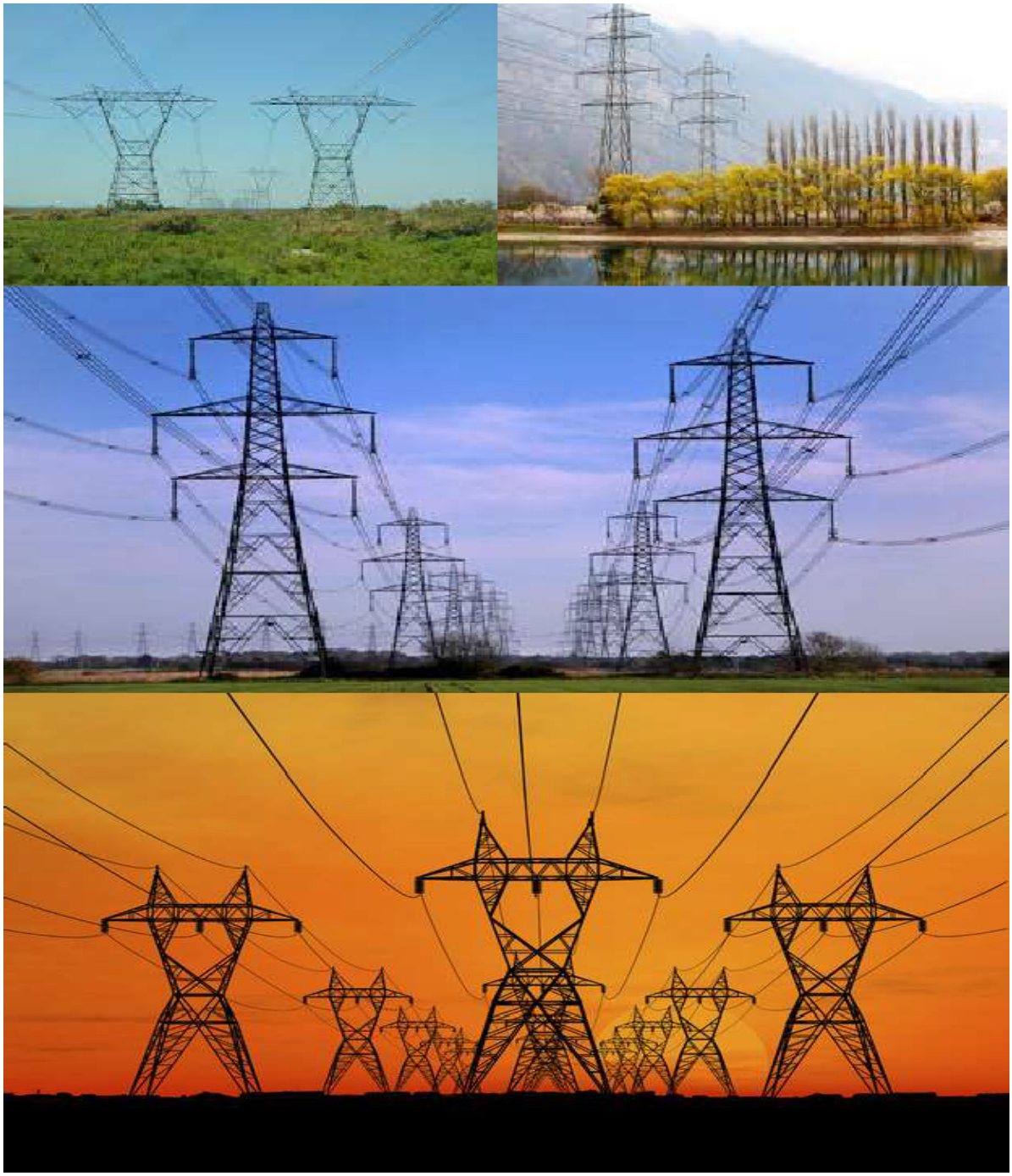
GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION OF INFRASTRUCTURE FOR THE OVERHEAD TRANSMISSION AND DISTRIBUTION OF ELECTRICITY



forestry, fisheries & the environment

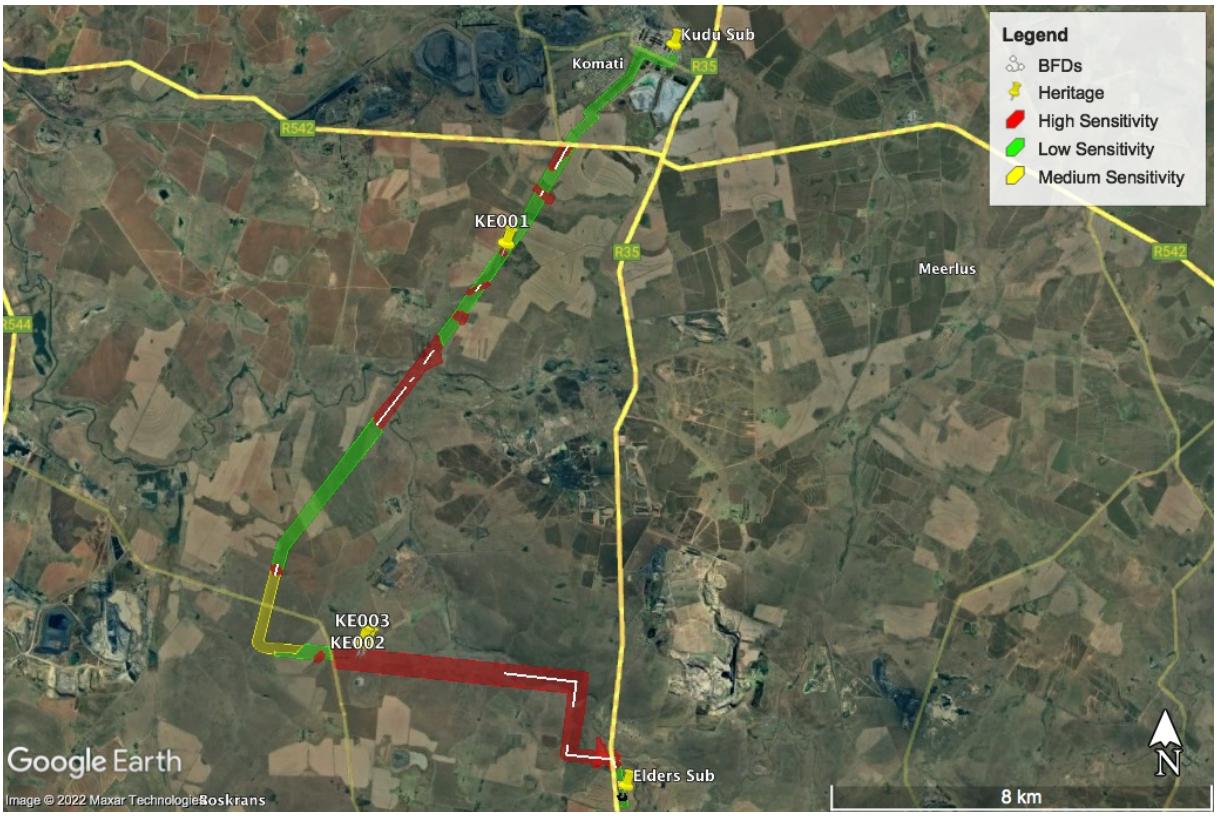
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL MANAGEMENT PROGRAM FOR ESKOM 132KV POWER LINE BETWEEN KUDU SUBSTATION (AT KOMATI POWER STATION) AND ELDERS SUBSTATION

DFFE REF: 2022-06-0014

SEPTEMBER 2022

Construction of Eskom Distribution 132kV overhead power line



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INTRODUCTION

1. Background

The National Environmental Management Act 107 of 1998 (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for environmental authorisation, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant and the competent authority.

2. Purpose

This document constitutes a generic EMPr relevant to applications for EA for overhead electricity transmission and distribution infrastructure, and their expansion including all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and actions which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development and expansion of overhead electricity transmission and distribution infrastructure. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to overhead electricity transmission and distribution infrastructure requiring environmental authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring environmental authorization, mainly activity 11 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014 and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, and all associated listed or specified activities necessary for the realization and expansion of such infrastructure. It contains impact management outcomes and actions aimed at avoidance, management and mitigation of impacts and risks associated with the development and expansion of overhead electricity transmission and distribution infrastructure.

The general impact management outcomes and actions included in this generic EMPr does not cover situations where specific site environmental attributes are present and for which specific environmental impact management outcomes and actions are required.

5. Structure of this document

This generic EMPr is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is not legally binding	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and actions required for the avoidance, management and mitigation of impacts and risks associated with the development and expansion of infrastructure for the overhead transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved.
			The template in this section is to be completed by the contractor, with each completed page signed and dated by both the contractor and the holder of the EA prior to commencement of the activity.
			Once completed and signed, the template represents the EMPr for the development approved by the EA and is legally binding. The template **is not** to be submitted to the competent authority and **does not** need approval. Once the generic EMPr is gazetted for implementation, it has been approved by the NEMA competent authority.
			To allow interested and affected parties access to the pre-approved EMPr template for consideration through the authorisation process, the applicant/proponent or the applicants/proponents EAP on behalf of the applicant/proponent must make the location of the document known to the interested and affected parties. Should an interested and affected parties not have access to electronic media, the applicant or the applicants EAP must make a hard copy available at a public location.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the environmental authorisation will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and actions are binding. The preliminary infrastructure layout must be finalized before commencement, ensuring that all management actions and activities have been either pre-approved or approved in terms of Part C. This section must be submitted to the competent authority for approval with the final documentation for environmental authorisation. The information submitted for environmental authorisation will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this section forms part of the EMPr for the development as approved through an EA.

Part	Section	Heading	Content
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and actions not included in the pre-approved generic EMPr to manage impacts, these specific impact management outcomes and actions must be included in this section. These specific environmental attributes must be referenced spatially and must include impact management outcomes and actions. These specific impact management outcomes and actions must be presented in the format of the pre-approved generic EMPr template (Part B: section 1) The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. This section will not be required should the site contain no specific environmental sensitivities or attributes. If Part C is applicable to the site, it **is required** to be submitted to the competent authority for approval prior to commencement of the activity. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development and which are not already included in Part B: section 1.
	Appendix 1		Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority. The method statements, once signed, form part of the generic EMPr for the development and are legally binding. Method statements may be amended.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the contactor and the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and actions of the generic EMPr

Once the activity has commenced a holder of an EA may make amendments to the environmental management controls in the following manner:

- Amendment of the environmental management outcome – in line with regulation 37 of the Environmental Impact Assessment Regulation, 2014

- Amendment of the environmental management activity – in line with regulation 36 of the Environmental Impact Assessment Regulations, 2014

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section 2 requires a map to be produced.

Sub-section one contains the project name, the applicants name and details, the site information which includes coordinates of the corridor in which the proposed electricity transmission and distribution infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and where available the farm name.

Sub-section 2 is to be prepared by an EAP, and must contain his/her name and expertise including a curriculum vita. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. Once the web-based screening tool identified in regulation 16(1)(v) of the Environmental Impact Assessment Regulations, 2014 is available, the sensitivity map must be prepared from this system. The map is to indicate areas/features of sensitivity based on the findings of the assessment and illustrated according to four tiers, Very High, High, Medium or Low. The sensitivity map shall also identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.

