

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

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**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

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## **INTRODUCTION**

### **1. Background**

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) 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, as amended (EIA Regulations) 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 EA, 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 (CA).

### **2. Purpose**

This document constitutes a generic EMPr relevant to applications for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and 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 impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity. 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 the development or expansion of substation infrastructure for the transmission and distribution of electricity requiring EA in terms of NEMA. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realization of such infrastructure.

## 5. Structure of this document

This document 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 <b>not legally binding</b>	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	<p>Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved.</p> <p>The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity.</p> <p>Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column.</p> <p>Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template <b>is not required</b> to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA.</p> <p>To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.</p>
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA

Part	Section	Heading	Content
			<p>will comply with the pre-approved generic EMPr template contained in <u>Part B: Section 1</u>, and understands that the impact management outcomes and impact management actions are <b>legally binding</b>. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and impact management actions have been either pre-approved or approved in terms of <u>Part C</u>.</p> <p>This section <b>must be</b> submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of <u>Part B: section 2</u> not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.</p>
C		Site specific sensitivities/ attributes	<p>If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially, and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (<u>Part B: section 1</u>)</p> <p>This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if <u>Part C</u> is applicable to the site, it <b>is required</b> to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. Once</p>

Part	Section	Heading	Content
			<p>approved, Part C forms part of the EMPr for the site and is legally binding.</p> <p>This section applies only <b>to additional</b> impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in <u>Part B: section 1</u>.</p>
		Appendix 1	<p>Contains the method statements to be prepared prior to commencement of the activity. The method statements are <b>not required</b> to be submitted to the competent authority.</p>

## 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 impact 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 and dated by 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 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 impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in Regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in Regulation 36 of the EIA Regulations.



## **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 two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the property or farm in which the proposed substation 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 vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: <https://screening.environment.gov.za/screeningtool>. The sensitivity map shall identify the nature of each sensitive feature e.g., threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features and within 50 m from the development footprint.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/EA holder will comply with the pre-approved 'generic EMPr' template in Section 1 and understands that the impact management outcomes and impact management actions are legally binding.

### **(a) 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 an amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA 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.

## PART A – GENERAL INFORMATION

### 1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations 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;

**“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;

**“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.

**“hazardous substance”** 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;

**“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 must cover as a minimum 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.

**“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**

<b>CA</b>	Competent Authority
<b>cEO</b>	Contractors Environmental Officer
<b>dEO</b>	Developer Environmental Officer
<b>DPM</b>	Developer Project Manager
<b>DSS</b>	Developer Site Supervisor
<b>EAR</b>	Environmental Audit Report
<b>ECA</b>	Environmental Conservation Act No. 73 of 1989
<b>ECO</b>	Environmental Control Officer
<b>EA</b>	Environmental Authorisation
<b>EIA</b>	Environmental Impact Assessment
<b>ERAP</b>	Emergency Response Action Plan
<b>EMPr</b>	Environmental Management Programme Report
<b>EAP</b>	Environmental Assessment Practitioner
<b>FPA</b>	Fire Protection Agency
<b>HCS</b>	Hazardous chemical Substance
<b>NEMA</b>	National Environmental Management Act, 1998 (Act No. 107 of 1998)
<b>NEMBA</b>	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
<b>NEMWA</b>	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
<b>MSDS</b>	Material Safety Data Sheet
<b>RI&amp;AP's</b>	Registered Interested and affected parties

### 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 EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

**Table 1:** Guide to roles and responsibilities for implementation of an EMPr

Responsible Person(s)	Role and Responsibilities
Developer's Project Manager (DPM)	<p><u>Role</u></p> <p>The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (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.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Be fully conversant with the conditions of the EA;</li> <li>- Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s);</li> <li>- Issuing of site instructions to the Contractor for corrective actions required;</li> <li>- Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and</li> <li>- Ensure that periodic environmental performance audits are undertaken on the project implementation.</li> </ul>

Responsible Person(s)	Role and Responsibilities
Developer Site Supervisor (DSS)	<p><u>Role</u> The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day-to-day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Ensure that all contractors identify a contractor's Environmental Officer (cEO);</li> <li>- Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO;</li> <li>- Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO;</li> <li>- Issuing of site instructions to the Contractor for corrective actions required;</li> <li>- Will issue all non-compliances to contractors; and</li> <li>- Ratify the Monthly Environmental Report.</li> </ul>
Environmental Control Officer (ECO)	<p><u>Role</u> The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO 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 DSS 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 EA and EMPr.</p> <p>The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &amp; Affected Parties' (RI&amp;AP's), as required. Issues of non-compliance raised by the ECO must be taken up 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</p>

Responsible Person(s)	Role and Responsibilities
	<p>Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required.</p> <p><u>Responsibilities</u></p> <p>The responsibilities of the ECO will include the following:</p> <ul style="list-style-type: none"> <li>- Be aware of the findings and conclusions of all EA related to the development;</li> <li>- Be familiar with the recommendations and mitigation measures of this EMPr;</li> <li>- Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them;</li> <li>- 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;</li> <li>- Educate the construction team about the management measures contained in the EMPr and environmental licenses;</li> <li>- Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective;</li> <li>- Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements;</li> <li>- 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 EMPr and/or environmental licenses;</li> <li>- Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns;</li> <li>- Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr;</li> <li>- Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO);</li> <li>- Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken;</li> <li>- Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken;</li> </ul>

Responsible Person(s)	Role and Responsibilities
	<ul style="list-style-type: none"> <li>- Assisting in the resolution of conflicts;</li> <li>- Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor;</li> <li>- 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;</li> <li>- Maintenance, update and review of the EMPr;</li> <li>- Communication of all modifications to the EMPr to the relevant stakeholders.</li> </ul>
<p>developer Environmental Officer (dEO)</p>	<p><u>Role</u></p> <p>The dEOs will report to the Project Manager and are responsible for implementation of the 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.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Be fully conversant with the EMPr;</li> <li>- Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures;</li> <li>- Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s)</li> <li>- Confine the development site to the demarcated area;</li> <li>- Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO);</li> <li>- Assist the contractors in addressing environmental challenges on site;</li> <li>- Assist in incident management:</li> <li>- Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared;</li> <li>- Assist the contractor in investigating environmental incidents and compile investigation reports;</li> <li>- Follow-up on pre-warnings, defects, non-conformance reports;</li> <li>- Measure and communicate environmental performance to the Contractor;</li> </ul>

Responsible Person(s)	Role and Responsibilities
	<ul style="list-style-type: none"> <li>- Conduct environmental awareness training on site together with ECO and cEO;</li> <li>- Ensure that the necessary legal permits and / or licenses are in place and up to date;</li> <li>- Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;</li> </ul>
Contractor	<p><u>Role</u></p> <p>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 EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this 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 impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- project delivery and quality control for the development services as per appointment;</li> <li>- 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;</li> <li>- 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;</li> <li>- attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones;</li> <li>- ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.</li> </ul>
contractor Environmental Officer (cEO)	<p><u>Role</u></p> <p>Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the 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</p>



Responsible Person(s)	Role and Responsibilities
	<p>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:</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Be on site throughout the duration of the project and be dedicated to the project;</li> <li>- Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site;</li> <li>- Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements;</li> <li>- Attend the Environmental Site Meeting;</li> <li>- Undertaking corrective actions where non-compliances are registered within the stipulated timeframes;</li> <li>- Report back formally on the completion of corrective actions;</li> <li>- Assist the ECO in maintaining all the site documentation;</li> <li>- Prepare the site inspection reports and corrective action reports for submission to the ECO;</li> <li>- Assist the ECO with the preparing of the monthly report; and</li> <li>- Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.</li> </ul>

## 4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all substation 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 EMPr file. As a minimum, all documentation detailed below will be stored in the 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 DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

### 4.2 Documentation to be available

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

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- 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 EMPr file and submit a copy of the completed checklist to the DSS 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 EIA Regulations.

#### 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 EMPr.

The method statement must 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 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 commencement date of the 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 monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor 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 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 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 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 EAR.

#### 4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the 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, impact management outcomes and impact management 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 DSS, 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 has 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, development 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;
12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. 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 **(section 4.11)** 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 **(section 4.10)** above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, 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 activity and implementation of the EMPr must be undertaken. The findings and outcomes included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECOs must prepare a monthly EAR. 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 EA, the ECOs shall submit the monthly reports to the CA. 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 rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

## **PART B: SECTION 1: Pre-approved generic EMPr template**

### **5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS**

This section provides a pre-approved generic EMPr template with aspects that are common to the development of substation infrastructure for the transmission and distribution of electricity. There is a list of aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity.

The template provided below is to be completed by providing the information under each heading for each environmental impact 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 contractor 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**

**Impact 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
<ul style="list-style-type: none"> <li>- All staff must receive environmental awareness training prior to commencement of the activities;</li> <li>- The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course;</li> <li>- Refresher environmental awareness training is available as and when required;</li> <li>- All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr;</li> <li>- The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum:               <ul style="list-style-type: none"> <li>a) Safety notifications; and</li> <li>b) No littering.</li> </ul> </li> <li>- Environmental awareness training must include as a minimum the following:               <ul style="list-style-type: none"> <li>a) Description of significant environmental impacts, actual or potential, related to their work activities;</li> </ul> </li> </ul>	<b>ECO and cEO</b>	<b>Environmental Induction training; Toolbox talks; other pertinent training aids</b>	<b>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</b>	<b>ECO</b>	<b>Monthly</b>	<b>Signed induction and toolbox talk, or training registers</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p>b) Mitigation measures to be implemented when carrying out specific activities;</p> <p>c) Emergency preparedness and response procedures;</p> <p>d) Emergency procedures;</p> <p>e) Procedures to be followed when working near or within sensitive areas;</p> <p>f) Wastewater management procedures;</p> <p>g) Water usage and conservation;</p> <p>h) Solid waste management procedures;</p> <p>i) Sanitation procedures;</p> <p>j) Fire prevention; and</p> <p>k) Disease prevention.</p> <p>– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;</p> <p>– Educate workers on the dangers of open and/or unattended fires;</p> <p>– A staff attendance register of all staff to have received environmental awareness training must be available.</p> <p>– Course material must be available and presented in appropriate languages that all staff can understand.</p>						

