

Eskom Holdings SOC Limited



ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PROPOSED CONSTRUCTION OF THE ESKOM LIBANON 132KV POWER LINE

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Draft Environmental Management Programme

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1 Introduction

Eskom Holdings SOC Limited (Eskom) proposes to construct a 132kV power line 500 m in length which will loop-in from the existing Libgold power line to the existing Libanon DS Substation and loop-out to the existing Kloof Three power line. The existing Kloof Three and Libgold power lines are located south of the Libanon DS Substation. The aim of the project is to provide an additional 132kV line to the DS Libanon Substation, thus providing needed spare capacity and improving back-feed capabilities to provide power to the surrounding mining companies. The new line will be constructed within Eskom servitude and will cross R501 road. Eskom appointed GIBB (Pty) Ltd (herein referred to as GIBB) as the Independent Environmental Assessment Practitioner (EAP) to undertake the Basic Assessment (BA) process for the proposed development. On behalf of Eskom, GIBB has applied to the Department of Environmental Affairs (herein referred to as DEA) for an environmental authorisation.

This Environmental Management Programme (EMPr) was compiled as part of the Environmental Authorisation Process, required by the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The EMP will look at the potential environmental impacts the proposed additive could have on the environment and which mitigation and monitoring procedures will need to be put in place to manage these impacts with the smallest environmental footprint possible.

Based on the above information, the following (Table 1) listed Activities in terms of the Environmental Impact Assessment Regulations, 2010 have been applied for:

Table 1: Listed activities in terms of the Environmental Impact Assessment Regulations

Listed activity as described in GN R.544, 545 and 546	Description of project activity
GN R.544 Activity 10 (i): the construction of facilities or infrastructure for the transmission and distribution of electricity outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.	A 132kV loop in line of approximately 500 metres in length will be constructed outside an urban area.

1.1 Applicable Documentation

The following environmental documentation is applicable for the project, and should be read in conjunction with this EMP:

- Basic Assessment Report for the Eskom Libanon 132kV powerline;
- Environmental Authorisation issued by the Department of Environmental Affairs. Cognisance of the Environmental Authorisation must be taken once it has been issued. Where necessary, this EMP must be amended to comply with this Environmental Authorisation;
- Other Permits or licences that may need to be acquired at the time of construction; and
- All acts, ordinances and by-laws relevant to the proposed project.

1.2 Applicable Legislation

The following is a summary of the environmental legislation applicable to the proposed project:

LEGISLATION	RELATES TO
National Environmental Management Act, 1998 (Act no. 107 of 1998) (NEMA)	NEMA is the key environmental management legislation and states in section 2(4)(k) that “the environment is held in public trust for the people, the beneficial use of resources must serve the public interest and the environment must be protected as the people’s common heritage” thereby paving the way for EIA process to assess developments that may have a harmful impact on the environment.
Occupational Health and Safety Act, 1993 (Act no. 85 of 1993) (OHSA)	General duties of employers to their employees
	General duties of employers and self-employed persons to persons other than their employees.
National Water Act, 1998 (Act no. 36 of 1998) (NWA)	This Act provides for the protection and management of water resources. A Water Use License Application is made to authorise water use activities pertaining to the altering of the bed, bank, course and characteristics of the watercourse and for the abstraction of water for use during the operational phases.
National Environmental Management: Waste Act, 2008 (Act no. 59 of 2008) (NEM:WA)	This Act provides for regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation. Also to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities.
National Environmental Management: Biodiversity Act, 2004 (Act no. 10 of 2004) (NEM:BA)	The Biodiversity Act provides for the management and protection of the country’s biodiversity within the framework established by NEMA. It provides for the protection of species and ecosystems in need of protection, sustainable use of indigenous biological resources, and equity in bio-prospecting.
Hazardous Substances Act, 1973 (Act no.15 of 1973) (HSA)	Provides for the definition, classification, use, operation, modification, disposal or dumping of hazardous substances such as fertilizing materials.
SANS 10103 (Noise Regulations)	The measurement and rating of environmental noise with respect to annoyance and to speech communication.
Constitution of the Republic of South Africa	The constitution paved the way for the protection of the natural environment and heritage resources through the recognition of the rights to a safe and healthy environment.
Environmental Impact Assessment (EIA) Regulations, 2010 (Government Notice No. R543, R544 and R546, 18 June 2010)	The EIA regulations describe the EIA process to be followed including the public participation process, and the listed activities that may have a harmful impact on the environment and must be assessed.

