



INTERNAL ENVIRONMENTAL MANAGEMENT PROGRAMME

**TSHWANE HV YARD FENCING REFURB PROJECT:
LOMOND, PELLY, NJALA AND KWAGGA SUBSTATIONS**

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1 INTRODUCTION

1.1 BACKGROUND

Tshwane CLN, Central Grid has initiated a project to upgrade the fencing around the HV Plant Yard of identified substations. These substations are more than 40 years old and have never been refurbished.

The following substations have been identified for the refurbishment of fence and gate to comply with the Occupational Health and Safety Act No. 85 of 1993 under section 43 schedule 6:

- Lomond Substatio – Hartbeespoort
- Pelly Substation - Hamanskraal
- Njala substation- Delmas
- Kwagga - Atteridgeville

2 SCOPE OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

This EMPr has been compiled to address the potential environmental impact that might occur during Tshwane HV Yard fencing refurbishment project at Lomond, Pelly, Njala and Kwagga substations. This document serves as the environmental specification to Eskom National Transmission Company (NTCSA) personnel and contractors with regards to addressing the environmental issues identified prior to and during the construction phase. It is the responsibility of the Project Manager (PM), Contractors and the Environmental Practitioner to ensure compliance with all the environmental specifications in this document as well as the relevant legislations. This EMPr should also ensure the sustainable management of the environment whilst Tshwane HV Yard fencing refurbishment project at Lomond, Pelly, Njala and Kwagga substations project is being undertaken. This EMPr must be viewed as a contract document to which all Eskom National Transmission Company (Eskom NTCSA) employees and contractors involved should adhere to.

NB: This EMP document only caters for the scope of work contained in it. Any activities outside the given scope of work will need to be addressed through the correct process (i.e. method statements).

3 ROLES AND RESPONSIBILITIES

FUNCTION	ROLES AND RESPONSIBILITIES
Eskom NTCSA Environmental Practitioner	To ensure that an Environmental Management Programme (EMPr) for the construction phase of the project is compiled and approved. To ensure that all conditions stipulated in the EMPr are met To conduct audit, monitor or provide assurance before, during and post construction
Eskom NTCSA Project Manager/ Site Manager	Ensure that implementation of EMPr is executed as planned. Ensure that conditions in this EMPr are fulfilled before the contractor occupies the site.
Contractor Environmental Officer (CEO)/ SHE Officer	Ensures that all Sub-contractors (if any) working under the Principal Contractor abide by the requirements of the EMPr. Be on site throughout the duration of the project and be dedicated to the project

	<p>Ensure all staff are aware of the environmental requirements, conditions, and constraints with respect to all of their activities on site.</p> <p>Implementing the environmental conditions, guidelines and requirements as stipulated within the EMPr and Method Statements</p> <p>Attend the Environmental site meetings</p> <p>Undertaking corrective actions where non-compliances are registered within the stipulated timeframes</p> <p>Assist the Eskom environmental practitioner in maintaining all the site documentation</p> <p>Prepare site inspection reports and corrective action reports for submission to the Eskom</p> <p><i>NB: Considering the project's scope and duration, a separate Environmental Officer may not be required. Instead, the full-time SHE Officer with at least training in environmental management (e.g., ISO 14001:2015 Environmental Management System, Environmental Law etc.) can also oversee environmental monitoring and ensure compliance. Proof of such training and SHE officer appointment with environmental responsibilities shall be submitted to the Client for approval.</i></p>
Contractor Project Manager/ Site Manager	<p>To provide all necessary supervision during the execution of the project. He/She should be available on site all the time</p> <p>To appoint a competent Environmental Officer</p> <p>To ensure that implementation is conducted in an environmentally acceptable manner</p> <p>To fulfil all obligations as per the agreed contract</p> <p>To inform and educate all employees about the environmental risks associated with the different activities that should be avoided during the construction process and lessen significant impacts to the environment.</p>

4 LEGISLATIVE CONTEXT

The following National Environmental related Acts were considered in the compilation of this EMPr:

- National Environmental Management Act, 1998 (NEMA) (Act No 107 of 1998), and all amendments and supplementary listings and/or regulations.
- Environment Conservation Act, 1989 (ECA) (No 73 of 1989) and amendments.