Sub-section 3 is the declaration that the applicant/proponent or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/holder will comply with the 'generic EMPr' in Section 1 and understands that the management outcomes and activities are binding.

(i) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for amendment of the EA in terms of regulations 29 or 31 of the Environmental Impact Assessment Regulations, 2014. The information submitted for an amendment to an environmental authorization will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the site and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In these EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA has that meaning, and unless the context requires otherwise –

Clearing means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

Contractor - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

Construction camp is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

Method Statement means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The Method Statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The Method Statement shall cover applicable details with regard to:

(i) Construction procedures;
(ii) Plant, materials and equipment to be used;
(iii) Transporting the equipment to and from site;
(iv) How the plant/ material/ equipment will be moved while on site;
(v) How and where the plant/ material/ equipment will be stored;
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
(vii) Timing and location of activities;
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

Hazardous Substances is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

Slope means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

Solid waste means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

Spoil means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

Topsoil means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil;

Works means the Works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
RI&AP's	Registered Interested and affected parties
MSDS	Material Safety Data Sheet

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the generic EMPr gives guidance to the various environmental roles and reporting lines.

Table 1: Guide to roles and responsibilities for implementation of a generic EMPr

Function	**Role and Responsibilities**
Developer's Project Manager (DPM)	Role The Project Developer is accountable for ensuring compliance with the generic EMPr and any conditions of approval from the competent authority (CA). An independent environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the generic EMPr according to relevant environmental legislation, and the conditions of environmental authorization (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. Responsibilities - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the generic EMPr are communicated and adhered to by the Developer and its Contractor(s); - Monitor the implementation of the generic EMPr throughout the project by means of site inspections and meetings. Overall management of the project and generic EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.
Developer Site Supervisor (DSS)	Role The Developer Site Supervisor reports directly to the Developer Project Manager, oversees site works, liaises with the contractor(s) and the ECO. The Developer Site Supervisor is responsible for the day to day

Function	Role and Responsibilities
	implementation of the generic EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the generic EMPr. Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	Role The ECO should be employed by the developer for the duration of the project. The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the Environmental Control Officer is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the Developer Site Supervisor and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non- compliance with the Performance Specifications as set out in the environmental authorisation and generic EMPr. The Environmental Control Officer provides feedback to the Developer Site Supervisor and Project Manager, who in turn reports back to the Implementing Agent and potential and Registered Interested &Affected Partie's (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up

Function	Role and Responsibilities
	by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the Environmental Authorisation, report to the relevant competent authority as and when required. <u>Responsibilities</u> The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all environmental authorisations related to the development; - Be familiar with the recommendations and mitigation measures of this generic EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the generic EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the generic EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the generic EMPr and/or environmental licenses; - Liaison between the Developer Project Manager, Contractors, authorities and other lead stakeholders on all environmental concerns;

Function	Role and Responsibilities
	- Issuing of site instructions to the Contractor for corrective actions required; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the generic EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor and/or sub-contractors; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the generic EMPr; - Communication of all modifications to the generic EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	Role The dEOs will report to the Project Manager and are responsible for implementation of the generic EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. Responsibilities - Be fully conversant with the generic EMPr; - Be familiar with the recommendations and mitigation measures of this generic EMPr, and implement these measures;

Function	Role and Responsibilities
	- Ensure that all stipulations within the generic EMPr are communicated and adhered to by the Employees, Contractor(s) and its sub-contractor(s); - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to generic EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor; - Audit carried out by an independent auditor/consultant.
Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the generic EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this draft EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the management actions contained in the generic EMPr will be implemented during the development of overhead transmission and distribution electricity infrastructure activities. Responsibilities - project delivery and quality control for the construction services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period;

Function	Role and Responsibilities
	- ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of construction activities to confirm the construction procedure and designated activity zones; - ensure that contractors' staff (or sub-contractors) repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in the Environmental Management Programme, to the satisfaction of the ECO.
contractor Environmental Officer (cEO)	Role Each Contractor affected by the EMPr should appoint a contractor Environmental Officer, who is responsible for the on-site implementation of the generic EMPr (or relevant sections of the generic EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria: The cEO ensures that all Sub-contractors working under the Contractor abide by the requirements of the generic EMPr. The Contractor is answerable to the Project Manager for all environmental issues associated with the project. Contractor performance will, amongst others, be assessed on health, safety and environmental management criteria Their primary role is to coordinate the environmental management activities of the Contractor on site. Responsibilities - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site;

Function	Role and Responsibilities
	- Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, generic EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the generic EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead transmission and distribution electricity infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the generic EMPr file. At a minimum, all documentation detailed below will be stored in the generic EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the Developer's Site Supervisor (where applicable). This duplicate file will be the responsibility of the ECOs and must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The generic EMPr file must be made available at all times on request by the Competent Authority (in terms of NEMA EIA regulation) or other relevant authorities. The generic EMPr file will form part of any environmental audits undertaken as prescribed in the Regulations.

4.2 Documentation to be available

At the outset of the project the following documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed environmental authorisation from the competent authority in terms of NEMA, granting approval for the development;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the generic EMPr file and submit a copy of the completed checklist to the Developer's Site Supervisor on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as

required in terms of the Regulation. The ECOs will report on the week's "highs and lows" to the Senior Site Representative on a weekly basis.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record "Matters for Attention" that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the generic EMPr.

The method statement shall cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the generic EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the programmed commencement date of the subject works or activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;

- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall ensure that the contractors perform in accordance with these method statements. Completed and authorised method statements shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this generic EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the generic EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the generic EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the environmental audit report.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the Developer's Site Supervisor or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the generic EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;

- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, management outcomes and actions activities, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the Developer's Site Supervisor, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, construction sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction
7. Waste management sites;
8. Ablution facilities (inside and out);

9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage; and
12. All areas before, during and post rehabilitation.
13. Include relevant photographs in the Final Environmental Audit Report

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in (4.13) below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in (9.12) above;
2. The ECOs will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the Developer's Project Manager, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13 Environmental audits

Internal Environmental Audits of the construction phase and implementation of the EMPr will be undertaken by the ECO and are a legal requirement in terms of NEMA once an EA is issued and as long as the EMPr is valid. The findings and outcomes of these audits will be recorded in the EMPr file. The environmental audits and associated reports must be conducted and submitted to the competent authority at intervals as indicated in the environmental authorisation.

The ECOs shall prepare a monthly Environmental Audit Report. The Report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the environmental authorisation, the ECOs shall submit the monthly reports to the Competent Authority in terms of NEMA. At a minimum the Monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the development Phase, the ECOs are required to prepare a final environmental audit report. The report is to be submitted to the competent authority for acceptance and approval. The environmental report must comply with Appendix 7 of the Environmental impact Assessment Regulations, 2014.

- Details of the independent person who prepared the report;
- Details of the expertise of independent person that compiled the report;
- A declaration that the independent auditor is independent in a form as may be specified by the Competent Authority;
- An indication of the scope of, and the purpose for which, the environmental audit report was prepared;
- A description of the methodology adopted in preparing the environmental audit report;
- An indication of the ability of the EMPr, and where applicable, the closure plan to-

- Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis;
- Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and
- Ensure compliance with the provisions of environmental authorisation, EMPr, and where applicable, the closure plan;

- A description of any assumptions made, and any uncertainties or gaps in knowledge;
- A description of any consultation process that was undertaken during the course of carrying out the environmental audit report;
- A summary and copies of any comments that were received during any consultation process; and
- Any other information requested by the Competent Authority.

Submission of the final environmental audit report to the competent authority will indicate the end of the development phase.

PART B: SECTION 1

5. IMPACT MANAGEMENT OUTCOMES AND ACTIONS

This section provides a pre-approved generic EMPr template with activities that are common to the development of overhead electricity transmission and distribution infrastructure. There are 30 activities identified for the development of overhead electricity transmission and distribution infrastructure, and for each activity a set of prescribed impact management outcomes and associated management actions have been identified. Holders of EAs are responsible to ensure the implementation of these controls for all projects as a minimum requirement for mitigating the impact of particular construction related activities.

The template provided below is to be completed by providing the information under each headings for each environmental management action:

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training; – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; The template is to be completed by providing the following information for each environmental management action: – All new staff coming onto site must receive environmental awareness training; – Refresher environmental awareness training is available as and when required; – All staff are aware of the conditions and controls linked to the Environmental Authorisation and within the EMPr; – The responsible operator of equipment must have the required training to make use of the spill kit in emergency situations; – All staff are made aware of their individual roles and responsibilities in achieving compliance with the environmental authorisation and EMPr; – The Contractor must erect and maintain information posters at key locations on site; – Environmental awareness training should include as a minimum the following:	ECO and cEO	Environmental Induction training; Toolbox talks; other pertinent training aids.	Initially prior to construction commencing ECO to induct Construction Management and cEO, and thereafter repeated for all new employees and yearly. Toolbox talks to be presented weekly.	ECO	Monthly	Signed induction and toolbox talk, or training registers.

a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; and j) Disease prevention; – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available. – Course material must be available and presented in all appropriate languages.						

5.2 Site Establishment development

Management outcome: Impacts on the environment are minimised when constructing new infrastructure and the development footprint are kept to demarcated construction area.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A Method Statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; – Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; – Sites should be located where possible on previously disturbed areas; – The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and – The use of existing accommodation for contractor staff, where possible, is encouraged.	Contractor	Method Statement compilation and communication of Method Statements to employees. Use of EIA and Specialist Studies to locate site camps.	Prior to construction.	ECO	Monthly	Signed Method Statements; signed proof of communication register; Liaison with ECO regarding site camp placement.

5.3 No-Go areas

Management outcome: Access to No go areas prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of No-Go areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; – Erect, demarcate and maintain a temporary fence around the perimeter of any No-Go area; – Fencing of No-Go areas is to be undertaken in accordance with Section ***5.5: Fencing and gate installation***; and – Unauthorised access and development related activity inside No-Go areas is prohibited.	Contractor	Use of EIA and Specialist Studies to locate sensitive areas and 'nogo' areas.	Prior to construction in new areas	ECO	Monthly	Contractor compliance with sensitive areas and 'no-go' areas identified in EIA and Specialist Studies

5.4 Access roads

Management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within − the assessed and authorised area; An access agreement must be formalised and signed by the Development Project Manager, Contractor and landowner − before commencing with construction activities; The access roads to tower positions must be signposted after access has been negotiated and before the − commencement of construction activities; Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, − at the contractor's expense; Maximum use of both existing servitudes and existing roads must be made; − In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance − with section ***4.9: photographic record***; prior to use and the condition thereof agreed by the landowner, the Development Project Manager, landowner and the contractor;	Contractor	Implementation of mitigation measures.	Ongoing	ECO	Monthly	Signed access Agreements and maintenance of access roads.