## 5.2 Site Establishment development

**Impact management outcome:** Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>– 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;</li> <li>– 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;</li> <li>– Sites must be located where possible on previously disturbed areas;</li> <li>– The camp must be fenced in accordance with <b>Section 5.5: Fencing and gate installation</b>; and</li> <li>– The use of existing accommodation for contractor staff, where possible, is encouraged.</li> </ul>	<b>Contractor</b>	<b>Method Statement compilation and communication of Method Statements to employees. Use of EIA and Specialist Studies to locate site camps</b>	<b>Prior to construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Signed Method Statements; signed proof of communication register; Liaison with ECO regarding site camp placement</b>

### 5.3 Access restricted areas

**Impact management outcome:** Access to restricted areas prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development;</li> <li>- Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and</li> <li>- Unauthorised access and development related activity inside access restricted areas is prohibited.</li> </ul>	<b>Contractor</b>	<b>Use of EIA/BA and Specialist Studies to locate sensitive areas and 'no-go' areas</b>	<b>Prior to construction in new areas</b>	<b>ECO</b>	<b>Monthly</b>	<b>Contractor compliance with sensitive areas and 'no-go' areas identified in EIA/BA and Specialist Studies</b>

#### 5.4 Access roads

**Impact 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
<ul style="list-style-type: none"> <li>- An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;</li> <li>- 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</li> <li>- All contractors must be made aware of all these access routes.</li> <li>- Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;</li> <li>- Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads;</li> <li>- In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with <b>section 4.9: photographic record</b>; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;</li> <li>- Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands</li> <li>- Access roads must only be developed on a pre-planned and approved roads.</li> </ul>	<b>Contractor</b>	<b>Implementation of mitigation measures</b>	<b>Ongoing.</b>	<b>ECO</b>	<b>Monthly</b>	<b>Signed access agreements and maintenance of access roads</b>

**5.5 Fencing and Gate installation**

**Impact management outcome:** 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
<ul style="list-style-type: none"> <li>- Use existing gates provided to gain access to all parts of the area authorised for development, where possible;</li> <li>- Existing and new gates to be recorded and documented in accordance with <b>section 4.9: photographic record</b>;</li> <li>- All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;</li> <li>- 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 DPM, a gate must be installed at the approval of the landowner;</li> <li>- 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;</li> <li>- Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate;</li> <li>- Original tension must be maintained in the fence wires;</li> <li>- All gates installed in electrified fencing must be re-electrified;</li> <li>- All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities;</li> </ul>	<b>Contractor</b>	<b>Implementation of the mitigation measures</b>	<b>Ongoing.</b>	<b>ECO</b>	<b>Monthly</b>	<b>Site observation; public complaints register</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable;</li> <li>- Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner.</li> <li>- All fencing must be developed of high quality material bearing the SABS mark;</li> <li>- Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;</li> <li>- On completion of the development phase all temporary fences are to be removed;</li> <li>- The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.</li> </ul>						

### 5.6 Water Supply Management

**Impact 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
<ul style="list-style-type: none"> <li>- All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;</li> <li>- The Contractor must ensure the following:               <ul style="list-style-type: none"> <li>a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river;</li> <li>b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and</li> <li>c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.</li> </ul> </li> <li>- Ensure water conservation is being practiced by:               <ul style="list-style-type: none"> <li>a. Minimising water use during cleaning of equipment;</li> <li>b. Undertaking regular audits of water systems; and</li> <li>c. Including a discussion on water usage and conservation during environmental awareness training.</li> <li>d. The use of grey water is encouraged.</li> </ul> </li> </ul>	<b>Contractor</b>	<b>Application to DWS where applicable. Implementation of mitigation measures</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Proof of water source used; submission of above proof to DWS</b>

### 5.7 Storm and waste water management

**Impact management outcome:** 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
<ul style="list-style-type: none"> <li>- 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;</li> <li>- 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;</li> <li>- Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO;</li> <li>- Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies <u>only once all suspended solids have been removed from the water by settling out these solids in settlement ponds</u>. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.</li> </ul>	<b>Contractor</b>	<b>Employ methods to prevent water pollution</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Inspection of areas where construction takes place near watercourses</b>

### 5.8 Solid and hazardous waste management

**Impact management outcome:** Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.

Impact Management Actions	Implementation	Monitoring
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	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All measures regarding waste management must be undertaken using an integrated waste management approach;</li> <li>- Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;</li> <li>- A suitably positioned and clearly demarcated waste collection site must be identified and provided;</li> <li>- The waste collection site must be maintained in a clean and orderly manner;</li> <li>- Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;</li> <li>- Staff must be trained in waste segregation;</li> <li>- Bins must be emptied regularly;</li> <li>- General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;</li> <li>- Hazardous waste must be disposed of at a registered waste disposal site;</li> <li>- Certificates of safe disposal for general, hazardous and recycled waste must be maintained.</li> </ul>	<b>Contractor</b>	<b>Following good waste management practices outlined in approved method statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Waste safe disposal slips; Service Level Agreements</b>

### 5.9 Protection of watercourses and estuaries

**Impact management outcome:** Pollution and contamination of the watercourse environment and or estuary erosion are prevented.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All watercourses 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;</li> <li>- In the event of a spill, prompt action must be taken to clear the polluted or affected areas;</li> <li>- Where possible, no development equipment must traverse any seasonal or permanent wetland</li> <li>- Development of permanent watercourse crossing must only be undertaken where no alternative access to tower position is available;</li> <li>- There must not be any impact on the long-term morphological dynamics of watercourses <del>or estuaries</del>;</li> <li>- Existing crossing points must be favored over the creation of new crossings (including temporary access)</li> <li>- When working in or near any watercourse <del>or estuary</del>, the following environmental controls and consideration must be taken: <ul style="list-style-type: none"> <li>a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse</li> <li>b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained;</li> </ul> </li> </ul>	<b>Contractor</b>	<b>Method statements; Stormwater Management Plan</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Method Statement compliance</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p>c) 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</p> <p>d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.</p>						

### 5.10 Vegetation clearing

**Impact 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
<p><b>General:</b></p> <ul style="list-style-type: none"> <li>- Indigenous vegetation which does not interfere with the development must be left undisturbed;</li> <li>- Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;</li> <li>- Trees felled due to construction must be documented and form part of the Environmental Audit Report;</li> <li>- Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;</li> <li>- 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;</li> <li>- A daily register must be kept of all relevant details of herbicide usage;</li> <li>- No herbicides must be used in estuaries;</li> <li>- All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to <b>Section 5.3: Access restricted areas</b>. Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.</li> </ul>	<b>Contractor</b>	<b>Specialist recommendations; Method statement; Search and Rescue Plan; Alien vegetation removal Plan (approved plans and strategies used by Eskom), site awareness</b>	<b>Pre-Construction and Construction and Operation</b>	<b>ECO</b>	<b>Pre-Construction and weekly during construction</b>	<b>Compliance to method statements and Search and Rescue Plan; Alien vegetation removal Plan. Approved plans and strategies used by Eskom.</b>

### 5.11 Protection of fauna

**Impact management outcome:** Disturbance to fauna is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;</li> <li>- The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme;</li> <li>- 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;</li> <li>- Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;</li> <li>- No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;</li> <li>- No deliberate or intentional killing of fauna is allowed;</li> <li>- In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and</li> <li>-</li> </ul>	<b>Contractor</b>	<b>Method statement and adherence to exclusion/no-go zones; site awareness</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Public complaints register; adherence to exclusion/n o-go zones and method statements</b>

### 5.12 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
<ul style="list-style-type: none"> <li>- Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in <b>Section 5.3: Access restricted areas</b>;</li> <li>- Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance;</li> <li>- 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 must be allowed to remove/collect such material before development recommences.</li> <li>- If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a</li> </ul>	<b>Contractor</b>	<b>Method Statement; Heritage management plan</b>	<b>Pre-construction and construction</b>	<b>ECO</b>	<b>Weekly and daily for zones highlighted by Heritage Specialist where potsherds were found</b>	<b>Monitoring of construction areas, adherence to management plan if change finds found.</b>

Phase 2 rescue operation may be required subject to permits issued by SAHRA;						
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### 5.13 Safety of the public

**Impact management outcome:** All precautions are taken 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
<ul style="list-style-type: none"> <li>- 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.;</li> <li>- All unattended open excavations must be adequately fenced or demarcated;</li> <li>- Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;</li> <li>- Ensure structures vulnerable to high winds are secured;</li> <li>- Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.</li> </ul>	<b>Contractor</b>	<b>Landowner agreements; Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Site works barricaded, safe working site maintained, public complaints register.</b>



### 5.14 Sanitation

**Impact 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
<ul style="list-style-type: none"> <li>- Mobile chemical toilets are installed onsite if no other ablution facilities are available;</li> <li>- 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;</li> <li>- Where mobile chemical toilets are required, the following must be ensured:               <ul style="list-style-type: none"> <li>a) Toilets are located no closer than 100 m to any watercourse or water body;</li> <li>b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause;</li> <li>c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr;</li> <li>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;</li> </ul> </li> </ul>	<b>Contractor</b>	<b>Service level agreement with Service provider; Method statement; site awareness</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Service level agreement with service provider, proof of safe disposal of waste</b>

<ul style="list-style-type: none"> <li>e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours;</li> <li>f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards;</li> <li>- A copy of the waste disposal certificates must be maintained.</li> </ul>						
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**5.15 Prevention of disease**

**Impact 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
<ul style="list-style-type: none"> <li>- Undertake environmentally-friendly pest control in the camp area;</li> <li>- Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS;</li> <li>- The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area;</li> <li>- Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;</li> <li>- Free condoms must be made available to all staff on site at central points;</li> <li>- Medical support must be made available;</li> <li>- Provide access to Voluntary HIV Testing and Counselling Services.</li> </ul>	<b>Contractor</b>	<b>Method statement, awareness training</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Method statement, proof of awareness training</b>

**5.16 Emergency procedures**

**Impact 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
<ul style="list-style-type: none"> <li>- Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project;</li> <li>- The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;</li> <li>- All staff must be made aware of emergency procedures as part of environmental awareness training;</li> <li>- The relevant local authority must be made aware of a fire as soon as it starts;</li> <li>- In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see <b>Hazardous Substances section 5.17</b>).</li> </ul>	<b>Contractor</b>	<b>Environmental Emergency Response Action Plan</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Adherence /compliance to ERAP</b>

