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

environmental affairs
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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 **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and 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. 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. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. 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.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA

Part	Section	Heading	Content
			will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are **legally binding**. 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 Part C. This section **must be** 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 Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site specific sensitivities/ attributes	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 (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The

Part	Section	Heading	Content
			information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. E USOnce approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and 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 Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

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

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&AP's	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)	<u>Role</u> 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. <u>Responsibilities</u> - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - 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 - Ensure that periodic environmental performance audits are undertaken on the project implementation.

Responsible Person(s)	Role and Responsibilities
Developer Site Supervisor (DSS)	Role 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. Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	Role 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. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties' (RI&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

Responsible Person(s)	Role and Responsibilities
	variation, not allowed for in the 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. <u>Responsibilities</u> The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken;

Responsible Person(s)	Role and Responsibilities
	- Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> 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. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports;

Responsible Person(s)	Role and Responsibilities
	- Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;
Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the 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. Responsibilities - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - 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.

Responsible Person(s)	Role and Responsibilities
contractor Environmental Officer (cEO)	<u>Role</u> 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 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: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the 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 contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

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
– All staff must receive environmental awareness training prior to commencement of the activities;	**ECO/cEO/dEO**	**Environmental awareness training workshops must be held.**	**Pre-construction Construction, and construction phase (for new personnel)**	**ECO**	**Monthly and as required.**	**Attendance register and proof of training materials.**
– The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course;	**Contractor**	**Training sessions must be arranged to align with the construction programmes.**	**Pre-construction Construction, and construction phase (for new personnel**	**ECO**	**Monthly and as required.**	**Attendance register.**
– Refresher environmental awareness training is available as and when required;	**cEO / dEO in consultation with the ECO**	**Refresher awareness training sessions must be held.**	**Construction phase**	**ECO**	**Monthly and as required.**	**Attendance register and proof of training materials.**
– 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;	**cEO / dEO**	**Training workshops to be held with staff to inform staff of the conditions and controls linked to the EA and EMPr, and to make staff aware of their individual roles and responsibilities in achieving compliance with**	**Construction phase**	**ECO**	**Monthly and as required.**	**Attendance register and proof of training materials.**

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
		the EA and EMPr. The EMPr & EA must be made available to all staff.				
– The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a)Safety notifications; and b) No littering.	**Contractor**	**Produce posters and place them at appropriate, well-trafficked locations.**	**Pre-construction**	**ECO**	**Monthly**	**Photographic record within the ECO Report.**
– Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures;	**ECO cEO / dEO**	**Environmental awareness training must be developed with sufficient, understandable content and presented and distributed accordingly.**	**Pre-construction and throughout construction.**	**ECO**	**Prior to commence-ment of the Environ-mental training.**	**Proof of training materials.**

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
d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j)Fire prevention; and k) Disease prevention.						
– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	**ECO / dEO / cEO**	**All training materials used and proof of training (attendance registers) must be filed and kept on site.**	**Construction phase**	**ECO**	**Monthly**	**Filing system with all materials and proof of training.**
– Educate workers on the dangers of open and/or unattended fires;	**cEO / dEO / ECO**	**This must form part of the content of the Environmental Awareness training.**	**Pre-construction Construction**	**ECO**	**Monthly**	**Attendance register must be signed at the training.**
– A staff attendance register of all staff to have received	**cEO / dEO / ECO**	**Attendance registers must be filed.**	**Construction phase**	**ECO**	**Monthly**	**Filing system of all attendees**

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
environmental awareness training must be available.						**registers.**
– Course material must be available and presented in appropriate languages that all staff can understand.	**cEO / dEO / ECO**	**Training material must be made available on site and all material must be in an appropriate language for all staff.**	**Construction phase**	**ECO**	**Monthly**	**Awareness training materials must be available on site. The attendance register must indicate the language used during the training.**

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
– 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;	**Contractor**	**Compile an appropriate method statement.**	**Pre-construction & Construction**	**ECO**	**Monthly**	**Copy of method statement available on site, and submitted to ECO.**
– 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;	**DPM & Contractor**	**Placement of the camps must be outside of sensitive areas identified during the Environmental Authorisation process.**	**Pre-construction & Construction**	**ECO**	**Monthly**	**Site layout indicating location of camps outside of sensitive areas.**
– Sites must be located where possible on previously disturbed areas;	**DPM**	**Sites must be placed on previously disturbed areas as far as possible.**	**Pre-construction & Construction**	**ECO**	**Monthly**	**Site layout plan, and environmental sensitivity map.**

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
– The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and	**DPM & Contractor**	**Fencing aspects must be as per Section 5.5: Fencing and gate installation.**	**Pre-construction & Construction**	**ECO**	**Monthly**	**Camp fenced in line with Section 5.5: Fencing and gate installation. Photographic record.**
– The use of existing accommodation for contractor staff, where possible, is encouraged.	**Not Applicable. No existing accommodation is located on the site and no new accommodation facilities would be required. Staff would stay within the town of De Aar town, situated close to the proposed site.**					

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
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development;	**dEO/ cEO in consultation with ECO**	**Identify and document access restricted areas or specific requirements of affected landowners, if any.**	**Pre-construction**	**cEO** **ECO**	**Once-off, prior to construction Monthly, or when required**	**Restricted areas are identified using the Environmental Application and Report to identify these areas.**
– 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	**DSS/ Contractor/ cEO**	**Demarcate restricted access areas with a temporary barrier and maintain the demarcation and signage for the construction phase.**	**Pre-construction & construction**	**ECO**	**Monthly, or as required.**	**Clear demarcation and signage around areas of restricted access. Photographic evidence.**
– Unauthorised access and development related activity inside access restricted areas is prohibited.	**Contrator/ dEO/ cEO**	**Demarcate restricted access areas with a temporary barrier and maintain the demarcation and signage for the construction phase.**	**Construction phase**	**ECO**	**Monthly or as required.**	**Compliance with the restricted access areas must be reported on in**

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
						the Environmental Compliance Reporting.

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
– An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;	**DPM** **Contractor**	**Access agreements to be compiled. Access agreements to be signed by affected landowners before commencement of construction.**	**Pre-construction**	**cEO & ECO**	**Once-off, prior to construction**	**Signed agreements with affected landowners.**
– All private roads used for access to the servitude must be maintained	**Contractor**	**Maintain road conditions,**	**Continuously throughout all**	**cEO**	**On-going**	**Photographic evidence of**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
and upon completion of the works, be left in at least the original condition		**when and where required.**	**phases.**	**ECO**	**Monthly**	**road conditions throughout all phases.**
– All contractors must be made aware of all these access routes.	**dEO / cEO**	**Contractors must be provided with a map of all access roads.**	**Pre-construction** **Construction** **Operation**	**ECO**	**As required i.e. when new contactors come to site.**	**Access roads map must be readily available.**
– Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;	**Contractor**	**Deviations from the access routes must be closed and re-vegetated immediately.**	**Construction** **Operation (when required)**	**cEO &** **ECO**	**Ongoing** **Monthly (or as required)**	**Photographic evidence of before and after rehabilitation must be obtained and filed.**
– Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads;	**Contractor**	**Deviating from the access roads must be limited as far as possible.**	**Construction** **Operation**	**cEO** **ECO**	**Ongoing** **Monthly**	**Any deviations recorded with photographs. Rectification photographs must also be taken.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with ***section 4.9: photographic record***; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;	**DPM/ Contractor dEO / cEO**	**Photographic record (in accordance with section 4.9: photographic record) of private roads, before and after use.** **Condition of private road agreed by landowner, the DPM and Contractor, prior to use.**	**Pre-Construction & Construction phase**	**cEO** **ECO**	**Ongoing** **Prior to road use and after road use.**	**Photographic record of the roads before and after use. Proof of agreement by the landowner, DMP & Contractor on road condition.**
– Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands	**DPM & Contractor**	**Design access road routes to follow fence lines and tree belts, where possible.**	**Pre-construction**	**cEO** **ECO**	**Ongoing** **Once-off (prior to construction)**	**Map of access roads following fence lines and tree belts where possible.**
– Access roads must only be developed on a pre-planned and approved roads.	**DPM & Contractor**	**Construction of access roads on pre-planned and approved routes only.**	**Pre-construction & Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Implementation of the approved layout.**

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
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible;	**Contractor**	**Identify and notify staff of the gates to be used to access the site.**	**Pre-construction** **Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Existing gates used where possible.**
– Existing and new gates to be recorded and documented in accordance with **section *4.9: photographic record***;	**dEO & Contactor**	**Existing and new gates must be recorded and documented as per the requirements of section 4.9.**	**Construction Phase**	**cEO** **ECO**	**Ongoing** **Monthly.**	**Photographic record (as per section 4.9.) to be kept of the existing and new gates.**
– All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;	**Contractor**	**All gates to be fitted with locks and kept locked at all times.**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**All gates to be locked and no complaints from landowners received regarding locking of gates.**
– At points where the line crosses a fence in which there is no suitable gate within the extent of the line	**DPM/ dEO**	**Obtain approval for new gate(s) required, from affected landowners. New**	**Pre-construction** **Construction phase**	**cEO**	**Once-off before construction**	**Gate installed at a position agreed to by**

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
servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner;		**gate to be installed as per approval of the affected landowner.**		**ECO**	**and as required during construction . Monthly**	**the landowner.**
– Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;	**Contractor**	**The bottom of the installed gate must be no more than 100 mm from the ground.**	**Construction Phase**	**cEO ECO**	**Ongoing Monthly**	**Bottom of gate must be no more than 100 mm from the ground. Photographic evidence**
– Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate;	**Contractor**	**Where required, a reinforced concrete sill must be installed beneath the gate.**	**Construction Phase**	**ECO**	**Monthly**	**Reinforced concrete sill installed beneath the gate when necessary. Photographic evidence**

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
– Original tension must be maintained in the fence wires;	**Contractor**	**Original tension must be maintained in the fence wire.**	**Construction Phase**	**ECO**	**Monthly**	**The tension of the fence wires must be maintained at the same tension.**
– All gates installed in electrified fencing must be re-electrified;	**Contractor**	**Gates installed within electric fencing must be re-electrified.**	**Construction Phase**	**ECO**	**Monthly**	**Gates installed in electrified fencing re-electrified.**
– All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities;	**Contractor**	**Demarcation fencing ad barriers must be assessed and maintained accordingly.**	**Construction phase**	**ECO**	**Monthly**	**A photographic record of the fencing and barriers in good condition must be obtained.**
– Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not	**Contractor** **cEO**	**Fencing must be installed around the site camp, including batching plants, hazardous storage areas**	**Early in the construction phase.**	**ECO**	**Monthly**	**Photographic record of appropriate fencing must**

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
cause harm to the sensitive flora;		**and all 'No-Go' areas.**				**be kept.**
– Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner.	**Contractor dEO / cEO**	**Obtain permission from the landowner before restricting movement of livestock.**	**Construction phase**	**ECO**	**Monthly**	**Proof of the landowner agreement must be kept of record, if applicable.**
– All fencing must be developed of high quality material bearing the SABS mark;	**Contractor**	**Fencing must be developed using high quality material, approved by SABS.**	**Construction phase**	**ECO**	**Monthly**	**Fencing materials used must bear the SABS mark and/or documentary proof.**
– The use of razor wire as fencing must be avoided;	**Contractor**	**No razor wire must be used for fencing.**	**Construction phase**	**ECO**	**Monthly**	**No razor wire must be used for fencing.**
– 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;	**Contractor**	**Fenced areas with gate access must be locked after hours, on weekends and during public holidays.**	**Construction phase**	**ECO**	**Monthly**	**Fenced areas with gate access locked after hours, on weekends and**

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
		Security company to provide site security services appointed and providing services at required times.				**during public holidays. Security company appointed and servicing site, as required.**
– On completion of the development phase all temporary fences are to be removed;	**Contractor**	**All temporary fencing removed.**	**Construction phase**	**ECO**	**At end of construction phase.**	**No temporary fences remain after construction has been completed.** **Photographic evidence.**
– The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	**Contractor**	**All fence uprights must be removed in their entirety.**	**Construction phase**	**ECO**	**At the end of the construction period.**	**No fence uprights left on site.**

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
– 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;	**DPM / Contractor / dEO / cEO and ECO.**					
– The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.	**Not applicable. No water will be abstracted as part of the proposed development.**					
– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of	**Contractor / cEO** **dEO**	**Ensure that the specified water conservation practices are being undertaken on site.**	**Construction**	**ECO**	**Monthly**	**Verification on site; Proof of audits of water systems and/or**

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
water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.						**water usage;** **Proof of environmental awareness materials**

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
– 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;	**Contractor**	**Implement strict control mechanisms for runoff of contaminated water and an appropriate system to dispose of contaminated water (as per an approved Method Statement).**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**No evidence of contaminated water mismanagement.** **Hazardous waste removal**

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
						slips, where required. **Photographic evidence**
– 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;	**Contractor and cEO**	**Appropriate absorbent material must be used to soak up oil spills on concrete surfaces and the material must be disposed of appropriately (at a licensed waste disposal facility).**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Absorbent material available on site. No evidence of oil spills that have not been managed appropriately** **Proof of disposal at licensed waste disposal site (e.g. disposal slips)**
– Natural storm water runoff not contaminated during the development and clean water	**DPM & Contractor in**	**The DPM and ECO must determine whether clean water can be discharged**	**Construction phase**	**ECO**	**Monthly (or as required)**	**Proof of discussions between the**

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
can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO;	**consultation with ECO**	**directly into watercourses.**				**DPM & ECO.**
– Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.	**DPM, in consultation with ECO**	**The DPM and ECO must determine whether settled water can be released into the waterbody. If so, water must be freed of all sedimentation through a settlement pond, before release into the watercourse.**	**Construction phase**	**ECO**	**As required**	**Proof of discussions between the DPM & ECO, and photographic evidence of the settlement ponds.**