– All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition. As far as possible, access roads must follow the contours in hilly areas, as opposed to winding down steep slopes; – Access is to be established by vehicles passing over the same track on natural ground, multiple tracks are not permitted. Access roads must only be developed where necessary at watercourses, on steep slopes or where boulders prohibit vehicular traffic (refer to Appendix A for requirements when developing a new access road and Section ***5.9 Protection of watercourses*** for controls when seeking access in proximity to a water course or water body); – Upon completion of development, only roads as indicated by the Development Project Manager must be closed.						

5.5 Fencing and Gate installation

Management outcome: To minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Use existing gates provided to gain access to all parts of the defined Working Area, where possible; – Existing and new gates to be recorded and documented in accordance with section ***4.9: photographic record***; – All gates must be fitted with locks and be kept locked at all times during the construction phase, unless otherwise agreed with the landowner; – At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the Development Project Manager, a gate must be installed at the approval of the landowner; – Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground; – Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; – Original tension must be maintained in the fence wires; – All gates installed in electrified fencing must be re-electrified; – All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities; – Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated no-go areas, where applicable; – All fencing must be developed of high quality material bearing the SABS mark; – The use of razor wire as fencing must be avoided; – Fenced areas with gate access will remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;	Contractor and Applicant	Implementation of the mitigation measures	Ongoing	ECO	Monthly	Site observation; public complaints register

– On completion of the project all temporary fences are to be removed and where possible re-used by the contractor at new projects; – The contractor will ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						

5.6 Water Supply Management

Management outcome: Undertake responsible water usage.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Should water abstraction be required and the necessary authorisation from DWS and permission from the landowner has been received, the Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.	Contractor and Applicant	Application to DWS where applicable. Implementation of mitigation measures	Construction	ECO	Monthly	Proof of water source used; submission of above proof to DWS.

– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training.						

5.7 Storm and waste water management

Management outcome: An effective system of storm water run-off control is implemented, where required and impacts to the environment caused by storm water and wastewater discharges during construction are avoided.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Appropriate pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended; Materials into watercourses or water bodies must be designed and implemented; – Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, – at a location approved by the Project Manager; All spillage of oil onto concrete surfaces must be controlled – by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; Natural storm water runoff not contaminated by – development operations and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by	Contractor	Employ methods to prevent water pollution	Construction	ECO	Weekly	Inspection of areas where construction takes place near watercourses

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the ECO; – Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.						

5.8 Solid waste management

Management outcome: Wastes are appropriately stored, handled and safely disposed of at a licensed waste facility.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach; – Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; – A suitably positioned and clearly demarcated waste collection site must be identified and provided; – The waste collection site must be maintained in a clean and orderly fashion; –	Contractor	Following good waste management practices outlined in approved method Statement	Construction	ECO	Weekly	Waste Safe disposal slips; Service Level Agreements

– Waste must be segregated into separate bins and clearly marked for each waste type; – Staff must be trained in waste segregation; – Bins must be emptied regularly; – General waste produced onsite must be disposed of at – recognised and licenced waste disposal sites/ recycling company; – Hazardous waste must be disposed of at a registered waste disposal site; Certificates of safe disposal for general, hazardous and recycled waste must be maintained.						

5.9 Protection of watercourses

Management outcome: Pollution and contamination of the watercourse environment as well as potential erosion are prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
All watercourses and water bodies must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;	Contractor	Method statements; Stormwater Management Plan;	Construction	ECO	Weekly	Method Statement compliance

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– In the event of a spill, prompt action must be taken to clear the polluted or affected areas; – Where possible, no development equipment must traverse any seasonal or permanent wetland; – Development of permanent watercourse crossing must only be undertaken where no alternative access to tower position is available; – When working in or near any watercourse or wetland, the following environmental controls and consideration must be taken: a) River levels during the period of construction; b) Development within flowing water is to be minimised. All diversions must be in place, water diverted away from the Working Area and the area properly stabilised prior to excavations commencing; c) When working in flowing water, downstream sedimentation must be controlled by installing and maintaining the necessary temporary sedimentation barriers, e.g. geotextile silt curtains or sedimentation weirs developed out of suitably secured straw bales. Sedimentation barriers must be a maximum of 25 m downstream of the construction activities; d) During the execution of the Works, appropriate measures to prevent pollution and contamination of the riverine environment must be implemented e.g. including ensuring that construction equipment is well maintained; e) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and f) Appropriate rehabilitation and re-vegetation measures						

for the river banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.						

5.10 Vegetation clearing

Management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: Indigenous vegetation which does not interfere with the safe development and operation of the power line must be left undisturbed; Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; – Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the Botanical Specialist and completed prior to any development or clearing; – Permits for removal must be obtained from the relevant	Contractor and Applicant	Specialist recommendations; Method statement; Search and Rescue Plan; Alien vegetation removal Plan (approved plans and strategies used by Eskom), site awareness	Pre-Construction and Construction and Operation	ECO	Pre-Construction and weekly during construction	Compliance to method statements and Search and Rescue Plan; Alien vegetation removal Plan. approved plans and strategies used by Eskom)

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Competent Authority prior to the cutting or clearing the affected species, and they must be filed; – The Final Environmental Report must confirm that all identified species have been rescued and replanted; – Trees felled due to construction must be monitored and listed in the Audit Environmental Report; – Rivers, watercourses and other water bodies must be kept clear of felled trees, vegetation cuttings and debris. Integrity of the riverbanks must be maintained by only trimming parts of trees directly affecting the safe operation of the overhead transmission and distribution infrastructure; – Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; – A daily register must be kept of all relevant details of herbicide usage as stipulated in Act 36 of 1947; – Trees, shrubs, grass, natural features and topsoil which are not removed during vegetation clearance shall be protected from damage during operation of the overhead transmission and distribution infrastructure. Disturbance of the surface of the earth shall be allowed for access purposes only; – All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off if required in accordance with No-Go procedure in Section 8.3: No-Go areas. When working in or near any watercourse or wetland, the following environmental controls and consideration shall be taken.						

Servitude: – Vegetation that does not grow high enough to cause interference with overhead overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, should not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager; – Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to the specifications – Alien invasive vegetation should be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a licenced waste disposal facility; – Vegetation should be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280; – Trees growing to a height in excess of the horizontal distance of that tree from the nearest conductor which are identified as being a risk to safe operation of the overhead transmission and distribution infrastructure must be treated and prevented from growing in a manner as to endanger the line should they fall; – Debris resulting from clearing and pruning must be disposed of at a licenced waste disposal facility, unless the landowners wish to retain the cut vegetation; – Deep valleys and environmentally sensitive areas that restrict vehicle access, or legally protected areas, must not be cleared of vegetation provided that the vegetation poses no threat to the safe operation and reliability of the						

overhead transmission and distribution infrastructure. In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered.						

5.11 Protection of fauna

Management outcome: minimise disturbance to fauna.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; – Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; Nesting sites on existing parallel lines must documented; – Special recommendations of the avian specialist must be	Contractor	Method statement and adherence to exclusion/ no-go zones. Site awareness	Construction	ECO	Weekly	Public complaints register; adherence to exclusion/ no-go zones and method statements

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adhered to at all times to prevent unnecessary disturbance of birds; – Bird guards and diverters must be installed on the new line as per the recommendations of the specialist; – No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as No-Go areas.						

5.12 Protection of heritage resources

Management outcome: impact to heritage resources is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in ***Section 5.3: No-Go areas***; – Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; – All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material before development recommences.	Contractor	Method Statement; Heritage management plan	Preconstruction and construction	ECO	Weekly	Monitoring of construction areas, adherence to management plan if chance finds found.

5.13 Safety of the public

Management outcome: all precautions are taken where possible to minimise the risk of injury, harm or complaints.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; – All unattended open excavations must be adequately fenced or demarcated; – Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; – Ensure structures vulnerable to high winds are secured; – Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	Contractor	Landowner agreements; Method Statement	Construction	ECO	Weekly	Site works barricaded, safe working site maintained, public complaints register.

5.14 Sanitation

Management outcome: clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; – Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; – b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; A copy of the waste disposal certificates must be maintained.	Contractor	Service level agreement with Service provider; Method statement; site awareness	Construction	ECO	Weekly	Service level agreement with Service provider, proof of safe disposal of waste.

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5.15 Prevention of disease

Management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Undertake environmentally-friendly pest control in the camp area; Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; – Information and education relating to sexually transmitted diseases to be made available to both construction workers – and local community, where applicable; Free condoms will be made available to all staff on site at – central points; Medical support must be made available; – Provide access to Voluntary HIV Testing and Counselling Services.	Contractor	Method statement, awareness training.	Construction	ECO	Monthly	Method statement, proof of awareness training.

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5.16 Emergency procedures

Management outcome: emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; – All staff must be made aware of emergency procedures as part of environmental awareness training; – The relevant local authority must be made aware of a fire as soon as it starts; – In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17***).	Contractor	Environmental Emergency Response Action Plan	Construction	ECO	Monthly	Adherence/ compliance to ERAP

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5.17 Hazardous substances

Management outcome: safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; – All hazardous substances will be stored in suitable containers as defined in the Method Statement; – Containers will be clearly marked to indicate contents, quantities and safety requirements; – All storage areas will be bunded. The bunded area will be of sufficient capacity to contain a spill / leak from the stored containers; – An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis; – All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS); – All employees working with HCS will be trained in the safe use of the substance and according to the safety data	Contractor	Method Statement, OHS requirements; adequate and responsible use and storage of Hazardous Substances, Hazardous Substances storage register.	Construction	ECO	Weekly	Hazardous Substance Storage Register, MSDS, Method Statement.

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sheet; – Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; – The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; – The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall); – The floor of the bund must be sloped, draining to an oil separator; – Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; – All empty externally dirty drums must be stored on a drip tray or within a bunded area; – No unauthorised access into the hazardous substances storage areas shall be permitted; – No smoking must be allowed within the vicinity of the hazardous storage areas; – Adequate fire-fighting equipment must be made available at all hazardous storage areas; – Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used;						

– An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; – The responsible operator must have the required training to make use of the spill kit in emergency situations; – In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7 for procedures concerning waste water management*** and 5***.8 for solid waste management.***						

5.18 Workshop, equipment maintenance and storage

Management outcome: Soil, surface water and groundwater contamination is minimized.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, – a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a –	Contractor	Method Statement, OHS requirements; Hazardous Substances storage register, vehicle daily checklist, vehicle service register.	Construction	ECO	Weekly	Method Statement, Hazardous Substances storage register, vehicle daily checklist, vehicle service register.

fire as soon as it starts; – Leaking equipment must be repaired immediately or be removed from site to facilitate repair; – Workshop areas must be monitored for oil and fuel spills; – Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; – The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance Section ***5.7: Waste water management***.						

5.19 Batching plants

Management outcome: To control concrete and cement batching activities in order to minimise spillages and contamination of soil, surface water and groundwater						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Concrete mixing must be carried out on an impermeable surface (such as on boards and/or within a bunded area with an impermeable surface) or make a hard surface and	Contractor	Method statement	Construction	ECO	Weekly	Compliance to mitigation and method statement

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remove when done; – Concrete mixing areas must be fitted with a containment facility for the collection of cement laden water. This facility must be impervious to prevent soil and groundwater contamination; – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete – associated equipment. Water used for washing must be restricted; – Hardened concrete from the washout facility or concrete – mixer can either be reused or disposed of at an appropriate licenced disposal facility; – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***) – Any excess sand, stone and cement must be removed or reused from site on completion of construction period and – disposed at a registered disposal facility; Temporary fencing must be erected around batching plants in accordance with Section ***5.5: Fencing and gate installation***. –						

5.20 Dust emissions

Management outcome: dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible; Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; During high wind conditions, the ECO will evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; Vehicle speeds must not exceed 40km/h along dust roads or	Contractor	Method Statement, Vehicle Speed limit, dust suppression.	Construction	ECO	Monthly	Site observations, dust suppression register.