1.3 Structure of Environmental Management Programme report (EMPr)

The EMPr provides mitigation and management measures for the following phases of the project:

1.3.1 Construction Phase

This section of the EMPr provides management principles for the construction phase of the project. Environmental actions, procedures and responsibilities as required within the construction phase are specified. These specifications shall form part of the contract documentation and, therefore, the Contractor will be required to comply with the specifications to the satisfaction of the Project Coordinator and Environmental Control Officer, in terms of the construction contract.

1.3.2 Operation Phase

This section of the EMPr provides management principles for the operation phase of the project. Environmental actions, procedures and responsibilities as required for the operation phase of the project, are specified.

1.3.3 Decommissioning Phase

This section of the EMPr provides some management principles for the decommissioning phase of the project. Please note that it is highly unlikely that the proposed activity will be decommissioned in the short term (due to the life span of the operation) which makes it challenging to predict potential impacts.

It should be noted that this EMPr is a dynamic document which should be updated as and when required. Any amendments made must be submitted to both the Environmental Control Officer and Proponent for approval prior to implementation.

1.4 Objectives of the EMPr

This EMPr has the following objectives:

- To outline functions and responsibilities of responsible persons;
- To state standards and guidelines which are required to be achieved in terms of environmental legislation;
- To outline mitigation measures and environmental specifications which are required to be implemented for all phases of the project in order to minimise the extent of environmental impacts, and to manage environmental impacts; and
- To prevent long-term or permanent environmental degradation.

2 *Functions and Responsibilities*

Formal responsibilities are necessary to ensure that key procedures are executed. Specific responsibilities of the various personnel for this project are detailed below.

2.1 The Proponent:

- The proponent (Eskom) is ultimately accountable for ensuring compliance to the EMPr and conditions contained in the Environmental Authorisation (EA). The ECO must be contracted by the proponent as an independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of EA's, and the EMPr for the project.
- The proponent is further responsible for providing and giving a mandate to enable the ECO to perform responsibilities, and must ensure that the ECO is integrated as part of the project team.

2.2 The Consulting Engineer (CE):

- Contracted by the proponent to design and specify the project engineering aspects. Generally the engineer runs the works contract. The CE may also fulfil the role of Project Manager on the proponent's behalf.

2.3 Project Manager (PM):

- The Project Manager has over-all responsibility for managing the project, contractors, and consultants and for ensuring that the environmental management requirements are met. All decisions regarding environmental procedures must be approved by the PM. The PM has the authority to stop any operational activity in contravention of the EMPr in accordance with an agreed warning procedure.

2.4 Site Foreman (SF):

- The project manager's representative on site. Has the power/mandate to issue site instructions, following request by an ECO or instructions from the PM. The SF oversees site works.

2.5 The Environmental Control Officer (ECO):

- An independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of EA, and the EMPr for the project. The ECO must be on site prior to any site establishment and must endeavour to form an integral part of the project team.
- The ECO must be proactive and have access to specialist expertise as and when required, these include ecology specialists, etc.
- The ECO must conduct audits on compliance to relevant environmental legislation, conditions of EA, and the EMPr for the project. (Based on the nature of this project it is recommended that site inspections must be undertaken twice a month).