- National Environmental Management: Waste Act, 2008 (NEMWA, Act 59 of 2008).
- National Environmental Management: Biodiversity Act, 2004 (NEM:BA) (Act No. 10 of 2004) and amendments.
- National Forest Act, 1998 (NFA) (No 84 of 1998).
- National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998).
- Conservation of Agricultural Resources Act, 1983 (CARA) (Act No. 43 of 1983) and amendments.
- National Heritage Resources Act, 1999 (Act 25 of 1999).
- National Water Act, 1998 (Act 36 of 1998).
- The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- The National Fencing Act, 1963 (Act No 31 of 1963) as amended by Act 108 of 1991.
- The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) and its Regulations.
- The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004).
- The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).
- South African National Standard (SANS) 10228 – The identification and classification of dangerous goods.

5 PUBLIC INVOLVEMENT

The potential environmental impacts associated with the proposed project are required to be considered in compliance with the Environmental Impact Assessment (EIA) Regulations of 2014 published in Government Notice R982 to R985 on 4 December 2014, in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act 107 of 1998) (as amended). The above scope of work was assessed against the Listing Notices of the EIA Regulations 2014 and the following is noted:

- All the required refurbishment works will be done directly on the existing substation footprint and within the existing servitudes therefore the project would not trigger the EIA listed activities.
- Public involvement process as prescribed in Chapter 6 of GNR No. R982 of December 2014 (the “2014 EIA Regulations as Amended”) and are also guided by relevant principles contained in Chapter 2 of NEMA will not be required as the work does not trigger EIA activities.

6 PROJECT SCOPE

Designs and construction are in accordance with [1] – [21]. All construction is to be carried out in accordance with Eskom's Safety, Health and Environmental Specification. Construction will be done near other electrical equipment; therefore, all necessary safety procedures must be strictly adhered to.

The Civil Scope of Work involves the following design aspects:

Refurbish HV Yard fence as per specification drawing number 0.54-4963 and design drawings for each station.

1. Replace all rusted and damaged fence posts.
2. Replace all rusted and damaged HV yard access gates.
3. Replace all wire mesh on fence.
4. Earth straps required on all gates.
5. Use only galvanized bolts.
6. Keep the 45-degree fence overhang as per existing fence.
7. Dismantling, removal and adequate disposal of the old fencing and gates

6.1 LOMOND SUBSTATION

- To be read in conjunction with drawing Lom24P06-SE-E11
- Remove all strands of barbed wire on the single overhang and replace with new.
- All meshwire must be removed to spoil and replaced with new (1.35Km length).
- All the posts, stays and overhang members must be painted.
- Surface preparation, coating application procedures and guarantees must be in accordance with Eskom specification 240-75883230 pages 12 to 16.
- The post or stay must be opened until the concrete is exposed.
- Remove the rust stains with steel wool. Care must be taken not to damage the galvanising.

- If part of a post or stay is found to be rusted to more than half the original thickness, it must be replaced as detailed in drawing 0.54/4693.
- After surface preparation clean member with plascon metalcare galvanised iron cleaner.
- Apply one coat plascon metalcare galvanised iron primer. Apply two coats plascon metalcare, silvershine aluminium.
- All gates (8 off 6m, 1 off 4m and 1 off 1m) must be removed to spoil and replaced with new.
- Install additional 6m and 1m gates as shown.
- All gates require earth straps.