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**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach;	**Contractor**	**Waste management must be undertaken with an integrated waste management approach (as per an approved Method Statement).**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Implementation of waste management plan and disposal receipts of responsible disposable.**
– Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	**Contractor**	**Covered waste collection bins (scavenger and weatherproof) must be provided on site.**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Covered waste collection bins (scavenger and weatherproof) evident on site.**
– A suitably positioned and clearly demarcated waste collection site must be identified and provided;	**DPM & Contractor**	**A site suitable for a waste collection site e.g. away from environmental sensitivities must be identified and clearly demarcated. Signage must also be installed at the identified site.**	**Construction phase**	**ECO**	**Once-off (prior to the commencement of construction)**	**A well-positioned waste collection point clearly demarcated.** **Photographic evidence.**
– The waste collection site must be maintained in a clean and orderly manner;	**Contractor**	**Waste collection site must be maintained and kept**	**Construction phase**	**cEO**	**Ongoing**	**A tidy, orderly waste collection site.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		clean and orderly.		**ECO**	**Monthly**	**No evidence of litter or waste on site.**
– Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;	**Contractor / cEO**	**Each waste type must be disposed of separately. To assist with this, bins must be clearly labelled (including images) to assist with this.**	**Construction phase**	**cEO ECO**	**Ongoing Monthly**	**Separate waste bins on site and no evidence of mixing waste types in bins.**
– Staff must be trained in waste segregation;	**cEO / dEO**	**Waste segregation must be included in the environmental awareness training.**	**Pre-construction Construction**	**ECO**	**Monthly and as required.**	**Documentary evidence that training materials include waste segregation.**
– Bins must be emptied regularly;	**Contractor cEO**	**Waste bins must be emptied on a regular basis, and not be allowed to overflow.**	**Construction**	**cEO ECO**	**Ongoing Monthly**	**Bins must not be overflowing with waste.**
– General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;	**Contractor cEO**	**General waste must be disposed of at a registered waste disposal site / recycling company.**	**Construction**	**cEO ECO**	**Ongoing Monthly**	**Disposal receipts from registered waste disposal sites must be kept on**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						record.
– Hazardous waste must be disposed of at a registered waste disposal site;	**Contractor** **cEO**	**Hazardous waste must be disposed of at a registered waste disposal site.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Disposal receipts from registered waste disposal sites must be obtained and kept on record.**
– Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	**Contractor** **cEO**	**Certificates / receipts of safe disposal of general, hazardous and recycled waste must obtained and kept on record.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Certificates / receipts of safe disposal of various wastes.**

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
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste,	**Contractor** **cEO**	**No construction activities (and therefore no risk of direct and indirect spills of**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**No spillage of pollutants into watercourses**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;		**pollutants) are to be undertaken close to water bodies. The freshwater specialist's buffers around the freshwater features must be adhered to.**				**reported on site, and no evidence of any spills.**
– In the event of a spill, prompt action must be taken to clear the polluted or affected areas;	**Contractor** **cEO**	**If a spill occurs, the polluted or affected area must be cleared up immediately.**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Information and feedback with respect to how the spill was cleaned up must be documented and kept on file.** **Photographic evidence.**
– Where possible, no development equipment must traverse any seasonal or permanent wetland	**Contractor** **cEO**	**No equipment may be permitted to traverse any seasonal or permanent wetlands.**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**No evidence of equipment traversing any seasonal or permanent wetland on site.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No return flow into the estuaries must be allowed and no disturbance of the Estuarine Functional Zone should occur;	**Not applicable – no estuaries were identified within the grid connection corridor.**					
– Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;	**Contractor and cEO**	**Only authorized access roads must be used and/or developed.**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Only authorized access road routes used and/or developed.**
– Existing crossing points must be favored over the creation of new crossings (including temporary access)	**Contractor /** **cEO**	**Existing crossing points over watercourses must be used as far as possible.**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**No evidence of unnecessary new tracks, when an existing track is nearby.**
– There must not be any impact on the long term morphological dynamics of watercourses or estuaries;	**DPM** **Contractor** **cEO**	**The powerline must not have any impacts which change the long-term morphological dynamics of watercourses or estuaries.**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**No impact incidents on the watercourses reported.**
– When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken:	**Contractor** **cEO**	**When working in or near any watercourse or estuary, the specified environmental controls and considerations**	**Construction phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**No evidence of degradation to the waterbody**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse 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; 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 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.		**must be accommodated.**				**and no incidents of damage to the waterbodies.**

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
General: – Indigenous vegetation which does not interfere with the development must be left undisturbed;	**Contractor and cEO**	**Areas of indigenous vegetation to be avoided must be demarcated before clearance is undertaken.**	**Pre-construction** **Construction** **Operation**	**cEO** **ECO**	**Ongoing** **Monthly**	**Areas of indigenous vegetation are demarcated and undisturbed.**
– Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;	**Contractor,** **cEO**	**Areas containing protected or endangered species to be demarcated, to be avoided by construction activities, prior to vegetation clearance**	**Pre-construction** **Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**A No protected or endangered species have been damaged and/or removed, unless absolutely necessary (and only if the necessary permits have**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						been obtained).
– Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing;	**DPM and contractor in consultation with the relevant specialist.**	**Search and rescue must be undertaken by a suitably qualified relevant specialist, and replanting of the removed species must take place. A Plant Search and Rescue Plan/ Method Statement must be compiled to detail this process.**	**Pre- construction**	**ECO**	**Monthly**	**Implementation of Plant Search and Rescue Plan/ Method Statement.** **Photographic evidence and/or notes of the search and rescue must be taken and kept on record.**
– Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries prior to the cutting or clearing of the affected species, and they must be filed;	**DPM** **dEO**	**If required, the relevant permits must be applied for and obtained from the relevant authority and kept on file.**	**Pre-construction (Prior to Search and Rescue).**	**cEO** **ECO**	**Ongoing** **Monthly**	**Permits must be kept on filed.**
– The Environmental Audit Report must confirm that all identified	**ECO**	**Include details pertaining to the rescue and replanting of**	**During the construction phase**	**ECO**	**As required.**	**The Environmental**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals;		**identified species in the Environmental Audit Report.**	**and at the completion of the construction phase.**			**Audit Report contains details pertaining to the rescue and replanting of identified species.**
– Trees felled due to construction must be documented and form part of the Environmental Audit Report;	**ECO**	**The Audit Report must contain details of trees felled.**	**Construction Phase**	**ECO**	**As required.**	**The Audit Report must contain details of trees felled.**
– Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;	**Contractor** **cEO**	**Felled trees,, vegetation cuttings and debris must be disposed of appropriately and must not be placed within watercourses and rivers.**	**Construction Phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Rivers and watercourses must not have felled trees, vegetation cuttings or debris.**
– 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,	**DPM,** **dEO** **Contractor** **Maintenanc**	**Only a qualified pest control operator must be appointed.**	**Construction Phase** **Operation Phase**	**ECO** **dEO**	**Monthly/ as when use of herbicides is required**	**Proof of details of appointed registered pest control operator to be kept on file for**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
supervision of a registered pest control operator or is appropriately trained;	**e Staff**					**audit purposes.**
– A daily register must be kept of all relevant details of herbicide usage;	**Contractor** **cEO**	**A daily register of all herbicide usage must be kept on site.**	**Construction Phase** **Operation Phase**	**ECO**	**Monthly**	**The register must be available for viewing on site.**
– No herbicides must be used in estuaries;	**Not applicable - no estuaries were identified within the grid connection corridor.**					
– All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to ***Section 5.3: Access restricted areas***. Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.	**Contractor** **cEO**	**Protected species and sensitive vegetation must be clearly demarcated in accordance with Section 5.3.**	**Pre-construction**	**ECO**	**Monthly**	**Protected species and sensitive vegetation clearly demarcated in accordance with Section 5.3** **Photographic eivdence**
Servitude: – Vegetation that does not grow high enough to cause interference with	**DPM, Contractor,**	**Identify vegetation that needs to be trimmed.**	**Construction**	**ECO** **Operations**	**Monthly**	**No evidence of unnecessary cutting or**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager;	**cEO** **Operations & Maintenance team**		**Operation**	**& Maintenance Team**		**trimming of vegetation. Photographic evidence**
– Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the land owner and the EA holder	**DPM** **Contractor,** **Operations & Maintenance Team**	**Width to be cleared must be in accordance with an agreement between the landowner and EA holder.**	**Construction** **Operation**	**ECO**	**As required.**	**Proof of agreement of width to be cleared must be kept on file.** **Proof must be provided that only agreed upon areas have been cleared.**
– Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognised waste disposal facility;	**Contractor** **cEO**	**Alien invasive vegetation must be removed in accordance with an Alien Invasive Management Plan. The vegetation must be disposed of at a recognized**	**Construction** **Operation**	**ECO** **Operations & Maintenance Team**	**Monthly and as required.**	**Proof of removal of invasive alien vegetation as per alien invasive management**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		waste disposal facility.				**plan.** **Receipts of disposal from a registered waste disposal facility must be obtained and kept on record.**
– Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280;	**Contractor** **Operations & Maintenance Team**	**Where vegetation is likely to intrude on the MVCD before the next scheduled clearance, the vegetation must be trimmed.**	**Construction** **Operation**	**ECO** **Operations & Maintenance Team**	**Monthly, and/or as required.**	**Photographic/ documentary evidence**
– Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation;	**Contractor** **cEO** **Operations & Maintenance Team**	**Consult with the landowner whether they would like to retain the cut vegetation. If not, it must be disposed of at a recognised waste disposal facility.**	**Construction** **Operation**	**ECO** **Operations & Maintenance Team**	**As required.**	**Proof (receipts) must be obtained that the debris was disposed of at a recognized waste disposal facility or was kept by the**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						landowner.
In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered.	**Contractor** **cEO** **Operations & Maintenance Team**	**Develop a procedure for the clearing of vegetation and the stringing process which limits the impact to the environment.**	**Pre-construction** **Construction**	**ECO**	**Once, prior to the commencement of construction.**	**Proof of the procedure used for clearing vegetation and stringing must be obtained.**

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
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;	**dEO/cEO** **Contractor**	**Avoid interfering with or disturbing livestock, where possible.** **The landowner, or representative of the landowner must give written consent to interfere with livestock, if such**	**Construction Phase0**	**ECO**	**Monthly**	**Written consent by the landowner or a representative of the landowner.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		interference is unavoidable.				
– The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme;	**DPM** **dEO/cEO** **Contractor**	**Breeding sites identified by the avifaunal specialist must be taken into consideration when compiling the development programme.**	**Pre-construction**	**ECO**	**Once-off, (at commencement of construction).**	**The development programme takes cognizance of bird breeding sites.**
– 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;	**dEO/cEO** **Contractor** **Operations & Maintenance Team**	**Breeding sites must be clearly indicated on a map of the site and all staff must be made aware of these areas.**	**Construction** **Operation**	**cEO** **ECO** **Operations & Maintenance Team**	**Ongoing** **Monthly** **Monthly during operation**	**Photographic evidence of intact breeding sites.**
– Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;	**dEO/cEO** **Contractor** **Operations & Maintenance Team**	**The Basic Assessment Report and any other relevant information must be reviewed for any recommendations from the avian specialist to limit unnecessary disturbance of birds.**	**Pre-construction** **Construction** **Operation**	**cEO** **ECO** **Operations & Maintenance Team**	**Ongoing** **Monthly**	**Photographic/ documentary evidence of complying with the specialist's recommendations must be provided.**
– No poaching must be tolerated	**Contractor**	**Any animal dens that could**	**Construction phase**	**cEO**	**Ongoing**	**No incidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;	**dEO / cEO**	**be impacted by the development must be marked as "No-Go" areas.** **Poaching must not be tolerated at a;**	**Operation**	**ECO** **Operations & Maintenance Team**	**Monthly**	**of poaching evident or reported.**
– No deliberate or intentional killing of fauna is allowed;	**dEO/cEO** **Contractor**	**This must be included in the environmental awareness training and it must be ensured that all staff fully understand this.**	**Construction** **Operation**	**ECO**	**Monthly**	**No incidents of deliberate or intentional killing of fauna evident and/or reported.**
– 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	**dEO / cEO** **Contractor**	**Where necessary, snake deterrents must be applied to the pylons of the powerline to prevent snakes moving up the pylons.**	**Pre-construction/ design** **Construction**	**ECO**	**Monthly**	**Photographic/ documentary evidence of snake deterrents on pylons.**
– No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.	**DPM & dEO**	**Permits must be obtained from relevant authorities for the removal and/or relocation of any Threatened or Protected species and/or protected fauna as listed according to NEMBA (Act No. 10 of 2004)**	**Pre-construction and construction phase**	**ECO**	**Monthly**	**Permits from the relevant authority/ie readily available, on file.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		and relevant provincial ordinances.				

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
– Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in ***Section 5.3: Access restricted areas***;	**DPM** **dEO/ cEO** **Contractor**	**Identify, demarcate and prevent impact to known sensitive heritage features in accordance with Section 5.3.**	**Pre-construction**	**ECO**	**Monthly**	**Avoidance of sensitive heritage features and photographic evidence of such.**
– Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance;	**cEO/ dEO/ Contractor**	**Construction staff to be educated (as part of the environmental awareness training) of the potential for archaeological and palaeontological finds in excavations, and what to do in the evident of heritage resources being encountered/ uncovered.**	**Construction Phase**	**ECO**	**Monthly**	**Documentary/ photographic evidence.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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.	**cEO / dEO** **Contractor**	**All works must stop immediately if any human remains and/or other archaeological, palaeontological and historical material are uncovered.**	**Construction Phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Proof of work ceasing and appropriate procedure being followed.**

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
– 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.;	**Contractor**	**Assess the site for any potential dangers to the public. Demarcate and restrict access to these areas and where necessary, contact the local authority.**	**Construction**	**ECO**	**Monthly, and as required.**	**Dangerous areas clearly demarcated, with restricted access.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All unattended open excavations must be adequately fenced or demarcated;	**Contractor**	**Fence or demarcate open, unattended excavations.**	**Construction Phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence**
– Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;	**Contractor**	**The areas with partly constructed towers and / or scaffolding must have restricted access.**	**Construction Phase**	**ECO**	**Monthly**	**On site verification** **Photographic evidence.**
– Ensure structures vulnerable to high winds are secured;	**Contractor**	**Structures vulnerable to high winds must be secured appropriately.**	**Construction Phase**	**ECO**	**Monthly**	**No incidence of unstable structures due to high winds evident or reported.**
– Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	**Contractor** **DPM**	**Compile and maintain a public incidents and complaints register, and update, as required.**	**Construction Phase**	**ECO**	**Monthly**	**The incidents and complaints register must be up to date, and available on site.**

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
– Mobile chemical toilets are installed onsite if no other ablution facilities are available;	**Contractor**	**If no ablution facilities are available on site, mobile chemical toilets must be utilized and placed outside of environmentally sensitive areas.**	**Construction Phase**	**ECO**	**Monthly**	**Photographic evidence** **Record of chemical toilet service provider.**
– 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;	**Contractor / cEO**	**This must be included in the environmental awareness training.**	**Construction**	**ECO**	**Monthly**	**Content of environmental awareness training materials. No evidence of non-compliance.**
– Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body;	**Contractor / cEO**	**All specified requirements, as per the Impact Management Actions, must be met.**	**Construction Phase**	**cEO** **ECO**	**Ongoing** **Monthly**	**Inspections of the toilets must be made to ensure all requirements**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards;						**are being met.**
– A copy of the waste disposal certificates must be maintained.	**Contractor**	**Obtain a certificate / receipt from the waste disposal service provide when waste has been collected and disposed of.**	**Construction Phase**	**ECO**	**Monthly**	**Copies of waste certificates / receipts must be kept on file at site.**