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- The ECO must be the liaison between the relevant authorities and the project team. The ECO must communicate and inform the proponent and project manager of any changes to environmental conditions as required by relevant authoritative bodies. The ECO must ensure that the registration and updating of all relevant EMPr documentation is carried out.
 - The ECO must be suitably experienced with the relevant environmental management qualifications and preferably competent in environmental related methods and practices.
 - The ECO must handle information received from whistle blowers as confidential and must address and report these incidences to the relevant Authority as soon as possible.

2.6 The Contractor:

- Is to ensure that the environmental specifications of this document (including any revisions, additions or amendments) are effectively implemented. This includes the on-site implementation of steps to mitigate environmental impacts.
- Will ensure that all Employees and co-contractors employed comply with the requirements and provisions of the EMPr.
- Prepares method statements.
- Monitors environmental performance and conformance with the specifications contained in this document during daily site inspections.
- Discusses implementation of and compliance with this document with staff at routine site meetings;
- Reports progress towards implementation of and non-conformances with this document at site meetings with ECO.
- Will notify the ECO of the anticipated programme of works and fully disclose all details of activities involved.
- Will ensure that suitable records are kept and that the appropriate documentation is available to the ECO.
- Will Notify the ECO of all incidents, accidents and transgressions on site with respect to environmental management as well as requirements of the EMPr and corrective actions/remedial action taken.
- Reports and record all accidents and incidents resulting in injury or death.
- Informs the ECO of problems arising when implementing the EMPr and ways of improving the EMPr.
- Informs the ECO of any complaints received.

2.7 General Guidelines

The following measures provide guideline solutions to frequently anticipated issues on most development activities:

- The prevention of any site degradation due to non-compliance, administrative or financial problems, and inactivity during the operation phase, illegal activities, delays caused by archaeological finds etc. is ultimately the responsibility of the applicant/developer. Section 28, National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA].

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- The study area must be clearly defined according to the project authorisation. All workforce members and other construction personnel are not to go beyond the designated footprint.
 - The site staff must adhere to agreed and approved access points and haul roads.
 - No camping is allowed on any private property.
 - Damage to private or public property such as fences, gates and other infrastructure may occur at any time. All damage to be repaired immediately and to the satisfaction of the owner.
 - The Project Manager must adhere to all conditions of contract including this EMPr.
 - Proper planning of the construction process must be undertaken to allow for disruptions due to rain and very wet conditions.
 - All private and public manmade structures near the project site must be protected against damage at all times and any damage must be rectified immediately.
 - Proper site management and regular monitoring of site works.
 - Proper documentation and record keeping of all complaints and actions taken.
 - Regular site inspections and good control over the construction process throughout the construction period.
 - A positive attitude towards Environmental Management by all site personnel must be motivated through regular and effective awareness and training sessions.
 - An ECO is to be appointed to implement this EMPr. The ECO is to deal with any landowner related matters.
 - Environmental Audits to be carried out during construction operations and upon completion of decommissioning of the project.

2.8 Awareness Training

The ECO is responsible for ensuring everyone on site is given an environmental awareness induction session which not only clearly defines what the environment is and gives specifics detailing the local environment but outlines the requirements of the EMPr as a management tool to protect the environment.

Refresher courses must be conducted as and when required. The PM must ensure weekly (or as needed) toolbox talks include alerting the workforce to particular environmental concerns associated with the tasks for that week or the area/habitat in which they are working. Awareness posters and a hand out must be produced to create awareness throughout the site (as needed).

2.9 Environmental Method Statements

Method Statements are written submissions to the ECO by the PM, in response to a request by the ECO. The Method Statements set out the plant, materials, labour and method that the PM proposes using to carry out an activity, identified by the ECO. The Method Statements contain the appropriate detail such that the ECO is able to assess whether the PM's proposal is in accordance with the requirements of the EMPr. The PM must sign each Method Statement along with the ECO to formalise the approved Method Statement.

All Method Statements including those which may be required as ad hoc or emergency construction method statements must be submitted to the ECO for approval prior to the commencement of the activity.

Any changes to the method of works must be reflected by amendments to the original approved Method Statement. Any changes in this regard must be approved by the ECO on the understanding that such changes are environmentally acceptable and in line with the requirements of this EMPr.