**5.17 Hazardous substances**

**Impact 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
<ul style="list-style-type: none"> <li>- The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;</li> <li>- All hazardous substances must be stored in suitable containers as defined in the Method Statement;</li> <li>- Containers must be clearly marked to indicate contents, quantities and safety requirements;</li> <li>- All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;</li> <li>- Bunded areas to be suitably lined with a SABS approved liner;</li> <li>- An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;</li> <li>- All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);</li> <li>- All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;</li> <li>- Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate</li> </ul>	<b>Contractor</b>	<b>Method Statement, OHS requirements; adequate and responsible use and storage of Hazardous Substances, Hazardous Substances storage register</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Hazardous Substance Storage Register, MSDS, Method Statement</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p>safety measures. Appropriate personal protective equipment must be made available;</p> <ul style="list-style-type: none"> <li>- The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;</li> <li>- 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 110% of the total capacity of all the storage tanks/ bowsers;</li> <li>- The floor of the bund must be sloped, draining to an oil separator;</li> <li>- 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;</li> <li>- All empty externally dirty drums must be stored on a drip tray or within a bunded area;</li> <li>- No unauthorised access into the hazardous substances storage areas must be permitted;</li> <li>- No smoking must be allowed within the vicinity of the hazardous storage areas;</li> <li>- Adequate fire-fighting equipment must be made available at all hazardous storage areas;</li> <li>- 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;</li> </ul>						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- 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;</li> <li>- The responsible operator must have the required training to make use of the spill kit in emergency situations;</li> <li>- An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;</li> <li>- 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 <b>Section 5.7</b> for procedures concerning <b>storm and waste water management</b> and <b>5.8</b> for <b>solid and hazardous waste management</b>.</li> </ul>						

**5.18 Workshop, equipment maintenance and storage**

**Impact management outcome:** Soil, surface water and groundwater contamination is minimised.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;</li> <li>- 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 fire as soon as it starts;</li> <li>- Leaking equipment must be repaired immediately or be removed from site to facilitate repair;</li> <li>- Workshop areas must be monitored for oil and fuel spills;</li> <li>- Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;</li> <li>- 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;</li> <li>- Water drainage from the workshop must be contained and managed in accordance Section <b>5.7: Storm and waste water management</b>.</li> </ul>	<b>Contractor</b>	<b>Method Statement, OHS requirements; Hazardous Substances storage register, vehicle daily checklist, vehicle service register</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Method Statement, Hazardous Substances storage register, vehicle daily checklist, vehicle service register</b>

**5.19 Batching plants**

**Impact management outcome:** 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
<ul style="list-style-type: none"> <li>- Concrete mixing must be carried out on an impermeable surface;</li> <li>- Batching plants areas must be fitted with a containment facility for the collection of cement laden water.</li> <li>- Dirty water from the batching plant must be contained to prevent soil and groundwater contamination</li> <li>- Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;</li> <li>- A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;</li> <li>- Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility;</li> <li>- Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;</li> <li>- Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to <b>Section 5.20: Dust emissions</b>)</li> <li>- 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;</li> </ul>	<b>Contractor</b>	<b>Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Compliance to mitigation and method statement</b>



– Temporary fencing must be erected around batching plants in accordance with Section <b>5.5: Fencing and gate installation</b> .						
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**5.20 Dust emissions**

**Impact 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
<ul style="list-style-type: none"> <li>– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;</li> <li>– 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;</li> <li>– Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;</li> <li>– During high wind conditions, the ECO must 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;</li> <li>– Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;</li> </ul>	<b>Contractor</b>	<b>Method Statement, Vehicle Speed limit, dust suppression</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Site observations, dust suppression register</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO;</li> <li>- Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas;</li> <li>- Straw stabilisation must be applied at a rate of one bale/10 m<sup>2</sup> and harrowed into the top 100 mm of top material, for all completed earthworks;</li> <li>- For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.</li> </ul>						

### 5.21 Blasting

**Impact management outcome:** Impact to the environment is minimised through a safe blasting practice.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Any blasting activity must be conducted by a suitably licensed blasting contractor; and</li> </ul>	<b>Contractor</b>	<b>Relevant legislation and regulation</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Public complaints register; proof of</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.</li> </ul>						<b>registration of blasting contractor.</b>

## 5.22 Noise

**Impact Management outcome:** Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only;</li> <li>All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;</li> <li>Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;</li> <li>Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered</li> </ul>	<b>Contractor</b>	<b>Restriction of site hours to working hours Monday to Friday</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Public Complaints Register</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.						

### 5.23 Fire prevention

**Impact 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
<ul style="list-style-type: none"> <li>- Designate smoking areas where the fire hazard could be regarded as insignificant;</li> <li>- Firefighting equipment must be available on all vehicles located on site;</li> <li>- The local Fire Protection Agency (FPA) must be informed of construction activities;</li> <li>- Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;</li> <li>- Two-way swap of contact details between ECO and FPA.</li> </ul>	<b>Contractor</b>	<b>Emergency Response Action Plan; Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Public complaints register; compliance to ERAP</b>

## 5.24 Stockpiling and stockpile areas

**Impact management outcome:** 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
<ul style="list-style-type: none"> <li>- 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 and water bodies;</li> <li>- All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;</li> <li>- Topsoil stockpiles must not exceed 2 m in height;</li> <li>- During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);</li> <li>- Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.</li> </ul>	<b>Contractor</b>	<b>Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Method Statement and site observations</b>

### 5.25 Civil works

**Impact management outcome:** Impact to the environment minimised during civil works to create the substation terrace.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone;</li> <li>- Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards;</li> <li>- Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;</li> <li>- These areas can be 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;</li> <li>- Rehabilitation of the disturbed areas must be managed in accordance with <b>Section 5.35: Landscaping and rehabilitation</b>;</li> <li>- All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and</li> <li>- Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes.</li> </ul>	<b>Contractor</b>	<b>Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Site observation</b>

**5.26 Excavation of foundation, cable trenching and drainage systems**

**Impact management outcome:** No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a licensed landfill site, if not used for backfilling purposes;</li> <li>- Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;</li> <li>- Management of equipment for excavation purposes must be undertaken in accordance with <b>Section 5.18: Workshop, equipment maintenance and storage</b>; and</li> <li>- Hazardous substances spills from equipment must be managed in accordance with <b>Section 5.17: Hazardous substances</b>.</li> </ul>	<b>Contractor</b>	<b>Method Statement and Engineering Drawings</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Adherence to method statements</b>

**5.27 Installation of foundations, cable trenching and drainage systems**

**Impact management outcome:** No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>– Batching of cement to be undertaken in accordance with <b>Section 5.19: Batching plants</b>; and</li> <li>– Residual solid waste must be disposed of in accordance with <b>Section 5.8: Solid waste and hazardous management</b>.</li> </ul>	<b>Contractor</b>	<b>Method Statement</b>	<b>Construction</b>	<b>Contractor and ECO</b>	<b>Weekly</b>	<b>Method Statement and site observations</b>

**5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)**

**Impact management outcome:** No environmental degradation occurs as a result of installation of equipment.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>– Management of dust must be conducted in accordance with <b>Section 5.20: Dust emissions</b>;</li> <li>– Management of equipment used for installation must be conducted in accordance with <b>Section 5.18: Workshop, equipment maintenance and storage</b>;</li> <li>– Management hazardous substances and any associated spills must be conducted in accordance with <b>Section 5.17: Hazardous substances</b>; and</li> </ul>	<b>Contractor</b>	<b>Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Method Statement and site observation</b>



Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>Residual solid waste must be recycled or disposed of in accordance with <b>Section 5.8: Solid waste and hazardous management.</b></li> </ul>						

### 5.29 Steelwork Assembly and Erection

**Impact management outcome:** No environmental degradation occurs as a result of steelwork assembly and erection.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts</li> <li>Emergency repairs due to breakages of equipment must be managed in accordance with <b>Section 5.18: Workshop, equipment maintenance and storage</b> and <b>Section 5.16: Emergency procedures.</b></li> </ul>	<b>Contractor</b>	<b>Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Site Observations</b>

**5.30 Cabling and Stringing**

**Impact 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
<ul style="list-style-type: none"> <li>- Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with <b>Section 6.8: Solid waste and hazardous Management;</b></li> <li>- Management of equipment used for installation shall be conducted in accordance with <b>Section 5.18: Workshop, equipment maintenance and storage;</b></li> <li>- Management of hazardous substances and any associated spills shall be conducted in accordance with <b>Section 5.17: Hazardous substances.</b></li> </ul>	<b>Contractor</b>	<b>Method Statement, adherence to exclusion zones</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Site observations</b>

**5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)**

**Impact management outcome:** No environmental degradation occurs as a result of Testing and Commissioning.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>Residual solid waste must be recycled or disposed of in accordance with <b>Section 5.8: Solid waste and hazardous management.</b></li> </ul>	<b>Contractor</b>	<b>Method Statement</b>	<b>Construction</b>	<b>ECO</b>	<b>Weekly</b>	<b>Site observation</b>

**5.32 Socio-economic**

**Impact management outcome:** enhanced socio-economic development.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>Develop and implement communication strategies to facilitate public participation;</li> <li>Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;</li> <li>Sustain continuous communication and liaison with neighboring owners and residents</li> </ul>	<b>Contractor</b>	<b>Landowner Agreements; Issues and Complaints Register</b>	<b>Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Landowner Agreement; Issues and Complaints Register</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>– Create work and training opportunities for local stakeholders; and</li> <li>– Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.</li> </ul>						

### 5.33 Temporary closure of site

**Impact 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
<ul style="list-style-type: none"> <li>– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in <b>sections 5.17: Hazardous substances and 5.18: Workshop, equipment maintenance and storage;</b></li> <li>– Hazardous storage areas must be well ventilated;</li> <li>– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;</li> <li>– Emergency and contact details displayed must be displayed;</li> <li>– Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;</li> </ul>	<b>Contractor</b>	<b>Method statement</b>	<b>Construction – when applicable</b>	<b>ECO</b>	<b>Monthly – when applicable</b>	<b>Method statement</b>  <b>ECO reports</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;</li> <li>- Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;</li> <li>- Structures vulnerable to high winds must be secured;</li> <li>- Wind and dust mitigation must be implemented;</li> <li>- Cement and materials stores must have been secured;</li> <li>- Toilets must have been emptied and secured;</li> <li>- Refuse bins must have been emptied and secured;</li> <li>- Drip trays must have been emptied and secured.</li> </ul>						