20km/h when traversing unconsolidated and non-vegetated areas; – Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g. dampening with water; particularly during prolonged periods of dry weather in summer. Such measures must also include the use of temporary stabilising measures (e.g. chemical soil binders, straw, brush packs, chipping); – Straw stabilisation must be applied at a rate of one bale/10m² and harrowed into the top 100 mm of top material, for all completed earthworks; – For significant areas of excavation or exposed ground, spray water or wet areas using trucks to minimise the spread of dust.						

5.21 Blasting

Management outcome: impact to the environment is minimised through a safe and healthy blasting practice.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Any blasting to be done after informing local public; Any blasting activity must be conducted by a suitably licensed blasting contractor; – –	Contractor	Relevant legislation and regulation.	Construction	ECO	Monthly	Public complaints register; proof of registration of blasting contractor.

– Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.						

5.22 Noise

Management outcome: To prevent unnecessary noise to the environment by ensuring that noise from construction activity is mitigated.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, development must be limited to daylight hours.	Contractor	Restriction of site hours to working hours Monday to Friday	Construction	ECO	Monthly	Public Complaints Register

5.23 Fire prevention

Management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

Designate smoking areas where the fire hazard could be regarded as insignificant; Firefighting equipment must be available on all vehicles located on site; The local Fire Protection Agency (FPA) must be informed of construction activities; – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; – Two way swop of contact details between ECO and FPA.	Contractor	Emergency Response Action Plan; Method Statement	Construction	ECO	Monthly	Public complaints register; compliance to ERAP

5.24 Stockpiling and stockpile areas

Management outcome: To reduce erosion and sedimentation as a result of stockpiling		
Impact Management Actions	**Implementation**	**Monitoring**

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, wetlands and water bodies; – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; – Stockpiles must not exceed 2 m in height; – During periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g. cloth, tarpaulin etc.); – Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor	Method statement	Construction	ECO	Monthly	Method Statement and site observations

5.25 Finalising tower positions

Management outcome: No environmental degradation occurs as a result of the survey and pegging operations.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– No vegetation clearing must occur during survey and pegging operations; – No new access roads must be developed to facilitate access for survey and pegging purposes; – Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas; – The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.	Applicant	Findings of the EIA Specialist Studies	Pre-Construction	ECO	Once off	Final pegging of tower positions.

5.26 Installation of foundations

Management outcome: No environmental degradation occurs as a result of the survey and pegging operations.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Batching of cement to be undertaken in accordance with **Section *5.19 : Batching***; Residual cement must be disposed of in accordance with **Section *5.8: Solid Waste Management***.	Contractor	Method Statement and Engineering Drawings	Construction	ECO	Weekly	Adherence to method statements

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5.27 Assembly and erecting towers

Management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Prior to erection, assembled towers and tower sections must be stored on elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation; In sensitive areas, tower assembly must take place off-site or away from sensitive positions; _ The crane used for tower assembly must be operated in a manner which minimises impact to the environment; The number of crane trips to each site must be minimised; _ Wheeled cranes must be utilised in preference to tracked cranes; _ Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact; _ Access to tower positions to be undertaken in accordance with access requirements in specified in Section 8.4: Access Roads; _ Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in Section 8.10: Vegetation clearing;	Contractor	Method Statement	Construction	ECO	Weekly	Site observation

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– No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor; – Topsoil must be removed separately and stored for later use during rehabilitation of such tower sites; – Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil; – Excavated slopes must be no greater that 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes; – Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed; – Only existing disturbed areas are utilised as spoil areas; – Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum; – Surface water runoff is appropriately channeled through or around spoil areas; – During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that; – The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation; – The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.						

5.28 Stringing

Management outcome: No environmental degradation occurs as a result of stringing						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid No-Go areas and other sensitive areas; – The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks; – Refueling of the winch and tensioner stations must be undertaken in accordance with Section 5.17: Hazardous substances; – In the case of the development of overhead transmission and distribution infrastructure, a one metre "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". – Vegetation clearing must be undertaken by hand, using	Contractor	Method Statement, adherence to exclusion zones	Construction	ECO	Weekly	Site observations

chainsaws and hand held implements, with vegetation being cut off at ground level. No tracked or wheeled mechanised equipment must be used; – Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter; – Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing; – No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing; – Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 work days minimum), in writing, must be provided to the landowner; Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.						

5.29 Temporary closure of site

Management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Bunds must be emptied (where applicable); Hazardous storage areas must be well ventilated; – Fire extinguishers must be serviced and accessible. Service – records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and – emergency personnel; Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush – stockpiles, fuels etc.; Structures vulnerable to high winds must be secured; Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; – Drip trays must have been emptied and secured. – –	Contractor	Method Statement	Construction – when applicable	ECO	Monthly – when applicable	Adherence to method statements

5.30 Landscaping and rehabilitation

Management outcome: No environmental degradation occurs as a result of the survey and pegging operations.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; – All spoil and waste will be disposed to a registered waste site and certificates of disposal provided; – All slopes in excess of 2% (1:50) must be contoured in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – All slopes in excess of 12% (1:8.3) must be terraced in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – Berms that have been created should have a slope of 1:4 and be replanted with indigenous species and grasses; – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping to a minimum depth of 600 mm; – Rehabilitation of tower sites and access roads outside of farmland; –	Contractor	Method Statements; erosion protection, alien eradication plan.	Concurrent with Construction	ECO	Monthly	Adequately revegetated work areas; no erosion or invasive plant species.

– Indigenous species will be used for replanting; – Stockpiled topsoil must be used for rehabilitation (refer to Section ***5.23: Stockpiling and stockpiled areas***); – Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; – Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; – Subsoil must be ripped before topsoil is placed; – The project must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; – Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled as per the instruction from the ECO; – Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Where required, re-vegetation can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must grow in the area feasible to grow; d) Root systems must have a binding effect on the soil; e) The final product should not cause an ecological imbalance in the area						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with regulation 26 (h) of the Environmental Impact Assessment Regulations, 2014.

ESKOM KUDU – ELDERS 132KV POWER LINE
DFFE REF: 2022-06-0014

PART B: SECTION 2

EMPr for Eskom Distribution Kudu – Elders 132kV power line

7. SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant:

Name of applicant: Eskom Holdings SOC Ltd, Mpumalanga Operating Unit

Contact Person: Betty Ndlovu

Tel: +27 13 693 4469/ +27 83 596 6068

Email: NgobenBT@eskom.co.za

Eskom Park, Main Building, Land Development Department, 3rd floor, office B313, Jelicoe & Water Meyer Streets, WITBANK

7.1.2 Details and expertise of the EAP:

Name of EAP: Ria Pretorius, Setala Environmental

Tel No: +27 82 568 6344

Fax No: +27 86 675 4026

E-mail address: ria@setalaenvironmental.co.za

Expertise of the EAP

Experience of the Environmental Assessment Practitioner (Ria Pretorius):

- A registered professional Environmental Assessment Practitioner with EAPASA, with Registration number 2019/1908.
- Eighteen years' experience in environmental applications.
- Completed more than 50 authorised projects in this field.
- Extensive experience in field investigations and report writing.
- Member of the Environmental Law Association (ELA).
- Member of the International Association for Impact Assessment South Africa (IAIAsa).
- Holder of multiple academic qualifications, the highest at NQF level 9 (masters degree).
- Attended additional courses i.e. at North West University in EIA, NEMA Regulations; The University of Pretoria, Faculty of Law in Environmental Law.

7.1.3 Project name:

Eskom Kudu - Elders 132kV power line and Elders Substation

7.1.4 Description of the project:

This project is for the construction of a ± 26km overhead line between Kudu Substation and the Elders substation as well as for the construction of Elders substation.

This application is for the supply of bulk electricity. The proposed infrastructure, the overhead powerline and the substation will remain Eskom's property.

The following to be constructed:

- Construct a ± 26km Kingbird overhead 132kV line outside an urban area from Kudu Substation (at Komati Power Station) to the proposed Elders substation. (Listing Notice 1 Activity 11)
- Construct 2 x 20MVA 132/11kV Elders Substation. (Listing Notice 1 Activity 11)
- Construct Power line structures/ stayed monopole steel poles within 32 meters of a waterbody along the 132kV feeder line and excavate more than 10 cubic metres of soil and rock from a watercourse. (Listing Notice 1 Activity 19)
- Develop access roads of wider than 4 metres to construct the power line in (bb) National Protected Area Expansion Strategy Focus areas and (ee) Critical biodiversity areas. (Listing Notice 3 Activity 4 (bb) & (ee))

- The clearance of the vegetation underneath the power line alignment is not a listed activity, being a linear activity. An area of 8m will be cleared of major trees and bushes, 4m on either side of the proposed alignment of the power line.
- The construction of a temporary laydown area of approximately 0,18ha on Elders substation site is not a listed activity.

7.1.5 Project location:

The project is located on Komati Power Station 56-IS Remainder; Goedehoop 46-IS R/3, Portions 8/3, 2, Re, 4; Kleinfontein 49-IS Portions 10/1, RE/4, 12/4, 8/4; in the jurisdiction of Steve Tshwete Local Municipality (Nkangala DM) and Schoonvlei 52-IS Portion 2, Middelkraal 50-IS 8/3, R/3 in Govan Mbeki Local Municipality (Gert Sibande DM), Mpumalanga Province. Refer to below:

Kudu-Elders Route 1				
Item	Property	Ptn	Size	SG code
1	Komati Power Station 56-IS	RE	611,8241	T0IS00000000005600000
2	Goedehoop 46-IS	R/3	396,0727	T0IS00000000004600003
3	Goedehoop 46-IS	8/3	79,1883	T0IS00000000004600008
4	Goedehoop 46-IS	2	475,2753	T0IS00000000004600002
5	Goedehoop 46-IS	RE	310,4787	T0IS00000000004600000
6	Goedehoop 46-IS	4	278,7939	T0IS00000000004600004
7	Kleinfontein 49-IS	10/1	211,2779	T0IS00000000004900010
8	Kleinfontein 49-IS	RE/4	544,2618	T0IS00000000004900004
9	Kleinfontein 49-IS	12/4	274,0902	T0IS00000000004900012
10	Kleinfontein 49-IS	8/4	818,3464	T0IS00000000004900008
11	Schoonvlei 52-IS	2	279,1883	T0IS00000000005200002
12	Middelkraal 50-IS	8/3	4,4603	T0IS00000000005000003
13	Middelkraal 50-IS	R/3	252,4993	T0IS00000000005000003

The Quarter Degree Square (QDS) is 2629AB. The study area is situated within the Quaternary Drainage Area (QDA) of B11A & B11B.