The pro forma Method Statements attached (amongst others) must be used and method statements for the following activities must be submitted to the ECO for approval as soon as construction occurs:

- Solid waste management;
- Crew camps and operation lay down areas;
- Dust control;
- Hydrocarbon and emergency spills procedures; and
- Fire.

2.10 Site Documentation

The following is a list of documentation amongst others, which must be held on site and must be made available to the ECO and/or Approving Authority on request.

- Site daily diary /instruction book/ Incident reports;
- Records of all remediation / rehabilitation activities;
- Copies of ECO reports (management and monitoring);
- Environmental Management Programme (EMPr);
- Complaints register;
- Method statements; and
- Environmental Authorisation.

2.10.1 Pro forma Documentation

(a) Prior to the re-commencement of construction activities

The following attached pro forma documentation is to be filled out and is binding to the EMPr and project contract and includes, but is not limited to the following:

- Declaration of understanding by the Developer;
- Declaration of understanding by the Project Manager;
- Declaration of understanding by the Contractor;
- Method statements; and
- ECO approval for method statements.

(b) During construction activities

The following attached pro forma documentation is to be filled out and maintained. These are binding to the EMPr and project contract. They include, but are not limited to, the following:

- Amended Method Statements;
- ECO approval for amended method statements;
- Environmental incidents; and
- Records of all remediation / rehabilitation activities.

3 Environmental Management Requirements

3.1 Section A: Planning and Pre-construction Phase Activities

A.1. Project contract and programme		Responsibility	Frequency	Notes
<p>Contingencies for minimising negative impacts anticipated to occur during the construction phase needs to be implemented</p> <p>Ensure environmental awareness and formalise environmental responsibilities and implementation</p>	<p>A.1.1 Project contract and programme</p> <p>(a) 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.</p> <p>(b) A copy of this EMPr must be available on site. The Contractor must ensure that all the personnel on site, sub-contractors and their team, suppliers, etc. are familiar with and understand the specifications contained in the EMPr.</p>	Proponent		
A.2. Appointments and duties of project team		Responsibility	Frequency	Notes
	<p>A.2.1 Pro forma document and contracts</p> <p>(a) The contact details for the ECO, Contractor and SHE officer must be completed as part of the pro-forma documents and a copy kept on site. This document must be made available to the approving authority on request.</p> <p>(b) Subcontractor(s) contracts with the principle contractor must contain a clause to the effect that the disposal of all construction-generated refuse / waste to an officially approved</p>	Proponent	Once - off	

	dumping site is the responsibility of the subcontractor in question and that the subcontractors are bound to the management activities stipulated in this EMPr.			
	<p>A.2.2 Roles and responsibilities</p> <p>(a) Before construction activities commence, role players must have a clear indication of to their role in the implementation of this EMPr.</p>	Proponent	Once - off	
A.3. Method Statements		Responsibility	Frequency	Notes
	<p>A.3.1 Method Statements</p> <p>(a) Certain method statement must be provided by the contractor. All activities which require method statements may only commence once the method statements have been approved by the engineer and or ECO as applicable.</p> <p>(b) Where applicable, the contractor will provide job-specific training on an ad hoc basis when workers are engaged in activities, which require method statements.</p>	PM/ Contractor	Prior to commencing activities requiring method statements, on site.	Approved method statements and relevant pro forma documents along with training records to be kept on file on site.
A.4. Emergencies, non-compliance and communication		Responsibility	Frequency	Notes
	<p>A.4.1 Emergencies and communication</p> <p>(a) The contractor must provide method statements on the protocols to be followed, and contingencies to be put in place for the following potential incidents before</p>	Contractor	On-going	