6.2 PELLY SUBSTATION

- To be read in conjunction with drawing PEL24P09-SE-E11
- Remove all strands of barbed wire on the single overhang and replace with new.
- All meshwire must be removed to spoil and replaced with new (1.65Km length).
- All the posts, stays and overhang members must be painted.
- Surface preparation, coating application procedures and guarantees must be in accordance with Eskom specification 240-75883230 pages 12 to 16.
- The post or stay must be opened until the concrete is exposed.
- Remove the rust stains with steel wool. Care must be taken not to damage the galvanising.
- If part of a post or stay is found to be rusted to more than half the original thickness, it must be replaced as detailed in drawing 0.54/4693.
- After surface preparation clean member with plascon metalcare galvanised iron cleaner.
- Apply one coat plascon metalcare galvanised iron primer. Apply two coats plascon metalcare, silvershine aluminium.
- All gates (16 off 6m, 3 off 12m, 3 off 1m and 8 off 6m removable panels) must be removed to spoil and replaced with new.

- All gates require earth straps.

6.3 NJALA SUBSTATION

- Remove all strands of barbed wire on the single overhang and replace with new.
- All meshwire must be removed to spoil and replaced with new (0.376Km length).
- All the posts, stays and overhang members must be painted.
 - Surface preparation, coating application procedures and guarantees must be in accordance with Eskom specification 240-75883230 pages 12 to 16.
 - The post or stay must be opened until the concrete is exposed.
 - Remove the rust stains with steel wool. Care must be taken not to damage the galvanising.
 - If part of a post or stay is found to be rusted to more than halve the original thickness, it must be replaced as detailed in drawing 0.54/4693.
 - After surface preparation clean member with plascon metalcare galvanised iron cleaner.
 - Apply one coat plascon metalcare galvanised iron primer. Apply two coats plascon metalcare, silvershine aluminium.
 - All gates (2 off 1m) must be removed to spoil and replaced with new.
 - Install 2 additional 6m gates as shown.
 - All gates require earth straps.
 - Extend the concrete road as shown.

6.4 KWAGGA SUBSTATION

- To be read in conjunction with drawing Kwa24P04-SE-E11
- Remove all strands of barbed wire on the single overhang and replace with new. All meshwire must be removed to spoil and replaced with new (0.215Km length).
- All the posts, stays and overhang members must be painted.
- Surface preparation, coating application procedures and guarantees must be in accordance with Eskom specification 240-75883230 pages 12 to 16.
- The post or stay must be opened until the concrete is exposed.

- Remove the rust stains with steel wool. Care must be taken not to damage the galvanising.
- If part of a post or stay is found to be rusted to more than halve the original thickness, it must be replaced as detailed in drawing 0.54/4693.
- After surface preparation clean member with plascon metalcare galvanised iron cleaner.
- Apply one coat plascon metalcare galvanised iron primer. Apply two coats plascon metalcare, silvershine aluminium.
- All gates (2 off 4m and 1 off 1m) must be removed to spoil and replaced with new.
- Install additional 6m and 1m gates as shown.
- All gates require earth straps.
- Install new ramp as shown.

7 SPECIFIC PROJECT ENVIRONMENTAL CONTROLS

This section specifies standard mitigation measures to be followed by the parties responsible for environmental management during Tshwane HV Yard fencing refurbishment project at Lomond, Pelly, Njala and Kwagga substations.

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
<p style="text-align: center;">7.1 Project Contract and programme</p> <ul style="list-style-type: none"> • The EMPr must be included as part of the tender documentation thereby making it part of the enquiry document to make the recommendations and constraints, as set out in this document, enforceable under the general conditions of contract. • A copy of this EMPr must be always available at the substation. The Contractor shall ensure that all the personnel on site, sub-contractors and their teams, suppliers, etc. are familiar with and understand the specifications contained in this EMPr. 	<p>Contingencies for minimising negative impacts anticipated to occur during the construction phase.</p> <p>Ensure environmental awareness and formalize environmental responsibilities and implementation.</p>	<p>Contract records</p> <p>Signed declaration pro-forma</p>	<p>During tender stage</p> <p>During construction</p>
<p style="text-align: center;">7.2 Method Statements</p> <ul style="list-style-type: none"> • All activities which require method statements may only commence once the method statements have been approved by the PM and SEA. • Where applicable, the contractor shall provide job-specific training on an <i>ad hoc</i> basis when workers are engaged in activities, which require method statements. 	<p>Contingencies for minimising negative impacts anticipated to occur during the construction phase</p>	<p>Approved method statements and relevant pro forma documents</p> <p>Training records</p>	<p>As and when required</p>