7.1.6 Preliminary technical specification of the overhead distribution line:

COORDINATES OF DEVELOPMENT PROPOSAL

1 GPS coordinates Kudu – Elders 132kV power line

Route 1

- Length: 26,019 km.
- Starting Point at Elders substation: 26°13'57.96"S; 29°27'53.17"E.
- Middle Point: 26°10'47.32"S; 29°23'56.19"E.
- End Point at Kudu Substation site: 26° 5'37.81"S; 29°28'30.19"E.

Co-ordinates every 250m

Table 1: GPS Co-ordinates along Kudu-Elders 132kV Power Line - every 250m

Preferred Route	Longitude (E)	Latitude (S)
(m)	(Decimal degrees)	(Decimal degrees)
Elders Subsation	29,46431367	-26,2307459
250	29,46378351	-26,22861311
500	29,46325335	-26,22648035
750	29,46123076	-26,22574272
1000	29,45865277	-26,22552428
1250	29,45607479	-26,22530583
1500	29,4534968	-26,22508739
1750	29,45353938	-26,22311447
2000	29,45386384	-26,22095286
2250	29,4541883	-26,21879129
2500	29,45451277	-26,21662976
2750	29,45483723	-26,21446828
3000	29,45516169	-26,21230682
3250	29,45399601	-26,21112707
3500	29,45142239	-26,21087482
3750	29,44884878	-26,21062257
4000	29,44627516	-26,21037032
4250	29,44370155	-26,21011807
4500	29,44112794	-26,20986582
4750	29,43855432	-26,20961357
5000	29,43598071	-26,20936132
5250	29,43340709	-26,20910907
5500	29,43083348	-26,20885683
5750	29,42825986	-26,20860458
6000	29,42568625	-26,20835234
6250	29,42311263	-26,20810009
6500	29,42053902	-26,20784785
6750	29,41796541	-26,2075956
7000	29,41539179	-26,20734336
7250	29,41281686	-26,2071011
7500	29,41023998	-26,20687366
7750	29,4076631	-26,20664621
8000	29,40508622	-26,20641876
8250	29,40251142	-26,20617552
8500	29,39993793	-26,2059224
8750	29,39736444	-26,20566927
9000	29,39479095	-26,20541615
9250	29,39221745	-26,20516303
9500	29,38964396	-26,2049099

9750	29,38860637	-26,20324216
10000	29,38922248	-26,20112624
10250	29,38983859	-26,19901037
10500	29,39045471	-26,19689453
10750	29,39107082	-26,19477873
11000	29,39168693	-26,19266297
11250	29,39230304	-26,19054724
11500	29,39291916	-26,18843155
11750	29,39353527	-26,18631591
12000	29,39491239	-26,18449595
12250	29,39643002	-26,18273061
12500	29,39794765	-26,1809653
12750	29,39946528	-26,17920001
13000	29,40098291	-26,17743474
13250	29,40250053	-26,17566951
13500	29,40401816	-26,1739043
13750	29,40553579	-26,17213911
14000	29,40705342	-26,17037396
14250	29,40857104	-26,16860882
14500	29,41008867	-26,16684372
14750	29,4116063	-26,16507864
15000	29,41312393	-26,16331359
15250	29,41464739	-26,16155212
15500	29,41617207	-26,15979141
15750	29,41769674	-26,15803073
16000	29,41922142	-26,15627008
16250	29,4207461	-26,15450945
16500	29,42227077	-26,15274885
16750	29,42376988	-26,15097322
17000	29,4252178	-26,14916749
17250	29,42666571	-26,14736178
17500	29,42810971	-26,14555389
17750	29,42954776	-26,14374269
18000	29,43098582	-26,14193151
18250	29,43242388	-26,14012035
18500	29,43386194	-26,13830923
18750	29,43529999	-26,13649813
19000	29,43673805	-26,13468706
19250	29,43817719	-26,13287663
19500	29,43962647	-26,13107194
19750	29,44107574	-26,12926728
20000	29,44252502	-26,12746264
20250	29,44397429	-26,12565803
20500	29,44533288	-26,12380814
20750	29,44652785	-26,12187654
21000	29,44772282	-26,11994497
21250	29,44891779	-26,11801343
21500	29,45011276	-26,11608192
21750	29,45130773	-26,11415044
22000	29,4525027	-26,11221899
22250	29,45369767	-26,11028758
22500	29,45489264	-26,10835619
22750	29,4566916	-26,10681056
23000	29,45858719	-26,10532666
23250	29,45865002	-26,10364414

23500	29,46056437	-26,10217736
23750	29,46247872	-26,10071061
24000	29,46439306	-26,09924387
24250	29,46630741	-26,09777715
24500	29,46784573	-26,09616131
24750	29,46843	-26,09407195
25000	29,46999289	-26,09320889
25250	29,4723734	-26,09406691
25500	29,4748156	-26,0946423
25750	29,47578639	-26,09325584
Kudu Substation	29,475053	-26,093836
Alternate Route	**Longitude (E)**	**Latitude (S)**
(m)	(Decimal degrees)	(Decimal degrees)
Elders Subsation	29,46431367	-26,2307459
250	29,46378351	-26,22861311
500	29,46325335	-26,22648035
750	29,46123076	-26,22574272
1000	29,45865277	-26,22552428
1250	29,45607479	-26,22530583
1500	29,4534968	-26,22508739
1750	29,453643	-26,225112
2000	29.453969°	-26,22285
2250	29,454312	-26,220611
2500	29,454652	-26,218366
2750	29,455092	-26,216191
3000	29,455716	-26,211357
3250	29,45399601	-26,21112707
3500	29,45142239	-26,21087482
3750	29,44884878	-26,21062257
4000	29,44627516	-26,21037032
4250	29,44370155	-26,21011807
4500	29,44112794	-26,20986582
4750	29,43855432	-26,20961357
5000	29,43598071	-26,20936132
5250	29,43340709	-26,20910907
5500	29,43083348	-26,20885683
5750	29,42825986	-26,20860458
6000	29,42568625	-26,20835234
6250	29,42311263	-26,20810009
6500	29,42053902	-26,20784785
6750	29,41796541	-26,2075956
7000	29,41539179	-26,20734336
7250	29,41281686	-26,2071011
7500	29,41023998	-26,20687366
7750	29,4076631	-26,20664621
8000	29,40508622	-26,20641876
8250	29,40251142	-26,20617552
8500	29,39993793	-26,2059224
8750	29,39736444	-26,20566927
9000	29,39479095	-26,20541615
9250	29,39221745	-26,20516303
9500	29,38964396	-26,2049099
9750	29,38860637	-26,20324216
10000	29,38922248	-26,20112624
10250	29,38983859	-26,19901037

10500	29,39045471	-26,19689453
10750	29,39107082	-26,19477873
11000	29,39168693	-26,19266297
11250	29,39230304	-26,19054724
11500	29,39291916	-26,18843155
11750	29,39353527	-26,18631591
12000	29,39491239	-26,18449595
12250	29,39643002	-26,18273061
12500	29,39794765	-26,1809653
12750	29,39946528	-26,17920001
13000	29,40098291	-26,17743474
13250	29,40250053	-26,17566951
13500	29,40401816	-26,1739043
13750	29,40553579	-26,17213911
14000	29,40705342	-26,17037396
14250	29,40857104	-26,16860882
14500	29,41008867	-26,16684372
14750	29,4116063	-26,16507864
15000	29,41312393	-26,16331359
15250	29,41464739	-26,16155212
15500	29,41617207	-26,15979141
15750	29,41769674	-26,15803073
16000	29,41922142	-26,15627008
16250	29,4207461	-26,15450945
16500	29,42227077	-26,15274885
16750	29,42376988	-26,15097322
17000	29,4252178	-26,14916749
17250	29,426155	-26,151185
17500	29,42810971	-26,14555389
17750	29,42954776	-26,14374269
18000	29,43098582	-26,14193151
18250	29,43242388	-26,14012035
18500	29,43386194	-26,13830923
18750	29,43529999	-26,13649813
19000	29,43673805	-26,13468706
19250	29,43817719	-26,13287663
19500	29,43962647	-26,13107194
19750	29,44107574	-26,12926728
20000	29,44252502	-26,12746264
20250	29,44397429	-26,12565803
20500	29,44533288	-26,12380814
20750	29,44652785	-26,12187654
21000	29,44772282	-26,11994497
21250	29,44891779	-26,11801343
21500	29,45011276	-26,11608192
21750	29,45130773	-26,11415044
22000	29,4525027	-26,11221899
22250	29,45369767	-26,11028758
22500	29,45489264	-26,10835619
22750	29,4566916	-26,10681056
23000	29,45858719	-26,10532666
23250	29,45865002	-26,10364414
23500	29,46056437	-26,10217736
23750	29,46247872	-26,10071061
24000	29,46439306	-26,09924387

24250	29,46630741	-26,09777715
24500	29,46784573	-26,09616131
24750	29,46843	-26,09407195
25000	29,467122	-26,096394
25250	29,4723734	-26,09406691
25500	29,4748156	-26,0946423
25750	29,47578639	-26,09325584
Kudu Substation	29,475053	-26,093836

2 Temporary Laydown area

Table 2: GPS Co-ordinates

LAYDOWN AREA AT ELDERS SUBSTATION	
Approximate Centre of Site	26°13'58.39"S; 29°27'55.75"E

PHYSICAL SIZE OF THE ACTIVITY

The physical size of the preferred activity/ (footprint):

Table 3: The Kudu –Elders 132kV power line

Alternative:	Length of the activity:
Route 1 (Preferred)	26,019 km
Route 2 (Alternative)	26,029 km

The size of the servitudes (within which the above footprint will occur):

Table 4: The Kudu - Elders 132kV power line

Alternative:	Size of the site/servitude:
Route 1 (Preferred)	31m servitude x 26 019 m = 806 589m^2 / 80,65 ha
Route 2 (Alternative)	31m servitude x 26 029 m = 806 899m^2 / 80,68 ha

Table 5: The Kudu - Elders Laydown area

Alternative:	Footprint of the activity:
Laydown area (Inside Elders Substation site)	0,18 ha