	<p>construction may begin: contamination of soils from spills and fire.</p> <p>(b) Communication in emergencies must follow the suggested lines of communication.</p>			
	<p>A.4.2 Non-compliance</p> <p>The contractor understands that failure to adhere to the requirements of the EMPr costs incurred for any remediation required as result of the specific non-compliance.</p>	Contractor	On-going	
A.5. Construction Camp set up (if required)		Responsibility	Frequency	Notes
Careful planning of the construction camp can ensure that the time and costs associated with environmental management and rehabilitation are reduced.	<p>A.5.1 Layout</p> <p>(a) The choice of the Contractor's camp requires the Project Manager's and ECO's permission and must ensure that the camp is located in an area that will ensure a minimum impact.</p> <p>(b) The camp should be located on already disturbed areas, such as school grounds, sports fields or previous construction camp sites.</p> <p>(c) The contractor should submit plans of exact location, extent and construction details of the temporary construction camp facilities to the Project Manager for approval, prior to establishment of the camp.</p> <p>The layout plans should reflect the proposed camp's location in relation to any existing infrastructure (water mains, electricity cables, sewage mains, etc.) on site.</p>	PM/ Contractor	Prior to site establishment	

	<p>Access to the construction camp must be through an existing route that is clearly demarcated and agreed upon.</p> <p>(d) The construction camp can comprise of the following (as required):</p> <ol style="list-style-type: none"> a. Site office b. Ablution facilities c. Designated first aid area d. Eating area e. Laydown areas 			
	<p>A.5.2 Ablutions</p> <p>(a) Ablution facilities must be provided and should be located within the construction camp at a ratio of 1:20 workers.</p>	PM/ Contractor		
	<p>A.5.3. Provision for camp waste disposal</p> <p>(a) Bins and skips shall be provided at convenient intervals for disposal of waste within the construction camp/site.</p> <p>(b) Recycling and provision of separate waste receptacles for different types of waste should be encouraged.</p>	PM/ Contractor	On-going	
A.6. Establishing storage areas		Responsibility	Frequency	Notes
Storage areas can be hazardous and unsightly. These storage areas can also cause environmental pollution if not designed and managed properly.	<p>A.6.1. General Substances and Materials</p> <p>(a) When deciding on the location of temporary stockpiles, the following needs to be considered:</p> <ul style="list-style-type: none"> • road access, • length of time the stockpile will exist. 	EO/ ECO approval	During site establishment.	

	<p>(b) Additionally all stockpiles should be located away from sensitive ecosystems and protected from the prevailing winds.</p> <p>(c) Storage areas must be designated, demarcated and fenced if necessary.</p> <p>(d) Storage areas should be secured, to minimize the risk of crime and contamination.</p>			
	<p>A.6.2 Hazardous Substances and Materials</p> <p>(a) Fuel must be stored in a bunded area with at least a volume of 110% of the largest tank.</p> <p>(b) No smoking shall be allowed in the vicinity of the fuel storage area. Erect at least one no-smoking warning sign, which is clearly visible at the fuel storage area, to warn all staff of associated dangers.</p> <p>(c) Provide adequate firefighting equipment at or close to the fuel storage and dispensing area(s).</p> <p>(d) Keep fuel under lock and key at all times.</p> <p>(e) Hazardous chemical working/ refuelling areas must be bunded with an impermeable liner.</p> <p>(f) Ensure that there is always a supply of absorbent material readily available to absorb/break down any hydrocarbon spillage.</p> <p>(g) In the case of a spill, contaminated material must be removed from the site immediately and disposed of at an appropriate licensed hazardous waste facility.</p>	EO/ ECO approval	During site establishment	