<ul style="list-style-type: none"> It must be ensured that Eskom policies, guidelines and standards are consulted to ensure that method statements meet requirements as set out in these documents. 			
<p>7.3 Site demarcation and development</p> <ul style="list-style-type: none"> All conditions contained in this EMPr must be adhered to and considered when site demarcation and development takes place. No activities will be allowed outside the demarcated area. 	<p>Contingencies for minimising negative impacts anticipated to occur during the construction phase</p>	<p>Demarcated area's Filled in section of this document</p>	<p>As and when required</p>
<p>MITIGATION MEASURE</p>	<p>MANAGEMENT OBJECTIVES</p>	<p>MEASURABLE TARGETS</p>	<p>FREQUENCY OF ACTION</p>

<p>7.4 Environmental Awareness</p> <ul style="list-style-type: none"> • All staff should receive environmental awareness/ training. • All new staff coming onto site shall receive environmental awareness/training. • Refresher environmental awareness/training shall be available as and when required. • All staff shall be made aware of the conditions and controls linked to the EMPr. • All staff are made aware of their individual roles and responsibilities in achieving compliance with the EMPr. • The Contractor shall erect and maintain information posters at key locations on site. <p>Environmental awareness/training should include as a minimum the following:</p> <ul style="list-style-type: none"> • Description of significant environmental impacts, actual or potential, related to their work activities. • Mitigation measures to be implemented when carrying out specific activities. • Emergency preparedness and response procedures. • Wastewater management procedures. • Water usage and conservation. • Solid waste management procedures. • Sanitation procedures • Chance finds procedure for archaeological/ paleontological/historical sites unearthed during construction. • All record of all environmental awareness undertaken as part of the EMPr must be available. 	<p>Environmental training and awareness of construction staff contribute to minimisation of the occurrence of environmental impact to the work area.</p>	<p>Environmental impact because of construction activities is minimised through the development of effective environmental awareness training material and execution of environmental awareness training for all staff</p>	<p>As and when required</p>
MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
<p>7.5 Site Establishment</p> <ul style="list-style-type: none"> • A site establishment method statement shall be provided by the contractor prior to any on-site 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), 			

<p>including but not limited to offices, 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, ablution facilities, waste and wastewater management;</p> <ul style="list-style-type: none"> • Location of construction camps must be carefully considered and approved by Eskom to ensure that the site does not impact on sensitive areas • Sites should be located where possible on previously disturbed areas. • The construction camp shall be fenced 	<p>Ensure that environmental issues are taken into consideration in the planning and construction of site establishment</p>	<p>Impact to the environment during site establishment is minimised.</p>	<p>When the project starts</p>
<p>7.6 Environmental emergencies</p> <ul style="list-style-type: none"> • Compile an Emergency Response Plan prior to the commencement of the proposed project. • The Emergency Plan must deal with accidents harsh weather conditions, disasters, wildlife interactions, potential spillages and fires in line with relevant legislation. • All staff shall be made aware of emergency procedures as part of environmental awareness training. • The relevant local authority shall be made aware of a fire as soon as it starts. • In the event of emergency necessary mitigation measures to contain the spill or leak shall be implemented 	<p>Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.</p>	<p>All emergency situations are managed in accordance with the emergency procedures.</p>	<p>As and when required</p>
<p>MITIGATION MEASURE</p>	<p>MANAGEMENT OBJECTIVES</p>	<p>MEASURABLE TARGETS</p>	<p>FREQUENCY OF ACTION</p>
<p>7.7 Hazardous Chemical Substances (incl. oil)</p> <ul style="list-style-type: none"> • The contractor must provide method statements for the “handling & storage of hazardous chemical substances”, “fire”, and “emergency spills procedures”. • The substances must be confined to specific and secured areas within the contractor’s site, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously bunded with adequate 	<p>Prevention of pollution of the environment Minimise chances of transgression of the acts controlling pollution</p>	<p>No pollution of the environment No litigation due to transgression of pollution control acts</p>	<p>Daily</p>