TOWER PARAMETERS AND COORDINATES

Structures and GPS Coordinates of final pylon positions

To be submitted in Final EMPr

7.2 Sub-section 2: Development footprint site

7.2.1 Site Location with environmental sensitivities

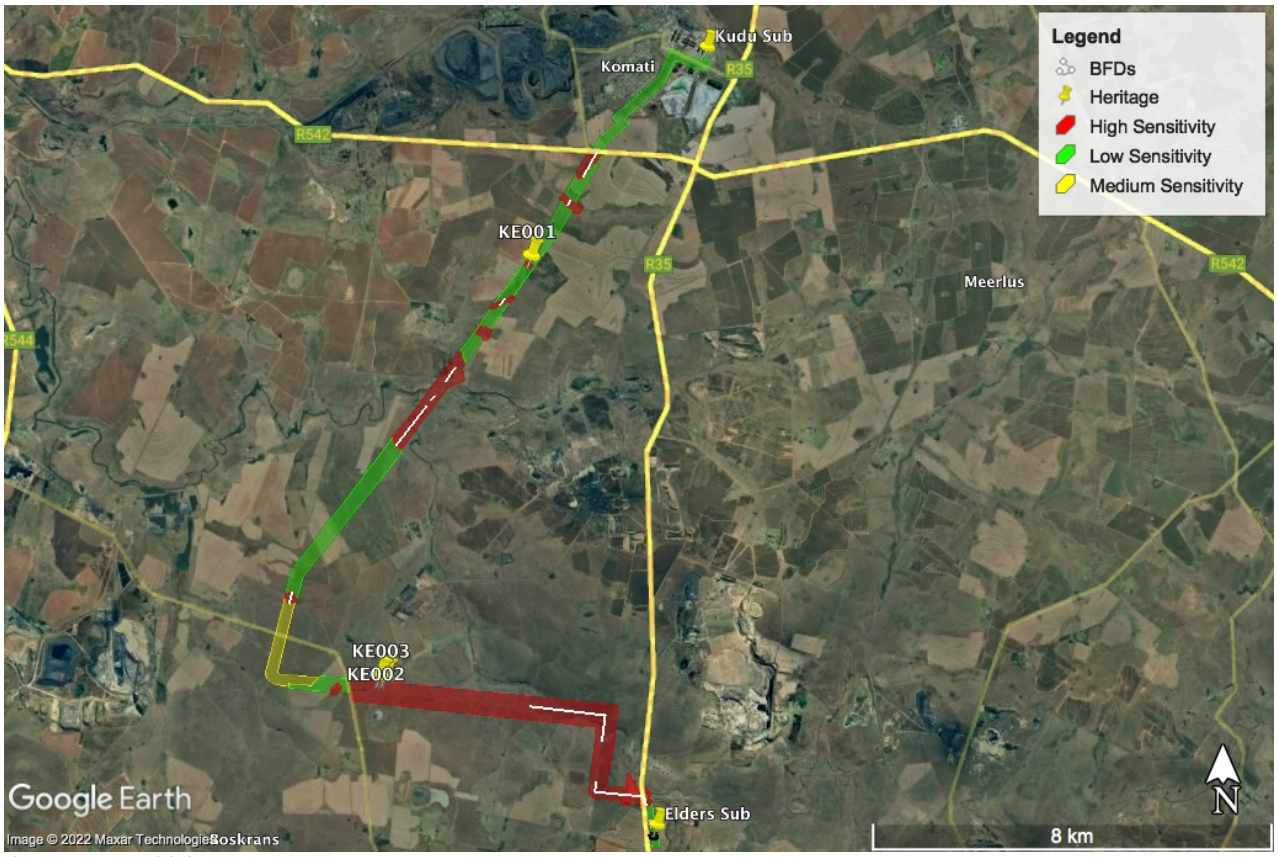

Figure 1: Sensitivity map Google Earth

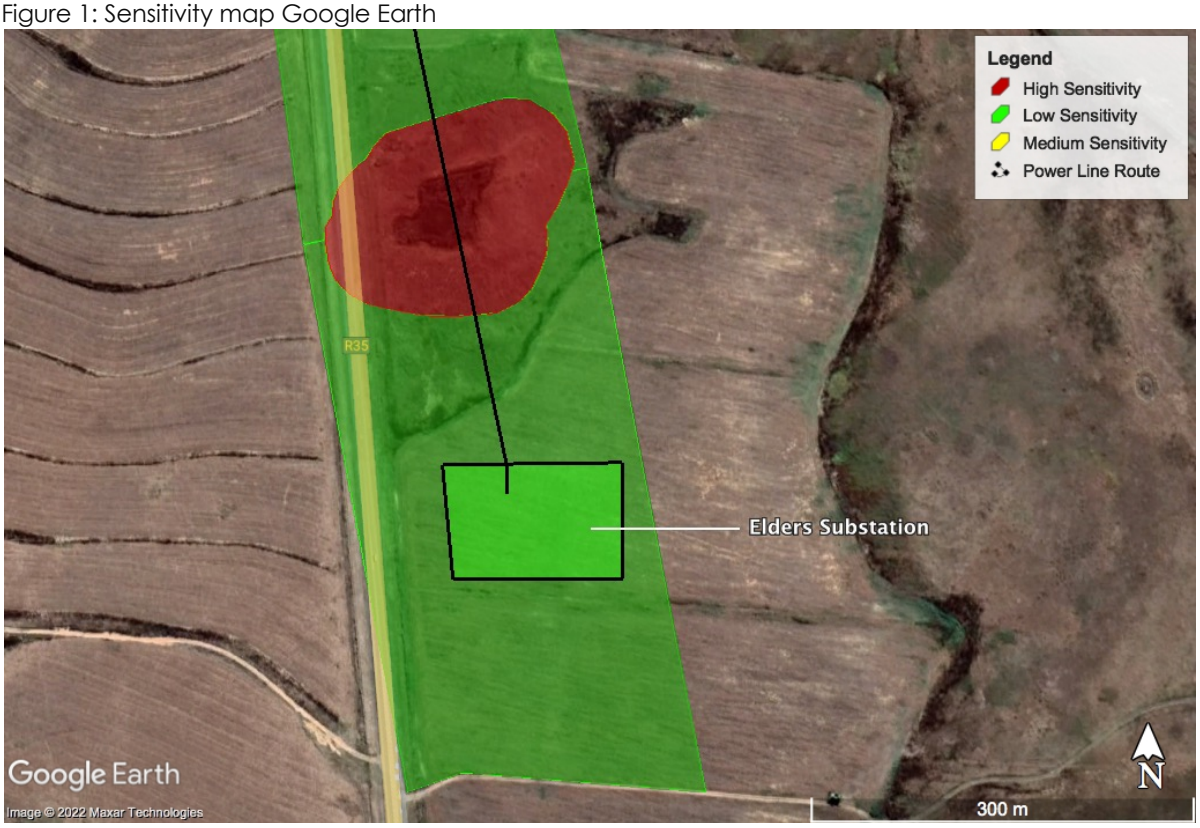

Figure 2: Sensitivity Map: Elders Substation

7.2.2 Requirements and conditions of the environmental authorisation

- No activities, which require a water use authorisation, must be allowed to encroach into a water resource without a water use authorisation being in place from the Department of Water and Sanitation.
- The only bufferzones required for the project are at watercourse crossings. A minimum of a 50m buffer zone, from the edge of the stream banks, or the edge of the temporary zone (in case of wetlands) have been demarcated and it is recommended that no pylons / poles be planted within these buffer zones.
- It will be possible to maintain this 50m buffer zone at most of the crossings and nearby areas, with the possible exception of the crossing at the Olifants River and associated floodplain wetland area.
- It is more than likely that a General Authorisation (GA) process will be required for the project, unless the span of the power line will be able to clear the wetland area plus the associate buffer zone. If not, the applicant must apply for a GA / water use.
- Notwithstanding, the buffer zones must be delineated and maintained as far as possible. That is, they must be seen as 'no-go zones' in terms of the general movement of people and vehicles; placement of portable toilets; laydown areas; temporary storage areas, etc.
- No watercourses (streams, drainage lines, rivers) may be impeded or impounded during the construction phase or at any stage of the project at all.
- Bird Flight Diverters (BFDs) must be installed in the areas indicated within the report. These areas include high-risk bird sensitive areas such as watercourse crossings and along with the elevated power line which creates potential collisions / bird-strikes.
- The Bird Flight Diverters (BFDs) must be placed across the demarcated areas of the powerline along the earth wire at 5m intervals, alternating black and white.
- Each monopole must be fitted with bird perches on the top. This helps to draw large birds (eg. Vultures) away from the dangerous / risky insulators that can result in electrocutions.
- Implementation of a Fossil chance find protocol for the project.
- Should any archaeological sites, artefacts, paleontological fossils or graves be exposed during construction work, work must be stopped immediately, the relevant heritage resources agency must be informed and the services of an accredited heritage professional must be obtained for an assessment of the heritage resources.
- If any unmarked human burials are uncovered and the archaeologist called in to inspect the finds and/or the police find them to be heritage graves, then mitigation may be necessary and the SAHRA Burial Grounds and Graves (BGG) Unit must be contacted for processes to follow.
- Weekly monitoring of pylon excavation areas during the pre-construction and construction phase by the ECO.

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA **Date:**

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations

29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

The EA will not be transferred to a new holder, therefore the current information under Part B: Section 2 is relevant.

PART C

8. SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No- Go procedure in ***Section 5.3: Access restricted areas***; – If there are any new heritages resources are discovered during construction and operation phases of the proposed development, then a professional archaeologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings at the expense of the developer. – If the newly discovered heritage resources prove to be of archaeological significance, a Phase 2 rescue operation may be required at the expense of the developer. Mitigation will only be carried out after the archaeologist obtains a permit in terms of section 35 of the NHRA (Act 25 of 1999). SAHRA APM Unit to be contacted for further details: (Nokukhanya Khumalo/Phillip Hine 021 202 8654). – If any unmarked human burials are uncovered and the archaeologist called in to inspect the finds and/or the police find them to be heritage graves, then mitigation may be necessary and the SAHRA Burial Grounds and Graves (BGG) Unit must be contacted for processes to follow (Thingahangwi Tshivase/ Ngqalabutho Madida 012 320 8490).	Contractor	Method Statement; Heritage management plan	Preconstruction and construction	ECO	Weekly	Monitoring of construction areas, adherence to management plan if chance finds found.

Protection of Palaeontological resources

Impact management outcome: Impact to Palaeontological resources is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The Chance Finds Fossil Procedure must be included in the EMPr as the proposed project is located in a low to very high sensitivity zone on the SAHRIS palaeo-sensitivity. In the unlikely event that fossils are uncovered during construction then construction must cease within the immediate vicinity, a buffer of 30 m must be established, and a palaeontologist called in to inspect the finds. The palaeontologist must obtain a section 35(4) permit in terms of NHRA and Chapter IV NHRA Regulations, before any fossils are collected. The following monitoring protocol must be adopted and implemented during earth moving activities: – The following procedure is only required if fossils are seen on the surface and when excavations commence. – When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the construction activities will not be interrupted. – Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures. – Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment. – Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits. – If no good fossil material is recovered then no site inspections by the palaeontologist would be required. – If no fossils are found and the excavations have finished then no further monitoring is required. – In the unlikely event that fossils are uncovered during construction then construction must cease within the immediate vicinity, a buffer of 30 m must be established, and a palaeontologist called in to	Contractor	Method Statement	Preconstruction and construction	ECO	Weekly	Monitoring of construction areas, adherence to management plan if chance finds found.

inspect the finds. – The palaeontologist must obtain a section 35(4) permit in terms of NHRA and Chapter IV NHRA Regulations, before any fossils are collected. – If there are any new heritages resources are discovered during construction and operation phases of the proposed development, then a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings at the expense of the developer. – If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required at the expense of the developer. Mitigation will only be carried out after the archaeologist or palaeontologist obtains a permit in terms of section 35 of the NHRA (Act 25 of 1999). – You may contact SAHRA APM Unit for further details: (Nokukhanya Khumalo/ Phillip Hine 021 202 8654).						