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
– Undertake environmentally-friendly pest control in the camp area;	**Contractor**	**If necessary, pest control must be undertaken in an environmentally-friendly manner.**	**Construction Phase**	**ECO**	**Monthly**	**Proof of pest control methods to be documented and kept on site by Contactor. Photographic evidence.**
– Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS;	**Contractor**	**This must be included in the environmental awareness training/ Contractors "Tool Box" talks.**	**Construction**	**ECO**	**Monthly**	**Environmental Awareness training materials/ evidence of content of Tool Box talk**
– The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area;	**Contractor**	**Placement of information posters on AIDS must be displayed in the Contractor Camp area.**	**Construction**	**ECO**	**Monthly**	**Photographic evidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;	**Contractor**	**The relevant information must be included in the environmental awareness training/ Contractors "Tool Box" talks, and must be made available at the site camp**	**Construction Phase**	**ECO**	**Monthly**	**Information and education relating to sexually transmitted diseases must be contained within the training material.**
– Free condoms must be made available to all staff on site at central points;	**Contractor**	**Free condoms must be made available to all staff at appropriate places on the site, e.g. toilets, site camp..**	**Construction Phase**	**ECO**	**Monthly**	**Free condoms must be available at suitable locations on the site, e.g. toilets, or site camp.**
– Medical support must be made available;	**Contractor**	**Personnel trained in First Aid must always be on site and First Aid Kits must be located in strategic areas.**	**Construction Phase**	**ECO**	**Monthly**	**First Aid personnel must always be present on an active site. Up-to-date, full, First Aid kits must be**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						available at various locations on site.
– Provide access to Voluntary HIV Testing and Counselling Services.	**Contractor**	**HIV testing scheduling must be made available to all staff. Counselling must also be made available as an option.**	**Construction Phase**	**ECO**	**Monthly**	**Check there is an HIV testing schedule on site and that counselling is made available by the contractor.**

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
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project;	**Contractor**	**Compile an Emergency Response Action Plan (ERAP)**	**Pre-construction**	**ECO**	**Once-off, at the commencement of**	**ERAP compiled and available on site.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
					construction	
– The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;	**Contractor**	**Emergency Plan must contain the relevant detail.**	**Pre-construction**	**ECO**	**Once-off, at the commencement of construction**	**ERAP must contain the specified details.**
– All staff must be made aware of emergency procedures as part of environmental awareness training;	**Contractor**	**The ERAP must be covered in the environmental awareness training.**	**Construction phase**	**ECO**	**Once-off, at the commencement of construction**	**The ERAP must be covered in the environmental awareness training.**
– The relevant local authority must be made aware of a fire as soon as it starts;	**Contractor**	**The procedure to be followed in the event of a fire must be detailed within the ERAP, which must include making the relevant authority aware of the fire as soon as it has started.**	**Construction**	**ECO**	**Monthly**	**Evidence of the local authority being informed according to the ERAP.**
– In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17***).	**Contractor**	**During an emergency, mitigation measures must be implemented as per Section 5.17.**	**Construction**	**ECO**	**Monthly**	**The mitigation measures as per Section 5.17 have been adhered**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						to.

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
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;	**Contractor**	**Use and storage of hazardous materials must not be used unless absolutely necessary.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**There must be a record of hazardous substances used.**
– All hazardous substances must be stored in suitable containers as defined in the Method Statement;	**Contractor**	**Develop a method statement for the storage of hazardous substances.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Storage must be carried out as per the Method Statement.**
– Containers must be clearly marked to indicate contents, quantities and safety requirements;	**Contractor**	**Containers with hazardous materials must be clearly marked.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence**
– All storage areas must be bunded.	**Contractor**	**All storage areas must be**	**Construction**	**cEO**	**Ongoing**	**Photographic**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;		**bunded and with a sufficient capacity to contain a spill / leak from the container.**		**ECO**	**Monthly**	**evidence**
– Bunded areas to be suitably lined with a SABS approved liner;	**Contractor**	**Bunded areas must be suitably lined with SABS approved liner.**	**Construction**	**ECO**	**Monthly**	**Photographs of bunded storage areas.**
– An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;	**Contractor**	**Compile and maintain an alphabetically-listed Hazardous Chemical Substance control sheet.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**The HCS must be available on site.**
– All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	**Contractor**	**Each hazardous chemical that will be used on site must have a Material Safety Data Sheet (MSDS).**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**There must be a Material Safety Data Sheet for each hazardous chemical on site.**
– All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;	**Contractor**	**Provide training to employees working with HCS. Employees must sign a training register.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**A training register must be available on site.**
– Employees handling hazardous substances / materials must be aware of the potential impacts and	**Contractor**	**Environmental training must be provided to these employees and the**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**The training register must be available**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
follow appropriate safety measures. Appropriate personal protective equipment must be made available;		**employees must be provided with personal protective equipment.**				**on site and contain a list of all those who received the training.**
– The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;	**Contractor**	**Any dangerous fuel must be stored appropriately in storage tanks or in a bowser.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Storage tanks for this purpose must be present on site and all fuel in site to be stored in these tanks.** **Photographic evidence**
– The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);	**Contractor**	**Construct/install the appropriate bund design for tanks / bowsers on site.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Bunds must be as described (correct capacity and lined appropriately. Photographic evidence.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The floor of the bund must be sloped, draining to an oil separator;	**Contractor**	**Ensure the bund floor is sloped, towards an oil separator.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Bund floor must be sloped to an oil separator.** **Photographic evidence.**
– 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;	**Contractor**	**An impermeable groundcover must be used where the storage area is refueled, and dispensing equipment must contain a drip tray in the appropriate position to catch potential spills/ drips.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence.** **No evidence of spills.**
– All empty externally dirty drums must be stored on a drip tray or within a bunded area;	**Contractor**	**Empty, externally dirty drums/ containers must be stored within a bund or on a drip tray.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Externally dirty drums /containers stored within a bund or on a drip tray. Photographic evidence** **No evidence of non-**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						compliance
– No unauthorised access into the hazardous substances storage areas must be permitted;	**Contractor**	**Develop a procedure/ Method Statement, detailing how access into the hazardous substances storage area will be controlled.** **Access to the area with hazardous substances must be restricted and carefully monitored.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Documentary evidence of a procedure/ method statement for controlling access to hazardous substances storage area.**
– No smoking must be allowed within the vicinity of the hazardous storage areas;	**Contractor**	**Smoking must not be permitted within the vicinity of the hazardous storage areas. Signs must be erected near the area to remind staff of this. This must also be included in the environmental awareness training.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence.** **This content must also be evident within the awareness training material.**
– Adequate fire-fighting equipment must be made available at all hazardous storage areas;	**Contractor**	**Adequate fire fighting equipment must be available at all hazardous storage areas.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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;	**Contractor**	**Appropriate ground protection must be positioned in such a way to avoid any spills onto the bare ground.**	**Construction Phase**	**ECO**	**Weekly**	**There must be no evidence of non-compliance i.e. spills on the bare ground. Photographic evidence**
– 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;	**Contractor** **cEO**	**A spill kit must be kept on site and must be of the size relevant to the activities involving the use of hazardous substances.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**An appropriately sized spill kit must be on site. Photographic evidence**
– The responsible operator must have the required training to make use of the spill kit in emergency situations;	**Contractor** **cEO**	**Training to use the spill kits must be provided to the responsible operator.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Proof the responsible operators have received the necessary training..**
– An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;	**Contractor** **cEO**	**Spill kits must be available and positioned in all areas were activities with hazardous materials are**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Appropriate numbers of spill kits present on site.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		being undertaken.				**Photographic evidence.**
– In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7*** for procedures concerning ***storm and waste water management*** and ***5.8*** for ***solid and hazardous waste management.***	**Contractor**	**Contaminated soil must be collected in containers and stored in a suitable location before being disposed of as per the procedures described in Section 5.7 or Section 5.8.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence** **Receipts from registered waste disposal service provider.**

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
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;	**Contractor**	**All maintenance of vehicles and equipment must take place in the workshop area, as far as possible.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Verification on site.** **No evidence of non-compliance**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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.	**Contractor**	**A drip tray must be placed in a position to prevent contamination of the ground when repairs or maintenance has to take place outside of the workshop.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Evidence of the appropriate procedure followed.**
– Leaking equipment must be repaired immediately or be removed from site to facilitate repair;	**Contractor**	**Leaking equipment must be removed from site, or repaired immediately.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Evidence of leaking equipment repaired or removed from site.**
– Workshop areas must be monitored for oil and fuel spills;	**Contractor**	**Workshop inspections must be undertaken, for oil or fuel spills.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence.**
– Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;	**Contractor** **cEO**	**A spill kit must be kept on site and must be of the size relevant to the activities involving the use of fuel and oil.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**An appropriately sized spill kit on site. Photographic evidence**
– The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a	**Contractor**	**Ensure there is a sloped bunded concrete slab to accommodate run-off from**	**Construction**	**cEO**	**Ongoing**	**Photographic evidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed;		**maintenance of vehicles in the workshop.**		**ECO**	**Monthly**	
– Water drainage from the workshop must be contained and managed in accordance ***Section 5.7: storm and waste water management***.	**Contractor**	**Ensure that water draining from the workshop is contained and managed in accordance with Section 5.7.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Water drainage from the workshop conducted inline with Section 5.7.**

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
– Concrete mixing must be carried out on an impermeable surface;	**Contractor**	**Ensure all mixing of concrete is done on an impermeable surface. This must be covered well in the awareness training.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**No evidence of non-compliance. i.e. no concrete on the bare ground.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Batching plants areas must be fitted with a containment facility for the collection of cement laden water.	**Contractor**	**Ensure batching plant areas are fitted with a containment facility to ensure cement laden water is collected.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence**
– Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	**Contractor**	**Ensure dirty water from the batching plant is contained to avoid contamination of the groundwater.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**No dirty water must be evident outside of the batching plant containment area.**
– Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;	**Contractor**	**A designated area for bagged cement must be allocated as per the specifications (not close to watercourses).**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence**
– A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	**Contractor**	**Ensure there is a 'washout' facility. Water used at this facility must be limited.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Washout facility in use and evidence of minimal water use.**
– Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of	**Contractor**	**Hardened concrete from the washout facility must be reused or disposed off via**	**Construction**	**cEO**	**Ongoing**	**No build-up of hardened concrete at**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
at an appropriate licenced disposal facility;		**the appropriate disposal stream for hazardous waste.**		**ECO**	**Monthly**	**the washout facility. Receipts from a licensed disposal facility.**
– Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;	**Contractor**	**If empty cement bags are stored on site, they must be securely closed with binding material and stored in an appropriate area.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence.**
– Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***)	**Contractor**	**Sand and aggregates containing cement must be prevented from emitting dust by dampening or by another means.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic/ documentary proof.**
– 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;	**Contractor**	**All excess sand, stone and cement must be removed from site at the end of the construction period.**	**Construction phase.**	**ECO**	**Once-off, at construction site closure.**	**No excess sand, stone or cement remaining in site.** **Disposal certificate/ receipt from waste disposal**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						facility.
– Temporary fencing must be erected around batching plants in accordance with ***Section 5.5: Fencing and gate installation***.	**Contractor**	**Ensure temporary fencing is installed around batching plants in line with Section 5.5.**	**Construction Phase**	**ECO**	**Monthly**	**Photographic proof**

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
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;	**Contractor**	**Investigate the best means of suppressing dust generation. In consultation with the ECO, implement a preferred method.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Evidence of effective dust suppression.**
– 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;	**Contractor**	**Planning must be carried out for vegetation removal, as well as re-vegetation and stabilization.**	**Construction**	**ECO**	**Monthly**	**Evidence of plan to be provided.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;	**Contractor**	**Ensure that working with erodible materials is not undertaken during times of high winds or when a visible dust plume is present.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**No evidence of non-compliance.** **No complaints submitted in this regard.**
– 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;	**ECO**	**ECO to provide suitable recommendations.**	**Construction**	**ECO**	**N/A**	**N/A**
– Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	**Contractor**	**Ensure stockpiles are located in sheltered areas or are covered appropriately to prevent being exposed to the wind.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Soil stockpiles not exposed to erosive effects of the wind.** **Photographic evidence.**
– Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO;	**Contractor** **ECO**	**Implement erosion control measures as required by the ECO.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Erosion control measures have been implemented, as required by**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						the ECO.
– Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas;	**Contractor** **Operations & Maintenance Team**	**Inform drivers of speed limits and place speed limit signs along roads, if required.**	**Construction**	**ECO** **Operations & Maintenance Team**	**Monthly**	**No public complaints relating to speeding.**
– Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks;	**Contractor**	**Straw stabilization, as specified must be undertaken.**	**Construction**	**ECO**	**Monthly**	**Photographic evidence.**
– For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.	**Contractor**	**Implement dust suppression measures for large areas of excavation.**	**Construction**	**ECO**	**Monthly**	**Photographic evidence.** **No public complaints relating to dust.**

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
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and	**Contractor**	**A licensed blasting contractor must be appointed for any blasting activities.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Evidence of professional registration of the appointed blaster.**
– Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	**Contractor**	**Notify surrounding landowners, emergency services and site personnel of blasting activity 24 hours prior to the blasting activity.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Proof of notification of surrounding landowners, emergency services and site personnel of blasting activity.**

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
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only;	**Contractor**	**Ensure noise levels are maintained at an acceptable level and limit use of sound amplification.**	**Construction**	**ECO**	**Monthly**	**No noise complaints on record.**
– All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	**Contractor**	**Ensure vehicles and machinery are fitted with appropriate silencing technology and maintained accordingly.**	**Construction**	**ECO**	**Monthly**	**No noise complaints on record and vehicles and machinery fitted with appropriate silencing technology.**
– 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;	**Contractor** **cEO**	**Ensure a public complaints register is kept on site.** **Provide transport to and from site on a daily basis for construction workers.**	**Construction**	**ECO**	**Monthly**	**Public complaints register kept on site.** **Proof of transport of construction workers.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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 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.	**Contractor**	**Develop a Code of Conduct for construction staff.** **Appropriate working hours must be determined for the site.**	**Construction**	**ECO**	**Monthly**	**A copy of the Code of Conduct must be present on site.** **No complaints regarding staff behavior in complaints register.**