#### 5.34 Dismantling of old equipment

**Impact management outcome:** Impact to the environment to be minimised during the dismantling, storage and disposal of old equipment commissioning.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment;</li> <li>- Oil containing equipment must be stored to prevent leaking or be stored on drip trays;</li> </ul>	<b>Contractor</b>	<b>Method statement</b>	<b>Construction and decommissioning</b>	<b>ECO</b>	<b>Monthly – when applicable</b>	<b>Site observation</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All scrap steel must be stacked neatly and any disused and broken insulators must be stored in containers;</li> <li>- Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment;</li> <li>- The Contractor must also be equipped to contain and clean up any pollution causing spills; and</li> <li>- Disposal of unusable material must be at a licensed waste disposal site.</li> </ul>						

### 5.35 Landscaping and rehabilitation

**Impact management outcome:** Areas disturbed during the development phase are returned to a state that approximates the original condition.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed of to a registered waste site;</li> </ul>	<b>Contractor</b>	<b>Method Statements; erosion protection; alien eradication plan</b>	<b>Concurrent with Construction</b>	<b>ECO</b>	<b>Monthly</b>	<b>Adequately revegetated work areas; no erosion or</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983</li> <li>- All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;</li> <li>- Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition;</li> <li>- Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners;</li> <li>- Rehabilitation of access roads outside of farmland;</li> <li>- Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;</li> <li>- Stockpiled topsoil must be used for rehabilitation (refer to <b>Section 5.24: Stockpiling and stockpiled areas</b>);</li> <li>- Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;</li> <li>- Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;</li> <li>- Subsoil must be ripped before topsoil is placed;</li> <li>- The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;</li> </ul>						<b>invasive plant species</b>

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;</li> <li>- 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;</li> <li>- Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil.</li> <li>- Where required, re-vegetation including hydro-seeding 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: <ul style="list-style-type: none"> <li>a) Annual and perennial plants are chosen;</li> <li>b) Pioneer species are included;</li> <li>c) Species chosen must be indigenous to the area with the seeds used coming from the area;</li> <li>d) Root systems must have a binding effect on the soil;</li> <li>e) The final product must not cause an ecological imbalance in the area</li> </ul> </li> </ul>						

## 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 the requirements of Regulation 26(h) of the EIA Regulations.



## PART B: SECTION 2

### 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 Company: **Eskom Holdings SOC Ltd**

Name of Applicant: **Tobile Bokwe**

Tel No: **011 800 2303**

Fax No: **N/A**

Physical Address: **Megawatt Park, Maxwell Drive, Sunninghill, Johannesburg**

##### 7.1.2 Details and expertise of the EAP:

Name of Company: **SiVEST SA (Pty) Ltd**

Name of EAP: **Natalie Pullen**

Tel No: **+27 11 798 0633**

Fax No: **N/A**

E-mail address: [nataliep@sivest.com](mailto:nataliep@sivest.com)

Expertise of the EAP (Curriculum Vitae included): **MSc (Environmental Biotechnology), Reg. EAP (EAPASA) (#2018/132). CV included in the BA Application**

##### 7.1.3 Project name:

Proposed Construction of New Iphiva 400/132 kV Substation on Site 6.1, within the jurisdiction of Nongoma Local Municipality in Zululand District Municipality, KwaZulu-Natal Province.

##### 7.1.4 Description of the project:

The proposed 400/132 kV substation will have a 600m x 600m footprint, within a 1m x 1km study area covering approximately 36 ha. The substation is composed of standard electrical equipment such as transformers, reactors, busbars and isolators. The substation will have a microwave radio communication mast that could be up to 80m high. Oil and fuel storage facilities will be bunded and there will be an oil bund to contain any transformer oil spills.

The substation needs to be close to the load centre and the existing 132kV powerline network. The site has to be levelled before construction can commence, and a flat site is therefore preferable. Good existing road access and a low density of structures is an advantage and will reduce environmental impacts. The current use of the site, which is commercial farming, will no longer be possible.

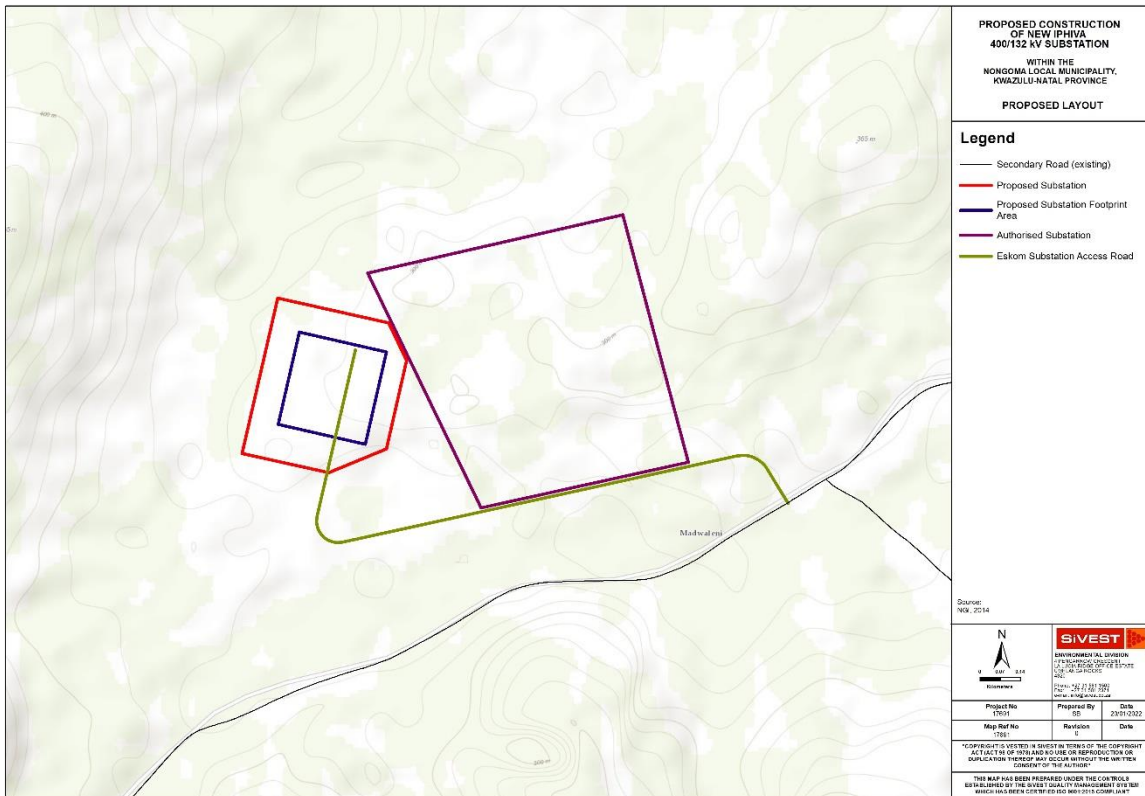
The substation needs to be lit at night for safety and security reasons. The security lighting will be around the substation fence, the luminaire height is 4m, and will be operated with a trigger from the non-lethal fence.

One 400kV powerline and seven 132kV powerlines will enter/leave the substation in various directions, depending on the final location.

A new main access road will be established to provide access to the Iphiva Substation. The proposed road will be as follows:

- The main access road (gravel) will be approximately 6 - 7m wide and approximately 2.1km in length.

It should be noted that the proposed project site will be accessed via a new proposed road from the P234 Gravel Road which branches off the N2 National Road. The proposed project location is approximately 9km north-west of the N2 National Road.



**Figure 1: Layout**

The competent authority for this EIA process is the national Department of Forestry, Fisheries and the Environment (DFFE).

**7.1.5 Project location:**

Below are the details of the project site area:

Province/s	KwaZulu-Natal
District Municipality/ies	District Municipality/ies
Local Municipality/ies	Local Municipality/ies
Ward number/s	Ward number/s
Nearest town/s	Nearest town/s
Farm name/s and number/s	Farm name/s and number/s
Portion number/s	Portion number/s

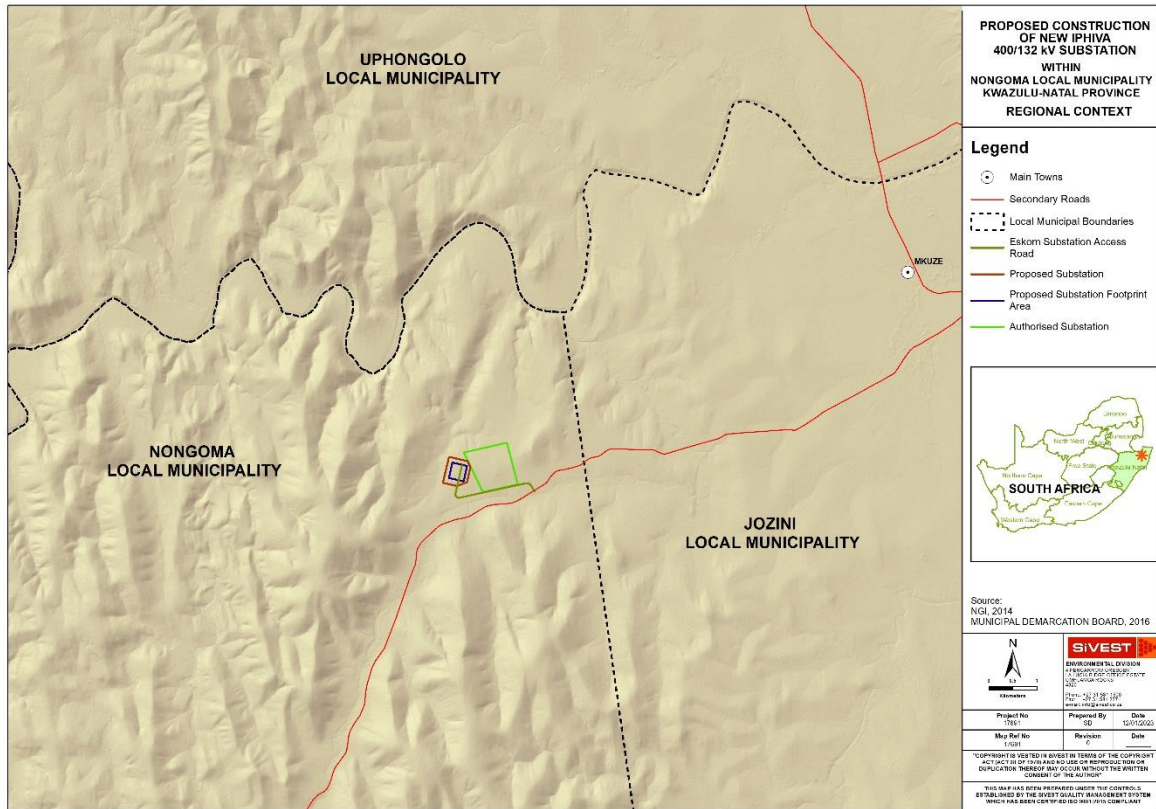


Figure 2: Regional Context

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: <https://screening.environment.gov.za/screeningtool>. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