<p>containment (<i>at least 1.5 times the volume of the fuel</i>) for potential spills or leaks</p> <ul style="list-style-type: none"> • Drip trays (<i>minimum of 10cm deep</i>) must be placed under all vehicles, including plant and equipment that stand for more than 24 hours. Vehicles suspected of leaking must not be left unattended, drip trays must be utilised. • The surface area of the drip trays will be dependent on the vehicle and must be large enough to catch any hydrocarbons that may leak from the vehicle/plant while stationary. • All spilled hazardous substances must be contained in impermeable containers for removal to a licensed hazardous waste management facility/ site, (this includes contaminated soils, and drenched spill kit material). • Material Safety Data Sheets (MSDS) must be prepared for all hazardous substances on site and supplied by the supplier where relevant. MSDS's must be updated as required • Where Polycarbonate Biphenyls (PCB) is handled it is imperative that Eskom policy document is consulted • Materials such as fuel, oil, paint, herbicide and insecticides must be sealed and stored in bunded areas or under lock and key, as appropriate, in well-ventilated areas. 		<p>No complaints from I & AP's Method statements</p>	
<p>7.8 Eating Area</p> <ul style="list-style-type: none"> • The Contractor shall, in conjunction with the SEA or PM designate restricted eating areas for eating during normal working hours. • Adequate closed refuse bins must be provided and cleaned daily. • Litter (<i>even if originating outside the camp</i>) and concrete bags etc. must be picked up daily and put into suitably closed bins. 	<p>Control potential influx of vermin and flies Neat workplace and hygienic environment</p>	<p>No visual sign of vermin and flies No complaints from I & AP's</p>	<p>Monitor daily</p>
<p>7.9 Waste Management</p> <ul style="list-style-type: none"> • All measures regarding waste management shall be undertaken using an integrated waste management approach. 	<p>To avoid, manage and mitigate potential impacts to the environment caused by the incorrect storage, handling and disposal of</p>	<p>Solid waste management is undertaken in accordance with relevant national and provincial</p>	<p>Daily</p>

<ul style="list-style-type: none"> • Sufficient, covered waste collection bins (scavenger and weatherproof) shall be provided. • A suitably positioned and clearly demarcated waste collection site shall be identified and provided. • The waste collection site shall be maintained in a clean and orderly fashion. • Waste shall be segregated into separate bins and clearly marked for each waste type. • Staff shall be trained in waste segregation. • Recycling of waste types shall be maximised. • Bins shall be emptied regularly. • General waste shall be disposed of at recognised and registered waste disposal sites/ recycling company. • Hazardous waste shall be disposed of at a registered waste disposal site. • Certificates of disposal for general, hazardous and recycled waste shall be maintained. <p>NB: Under no circumstances shall any waste be disposed of, burned or buried on site.</p>	<p>general and hazardous solid waste.</p>	<p>legislation and local by-laws.</p>	
<p>7.10 Sanitation</p> <ul style="list-style-type: none"> • Mobile chemical toilets shall be made available onsite if no other ablution facilities are available. • Ablution facilities and or mobile toilets shall be always used and no indiscriminate use of the veld for the purposes of ablutions shall be permitted under any circumstances. • Ablution facilities shall be located within 100 m of any workplace and shall be numerous enough to accommodate the workforce (minimum requirement of 1:15 workers on site) <p>Where mobile chemical toilets are required, the following shall be ensured:</p> <ol style="list-style-type: none"> a) Toilets are located no closer than 100 m to any watercourse or water body. b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause. c) No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the EMPr. 	<p>An abundant supply of suitably located clean and well-maintained toilet facilities are available to all staff to minimise the risk of disease and impact to the environment.</p>	<p>No pollution or disease arises on-site because of sanitation facilities or lack thereof.</p>	<p>Daily</p>