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
– Designate smoking areas where the fire hazard could be regarded as insignificant;	**Contractor**	**Identify and demarcate smoking areas. Staff to informed of these areas during the environmental**	**Construction**	**ECO**	**Monthly**	**Photographic evidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		awareness training.				
– Firefighting equipment must be available on all vehicles located on site;	**Contractor**	**Provide all site vehicles with firefighting equipment.**	**Construction**	**ECO**	**Monthly**	**Photographic evidence**
– The local Fire Protection Agency (FPA) must be informed of construction activities;	**Contractor**	**Inform the local FPA of construction activities**	**Construction**	**ECO**	**Once-off, at the commencement of construction.**	**Documentary evidence.**
– Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;	**Contractor**	**Ensure the contact numbers for the FPA and emergency services are contained within the environmental awareness training.**	**Construction**	**ECO**	**Once-off, at commencement of construction.**	**Awareness training material must contain contact numbers for the FPA and emergency services.**
– Two way swop of contact details between ECO and FPA.	**ECO**	**ECO and FPA to swop contact details.**	**Construction (at commencement of construction)**	**N/A**	**N/A**	**N/A**

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
– 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;	**Contractor**	**Identify and demarcate areas suitable for storing excavated materials. Ensure these areas are used and maintained appropriately.**	**Pre-construction & Construction**	**ECO**	**Monthly**	**Photographic evidence. No evidence of sensitive areas used for storing excavation material.**
– All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;	**Contractor**	**Monitoring stockpiled material for weeds and alien vegetation growth.**	**Construction**	**ECO**	**Monthly**	**No weeds or alien vegetation growth within the stockpiled materials.**
– Topsoil stockpiles must not exceed 2 m in height;	**Contractor**	**Ensure stockpiles do not exceed 2 m in height.**	**Construction**	**ECO**	**Monthly**	**Stockpiles must not exceed 2 m in height.**
– During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);	**Contractor**	**During strong winds and heavy rain, stockpiles must be covered by an appropriate material.**	**Construction**	**cEO** **ECO**	**Ongoing** **Monthly**	**Photographic evidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	**Contractor**	**Ensure sandbags are placed at the base of stockpiles to prevent erosion of the material.**	**Construction**	**ECO**	**Monthly**	**Photographic evidence**

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
– 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;	**Contractor**	**During terracing, topsoil must be collected and stored appropriately for use during the rehabilitation process.**	**Construction**	**ECO**	**Monthly**	**Topsoil from terracing activities retained and used for rehabilitation purposes.**
– Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards;	**Contractor**	**Identify terrace embankments and areas outside high voltage yards to be rehabilitated. Implement rehabilitation accordingly.**	**Post -construction** **Rehabilitation**	**ECO**	**Monthly**	**Photographic evidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	**Contractor**	**Where slopes have been impacted by construction activities, they must be rehabilitated to prevent erosion.**	**Post-construction** **Rehabilitation**	**ECO**	**Weekly**	**Disturbed slopes rehabilitated appropriately.**
– 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;	**Contractor**	**Affected slopes must be stabilised according to the contract design and implemented effectively.**	**Post-construction** **Rehabilitation**	**ECO**	**Weekly**	**Sloped areas stabilized according to the contract design.**
– Rehabilitation of the disturbed areas must be managed in accordance with ***Section 5.35: Landscaping and rehabilitation***;	**Contractor**	**Rehabilitation of disturbed areas must be managed in accordance with *Section 5.35***	**Post-construction** **Rehabilitation**	**ECO**	**Weekly**	**Rehabilitation undertaken according to Section 5.35.**
– All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and	**Contractor**	**Ensure excess spoil is disposed of at a recognized disposal site.**	**Construction**	**ECO**	**Monthly**	**Receipt of disposal from a registered disposal facility.**
– Spoil can however be used for landscaping purposes and must be	**Contractor**	**Where required, spoil must be used for landscaping**	**Rehabilitation**	**ECO**	**Monthly**	**Use of spoil for landscaping**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
covered with a layer of 150 mm topsoil for rehabilitation purposes.		**purposes which must be undertaken according to the specifications.**				**purposes.**

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
– 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;	**Contractor**	**Ensure excess spoil is disposed of at a recognized disposal site or is used for backfilling purposes.**	**Construction**	**ECO**	**Monthly**	**Receipt of disposal from a registered disposal facility.** **No evidence of non-compliance.**
– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	**Contractor**	**Use of spoil for landscaping purposes as per the described requirements.**	**Construction and Rehabilitation**	**ECO**	**Monthly**	**Photographic evidence.**
– Management of equipment for	**Contractor**	**Ensure the requirements of**	**Construction**	**ECO**	**Monthly**	**Photographic**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop, equipment maintenance and storage***; and		**Section 5.18 are met when managing equipment for excavation purposed.**				**evidence**
– Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***.	**Contractor / cEO**	**Ensure spills of hazardous substances are managed according to Section 5.17.**	**Construction**	**ECO**	**Monthly, and as required.**	**Photographic evidence**

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
– Batching of cement to be undertaken in accordance with **Section *5.19: Batching plants***; and	**Contractor**	**Ensure cement batching is undertaken in accordance with Section 5.19**	**Construction**	**ECO**	**Monthly**	**Photographic evidence**
– Residual solid waste must be disposed of in accordance with **Section *5.8: Solid waste and hazardous management***.	**Contractor**	**Ensure left-over cement is disposed of as per the specifications in Section 5.8.**	**Construction**	**ECO**	**Monthly**	**Evidence of residual cement being disposed of in accordance with Section**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						5.8.

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
– Management of dust must be conducted in accordance with Section ***5. 20: Dust emissions***;	**Contractor**	**Ensure dust management is conducted in accordance with Section 5.20.**	**Construction**	**ECO**	**Weekly**	**Photographic evidence.**
– Management of equipment used for installation must be conducted in accordance with Section ***5.18: Workshop, equipment maintenance and storage***;	**Contractor**	**Ensure management of equipment used for installation is conducted in accordance with Section 5.18.**	**Construction**	**ECO**	**Weekly**	**Management of equipment used for installation conducted in line with the requirement of Section 5.18.**
– Management hazardous substances and any associated spills must be conducted in accordance with Section ***5.17: Hazardous substances***; and	**Contractor** **cEO**	**Ensure management of hazardous substances (and associated spills) are conducted in accordance**	**Construction**	**ECO**	**Weekly**	**Photographic evidence**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		with Section 5.17.				
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.	**Contractor**	**Ensure solid waste is recycled or disposed of in accordance with Section 5.8.**	**Construction**	**ECO**	**Weekly**	**Photographic evidence**

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
– During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts	**Contractor**	**Unused or left-over materials must not be left on site during steelwork assembly.**	**Construction**	**ECO**	**Weekly**	**No unused or left-over materials left on site.**
– Emergency repairs due to breakages of equipment must be managed in accordance with ***Section 5. 18: Workshop, equipment maintenance and storage*** and ***Section 5.16: Emergency procedures***.	**Contractor**	**Ensure that emergency repairs are managed in accordance with Section 5.18.**	**Construction**	**ECO**	**Monthly**	**Photographic evidence**

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
– Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with **Section 6.8: *Solid waste and hazardous Management***;	**Contractor**	**Ensure that solid waste is recycled /disposed of in accordance with Section 6.8.**	**Construction**	**ECO**	**Ongoing** **Weekly**	**Disposal / recycling of solid waste in accordance with Section 6.8..**
– Management of equipment used for installation shall be conducted in accordance with **Section *5.18: Workshop, equipment maintenance and storage***;	**Contractor**	**Equipment used for installation must be managed in accordance with Section 5.18.**	**Construction**	**ECO**	**Ongoing**	**Equipment used for installation managed according to Section 5.18.**
– Management hazardous substances and any associated spills shall be conducted in accordance with ***Section 5.17: Hazardous substances***.	**Contractor**	**Ensure that hazardous substances and associated spills are managed according to Section 5.17.**	**Construction**	**ECO**	**Ongoing**	**Hazardous substances and spills managed in accordance with Section 5.17.**

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
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.	**Contractor**	**Ensure that solid waste is recycled /disposed of in accordance with Section 6.8.**	**Construction**	**ECO**	**Ongoing**	**Disposal / recycling of solid waste in accordance with Section 6.8..**

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
– Develop and implement communication strategies to facilitate public participation;	**Contractor/ dEO / cEO**	**Identify, develop and implement communication strategies to encourage communication from the public.**	**Pre-construction** **Construction**	**ECO**	**Monthly**	**Evidence of communication strategies being used for communication with the public.**
– Develop and implement a collaborative and constructive	**Contractor/**	**Develop and implement Grievance Mechanism to**	**Pre-construction**	**ECO**	**Monthly**	**A Grievance Mechanism**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
approach to conflict resolution as part of the external stakeholder engagement process;	**dEO / cEO**	**allow for a collaborative and constructive approach to conflict resolution during external stakeholder engagement.**	**Construction**			**must be in place on site. There must be no complaints of poorly managed conflict.**
– Sustain continuous communication and liaison with neighboring owners and residents	**dEO, cEO / Contractor**	**Ensure that there is continuous communication and liaison with neighbouring owners and residents.**	**Pre-construction** **Construction**	**ECO**	**Monthly**	**Proof of communicatio n with neighboring owners and residents.**
– Create work and training opportunities for local stakeholders; and	**DPM/ Contractor and dEO**	**Ensure work and training opportunities are created for local stakeholders i.e. employ local stakeholders, and provide up-skilling opportunities, wherever possible.**	**Pre-construction** **Construction**	**ECO**	**Monthly**	**Record of local stakeholders employed and training sessions provided.**
– 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.	**DPM, Contractor**	**Ensure that no staff (except security staff) stay over-night on the site.**	**Construction**	**ECO**	**Monthly**	**No staff staying over-night on site.**

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
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in ***sections 5.17: management of hazardous substances*** and ***5.18 workshop, equipment maintenance and storage***;	**Contractor**	**Ensure that bunds are emptied according to the impact management actions included in Sections 5.17 and 5.18.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Photographs of bunds emptied according to Sections 5.17 and 5.18.**
– Hazardous storage areas must be well ventilated;	**Contractor**	**Areas containing hazardous materials must be well ventilated.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Observation/ Photographic evidence**
– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	**Contractor / cEO**	**Ensure that all fire extinguishers have been serviced and are easily accessible. Service records must be filed and audited at the last service.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Easily accessible fire extinguishers and service records available.**
– Emergency and contact details must be displayed;	**Contractor / cEO**	**Ensure that all emergency contact details are clearly**	**Construction**	**cEO & ECO**	**At temporary closure of**	**Photographs of the clearly displayed**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		displayed.			**site**	**contact details.**
– Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;	**Contractor**	**Discuss the temporary closure period with the security personnel and ensure they have a means i.e. a phone of contacting and /or be contacted by relevant management or emergency personnel.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Proof of the discussion with the security personnel.**
– Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;	**Contractor**	**Undertake a thorough check of all potential night hazardous.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Proof of checking all potential night hazards.**
– Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;	**cEO /Contractor**	**Identify potential fire hazards on site and notify the local authority.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Proof of notifying the local authority of potential fire hazards on site.**
– Structures vulnerable to high winds must be secured;	**Contractor**	**Identify and secure any high structures vulnerable to**	**Construction**	**cEO & ECO**	**At temporary**	**Photographs of secured**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		high winds.			**closure of site**	**structures.**
– Wind and dust mitigation must be implemented;	**Contractor**	**Implement dust and wind mitigation.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Wind and dust mitigation implemented prior to site closure.**
– Cement and materials stores must have been secured;	**Contractor**	**Ensure that cement and other material stores are secured.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Cement and materials stored securely before site closure.**
– Toilets must have been emptied and secured;	**Contractor**	**Toilets must be emptied and secured.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Empty and secured toilets.**
– Refuse bins must have been emptied and secured;	**Contractor**	**Empty refuse bins and secure them.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Empty and secured refuse bins.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Drip trays must have been emptied and secured.	**Contractor**	**Empty all drip trays and secure them.**	**Construction**	**cEO & ECO**	**At temporary closure of site**	**Empty and secured drip trays.**

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
– All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment;	**Contractor**	**Equipment removed during the project stored in a responsible manner.**	**Pre-construction** **Construction**	**ECO**	**Monthly**	**Photographic evidence**
– Oil containing equipment must be stored to prevent leaking or be stored on drip trays;	**Contractor**	**Oil containers stored on drip trays or another appropriate way.**	**Construction**	**ECO**	**Monthly**	**Photographic evidence**
– All scrap steel must be stacked neatly and any disused and broken insulators must be stored in containers;	**Contractor**	**Scrap steel stacked neatly. Disused and broken insulators stored in containers.**	**Construction**	**ECO**	**Ongoing**	**Photographic evidence.**
– Once material has been scrapped and the contract has been placed	**Disposal**	**Equipment containing pollutants dismantled and**	**Construction**	**ECO**	**When required i.e.**	**Photographic**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
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;	**contractor**	**transported in a manner that prevents spillage and pollution of the environment.**			**when material is being prepped for removal.**	**evidence**
– The Contractor must also be equipped to contain and clean up any pollution causing spills; and	**Disposal contractor**	**A spill kit readily available (within disposal vehicle) for use.**	**Construction**	**ECO**	**When required i.e., before removal of material commences.**	**Complete spill kit in the disposal vehicle.**
– Disposal of unusable material must be at a licensed waste disposal site.	**Contractor**	**Unusable material disposed of at a licensed waste disposal site.**	**Construction**	**ECO**	**Monthly**	**Disposal receipts on site from a licensed waste disposal site.**