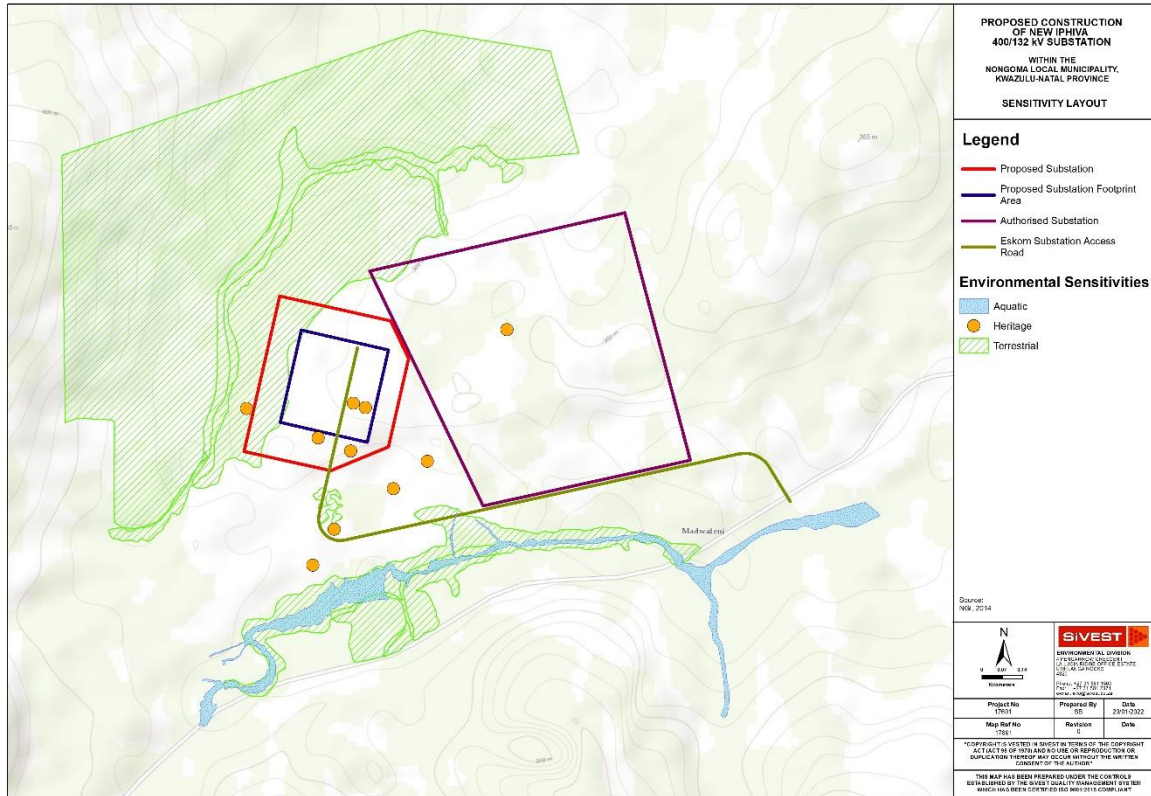


Figure 3: Environmental Sensitivity Overlay

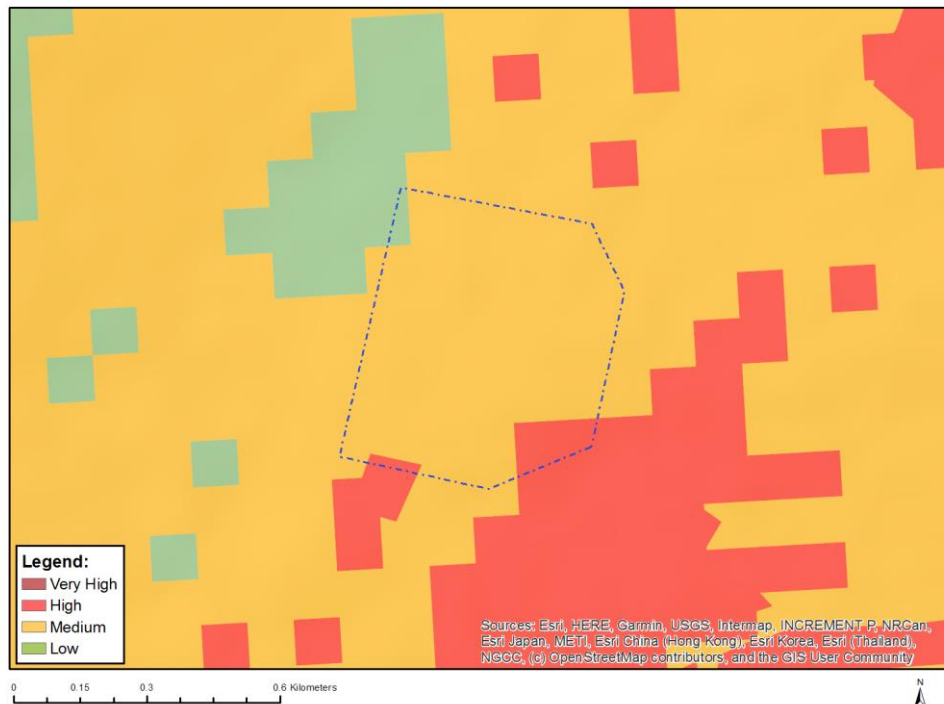
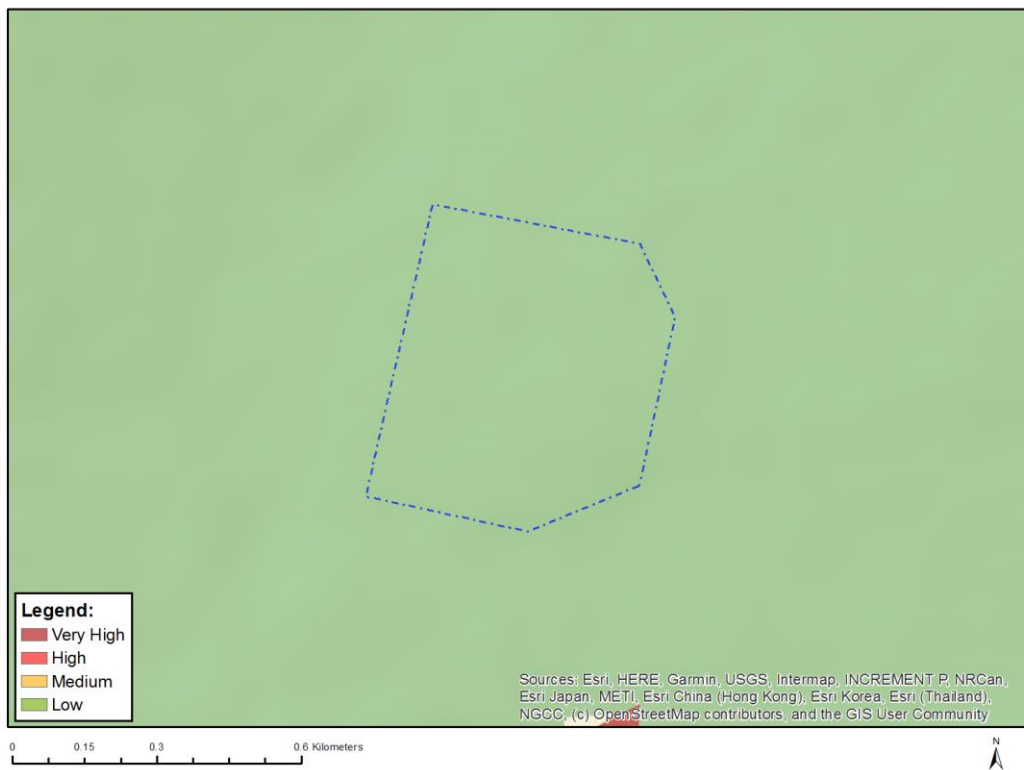


Figure 4: Map showing substation location in relation to the Agriculture Theme Sensitivity (DFFE Screening Tool)