A.7. Set up of waste management activities		Responsibility	Frequency	Notes
	<p>A.7.1 Waste management</p> <p>(a) A dedicated area must be allocated for waste sorting and storage.</p> <p>(b) Individual waste skip or wheelie bins for different types of waste should be provided, if required (if none currently exist).</p> <p>(c) Adhere to and practice good housekeeping to ensure that construction camps and sites are well organised, material is neatly stacked and waste is regularly removed.</p> <p>(d) All litter throughout the site should be picked up and placed in the appropriate recycling bins provided.</p>	EO/ ECO	During site establishment	
A.8. Education of site staff on general Environmental Conduct		Responsibility	Frequency	Notes
These points must be communicated to all staff prior to site establishment.	<p>A.8.1. Environmental Education and Awareness</p> <p>Ensure that all site personnel have a basic level of environmental awareness training. Possible topics to include:</p> <ul style="list-style-type: none"> • What is meant by 'Environment'? • Why do we have to protect the environment? • How construction activities can impact on the environment. • How can these impacts be mitigated. • Awareness of emergency and spills response provisions. • Social responsibility during construction e.g. being considerate to local residents. 	EO/ ECO	During staff induction and weekly Toolbox Talks	Toolbox talks and lunchtime Q&A.

	<p>It is the contractor's responsibility to provide the site foreman with no less than 1 hour's environmental training and to ensure that the foreman has sufficient understanding to pass the information onto the construction staff.</p> <p>(a) Translators are to be used where necessary.</p> <p>(b) The use of pictures and real-life examples is encouraged as these are easier to remember.</p> <p>(c) The need for a 'clean site' policy also needs to be explained to the construction workers.</p>			
	<p>A.8.2. Worker Conduct on Site</p> <p>Under no circumstances may open areas or surrounding bush be used as toilet facilities. A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules:</p> <ul style="list-style-type: none"> • No alcohol/drugs to be present on site. • No fire arms allowed on site or in vehicles transporting staff to/from the site (unless by security personnel. • Construction staff is to make use of facilities provided for them, as opposed to ad hoc alternatives. 	PM/ Contractor	During staff induction, followed by on-going monitoring.	
A.9. Water Quality		Responsibility	Frequency	Notes
Incorrect disposal of substances and materials and polluted run-off can cause serious negative impacts on surrounding water	<p>A.9.1. Water Quality</p> <p>(a) Equipment and machinery must be in good operation condition, clean (power washed),</p>	EO/ ECO	During site set up.	

resources.	<p>free of leaks, excess oil and grease. The equipment must be washed/ cleaned in the wash bays or demarcated areas only.</p> <p>(b) Ensure that machinery is operated by a skilled driver who has been trained to use it correctly and who will be able to identify if something is wrong with the engine and conduct regular inspections identifying engine related leaks.</p>			
A.10. Security and safety		Responsibility	Frequency	Notes
	<p>A.10.1. Risk Associated with materials on site</p> <p>(a) Material stockpiles or stacks such as cement, steel, bricks, corrugated iron sheeting, plastic piping, etc. must be stable and well packed to avoid collapse and possible injury to site workers, stockpiles must also be covered to avoid seepage and ground water pollution (where applicable).</p> <p>(b) No materials are to be stored in unstable or high risk areas such as in close proximity of the entrance road, excavated areas, etc.</p>	PM/ Contractor	On-going	
A.11. Geotechnical Conditions		Responsibility	Frequency	Notes
Potential impact for dolomitic areas since the study area is underlain by chert and dolomite of the Malmani Subgroup	<p>A.11.1. Risks associated with dolomitic areas</p> <p>(a) There is a potential for the development of sinkholes (rapid subsidence) or dolines (gradual settlement movements).</p> <p>(b) Assess dolomite stability during detailed planning to minimise potential impact.</p> <p>(c) If deemed necessary detailed geotechnical</p>	PM/ Contractor	Prior to site establishment and construction	

	investigations identify high-risk areas dolomite areas should be undertaken prior to construction.			
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3.2 Section B: Construction Phase Activities