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
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided	**Contractor**	**Ensure that all areas that have been disturbed by construction activities must receive landscaping and rehabilitation.** **All waste and spoil must be disposed of at registered waste facility and receipts of disposal obtained.**	**Construction**	**ECO**	**Monthly**	**All areas affected by the construction process have been landscaped and rehabilitated** **Waste disposal receipts available on file.**
– 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	**Contractor**	**Assess all slopes on site and identify those that require contouring in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983.**	**Construction**	**ECO**	**Monthly**	**All slopes assessed and contoured where deemed necessary.**
– 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	**Contractor**	**Assess all slopes on site and identify those that require terracing in accordance with the Conservation of Agricultural Resources Act,**	**Construction phase**	**ECO**	**Monthly**	**All slopes assessed and terraced where deemed**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
of 1983;		**No 43 of 1983.**				**necessary.**
– 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;	**Contractor**	**All berms created must have a slope of 1:4 and must be replanted with indigenous plants from the area.**	**Construction phase**	**ECO**	**Monthly**	**Berms to have a slope of 1:4 and must be planted with indigenous plants from the area.**
– 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;	**Contractor**	**When required, consult with the EA holder and the landowner whether the access roads across farmlands can be rehabilitated by ripping.**	**Construction phase**	**ECO**	**Monthly**	**Proof of consultation with the EA holder and landowner.**
– Rehabilitation of access roads outside of farmland;	**Contractor**	**Ensure that the tower sites and access roads outside of farmlands are rehabilitated.**	**Construction phase**	**ECO**	**Monthly**	**Before and after photographs of rehabilitation of tower sites and access roads.**
– Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	**Contractor**	**Indigenous species, common to the area must be used in the rehabilitation**	**Construction phase**	**ECO**	**Monthly**	**Use of indigenous species for**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		process.				**rehabilitation.**
– Stockpiled topsoil must be used for rehabilitation (refer to Section ***5.24: Stockpiling and stockpiled areas***);	**Contractor**	**Stockpiled topsoil must be used for rehabilitation.**	**Construction phase**	**ECO**	**Monthly**	**Photographic evidence**
– Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;	**Contractor**	**Topsoil must be evenly spread when used in rehabilitation processes.**	**Construction**	**ECO**	**Monthly**	**Topsoil evenly spread out.**
– Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;	**Contractor**	**Ensure that all weeds are removed from the topsoil and the area where the topsoil is to be placed, before applying the topsoil.**	**Construction phase**	**ECO**	**Monthly**	**No visible weeds in the topsoil or in the area where the topsoil is to be placed.**
– Subsoil must be ripped before topsoil is placed;	**Contractor**	**Rip the subsoil before topsoil is placed.**	**Construction phase**	**ECO**	**Monthly**	**Observation and/or photographic evidence.**
– The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;	**Contractor**	**Rehabilitation must be planned for the optimal time for vegetation establishment.**	**Construction phase**	**ECO**	**Monthly.**	**Rehabilitation undertaken during optimal time.**
– Where impacted through construction related activity, all sloped areas must be stabilised to	**Contractor**	**Where slopes have been impacted by construction activities, they must be**	**Construction phase**	**ECO**	**Monthly**	**Disturbed slopes rehabilitated**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
ensure proper rehabilitation is effected and erosion is controlled ;		**rehabilitated to prevent erosion.**				**appropriately.**
– 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;	**Contractor**	**Affected slopes must be stabilised according to the contract design and implemented effectively.**	**Construction**	**ECO**	**Monthly**	**Sloped areas stabilized according to the contract design.**
– Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil.	**Contractor**	**Spoil can be used for backfilling processes provided that it is covered with 150 mm of topsoil.**	**Construction**	**ECO**	**Monthly**	**If spoil has been used for backfilling, it must be covered by 150 mm topsoil.**
– 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: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be	**Contractor**	**Where required, hydroseeding may be used for re-vegetating. The hydroseeding must be carried out as per the mixture specifications.**	**Construction**	**ECO**	**Monthly**	**Hydroseeding conducted in accordance with the mixture specifications.**

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with 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:

Applicant name:	**Paarde Valley PV2 (Pty) Ltd**
Contact person:	**Mr Warren Morse**
Physical address:	**Top Floor, Golf Park 4, Raapenberg Rd, Mowbray, Cape Town, 7700**
Postal address:	**PostNet Suite #53 Private Bag X21 Howard Place 7405**
Email:	**warren@mulilo.com**
Telephone:	**(021) 685 3240**

7.1.2 Details and expertise of the EAP:

EAP name:	**Nicole Holland**
EAP qualifications:	**BSc (Hons) Environmental and Geographical Science**
Professional affiliation/ registration:	**Registered with the South African Council for Natural Scientific Professions (SACNASP) (Reg No.: 400306/06).** **Environmental Assessment Practitioner (EAP) - Registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Reg No.: 2020/493)** **Member of the IAIAsa (International Association for Impact Assessment (Western Cape Branch)).** **(Curriculum Vitae included)**
Physical address:	**Unit B3C, Tokai Village, Vans Road, Tokai, Cape Town, 7945**
Postal address:	**P.O. Box 31108, Tokai, Cape Town**
Email:	**nicole@hollandandassociates.net**
Telephone:	**083 464 5246**

7.1.3 Project name:

Proposed Paarde Valley PV2 Switching Station, 132kV Overhead Powerline to Vetlaagte Main Transmission Substation (MTS), and associated infrastructure, near De Aar, Northern Cape Province

7.1.4 Description of the project:

The proposed project would include the construction of a 132 kV, double circuit, overhead powerline (OHPL) grid connection from the switching station component of the authorised Paarde Valley PV2 Solar Energy Facility on-site substation to the proposed Vetlaagte Main Transmission Station (MTS)(which is undergoing its own EA process. The OHPL is proposed to be approximately 12.7 km in length and would be located in the Strategic Transmission Central Corridor[1]. The final OHPL servitude will be registered as 31 m in width but during the design development process a corridor of 200 meters has been assessed to allow for minor tower position adjustments. The exact pylon locations will be determined by the outcome of the specialist's investigations, and engineering considerations during detailed design. On average there will be 4 - 5 towers per km, so that the route will consist of approximately 40 towers. The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small. The line will have a capacity of 132 kV and will make use of either steel monopole or steel lattice structure in line with Eskom required specifications.

The project would also include the switching station component of the authorised Paarde Valley PV2 Solar Energy Facility on-site substation, with an approximate footprint area of 100 m x 100 m, and a feeder bay at the Vetlaagte MTS with a capacity of 132 kV, as this needs to be handed over to Eskom with the grid connection self-build works once constructed.

In summary, the infrastructure associated with the proposed development (and to be handed over to Eskom following construction), includes the following:

- **A 132 kV, double circuit Overhead Power Line (OHPL) with a length of approximately 12.7 km from the Paarde Valley PV2 Solar Energy Facility Switching Station to the proposed Vetlaagte Main Transmission Substation (MTS);**
- **A 132 kV feeder bay at the Vetlaagte MTS to connect to the Vetlaagte MTS; and**
- **An on-site Switching Station (SwS), adjacent to the authorised Paarde Valley PV2 Solar Energy Facility 132 kV on-site substation (approximately 100 m x 100 m combined).**
- **The technical details include:**

<u>Overhead Powerline:</u>

- **Height of pylons: Up to 32 m**
- **Type of poles/ pylons to be used: Double Circuit configuration. The alternatives under consideration and assessed are steel lattice or monopole structures in line with Eskom required specifications.**
- **Transmission line capacity 132kV**
- **Length of OHPL approximately 12.7 km**
- **OHPL Service Road (to lie within the OHPL servitude)**
    - **Length of OHPL service road(s): Twin-tracked service road following line route with a length of approximately 12.7 km, and**
    - **Width of OHPL service road(s): 6 m**

[1]No. 113 of Government Gazette No. 41445 published 16 February 2018

Switching Station:

- **Footprint of approximately 50 m – 100 m x 100 m adjacent to the Paarde Valley PV2 Substation, within the authorised substation footprint;**
- **Area occupied by buildings (Control building, relay room, generator, storage warehouse, water tanks, ablutions): +-1.0 Hectares**
- **Switching Station Access Road (separate access servitude from the nearest public road to the Switching Station yard)**
- **Compacted gravel**
    - **Length of access road: +- 2.34 km**
    - **Width of access road: 8 m**
- **Security fencing height: 2.4 m**
    - **Type of fencing: Eskom palisade fencing + chainlink fencing for temporary works**
- **Capacity of on-site switching station 132 kV**

The OHPL and Switching station are required to connect the Paarde Valley PV2 Solar Energy Facility to the Eskom National Grid. The route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible.

7.1.5 Project location:

Province:	**Northern Cape**
District Municipality:	**Pixley ka Seme District Municipality**
Local Municipality:	**Emthanjeni Municipality**
Ward number:	**1, 4 & 6**
Affected properties:	**Remainder of Portion 2 of Farm 145 Paarde Valley; Portions 6, 29, 30, 31 and 43 of Farm 145 Paarde Valley; Remainder of Farm 179 Du Plessis Dam; Remainder of Portion 4 Vetlaagte; and Erven 266, 268, 5113, 5114, 5115, 5123, 5122, 5121, 5127, 5316 and 5315**

SG 21 Digit Codes:	C 0 5 7 0 0 0 0 0 0 0 0 0 1 4 5 0 0 0 0 2 C 0 5 7 0 0 0 0 0 0 0 0 0 1 4 5 0 0 0 0 6 C 0 5 7 0 0 0 0 0 0 0 0 0 1 4 5 0 0 0 2 9 C 0 5 7 0 0 0 0 0 0 0 0 0 1 4 5 0 0 0 3 0 C 0 5 7 0 0 0 0 0 0 0 0 0 1 4 5 0 0 0 3 1 C 0 5 7 0 0 0 0 0 0 0 0 0 1 4 5 0 0 0 4 3 C 0 5 7 0 0 0 0 0 0 0 0 0 1 7 9 0 0 0 0 0 C 0 3 0 0 0 0 0 0 0 0 0 0 0 0 4 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 0 2 6 6 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 0 2 6 8 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 1 1 3 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 1 1 4 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 1 1 5 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 1 2 3 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 1 2 1 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 1 2 2 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 1 2 7 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 3 1 5 0 0 0 0 0 C 0 5 7 0 0 0 3 0 0 0 0 5 3 1 6 0 0 0 0 0 1 2 3 4 5
Nearest town:	**De Aar**

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.