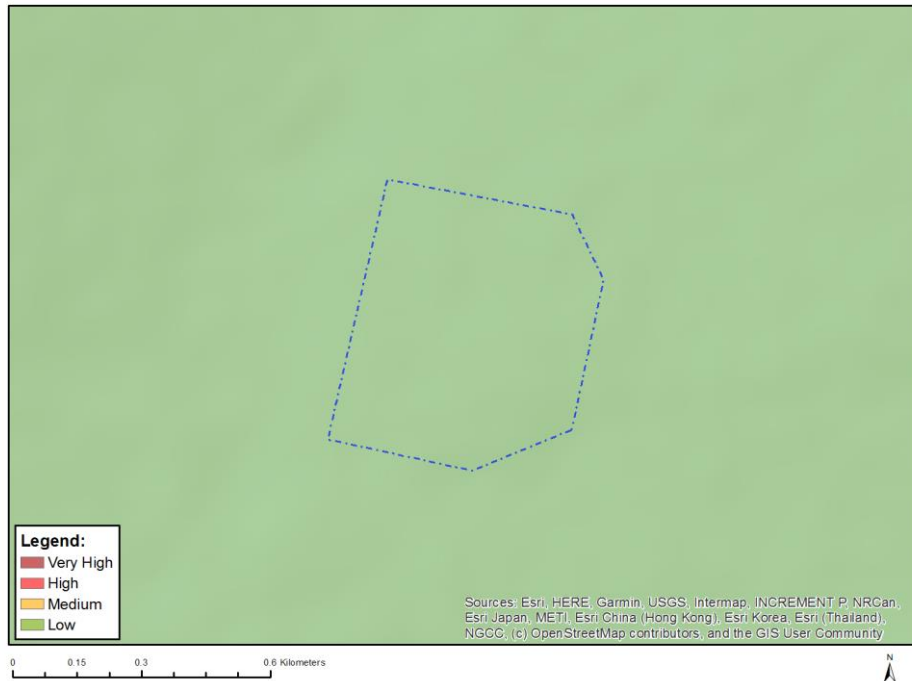


**Figure 5: Map showing substation location in relation to the Animal Species Theme Sensitivity (DFFE Screening Tool)**

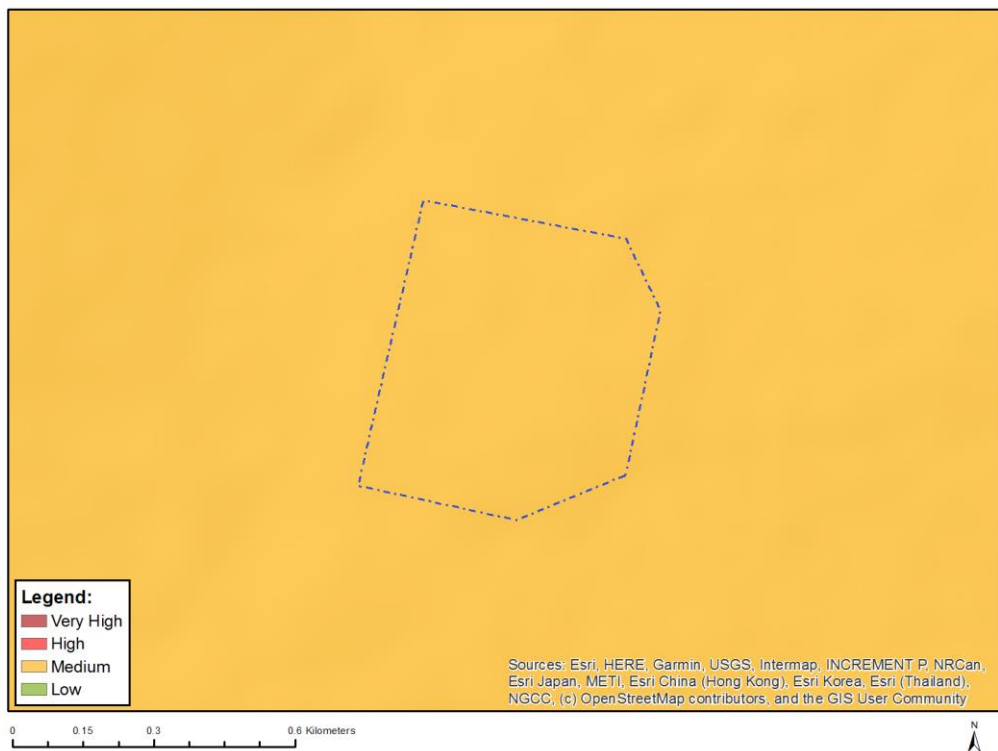


**Figure 6: Map showing substation location in relation to the Aquatic Biodiversity Theme Sensitivity (DFFE Screening Tool)**





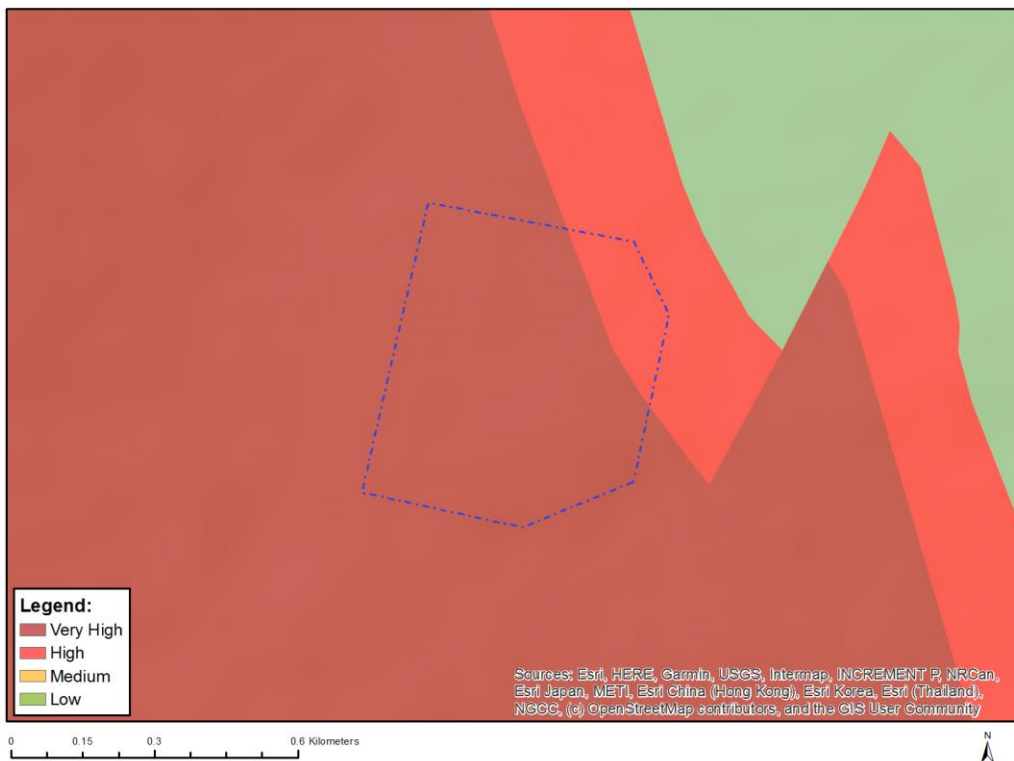
**Figure 7: Map showing substation location in relation to the Archaeological and Cultural Heritage Theme Sensitivity (DFFE Screening Tool)**



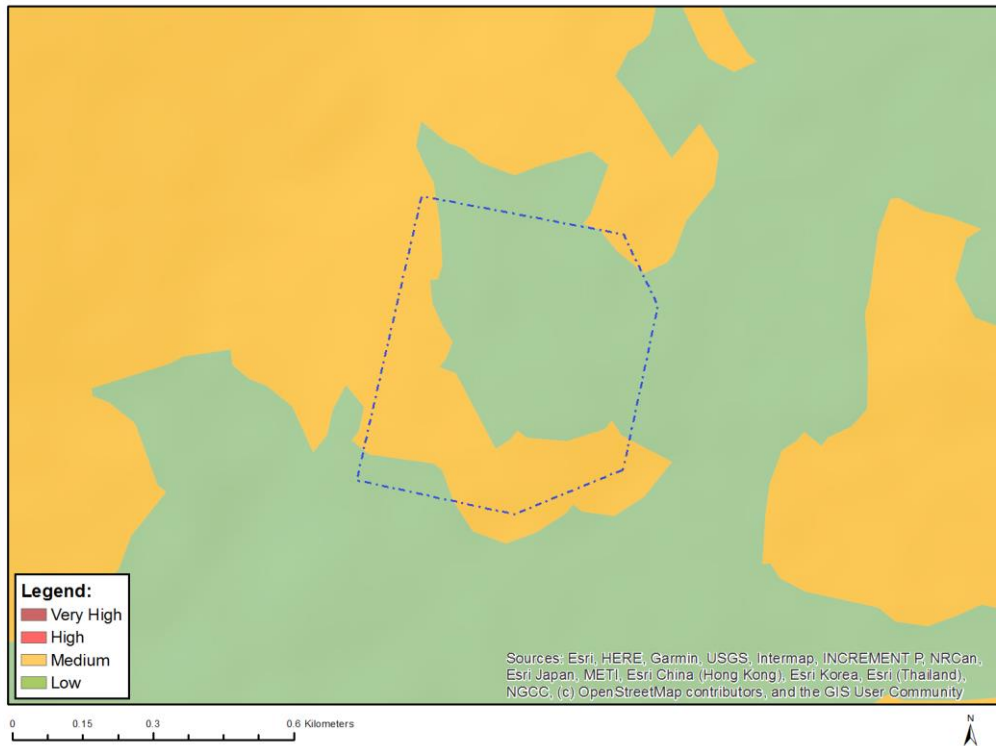
**Figure 8: Map showing substation location in relation to the Civil Aviation Theme Sensitivity (DFFE Screening Tool)**



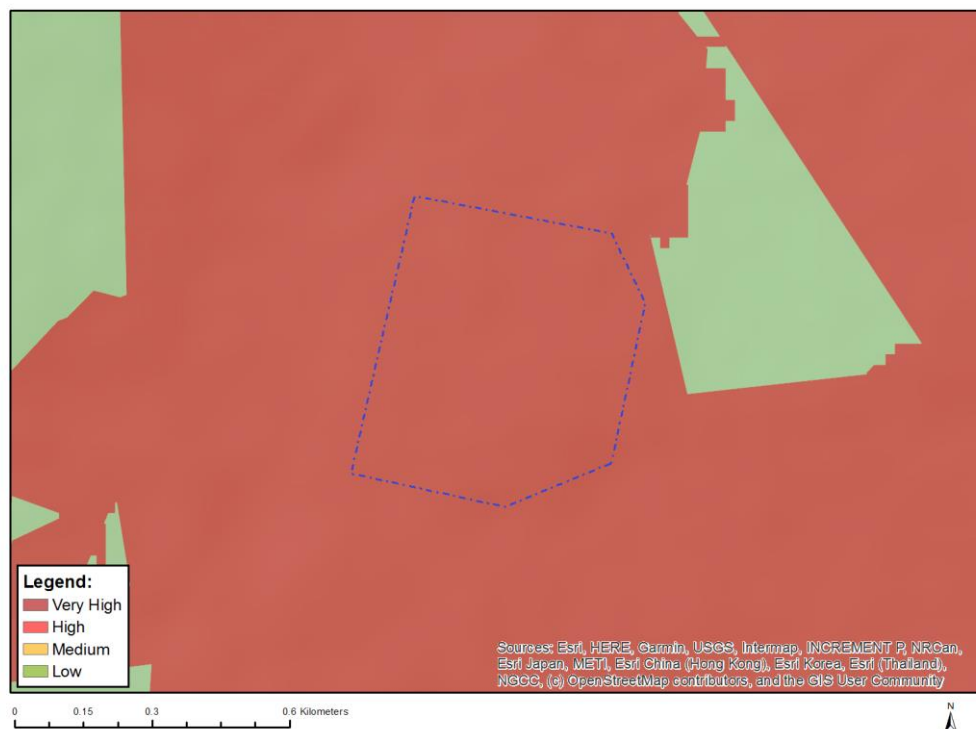
**Figure 9: Map showing substation location in relation to the Defence Theme Sensitivity (DFFE Screening Tool)**