Protection of protected trees

Impact management outcome: Impact to protected trees is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Most trees observed in the study area are the invasive alien blackwattle (Acacia mearnsii) No naturally occurring trees or shrubland is present in the proposed power line servitude or the substation site.	Contractor	Method Statement	Preconstruction and construction	ECO	Weekly	Monitoring of construction areas, adherence to management plan; application for tree permits

Protection of Red Data Listed or Orange Data Listed plants

Impact management outcome: Impact to RDL or ODL plants is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No naturally occurring trees or shrubland is present in the proposed power line servitude or the substation site. – The vegetation of the Elders Substation site has been totally transformed by years of ploughing and cultivating of the area. No natural vegetation remains. – The likelihood is low that any red data listed (RDL) or orange data listed (ODL) plants will be impacted. None appear to be directly within the power line servitude. – No red data listed (RDL) floral species were observed in the study area and none are expected to occur. A few orange data listed (ODL) species were observed, but most if not all can be avoided. – These ODL species include: Hypoxis hemerocallidea and Crinum bulbispermum – However, should any be noticed during construction then the ECO and/or Specialist must first be contacted for advice on how to move forward. If any suspicious plants are found that need to be moved or destroyed then once again the ECO and/or specialist must first be contacted.	Contractor	Method Statement	Preconstruction and construction	ECO	Weekly	Monitoring of construction areas, adherence to management plan; application for vegetation permits

Protection of avifauna

Impact management outcome: Impact to avifauna is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A steel mono-pole (structure) to be used for the new 132kV line, that reduces bird collisions and electrocutions. – Bird Flight Diverters (BFDs) must be installed in the areas indicated within the report. These areas include high-risk bird sensitive areas such as watercourse crossings along with the elevated power line which creates potential collisions / bird-strikes. – The Bird Flight Diverters (BFDs) must be placed across the demarcated areas of the powerline along the earth wire at 5m intervals, alternating black and white. – Each monopole must be fitted with bird perches on the top. This helps to draw large birds (eg. Vultures) away from the dangerous / risky insulators that can result in electrocutions. On H-poles spikes must be installed along the horizontal to deter birds from perching or nesting on these beams / structures. – Eskom will use the latest structure designs that further help reduce bird collisions and electrocutions. – No interaction is allowed with any birds, even common species. – Should a nest be found during the construction phase, work in that particular spot must be halted and a bird specialist consulted. Any nesting sites found should be cordoned off with tape and signs and declared a 'no-go' zone. – If the nest is within the actual servitude it might be able to be relocated, depending on the species and the advice from the bird specialist. – All Eskom guidelines must be implemented and adhered to. These include important guidelines such as Bird Collision Guidelines (www.eskom.co.za).	Contractor	Method Statement	Preconstruction and construction	ECO	Weekly	Monitoring of construction areas, adherence to management plan

The GPS points at the watercourse crossings where BFDs need to be placed are shown in the table below. The map showing the corresponding locations of these identified crossings are shown the below in Figure. The BFDs need to be placed across the entire length of the demarcated watercourses, including the buffer zones. There is no need to place BFDs in any other locations along the power line route or within the Elders Substation. The proposed substation is within a totally transformed area of old farmlands.

The buffer zones for the watercourse crossing are all 50m from the edge of the watercourse. Therefore, the placement of BFDs will be across the watercourse (river, stream, wetland, farm dam) plus the surrounding 50m buffer area.

Table 15: GPS Coordinates for BFDs

Map ID Number	Coordinates	Type of Watercourse
1	26°13'51.23"S; 29°27'51.40"E	Farm Dam
2	26°13'32.88"S; 29°27'39.00"E	Valley Bottom Wetland
3	26°13'30.43"S; 29°27'13.32"E	Seep Wetland
4	26°12'55.70"S; 29°27'18.40"E	Olifants River
5	26°12'35.46"S; 29°26'27.01"E	Olifants River
6	26°11'24.83"S; 29°23'32.69"E	Dam & Drainage Line
7	26° 9'29.59"S; 29°25'3.24"E	Olifants River & Floodplain
8	26° 9'16.02"S; 29°25'14.91"E	Unnamed stream (tributary to Olifants River
9	26° 9'0.46"S; 29°25'27.77"E	Dams, drainage line & wetland
10	26° 8'14.11"S; 29°26'5.01"E	Drainage Line
11	26° 7'10.20"S; 29°26'53.13"E	Drainage Line & Valley Bottom Wetland
12	26° 6'41.49"S; 29°27'10.64"E	Valley Bottom Wetland

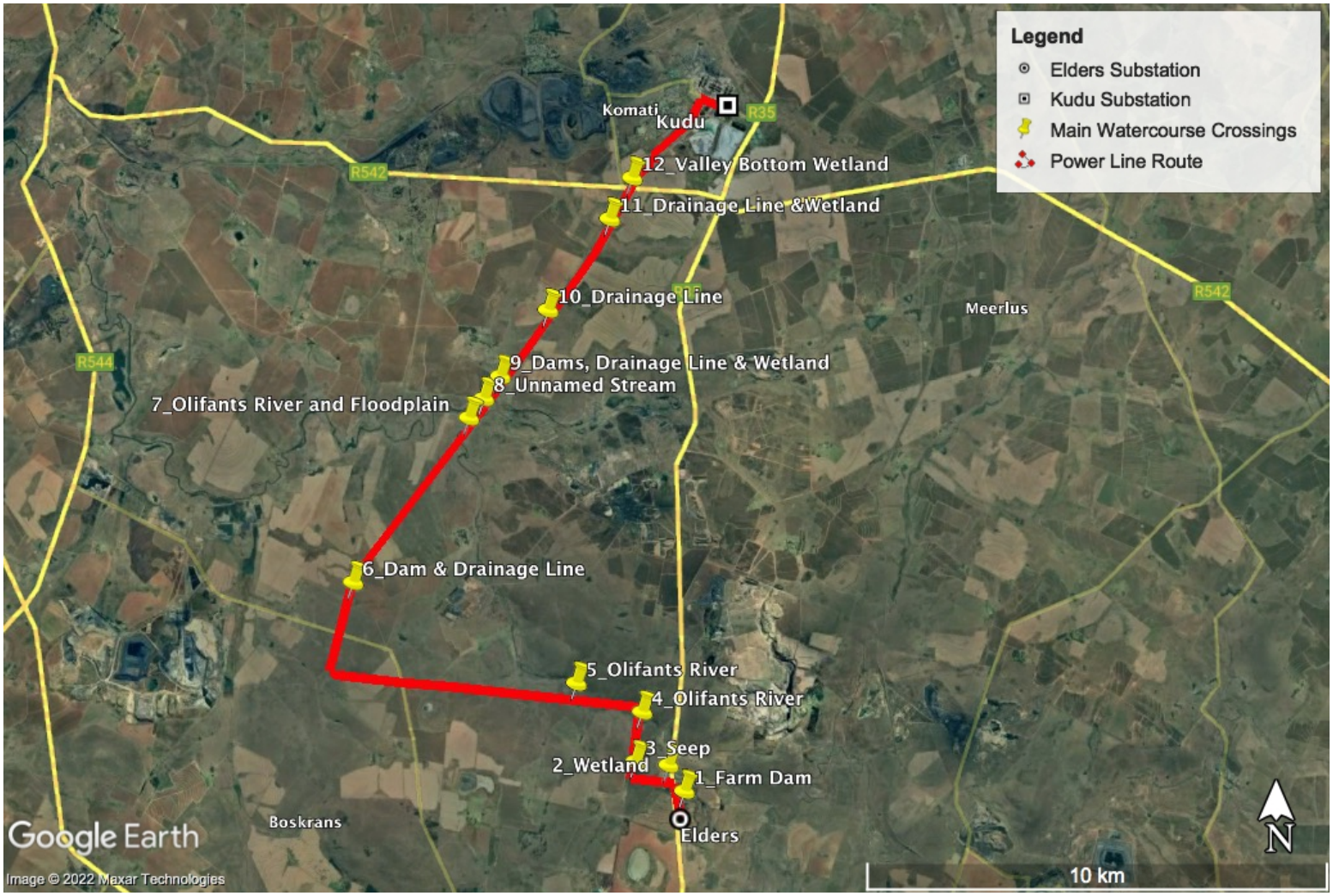

Figure 3: Watercourse crossings

The sensitivity map (avifauna) is shown below. The sensitivity is based on areas of high-risk negative impacts for birds and not necessarily on habitat status.