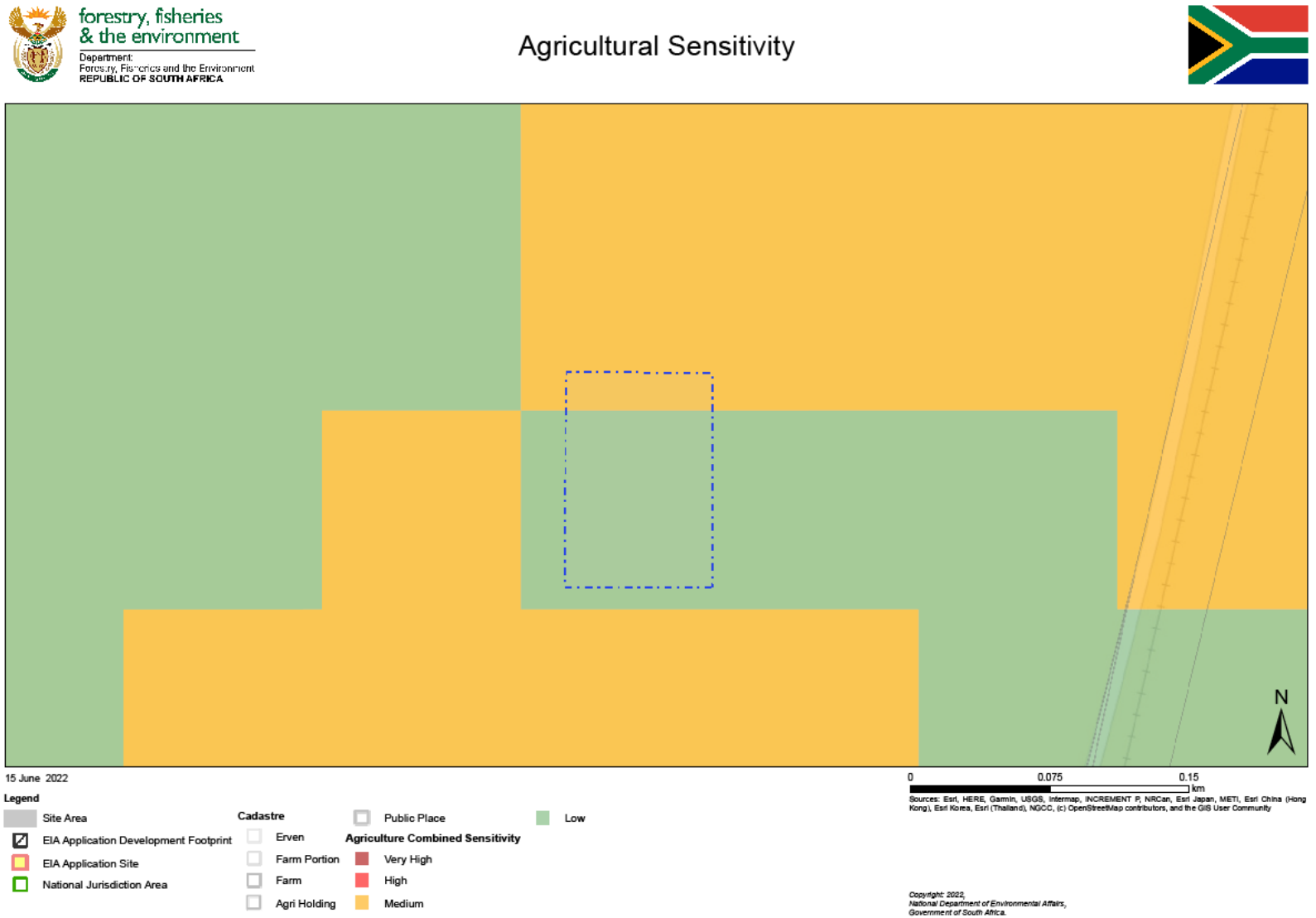

***Figure 1**: Agricultural site sensitivity map of the proposed substation (DFFE Screening Tool)*

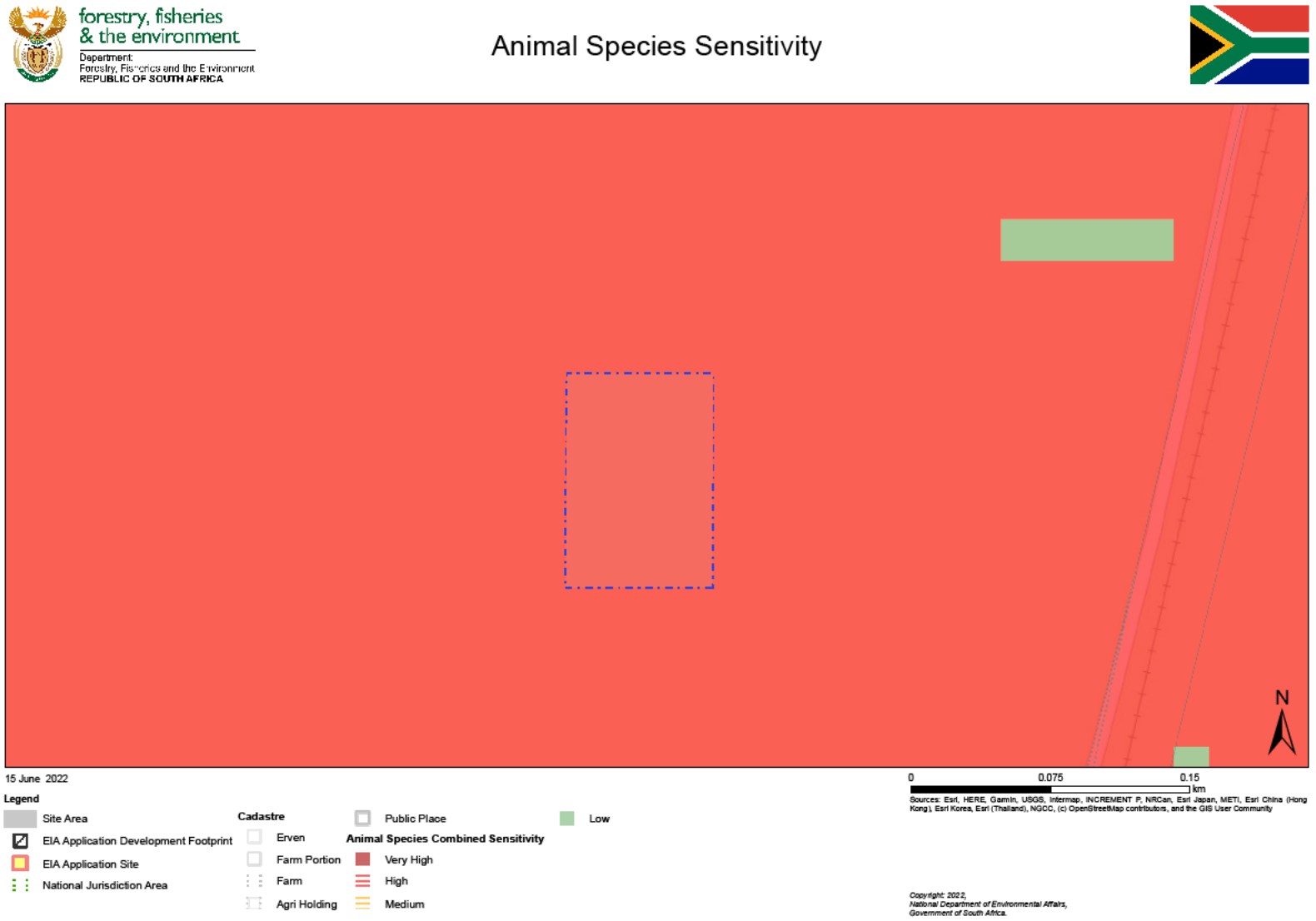

Figure 2: *Animal species site sensitivity map of the proposed substation (DFFE Screening Tool).*

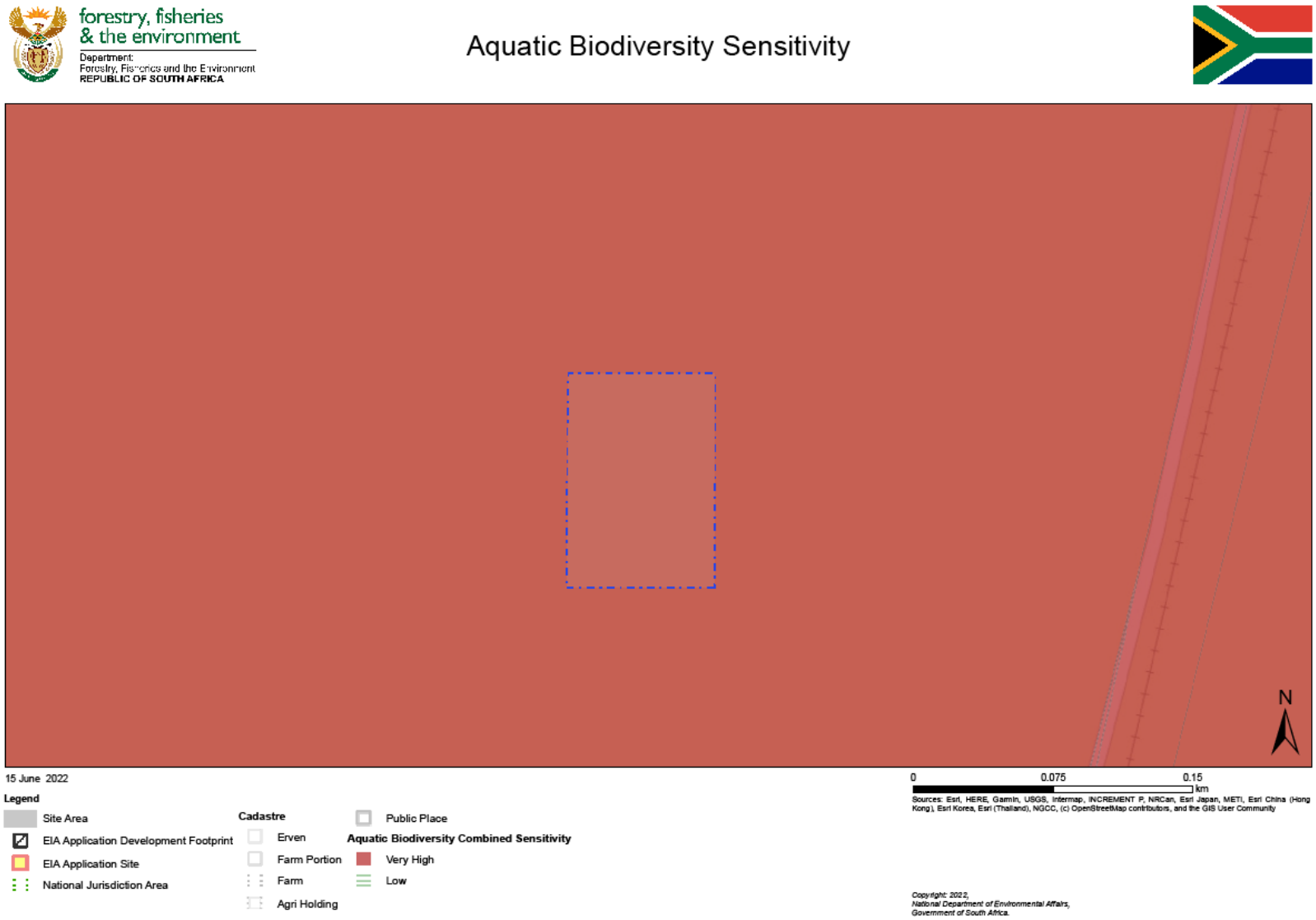

***Figure 3**: Aquatic Biodiversity site sensitivity map of the proposed substation (DFFE Screening Tool).*

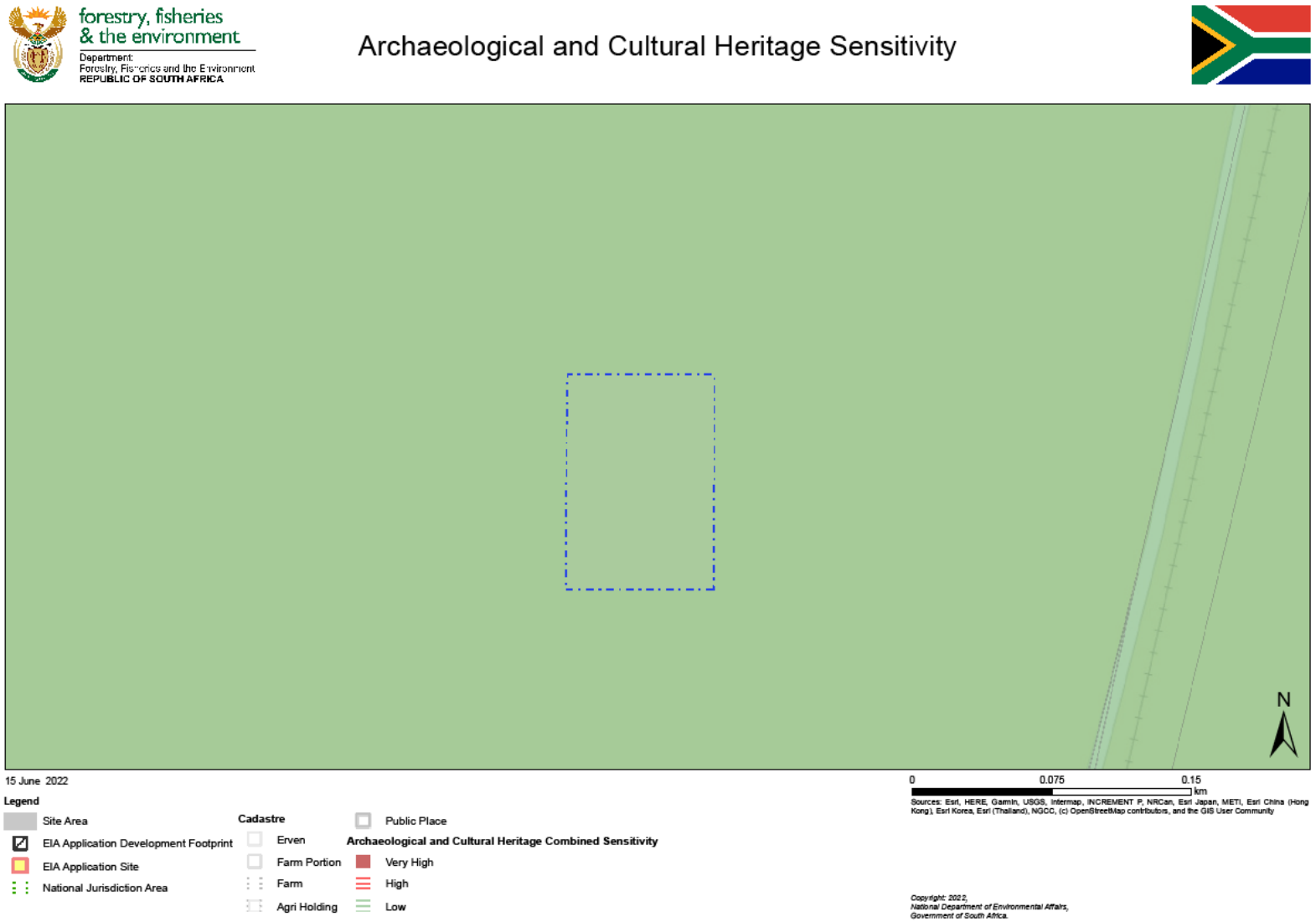

Figure 4: *Archaeological and Cultural Heritage site sensitivity map of the proposed substation (DFFE Screening Tool)*

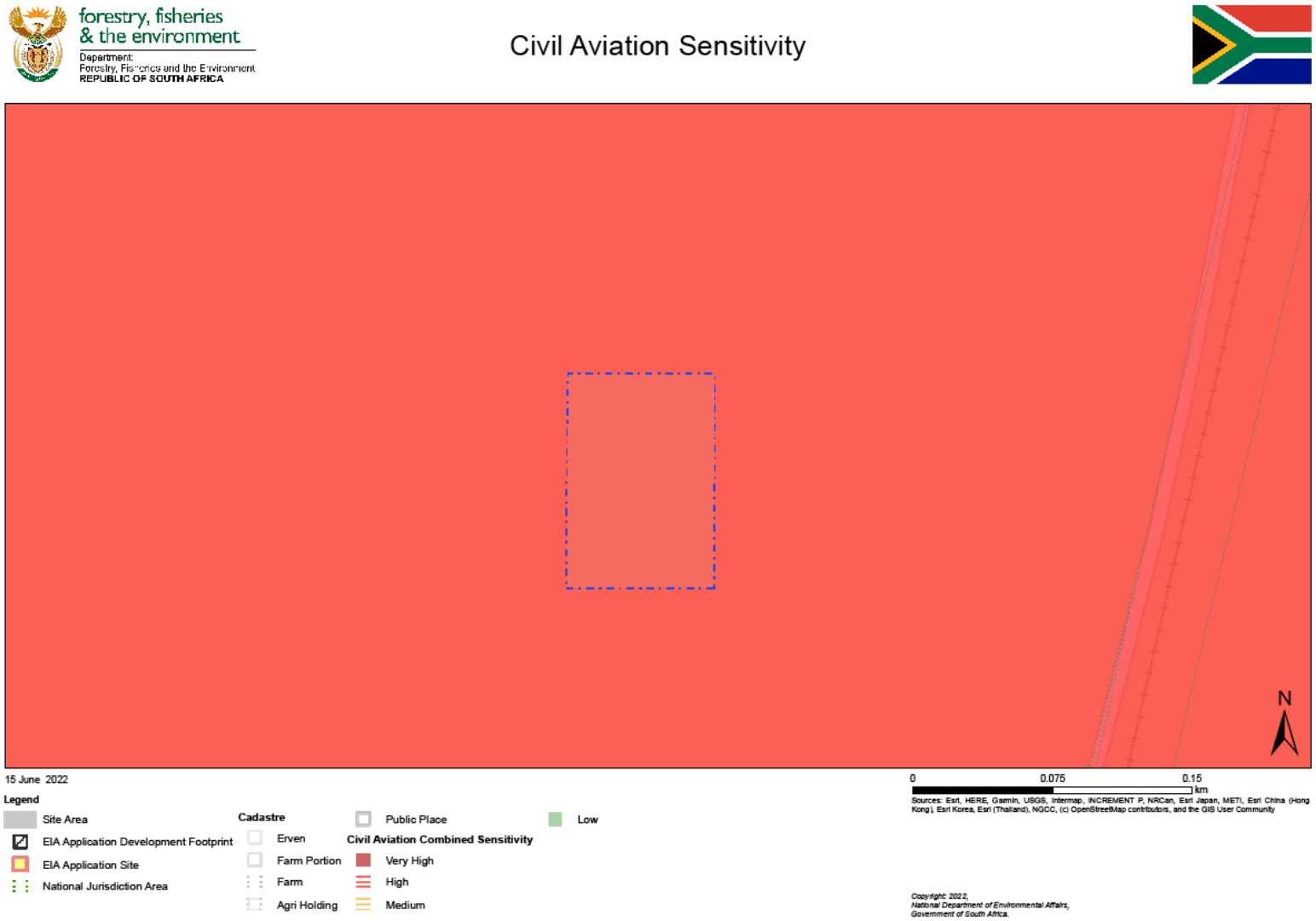

Figure 5: *Civil Aviation site sensitivity map of the proposed substation (DFFE Screening Tool).*