<p>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.</p> <p>e) Toilets are emptied before long weekends and workers holidays and shall be locked after working hours.</p> <p>f) Toilets are serviced regularly and the</p> <p>A copy of the waste disposal certificates together with receipt shall be maintained.</p>			
<p>7.11 Dust Management</p> <ul style="list-style-type: none"> • Take all reasonable measures to minimise the generation of dust because of construction • Removal of vegetation shall be avoided until such time as soil stripping is required and similarly exposed surfaces shall be re-vegetated or stabilised as soon as is practically possible. • Excavation, handling and transport of erodible materials shall be avoided under high wind conditions or when a visible dust plume is present. • During high wind conditions, the responsible person will evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level. • Where possible, soil stockpiles shall be in sheltered areas where they are not exposed to the erosive effects of the wind. Where erosion of stockpiles becomes a problem, erosion control measures shall be implemented at the discretion of the responsible person 	<p>To reduce dust emissions during construction activities.</p>	<p>Minimal occurrence of dust due the adherence of EMPr requirements.</p>	<p>Daily</p>

<p>7.12 Noise Management</p> <ul style="list-style-type: none"> All construction vehicles must be in a good working order to reduce possible noise pollution. Noise reduction is essential, and Contractors shall endeavour to limit unnecessary noise, especially loud talking, shouting or whistling, radios, sirens or hooters, motor revving, etc. The use of silent compressors is a specific requirement. Noisy activities shall take place only during normal working hours. The surrounding Eskom management and landowners must be informed in writing within 24 hours prior to any planned activities that will be unusually noisy or any other activities that could reasonably have an impact on the adjacent sites. These activities could include, but are not limited to, blasting, piling, use of pneumatic jackhammers and compressors. 	<p>To prevent unnecessary noise to the environment by ensuring that noise from construction activity is mitigated</p>	<p>Noise management is undertaken in accordance with SANS 10103 and requirements of the EMPr</p> <p>No complaints from surrounding landowners</p>	<p>Daily</p>
<p>7.13 Water management</p> <ul style="list-style-type: none"> Appropriate pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended materials into watercourses or water bodies shall be designed and implemented. Runoff from the cement/ concrete batching areas shall be strictly controlled, and contaminated water shall be collected, stored and either treated or disposed of off-site, at a location approved by the Project Manager. All spillage of oil onto concrete surfaces shall be controlled using an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility 	<p>To avoid, manage and mitigate potential impacts to the environment caused by wastewater discharge during construction.</p>	<p>Wastewater management is undertaken in accordance with relevant national and provincial legislation and local by-laws.</p>	<p>Daily</p>
<p>MITIGATION MEASURE</p>	<p>MANAGEMENT OBJECTIVES</p>	<p>MEASURABLE TARGETS</p>	<p>FREQUENCY OF ACTION</p>
<p>7.14 Dismantling of old equipment</p> <ul style="list-style-type: none"> All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment. 	<p>Impact to the environment to be minimised during the dismantling, storage and disposal of old equipment commissioning</p>	<p>All scrap material to be disposed of accordingly</p>	<p>When dismantling takes place</p>

<ul style="list-style-type: none"> • Oil containing equipment must be stored to prevent leaking or be stored on drip trays. • All scrap steel must be stacked neatly, and any disused and broken insulators must be stored in containers; • Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment. • The Contractor must also be equipped to contain and clean up any pollution causing spills. • Disposal of unusable material must be at a registered waste disposal site, and a certificate of disposal must be obtained 			
<p>7.15 Workshop, equipment maintenance and storage</p> <ul style="list-style-type: none"> • Leaking equipment must be repaired immediately or be removed from site to facilitate repair. • Chemical storage areas must be monitored for oil and fuel spills and such spills. • Appropriately sized spill kit kept on site relevant to the scale of the activity taking place shall be available. • The responsible operator of equipment must have the required training to make use of the spill kit in emergency situations. • The Chemical storage shall have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed; 	<p>The control operation, maintenance and storage of equipment prevent soil, surface water and groundwater contamination</p>	<p>Soil, surface water and groundwater contamination are prevented as due to adherence of EMP requirements</p>	<p>Daily</p>
<p>7.16 Access roads</p> <ul style="list-style-type: none"> • Existing roads and services within the substation must be utilised as far as possible. • No unauthorised access is permitted. • Any damage or degradation will be investigated, and fines issued, the affected areas must be immediately rehabilitated. 	<p>Minimise loss of topsoil and enhancement of erosion</p> <p>Minimise fauna and flora displacement by destruction of natural habitats</p>	<p>No erosion on access roads after completion of construction</p> <p>No loss of topsoil due to runoff water on access roads</p>	<p>As required, monitor daily</p>