**Figure 10: Map showing substation location in relation to the Paleontology Theme Sensitivity (DFFE Screening Tool)**



**Figure 11: Map showing substation location in relation to the Plant Species Theme Sensitivity (DFFE Screening Tool)**



**Figure 12: Map showing substation location in relation to the Terrestrial Biodiversity Theme Sensitivity (DFFE Screening Tool)**



### 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:



18 June 2023

### 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.

## PART C

### 8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and impact management actions must be included in this section. These specific management controls must be referenced spatially and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. 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. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

**The mitigation measures provide by the Specialists through the Impact Assessment process are included below.**

**Avifauna:**

**Pre-Construction Phase Specific Mitigations**

None

**Construction Phase Specific Mitigations**

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
<ul style="list-style-type: none"> <li>• Loss of vegetation and habitat for avifaunal species; and</li> <li>• The noise and movement associated with the construction activities at the development footprint will be a source of disturbance which would lead to the displacement of avifauna from the area;</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct a pre-construction inspection to identify Red List species that may be breeding within the project footprint to ensure that the impacts to breeding species (if any) are adequately managed.</li> <li>• A site-specific EMPr must be implemented, which gives appropriate and detailed description of how construction activities must be conducted. All contractors are to adhere to the EMPr and should apply good environmental practice during construction. The EMPr must specifically include the following:               <ul style="list-style-type: none"> <li>○ No off-road driving;</li> <li>○ Maximum use of existing roads, where possible;</li> <li>○ Measures to control noise and dust according to latest best practice;</li> <li>○ Restricted access to the rest of the property.</li> <li>○ Strict application of all recommendations in the botanical specialist report pertaining to the limitation of the footprint, including limiting vegetation clearance to an absolute minimum.</li> </ul> </li> <li>• Any bird nests that are found during the construction phase must be reported to the Environmental Officer (EO).</li> <li>• The boundaries of the development footprint areas are to be clearly demarcated and it must be ensured that all activities remain within the demarcated footprint area.</li> <li>• Mark power line with Eskom approved Bird Flight Diverters (BFDs) and fit them on the entire earth wire.</li> </ul>	<ul style="list-style-type: none"> <li>• Holder of the EA/ cEO and ECO</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced.</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent unnecessary displacement of avifauna by ensuring that contractors are aware of the requirements of the Construction.</li> </ul>	<p>Construction</p>

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
	<ul style="list-style-type: none"> <li>Monitoring of the powerlines to detect any faults in the deterrent mechanisms as well as monitoring potential mortality rates of birds.</li> </ul>				

### **Operation Phase Specific Mitigations**

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
<ul style="list-style-type: none"> <li>Total or partial displacement of avifauna due to habitat transformation associated with the vegetation clearance in the onsite substations.</li> <li>Mortality of avifauna due to collisions with the overhead power line; and</li> <li>Mortality of avifauna due to electrocutions in the substations.</li> </ul>	<ul style="list-style-type: none"> <li>Develop a Habitat Restoration Plan (HRP) and ensure that it is approved.</li> <li>Monitor rehabilitation via site audits and site inspections to ensure compliance. Record and report any non-compliance.</li> <li>Monitor the collision mortality on the overhead power line. Enlist an avifaunal specialist to conduct quarterly inspections of the overhead power line for a period of two years.</li> <li>Monitor the electrocution mortality in the substation and apply mitigation if electrocution happens regularly.</li> <li>Contractors and working staff should stay within the development area and movement outside these areas especially into sensitive avian microhabitats must be restricted.</li> <li>All relevant perching surfaces should be fitted with bird guards and perch guards as deterrents.</li> <li>Install artificial bird space perches and nesting platforms at a safe distance away from the energized structures</li> </ul>	<ul style="list-style-type: none"> <li>Holder of the EA/ cEO and ECO</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced</li> </ul>	<ul style="list-style-type: none"> <li>Prevent unnecessary displacement of avifauna by ensuring that the rehabilitation of transformed areas is implemented where possible by an appropriately qualified rehabilitation specialist.</li> </ul>	Operational

### **Decommissioning/Rehabilitation Phase Specific Mitigations**

None

**Biodiversity**

**Pre-Construction Phase Specific Mitigations**

None

**Construction Phase Specific Mitigations**

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
<ul style="list-style-type: none"> <li>• Loss of vegetation and habitat for fauna species;</li> <li>• Loss of floral SCC;</li> <li>• Fragmentation to the habitat;</li> <li>• Alien invasive proliferation.</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct a pre-construction inspection to identify floral SCC (protected species). Species like <i>Ammocharis coranica</i> and <i>Crinum macowanii</i> species within the development footprint must be searched and rescued. They can be replanted and re-established post construction. Permits from the relative governing authorities are required before construction commences to cut, destroy or remove all the protected floral species within the Project area. An additional site investigation is required to search and demarcate the protected flora within the proposed development. Consultation with the authorities are required for the permit application process and a suitable action for the removal may be required for the authorities.</li> <li>• Large trees should be avoided as far as practicable during clearing activities.</li> <li>• A site-specific EMPr must be implemented, which gives appropriate and detailed description of how construction activities must be conducted. All contractors are to adhere to the EMPr and should apply good environmental practice during construction. The EMPr must specifically include the following:               <ul style="list-style-type: none"> <li>○ No off-road driving;</li> <li>○ Maximum use of existing roads, where possible;</li> <li>○ Measures to control noise and dust according to latest best practice;</li> <li>○ Restricted access to the rest of the property; and</li> <li>○ Strict application of all recommendations in the botanical specialist report pertaining to the limitation of the footprint,</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Holder of the EA/ cEO and ECO</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts avoided or managed as per specialist recommendations.</li> </ul>	<p>Construction</p>

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
	<p>including limiting vegetation clearance to an absolute minimum.</p> <ul style="list-style-type: none"> <li>• The boundaries of the development footprint areas are to be clearly demarcated and it must be ensured that all activities remain within the demarcated footprint area.</li> <li>• The Riparian and Wetland habitats should be suitably buffered from any construction activities.</li> <li>• Conduct regular AIP inspections following significant rainfall, and depending on results, implement appropriate management actions.</li> <li>• Erosion prevention is key thus runoff must be controlled and managed by use of proper stormwater management measures.</li> </ul>				

**Operation Phase Specific Mitigations:**

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES/FR EQUENCY
<ul style="list-style-type: none"> <li>• Accidental faunal casualties</li> <li>• Continued habitat fragmentation and barrier to movement</li> <li>• Alien invasive proliferation.</li> </ul>	<ul style="list-style-type: none"> <li>• All vehicle and personnel movement should be restricted to the construction areas. Preventing staff from moving to unnecessary areas surrounding project footprint would ensure that animals have habitat to stay in and move through.</li> <li>• Enforce health and safety protocols, such as speed limits, to minimise faunal casualties. Prohibit vehicles from driving at night, unless absolutely necessary, ensure speed limits are adhered to and vehicles are equipped with adequate lighting;</li> <li>• SCC outside the Project Area should not be removed and areas known to have SCC should be avoided. SCC should be monitored.</li> <li>• Deploy anti-poaching units to prevent poaching of fauna and flora in the project area if necessary.</li> <li>• Prohibit heavy vehicles or machinery from driving in undisturbed vegetation units. All vehicles must remain on demarcated roads within the Project footprint.</li> </ul>	<ul style="list-style-type: none"> <li>• Holder of the EA/ cEO and ECO/Contractor</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts avoided or managed as per specialist recommendations.</li> </ul>	Operation

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES/FR EQUENCY
	<ul style="list-style-type: none"> <li>All AIPs on site should be removed timeously and follow up monitoring and removal plan should be initiated once construction is completed. AIPs should be removed as seedlings before they reach seed-bearing age. AIPs can establish on a site after removal for up to 2-7 years, therefore appropriate monitoring must take place.</li> </ul>				

## Biodiversity

### Decommissioning/ Rehabilitation Phase Specific Mitigations:

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES/FR EQUENCY
<ul style="list-style-type: none"> <li>Fragmentation to the habitat.</li> <li>Change in vegetation community and the faunal and floral diversity of the area.</li> <li>Alien invasive proliferation.</li> </ul>	<ul style="list-style-type: none"> <li>Minimise any disturbance of areas undergoing rehabilitation.</li> <li>Use plant species that are indigenous to the vegetation type and that were found there before the construction process. This will increase the likelihood of the area's functional integrity to return to a state similar to that of before the Construction Phase.</li> <li>Re-establish faunal habitats that have been removed. For example, bird and bat boxes can be installed. Raptor posts can be installed to replace tall trees that have been removed.</li> <li>All AIPs on site should be removed timeously and follow up monitoring and removal plan should be initiated once construction is completed. AIPs should be removed as seedlings before they reach seed-bearing age. AIPs can establish on a site after removal for up to 2-7 years, therefore appropriate monitoring must take place.</li> </ul>	<ul style="list-style-type: none"> <li>Holder of the EA/ cEO and ECO</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts avoided or managed as per specialist recommendations.</li> </ul>	Operation

**Archaeological & Palaeontology:**

**Construction Phase Specific Mitigations:**

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES/FR EQUENCY
<ul style="list-style-type: none"> <li>Direct impact to PEC7505-002, PEC7505-008 and PEC7505-009</li> </ul>	<ul style="list-style-type: none"> <li>The project related mitigation must aim to amend the project design to avoid the potential negative impact to heritage resources and implement a 30 m no-go buffer zone around these heritage resources. Digby Wells recommends a heritage practitioner or Environmental Control Officer (ECO) (or equivalent responsible person) be present at the time of vegetation clearing and excavation of land and installation of infrastructure occurs within a 50 m buffer of the identified heritage resources to ensure no damage occurs to these heritage resources.</li> <li>Additionally, these heritage resources must be incorporated into an HSMP for implementation. Should Eskom have an existing HSMP, the affected heritage resources must be incorporated into the existing HSMP and be subject to the same requirements encapsulated therein.</li> <li>Where Project design (or redesign) and in situ conservation is not feasible based on the Project design and layout requirements, heritage related mitigations must be employed. Heritage related mitigations will need to be undertaken in accordance with the requirements of the KZNARIA, NHRA and the associated regulations will be required. Such mitigations may include a Burial Grounds and Graves Consultation to assess whether a GRP is feasible. A GRP must be undertaken in accordance with: <ul style="list-style-type: none"> <li>Section 39 of the KZNARIA and the KZNARIA Regulations (2018); and</li> <li>Section 36 of the NHRA and Chapter IX and XI of the NHRA Regulations.</li> </ul> </li> <li>Digby Wells assumes that Project design amendment to include a buffer is the preferred alternative, and the post-mitigation impact assessment considers this mitigation strategy.</li> </ul>	<ul style="list-style-type: none"> <li>Holder of the EA/ cEO and ECO</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts avoided or managed as per specialist recommendations.</li> </ul>	<p>Construction</p>