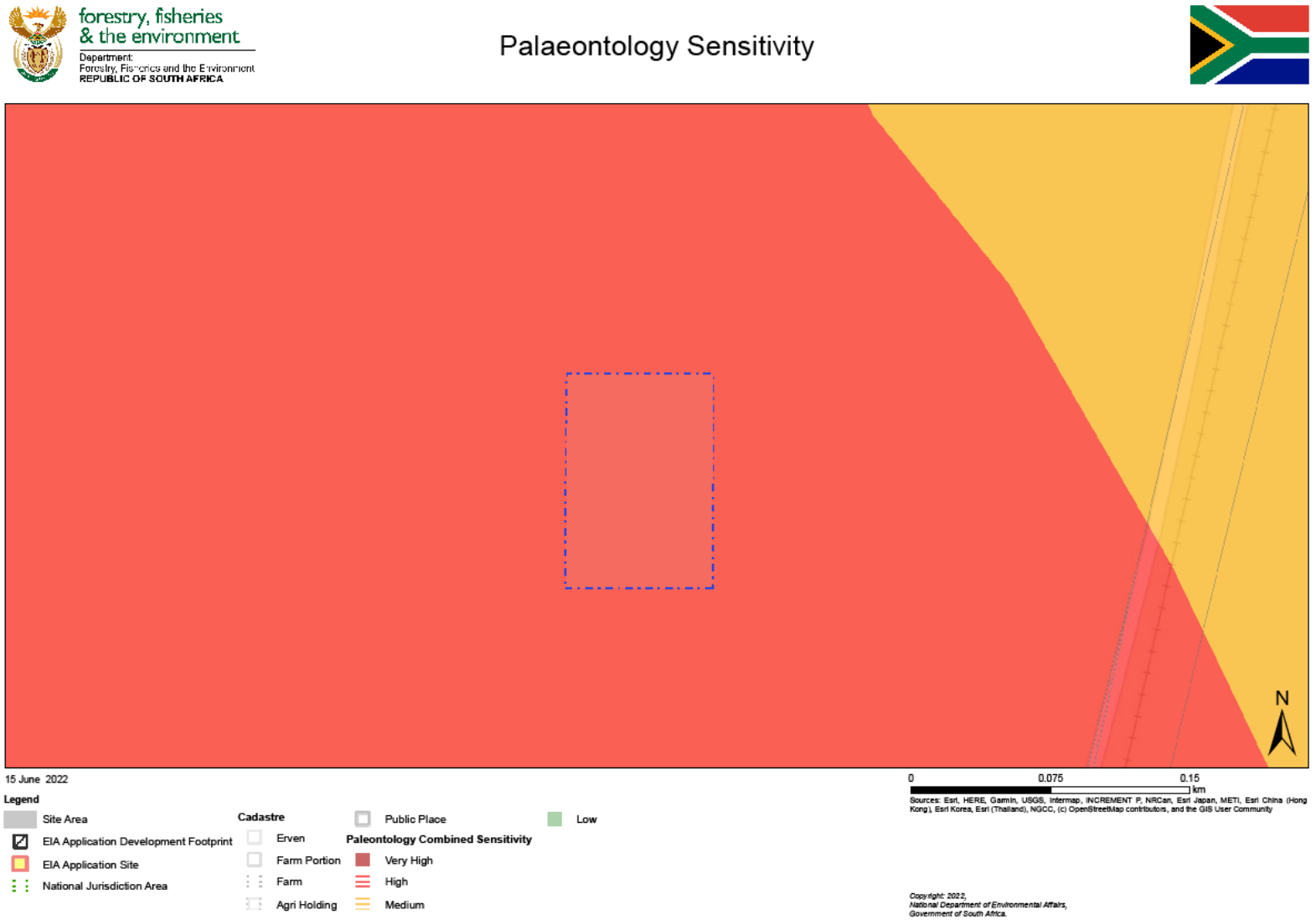

Figure 6: *Palaeontology site sensitivity map of the proposed substation (DFFE Screening Tool).*

Figure 7: *Plant species site sensitivity map of the proposed substation (DFFE Screening Tool).*

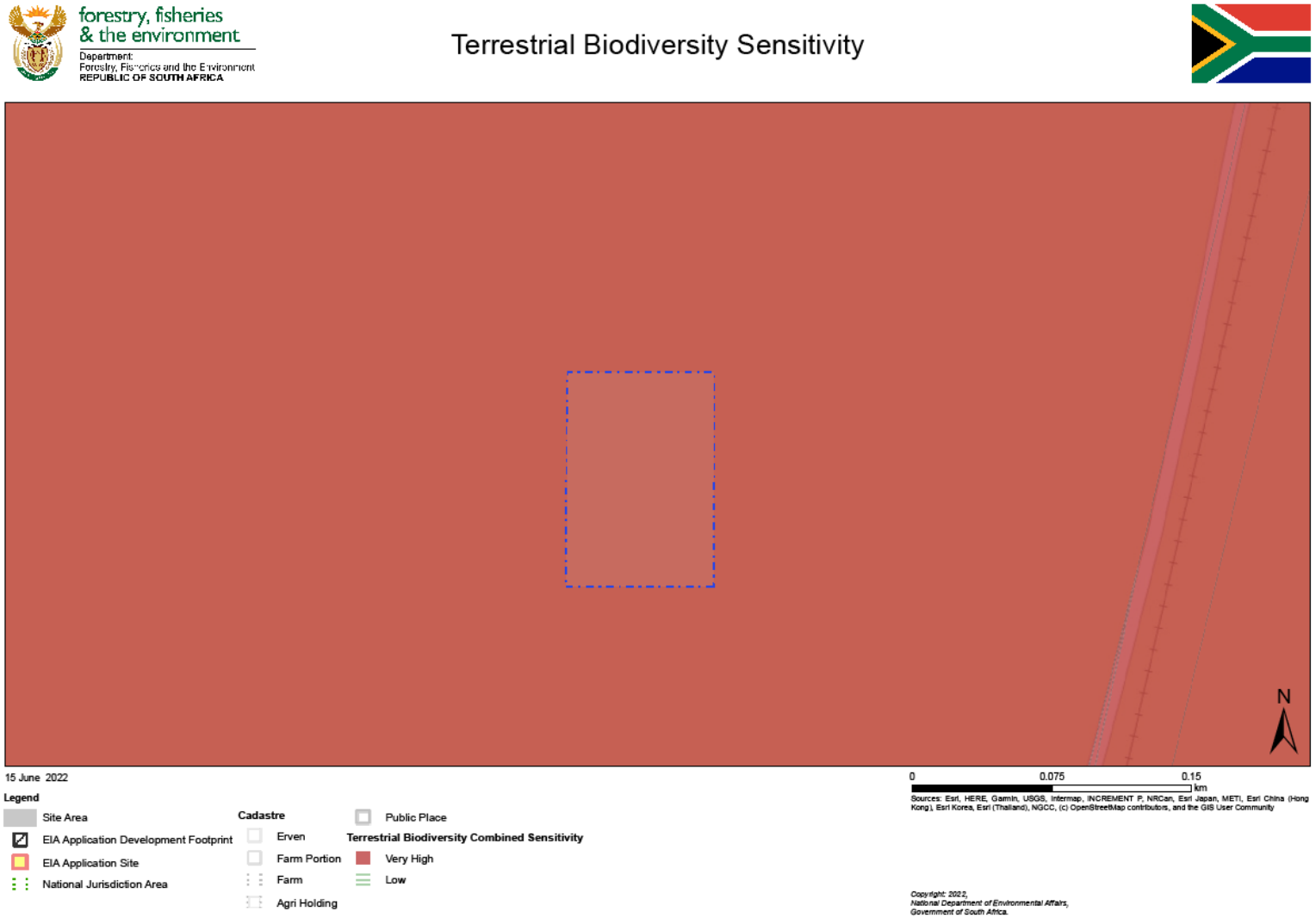

Figure 8: *Terrestrial Biodiversity site sensitivity map of the proposed substation (DFFE Screening Tool).*

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:

13 July 2022

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.

8.1 Avifaunal impacts

Impact management outcome:	**Minimize potential impact on avifauna of the proposed infrastructure**					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Design Phase						
Use of bird-friendly structure to minimize electrocution mortality of avifauna.	**DPM**	**Construction of the double circuit OHPL using a minimum clearance distance of 1.8 m between the jumpers and/or insulators and the horizontal earthed component on the lattice/monopole structure.**	**Design phase** **(Pre-Construction)**	**ECO**	**Once-off during design phase**	**Written approval of the powerline design by the avifaunal specialist.**
Construction Phase						
Minimize the noise and movement associated with the construction activities at the development footprint to reduce the risk of displacement of avifauna.	**cEO** **ECO**	**Conduct a pre-construction inspection (avifaunal walk-through) of the final switching station layout and powerline alignment to identify priority species that may be breeding within the final footprint. If a SSC nest is occupied, the avifaunal specialist must consult with the contractor to find ways of minimizing the potential disturbance to the breeding birds during the construction period. This could include measures such as delaying some of the activities until**	**Construction phase**	**ECO**	**1. Once-off at least one month before construction starts** **2. On a daily basis** **3. Weekly** **4. Weekly** **5. Weekly**	**ECO records and audits reports.**

Impact management outcome: Minimize potential impact on avifauna of the proposed infrastructure						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		after the breeding season. **The generic 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:** **1. No off-road driving;** **2. Maximum use of existing roads, where possible;** **3. Measures to control noise and dust according to latest best practice;** **4. Restricted access to the rest of the property;** **5. Strict application of all recommendations in the biodiversity specialist report**			**6. Weekly**	

Impact management outcome: Minimize potential impact on avifauna of the proposed infrastructure						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		pertaining to the limitation of the footprint. **6. Inclusion of operational measures to be followed with Environmental Awareness Training.**				
Mark the entire length of the overhead powerline with Eskom approved Bird Flight Diverters (BFDs) to reduce collision mortality of avifauna.	**dEO** **cEO**	**Bird Flight Diverters must be fitted to the entire OHPL according to the applicable Eskom Engineering Instruction (Eskom Unique Identifier 240 – 93563150: The utilisation of Bird Flight Diverters on Eskom Overhead Lines).**	**Construction phase**	**ECO**	**Once-off when the earthwires are strung.**	**ECO records and audit reports.**
Operational Phase						
Minimize the total or partial displacement of avifauna due to habitat transformation associated with the vegetation clearance within the switching station and powerline servitude	**DPM** **Contractor** **ECO**	**1. Appointment of rehabilitation specialist to implement rehabilitation measures.** **2. Site inspections to monitor progress of rehabilitation.** **3. Adaptive management to ensure rehabilitation goals are met.**	**Operational phase**	**ECO**	**1. Once-off** **2. Once a year** **3. As required**	**SHE audit reports**

Impact management outcome:	**Minimize potential impact on avifauna of the proposed infrastructure**					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Minimize the risk of avifaunal electrocution mortality in the switching station	**O&M Team**	**1. Monitor the electrocution mortality within the switching station** **2. Apply mitigation if electrocution affects SCC.**	**Operational phase**	**ECO** **Avifaunal specialist**	**Quarterly inspections by avifaunal specialist**	**Audit reports & specialist's quarterly reports.**

8.2 Aquatic Impacts

Impact management outcome:	**Minimize potential impact on aquatic ecosystems of the proposed infrastructure**					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Pre-Construction, Construction & Decommissioning Phase						
Minimise disturbance of aquatic habitats during construction and decommissioning.	**DPM/dEO** **cEO** **Contractor**	**The recommended buffers of at least 30 and 50 m between the delineated aquatic ecosystems and proposed development. The proposed project activities should be clearly demarcated and treated as no-go areas during construction. That is with the exception of the servitude road that will make use of an existing farm road.**	**Pre-construction, construction & decommissioning phase**	**ECO**	**Before commencement and during construction phase**	**Records of monitoring and adherence to implementations methods and mitigation measures**
Prevent water quality and sedimentation impacts	**DPM** **Contractor** **ECO**	**During the construction phase, site management must be undertaken at the laydown and construction sites. This should specifically address on-site stormwater management and prevention of pollution**	**Construction & decommissioning phase**	**ECO**	**During construction phase**	**Records of monitoring and adherence to implementations methods and mitigation measures**

Impact management outcome: Minimize potential impact on aquatic ecosystems of the proposed infrastructure						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		measures from any potential pollution sources during construction activities.				
Prevent invasion of site with alien plant species	**dEO** **cEO** **ECO**	**Invasive alien plant growth should be monitored on an ongoing basis to ensure that the disturbed areas do not become infested with invasive alien plants.**	**Pre-construction, construction & decommissioning phase**	**ECO**	**During construction phase**	**Records of monitoring and adherence to implementations methods and mitigation measures**
Prevent erosion of aquatic features within the site	**cEO/** **Contractor** **ECO**	**Monitor for erosion of aquatic features and adjacent areas during construction. Stormwater runoff from the project infrastructure and access roads (both the servitude and access roads) must be designed to mitigate the flow impacts of any stormwater leaving the developed areas. The runoff should rather be dissipated over a broad area covered by natural vegetation or managed using appropriate shaping**	**Construction & decommissioning phase**	**ECO**	**During construction phase**	**Records of monitoring and adherence to implementations methods and mitigation measures**

Impact management outcome: Minimize potential impact on aquatic ecosystems of the proposed infrastructure						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		of the servitude and access roads with berms or channels and swales adjacent to hardened surfaces where necessary. Should any erosion features develop, they should be stabilised as soon as possible.				
Operational Phase						
Reduce the cumulative habitat loss within aquatic ecosystems and impacts on broad-scale ecological processes such as fragmentation.	**DPM/dEO** **cEO** **ECO**	**All disturbed areas that are not used such as excess road widths, should be rehabilitated after construction to reduce the overall footprint of the development.**	**Operational phase**	**ECO**	**Ongoing**	**Removal of the hardened infrastructure and rehabilitation as per the mitigation measures recommended.**

8.3 Heritage impacts

Impact management outcome:	**Minimise potential impact on archaeology and graves of the proposed infrastructure**					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Construction Phase						
Minimise impacts to archaeological resources and graves	**DPM / dEO** **ECO** **Contractor / cEO**	**Pre-construction briefing of staff on the possibility of finding dense clusters of stone artefacts and possibly human graves.**	**At the start of construction**	**ECO**	**Once off at the start of construction**	**Successful reporting of any chance finds.**
Minimise impacts to archaeological resources and graves	**DPM / dEO** **ECO** **Contractor / cEO**	**Reporting of any chance finds to ECO who should then report to SAHRA (telephone 021 462 4502, email: info@sahra.org.za)**	**Throughout construction**	**ECO**	**As required**	**Successful reporting and rescue of any chance finds as may be needed.**