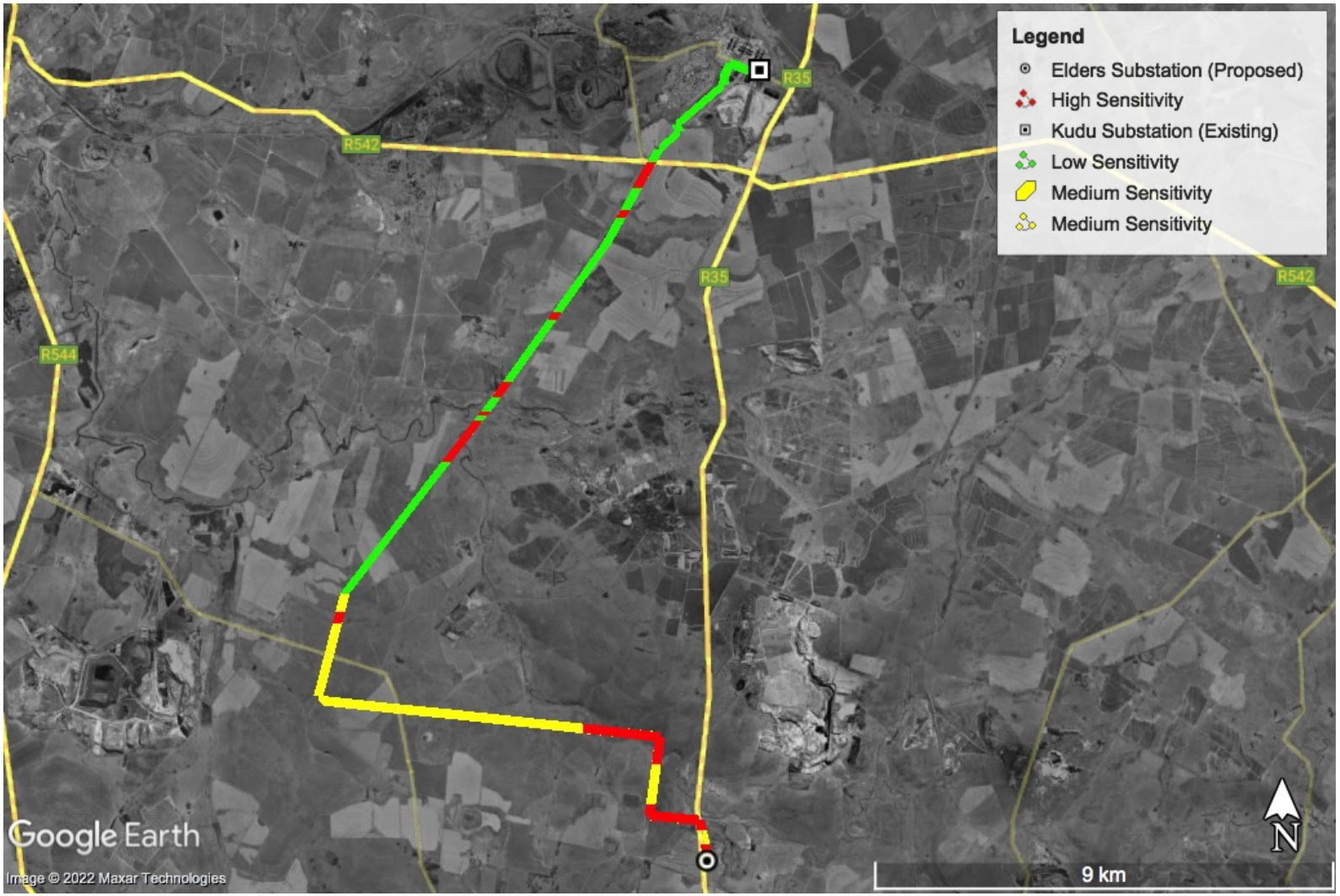

Figure 4: Sensitivity map Avifauna

Measures to Protect Hydrological Features

Impact management outcome: Impact to watercourses is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The study area is situated within the primary drainage area (PDA) of B, and the quaternary drainage area (QDA) of B11A & B11B. The area is within the Olifants (WMA 2). – There are a number of small streams, seasonal drainage lines, wetlands and the perennial Olifants River in the study area. There are a number of watercourse crossings. – The only buffer zones required for the project are at watercourse crossings. A 50m wide buffer zone, from the edge of riverbanks, stream banks, and temporary wetland zones have been demarcated and no pylons / poles are allowed to be planted within these buffer zones, unless absolutely necessary. – Pylons erected within these buffer zones will trigger the need for a General Authorisation (GA) application through the Department of Water and Sanitation (DWS). – The only buffer zones required in the study area (power line servitude) area at the watercourse crossings as shown below (Figure 5 to Figure 9). – No heavy vehicles are allowed to drive through any watercourse, unless on existing gravel and farm roads. – Access roads to be maintained at all times. – No temporary facilities or portable toilets to be setup within 100m of the watercourse and associated riparian zone and floodplains, including streams, drainage lines and wetlands. – No temporary accommodation or temporary storage facilities may be setup within 100m of the watercourse. – No temporary laydown areas may be established in the power line servitude, but only within the demarcated area near the substation site. – The temporary laydown area and temporary access roads (if	Contractor	Method statements; Stormwater Management Plan;	Pre-construction & Construction	ECO	Weekly	Method Statement Compliance; General Authorisation DWS

constructed) need to be rehabilitated. – Disturbed surface areas in the construction phase to be rehabilitated. – No open trenches to be left. No mounds of soils created during construction to be left.						

Note that the 50m wide buffer zones are incorporated into the delineated 'High Sensitivity' areas. This is because a buffer zone is a type of 'no-go' zone and is delineated to protect a sensitive area / habitat.

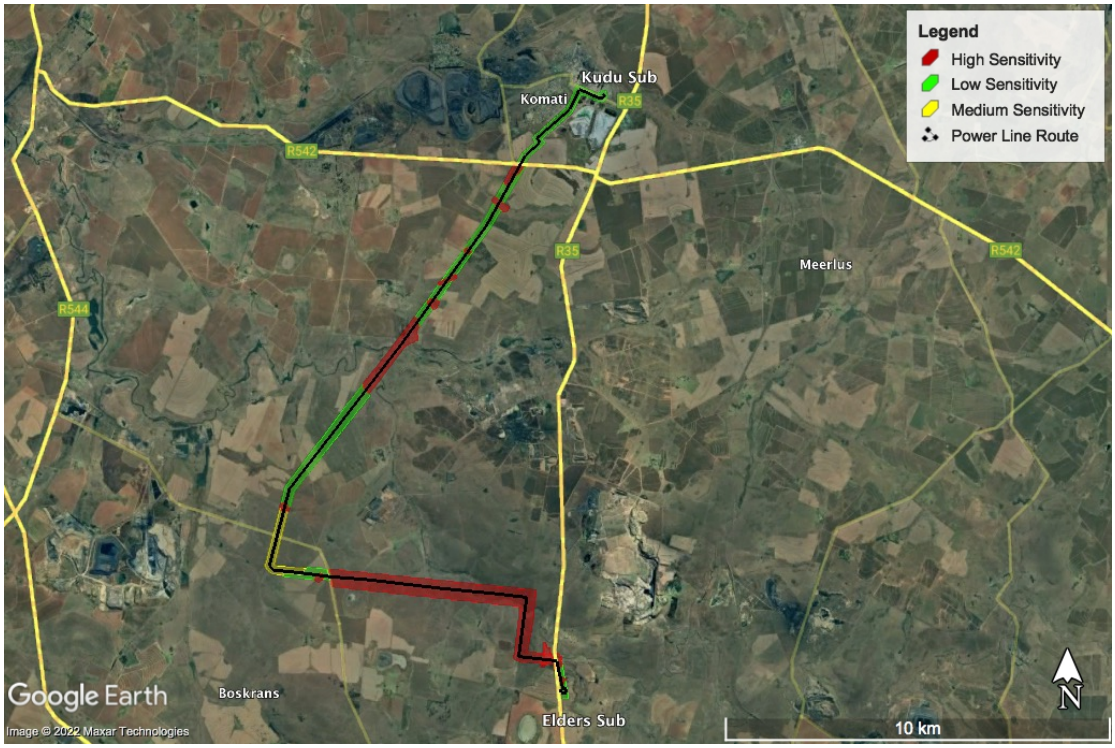

Figure 5 : Sensitivity map Project

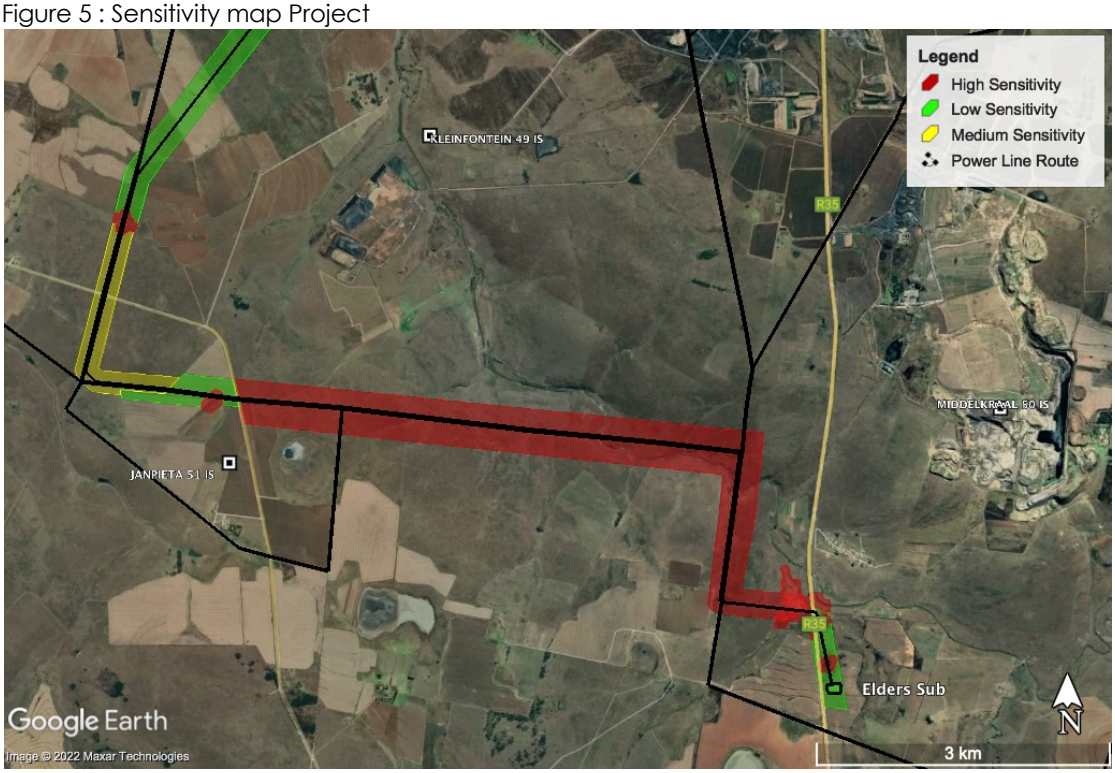

Figure 6: Sensitivity Map: Southern Section

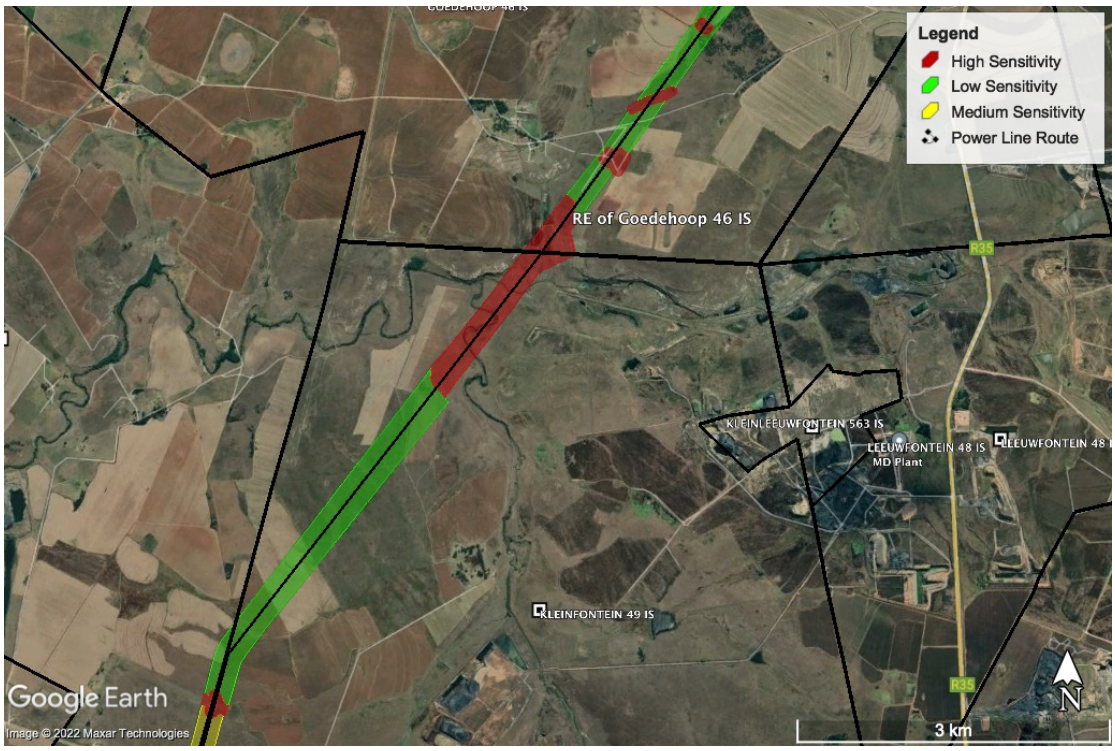

Figure 7: Sensitivity Map: Central Section

Figure 8: Sensitivity Map: Northern Section

Figure 9: Sensitivity Map: Elders Substation

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.