<ul style="list-style-type: none"> No driving off from the marked roads is permitted and designated parking areas must be identified and demarcated with applicable signage 			
MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
<p>7.17 Fauna/Animal Management</p> <ul style="list-style-type: none"> Focus on animals such as snakes and other reptiles that often generate fear by telling the labour force how to move safely away and to whom they report the sighting of such animals. The labour force should also be informed where snakes most often hide so that they can be vigilant when lifting stones etc. Employees must be trained on how to deal with fauna species as intentional killing will not be tolerated. 	<p>Minimise disturbance to animals Minimise interruption of breeding patterns of birds Minimise destruction of habitat</p>	<p>No measurable or visible signs of habitat destruction</p>	<p>Monitor daily</p>
<p>7.18 Flora/ Vegetation Management</p> <ul style="list-style-type: none"> The contractor must rehabilitate the construction camp and any other disturbed areas once construction activities have terminated. Compacted areas will be ripped and mulched to ensure recovery of the natural vegetation cover. Once construction is complete, rehabilitation of un-built areas must be undertaken to restore the aesthetic & ecological value of the area. Active re-vegetation must take place with local indigenous vegetation 	<p>Minimal disturbance to vegetation where such vegetation does not interfere with construction in terms of approvals from the relevant authority</p>	<p>The footprint has not exceeded the agreed boundaries All damaged areas successfully rehabilitated</p>	<p>As and when required</p>
<p>7.19 Fire Management</p> <ul style="list-style-type: none"> Designate smoking areas where the fire hazard could be regarded as insignificant. Educate workers on the dangers of open and/or unattended fires. No open fires shall be allowed on site under any circumstances. Firefighting equipment shall be available on vehicles located on site. 	<p>To minimise the risk of fire during construction</p>	<p>Fire prevention measures are carried out in accordance with the National Veld and Forest Fire Act, 101 of 1998</p>	<p>When necessary</p>

<ul style="list-style-type: none"> Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site. 			
MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
<p>7.20 Installation of equipment</p> <ul style="list-style-type: none"> Management of dust shall be conducted in accordance with Dust management section Management of equipment used for installation shall be conducted in accordance Workshop equipment maintenance and storage section. Management hazardous substances and any associated spills shall be conducted in accordance with Hazardous substances section; 	<p>Impact to the environment to be minimised during the installation of equipment</p>	<p>Impact to the environment is minimised through adherence to EMPr requirements</p>	<p>Daily</p>
<p>7.21 Rehabilitation</p> <ul style="list-style-type: none"> All areas disturbed by construction activities shall be subject to landscaping and rehabilitation. 	<p>Areas disturbed during construction are returned to a state that approximates the state which they were before disruption</p>	<p>Landscaping and rehabilitation are undertaken in accordance with the approved rehabilitation plan/specification</p>	<p>During rehabilitation phase</p>

8 CONCLUSION

This Environmental Management Programme report should be used as an on-site reference document during all phases of this project, and auditing should take place to determine compliance with this EMPr. Parties responsible for transgression of this EMPr should be held responsible for any rehabilitation that may need to be undertaken. Parties responsible for environmental degradation through irresponsible behaviour / negligence should receive penalties as stipulated in TPDNTCSA Environmental Requirements for Contractors and/or Suppliers Standard (TPDMAN-ST-37240-180100134).

It is imperative that precautions are taken to ensure that environmental degradation is minimized while the project is undertaken. This will take a concerted effort from the project team with proper planning being of utmost importance