8.4 Palaeontological impacts

Impact management outcome: Minimise potential impact on Palaeontological Heritage						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Pre-Construction, Construction Phase						
Prevent loss of fossil heritage	**DPM / dEO** **ECO** **Contractor / cEO**	**Follow the Chance Finds Protocol**	**Preconstruction phase and construction phase**	**ECO**	**Ongoing during construction**	**Records of fossil finds.**

8.5 Visual /Landscape impacts

Impact management outcome: Minimise potential impacts of the proposed infrastructure on scenic resources and sensitive receptors (visual).						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Pre-Construction and Construction Phase						
Locate temporary construction and stockpile areas in visually unobtrusive	**DPM/ dEO** **Contractor/ cEO**	**Locate construction camps and stockpiles away from the R48, farmsteads and**	**At start of construction phase**	**ECO**	**During construction phase**	**Records of monitoring and adherence to implementation methods and**

Impact management outcome: Minimise potential impacts of the proposed infrastructure on scenic resources and sensitive receptors (visual).						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
locations.	**ECO**	**residential areas where feasible.**				**mitigation measures**
Use existing roads and tracks where possible, and keep access roads as narrow as practical.	**DPM/ dEO** **Contractor/ cEO** **ECO**	**Use existing roads and tracks where possible, and keep access roads as narrow as practical.**	**At start of construction phase**	**ECO**	**During construction phase**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Control dust and noise during construction activities.	**DPM/ dEO** **Contractor/ cEO** **ECO**	**Control measures to conform with the EMPr.**	**Weekly during construction phase**	**ECO**	**During construction phase**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Rehabilitate / revegetate disturbed areas as soon as possible during and after the construction phase.	**DPM/ dEO** **Contractor/ cEO** **ECO**	**Control measures and rehabilitation to conform with the EMPr.**	**Weekly during construction phase**	**ECO**	**During construction phase**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Use similar pylon types over the length of the proposed grid where	**DPM**	**Take into consideration during design phase.**	**During pre-construction and start of construction**	**Project Manager/**	**Construction and operational**	**Records of monitoring and adherence to implementation**

Impact management outcome: Minimise potential impacts of the proposed infrastructure on scenic resources and sensitive receptors (visual).						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
possible.			**phase**	**ECO**	**phases**	**methods and mitigation measures**
Give preference to the use of monopoles, which have a cleaner visual silhouette.	**DPM**	**Take into consideration during design phase.**	**During pre-construction and start of construction phase**	**Project Manager/ ECO**	**Construction and operational phases**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Give switching station structures muted colours in the grey or green range, and avoid reflective surfaces.	**DPM**	**Take into consideration during design phase.**	**During pre-construction and start of construction phase**	**Project Manager/ ECO**	**Construction and operational phases**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Consider screening of the switching station by means of berms and/or vegetation, if necessary, to minimise visual intrusion.	**DPM**	**Take into consideration during design phase.**	**During pre-construction and start of construction phase**	**Project Manager/ ECO**	**Construction and operational phases**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Design signage and lighting at the switching station to avoid visual intrusion on the surroundings.	**DPM**	**Use reflectors on light fittings to avoid light spillage.**	**During pre-construction and start of construction phase**	**Project Manager/ ECO**	**Construction phase**	**Records of monitoring and adherence to implementation methods and**

Impact management outcome: Minimise potential impacts of the proposed infrastructure on scenic resources and sensitive receptors (visual).						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
						mitigation measures
Operational Phase						
Maintain the area along the grid route including stormwater erosion gullies.	**DPM**	**Ensure that visual mitigation measures are monitored by management on an on-going basis.**	**Weekly during construction phase and annually during operational phase**	**Project Manager/ ECO/ Eskom**	**Annually during operational phase**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Maintain rehabilitated areas, and control all signage, lighting and wastes.	**DPM**	**Ensure that visual mitigation measures are monitored by management on an on-going basis.**	**Weekly during construction phase and annually during operational phase**	**Project Manager/ ECO/ Eskom**	**Annually during operational phase**	**Records of monitoring and adherence to implementation methods and mitigation measures**

8.6 Terrestrial Biodiversity Impacts

Impact management outcome: Minimise potential loss of individual listed or protected plant species						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Locate any individuals of protected plants	**DPM/ dEO** **Contractor/ cEO** **ECO**	**Conduct detailed pre-construction walk-through survey by an ecological / botanical specialist during a favourable season. This survey must cover the footprint of all approved infrastructure, including internal access roads (final infrastructure layout). The best season is early to late Summer, but dependent on recent rainfall and vegetation growth. • The location of all transplanted rescued plants must be recorded, along with the identity of the plant.**	**During pre-construction**	**Project Manager/ ECO**	**Once**	**Records of monitoring and adherence to implementation methods and mitigation measures**
Monitor health / vigour of each transplanted individual	**DPM/ dEO** **Contractor/ cEO**	**As a scientific control, an equal number of non-transplanted individuals of the same species, within similar habitats, should be**	**During pre-construction, construction and operation for a minimum of three years.**	**Project Manager/ ECO / Eskom**	**Annually**	**Records of monitoring and adherence to implementation methods and mitigation measures**

Impact management outcome: Minimise potential loss of individual listed or protected plant species						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
	ECO	**monitored in the same way as the transplanted specimens. This will provide comparative data on the survival of wild populations relative to transplanted plants.**				

Impact management outcome: Minimise potential impacts of alien invasive species						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Monitor for early detection of alien plant species, to find species when they first appear on site	**Eskom**	**Appoint botanist to conduct early detection survey. Early detection should provide a list of species and locations where they have been detected. Remove alien invasive plants detected.**	**Annually during operational phase**	**Project Manager/ ECO/ Eskom**	**Annually**	**Record of adherence to implementation methods and mitigation measures**

Impact management outcome: Minimise potential impacts of alien invasive species						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Monitor for the effect of management actions on target species, which provides information on the effectiveness of management actions.	**Eskom**	**Such monitoring depends on the management actions taking place.**	**It should take place after each management action.**	**Project Manager/ ECO/ Eskom**	**Annually**	**Record of adherence to implementation methods and mitigation measures**

Impact management outcome: Rehabilitation of disturbed areas						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Monitor rehabilitated areas	**DPM/ dEO** **Contractor/ cEO** **ECO**	**All management actions associated with rehabilitation must be recorded after each management action has taken place.** **For each monitoring site, an**	**Construction, Operation and decommissioning phases for a minimum of three years or until vegetation stability has been achieved.**	**DPM/ dEO** **Contractor/ cEO** **ECO**	**Annually**	**Record of adherence to implementation methods and mitigation measures**

Impact management outcome: Rehabilitation of disturbed areas						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
	Eskom **Relevant specialist**	**equivalent comparative site in adjacent undisturbed vegetation should be similarly monitored.** **Monitoring data collection should include the following:** • **total vegetation cover and height, as well as for each major growth form;** • **species composition, including relative dominance;** • **soil stability and/or development of erosion features;** • **representative photographs should be taken at each monitoring period.**		**Eskom**		

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.

APPENDIX 2: EMPR REQUIREMENTS (APPENDIX 4 OF THE 2014 EIA REGULATIONS, AS AMENDED)

Appendix 4

Content of environmental management programme (EMPr)

1. (1) An EMPr must comply with section 24N of the Act and include—

(a) details of–

(i) the EAP who prepared the EMPr; and

(ii) the expertise of that EAP to prepare an EMPr;

(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;

(c) a description of the impact management objectives, including management statements, identifying the impacts that need to be avoided, managed and/or mitigated as identified through the environmental impact assessment process for all phases of the development including—

(i) planning and design;

(ii) pre-construction activities;

(iii) construction activities;

(iii) where relevant operation activities; and

(iv) rehabilitation of the environment after construction and where applicable post closure;

(d) a description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph (c);

(e) a description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved, and may include actions to —

(i) modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;

(ii) remedy the cause of pollution or degradation and migration of pollutants;

(iii) comply with any prescribed environmental management standards or practices;

(iv) comply with any applicable provisions of the Act regarding closure, where applicable;

(v) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;

(f) the method of monitoring the implementation of the impact management actions contemplated in paragraph (e);

(g) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (e);

(h) an indication of the persons who will be responsible for the implementation of the impact management actions;

(i) the time periods within which the impact management actions contemplated in paragraph (e) must be implemented;

(j) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (e);

(k) a program for reporting on compliance, taking into account the requirements as prescribed by these Regulations; and

(l) an environmental awareness plan describing the manner in which—

(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and

(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment.

(2) Where a proposed development and the geographical area within which it is located has been subjected to a pre-assessment using a spatial development tool, and the output of the pre-assessment in the form of a site specific development protocol has been adopted in the prescribed manner, the content of a EMPr may be determined by the adopted site specific development protocol applicable to the specific proposed development in the specific geographical area it is proposed in.

APPENDIX 3: CURRICULUM VITAE OF EAP

N L HOLLAND

CURRICULUM VITAE

Name	:	Nicole Holland (née Zimmermann)
Profession	:	Environmental Assessment Practitioner
Year of Birth	:	1976
Nationality	:	South African
Contact Details	:	P.O. Box 31108, Tokai, 7966 Cell: 083 4645246 Fax: 086 762 612 (SA Only) Email: nicole@hollandandassociates.net

Professional Registrations/ affiliations/ Memberships:

- Professional Environmental Scientist: South African Council for Natural Scientific Professions (Registration Number: 400306/06) (Environmental Scientist)
- Environmental Assessment Practitioner (EAP): Registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Registration Number: 2020/493)
- Member: South African affiliate of the International Association for Impact Assessment (IAIAsa)

Key Qualifications:

Nicole Holland has a Bachelor of Science (Hons) in Environmental and Geographical Science (UCT), specializing in Environmental Management. She has twenty years of experience in the environmental management field and has compiled and managed numerous environmental investigations including Environmental Impact Assessments, Environmental Management Plans/Programmes (EMP), waste management license application processes, as well as applications for amendments of Environmental Authorisations. Nicole has extensive experience in managing environmental authorisation processes including, amongst others, agricultural projects, water supply schemes and dams, renewable energy facilities, wastewater treatment works, housing and resort developments, cemeteries, road upgrades, pipelines, waste sites, and a cement manufacturing plant. Nicole has also undertaken the independent review of a number of Basic Assessment and Scoping and Environmental Impact Assessment Reports and has been involved in a broad spectrum of other environmental work including Environmental Auditing, the drafting of Environmental Management Programmes, and Environmental Control Officer work.

Summary of Relevant Project Experience:

EA Amendment Applications/ Amendment of EMPr's for renewable energy projects:

- Wind Energy Facility on the Eastern Plateau (South) near De Aar, Northern Cape Province
- Springbok Wind Energy Facility, near Springbok, Northern Cape Province
- Longyuan Mulilo Maanhaarberg Wind Energy Facility near De Aar, Northern Cape Province
- Longyuan Mulilo De Aar 2 North Wind Energy Facility near De Aar, Northern Cape Province
- Namies Wind Energy Facility, near Aggenery, Northern Cape Province
- Overhead Transmission Line (Kronos) for the Kronos Photovoltaic Development near Copperton, Northern Cape Province
- Overhead Transmission Line (Caprum) for the Kronos Photovoltaic Development near Copperton, Northern Cape Province
- 10MW Augrabies PV Solar Energy Facility, Northern Cape Province
- 132kV Transmission line from De Aar 1 WEF to Hydra Substation, Northern Cape Province
- 132kV transmission line from the De Aar 2 North WEF to the Hydra Substation, Northern Cape Province
- 100MW De Aar PV3 (Badenhorst Dam), Northern Cape Province
- De Aar PV4 (19.9MW) facility, Northern Cape Province
- Proposed 75 – 150MW De Aar PV2 (Paarde Valley) facility, Northern Cape Province

Environmental Management Programmes, Environmental Compliance Monitoring &/or Auditing

- Amendment of the approved EMPr for the Wind Energy Facility on the Eastern Plateau (North) near De Aar, Northern Cape Province
- Amendment of the approved EMPr for the Longyuan Mulilo Maanhaarberg Wind Energy Facility near De Aar, Western Cape Province
- Proposed cultivation of virgin soil, construction of a dam and associated infrastructure on Portion 27 and Portion 17 of Farm No. 466, Scherpenheuwel, Western Cape Province
- Proposed raising of Ou Brakfontein Dam near Citrusdal, Western Cape Province
- Proposed upgrade of a low level bridge over the Olifants River, near Citrusdal, Western Cape Province
- Proposed raising of Ruimsig Dam and expansion of agricultural areas, on Remainder of Portion 56 and Portion 93 of the Farm De la Haye No. 92, Near De Doorns, Western Cape
- Proposed Kleinberg Dam Scheme, Hex Valley, Western Cape, South Africa:
- Proposed raising of Osplaas Dam, Hex Valley, Western Cape
- Proposed cultivation of virgin soil on Remainder of Farm Monte Vista No. 43, Hex Valley, Western Cape
- Proposed upgrading of a road leading to the Mossgas Quay, Port of Saldanha, Western Cape
- Upgrading and extension of the Ben Schoeman Dock at Cape Town Harbour, Western Cape, South Africa
- Phase 1B expansion of the iron ore facility at the Port of Saldanha, Saldanha Bay, Western Cape, South Africa
- Upgrading of the Darling Wastewater Treatment Works, Darling, Western Cape, South Africa
- Proposed Upgrading of the Bonnievale Wastewater Treatment Works, Bonnievale
- Upgrading of the Hex River Valley Weirs, Hex River Valley, Western Cape, South Africa
- Proposed Construction of an Effluent Pipeline between the New Town Pump Station in Wellington and the Paarl Wastewater Treatment Works, Paarl, Western Cape, South Africa

Academic Qualifications:

- BSc (Hons) (Environmental and Geographical Science), University of Cape Town, South Africa, 2000.
- BSc (Environmental and Geographical Science), University of Cape Town, South Africa, 1996.
- EIA and Management Course, University of Stellenbosch, South Africa, June 2002.

Processional Experience:

2017 – present	Director, Holland Group (Pty) Ltd, trading as Holland & Associates Environmental Consultants, Cape Town, South Africa
2011 - 2017	Self employed, trading as Holland & Associates Environmental Consultants
2004 to 2011	Senior Environmental Practitioner, Aurecon South Africa (Pty) Ltd (previously known as Ninham Shand), Cape Town, South Africa
2002 - 2004	Environmental Scientist, Withers Environmental Consultants, Stellenbosch, South Africa
2001 - 2002	Senior Applications Analyst, Geosense Limited, Cape Town, South Africa
2000	Honours student, Department of Environmental and Geographical Science, University of Cape Town, Cape Town, South Africa
1998 - 1999	Junior Project Accountant, Warburg Dillon Read, Union Bank of Switzerland, London, United Kingdom