**Archaeological & Palaeontology:**

**Operation Phase Specific Mitigations:**

None

**Archaeological & Palaeontology:**

**Decommissioning Phase Specific Mitigations:**

None

**Surface Water**

**Pre-application Phase Specific Mitigations:**

None

**Surface Water**

**Construction Phase Specific Mitigations:**

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES/FR EQUENCY
<ul style="list-style-type: none"><li>• Increased runoff and creation of preferential flow paths through erosion;</li><li>• Sedimentation and increased sediment loads into the adjacent freshwater ecosystems;</li><li>• Potential spillage of hydrocarbons such as oils, fuels and grease, entering the surface and groundwater and</li></ul>	<ul style="list-style-type: none"><li>• Environmental Practitioner to be present during vegetation clearing to prevent unnecessary clearing of extensive areas not part of the direct footprint area.</li><li>• Limit vegetation removal activities to the infrastructure footprint area only, where removed or damaged vegetation areas should be revegetated as soon as possible with a suitable mix of plant species as determined by a qualified botanist.</li><li>• No vehicles or heavy machinery should be allowed to drive indiscriminately within any wetland areas. All vehicles must remain on demarcated roads and within the footprint and access roads.</li></ul>	<ul style="list-style-type: none"><li>• Holder of the EA/ cEO and ECO</li></ul>	<ul style="list-style-type: none"><li>• Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced.</li></ul>	<ul style="list-style-type: none"><li>• Impacts avoided or managed as per specialist recommendations.</li></ul>	Construction

ASPECT/ IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES/FR EQUENCY
<ul style="list-style-type: none"> <li>entering the freshwater ecosystems;</li> <li>Alien Invasive Plant (AIP) infestation due to disturbance; and</li> <li>Soil compaction from moving machinery leads to decreased soil depth for root/water penetration and increased runoff from hardened surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>Bare land surfaces must be vegetated to limit erosion from surface runoff associated with infrastructure areas. Revegetate disturbed areas immediately after construction.</li> <li>At areas where road crossings have been designed, these roads should cross wetland or river features at the narrowest point and a 90-degree angle with suitable drainage designed into the relevant bridge/culvert crossing.</li> <li>Ensure a soil management programme is implemented and maintained to minimize erosion and sedimentation.</li> <li>Stripped topsoil stockpiles and bare land surfaces must be vegetated to limit erosion from surface runoff associated with infrastructure areas. Revegetate disturbed areas immediately after construction.</li> <li>All areas of increased ecological sensitivity should be designated as "No-Go" areas and be off-limits to all unauthorised vehicles and personnel.</li> <li>Implement a Storm Water Management Plan (SWMP).</li> <li>Implement concurrent rehabilitation to prevent and minimise impacts to the freshwater systems.</li> </ul>				

## Surface Water

### Operation Phase Specific Mitigations:

IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
<ul style="list-style-type: none"> <li>Vehicle movement in the area, leading to soil compaction and increased runoff and erosion potential; and</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that sound environmental management is in place during the proposed operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>Holder of the EA/ CEO and ECO</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the EMPr. Oversee activities to ensure that the EMPr is</li> </ul>	<ul style="list-style-type: none"> <li>Impacts avoided or managed as per specialist recommendations.</li> </ul>	Operation

IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
<ul style="list-style-type: none"> <li>Increased AIPs.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that as far as possible all operational activities take place outside of wetland/riparian areas and their associated 100 m regulated area.</li> <li>Limit the footprint area of the operational activities to what is absolutely essential in order to minimise impacts as a result of vegetation clearing and compaction of soils.</li> <li>Ensure that no incision and canalisation of the wetland features present takes place as a result of the proposed operational activities.</li> <li>All erosion noted within and in the vicinity of the area footprint should be remedied immediately and included as part of the ongoing rehabilitation plan.</li> <li>All soils compacted as a result of operational activities should be ripped and profiled.</li> <li>A suitable AIP control programme must be put in place so as to prevent further encroachment as a result of disturbance to the surrounding terrestrial zones.</li> <li>Permit only essential personnel within the 100 m buffer for all wetland features identified.</li> <li>All areas of increased ecological sensitivity should be designated as "No-Go" areas and be off limits to all unauthorised vehicles and personnel.</li> <li>No crossing of the wetland features and their associated buffers should take place and the substrate conditions of the wetlands and downstream stream connectivity must be maintained.</li> <li>No material may be dumped or stockpiled within any wetland areas in the vicinity of the proposed footprint.</li> <li>No vehicles or heavy machinery may be allowed to drive indiscriminately within any wetland areas and their associated 500m regulated area. All vehicles must remain on demarcated roads and within the Project area footprint.</li> <li>All vehicles must be regularly inspected for leaks and re-fueling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil.</li> </ul>		<p>implemented and enforced.</p>		

IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
	<ul style="list-style-type: none"> <li>All spills should be immediately cleaned up and treated accordingly.</li> <li>Appropriate sanitary facilities must be provided for the duration of the operational activities and all waste must be removed to an appropriate waste facility.</li> </ul>				

## Surface Water

### Decommissioning/ Rehabilitation Phase Specific Mitigations:

IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
<p>Negative Impacts:</p> <ul style="list-style-type: none"> <li>Vehicle movement in the area, leading to soil compaction and increased runoff and erosion potential; and</li> <li>Increased AIPs.</li> </ul> <p>Positive Impacts:</p> <ul style="list-style-type: none"> <li>Increased natural flow pathways.</li> <li>Increase vegetation cover.</li> <li>Remediation of potentially contaminated wetlands; and</li> <li>Reducing the risk of erosion, sedimentation and loss of the soil resource.</li> </ul>	<ul style="list-style-type: none"> <li>Wetland monitoring must be carried out during both the construction and rehabilitation phases to ensure no unnecessary impacts to wetlands takes place. Monitoring should take place on an annual basis during the summer/wet season and carried out by an independent consultant for the duration of the rehabilitation phase. Monitoring should continue to take place every two years until the systems are considered stable.</li> <li>Wetlands and their associated 100 m buffer, to be clearly demarcated and avoided.</li> <li>An AIP management plan to be implemented and managed for the life of the proposed rehabilitation phase of the Project.</li> <li>As much vegetation growth as possible should be promoted within the proposed development area during all phases. In order to protect soils and vegetation, clearance should be kept to a minimum as the biomass in the area is not very high and so therefore plants will not grow quickly.</li> <li>All areas where active erosion is observed should be ripped, re-profiled and seeded with indigenous grasses.</li> <li>Preventative measures such as hessian sheeting should be used in steep re-seeded areas where high erosion potentials exist.</li> </ul>	<ul style="list-style-type: none"> <li>Holder of the EA/ cEO and ECO</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts avoided or managed as per specialist recommendations.</li> </ul>	Operation

IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
	<ul style="list-style-type: none"> <li>No vehicles or heavy machinery may be allowed to drive indiscriminately within any wetland areas and their associated 500m regulated area. All vehicles must remain on demarcated roads and within the project area footprint.</li> <li>All vehicles must be regularly inspected for leaks and re-fueling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil.</li> <li>All spills should be immediately cleaned up and treated accordingly.</li> </ul>				

## Visual

### Pre – Construction/ Construction Phase and Operation Specific Mitigations:

IMPACT	IMPACT MANAGEMENT ACTIONS	RESPONSIBILITY	METHOD	IMPACT MANAGEMENT OUTCOMES	TIMEFRAMES
<ul style="list-style-type: none"> <li>Alteration to the visual quality of the residents staying in the villages surrounding the study site, due to the physical presence and construction activities.</li> <li>The Project and its associated infrastructure will have a high impact on key residential areas such as the bordering villages.</li> </ul>	<p><b>Planning and site development</b></p> <ul style="list-style-type: none"> <li>With the construction of the substation and associated activities (site camp office, stockpiling area and material laydown area), the minimum amount of existing vegetation and topsoil should be removed. Ensure, wherever possible, natural grassland vegetation is retained and incorporated into the site rehabilitation. All top-soil that occurs within the proposed footprint of an activity must be removed and stockpiled for later use.</li> <li>Good housekeeping will be required and it is recommended that shade net be used to block views towards the construction site.</li> <li>Waste management is essential and can contribute to an untidy and aesthetically displeasing construction site.</li> </ul>	<p>1. Holder of the EA/ cEO and ECO</p>	<p>Implementation of the EMPr. Oversee activities to ensure that the EMPr is implemented and enforced.</p>	<p>Impacts avoided or managed as per specialist recommendations.</p>	<p>Pre-Construction/ Construction.</p>

**Earthworks**

- Earthworks should be executed in such a way that only the footprint and a small 'construction buffer zone' around the proposed activities is exposed. In all other areas, the natural occurring vegetation, more importantly the indigenous vegetation should be retained, especially along the periphery of the site. Dust suppression techniques should be in place always during all phases of the project, where required.

**Landscape and ecological approach**

- Should new vegetation be introduced to the site, an ecological approach to rehabilitation and vegetative screening measures, as opposed to a horticultural approach to landscaping should be adopted.
- Vegetation screens along the east, west and northern boundaries will screen the direct views towards the substation but will not mitigate the visual impact completely since the structures will be visible above the tree line and the power lines connecting the substation with the rest of the Eskom Project will still be visible.

**Lighting**

The following are measures that must be considered in the lighting design of the Project:

- Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the site.
- Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on illegal entry to the site.
- Minimise the number of light fixtures to the bare minimum, including security lighting.
- With the construction of the proposed substation, security lighting should only be used where necessary and carefully directed, preferably away from sensitive viewing areas.

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**Visual**

**Operation Phase Specific Mitigations:**

None

**Visual**

**Decommissioning/Rehabilitation Phase Specific Mitigations:**

None

**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.