B.1. Site Access		Responsibility	Frequency	Notes
	<p>B.1.1 Access to the site</p> <p>(a) Existing access roads must be used as far as possible, however short access roads may have to be created from the main roads to the depot sites. Please note that all existing access roads utilised will have to be maintained to the satisfaction of the landowners.</p>	Proponent	-	
B.2. Maintenance of construction camp		Responsibility	Frequency	Notes
	<p>B.2.1 Ablution</p> <p>(a) Portable chemical toilets should be acquired and placed at the depot construction sites. At least 1 toilet to 20 workers should be erected.</p> <p>(b) The toilets should be located within the construction camp sites.</p>	Proponent	As per the Emfuleni Local Municipalities current procedures or as directed by the EO / PM	
	<p>B.2.2. Eating Areas</p> <p>(a) Eating areas should be serviced and cleaned regularly to ensure the highest possible standards of hygiene and cleanliness.</p> <p>(b) All litter throughout the site should be picked up and placed in the appropriate recycling bins provided.</p>	Contractor	Daily and Weekly inspection	
	<p>B.2.3. Housekeeping</p>	Contractor	Daily	

	<p>(a) The contractor shall ensure that his camp and working areas are kept clean and tidy at all times.</p> <p>(b) Edge effects from the proposed development need to be strictly controlled.</p>			
B.3. Staff Conduct		Responsibility	Frequency	Notes
	<p>B.3.1. Environmental Education and Awareness/ Safety</p> <p>(a) The contractor must monitor the performance of construction workers to ensure that all the topics that were covered in the induction meeting is properly understood, and followed.</p>	Contractor	Daily/ Weekly	Toolbox talks and lunchtime Q&A.
B.4. Waste Management		Responsibility	Frequency	Notes
<p>Activities in the construction site such as office work, usage of construction materials, etc., generate different types of waste that requires to be managed properly. These wastes could result in environmental pollution such as soil contamination/ pollution or health hazards to employees working on-site, if not managed properly.</p>	<p>B.4.1 On-site waste management</p> <p>(a) Waste is grouped into “general” or “hazardous”, depending on its characteristics. The classification determines the handling methods and the ultimate disposal of the material. The Contractor/ ECO must classify waste into general or hazardous based on the toxicity or hazard nature of waste.</p> <p>(b) Waste must be placed in the designated or marked skips/ bins which must be emptied on a regular basis by a contracted waste collector. These should remain within the demarcated areas and should be designed to prevent refuse from being blown out by</p>	Contractor/ EO/ PM	<p>During the start-up of construction on site and on-going thereafter.</p> <p>During waste collection</p> <p>Prior to signing an agreement with the waste removal contractor.</p>	ECO and PM needs to ensure that all construction staff is educated on waste management.

	<p>wind.</p> <p>(c) Separation of waste and recycling of paper, glass, cans, scrap, metals, plastic bottles, etc., must be considered prior to disposal. The disposal at the landfill site should be considered as the last option, after having taken into consideration the prevention of waste generation, reduction waste generation, reuse and recycling.</p> <p>(d) Hazardous waste that require disposal (oily rags, used fuel/ oil, etc.) must be placed in a suitable leak proof skip or wheelie bin for disposal at an approved hazardous waste disposal facility.</p> <p>(e) The contractor is responsible for arranging the removal of all waste from site generated through construction activities. Waste must be removed to a registered, appropriate disposal and recycling facilities.</p> <p>(f) No burning and littering of waste on site should be allowed.</p> <p>(g) Request and keep on file the following from the waste contractors that are used to collect waste:</p> <ul style="list-style-type: none"> Copies of the weighbridge receipt from the waste removal contractor for all waste collected on site. 			
B.5. Construction vehicles/ equipment		Responsibility	Frequency	Notes
Engine machines such as compressors, pumps, air	<p>B.5.1 Construction equipment</p> <p>(a) Vehicles and machinery are to be kept in</p>	Contractor/ EO	On going	Contractor must follow a detailed

<p>conditioners and arc welders can have small leaks (usually oil) that can accumulate to become spills, which require clean-up. These leaks become more evident if the equipment remains in the same place for an extended period of time. Damaged fuel tanks, fuel hoses, and fuel pumps can be sources of significant fuel leaks. Hydraulic systems can blow gaskets or hoses resulting in large quantities of hydraulic fluid spilled to the ground.</p>	<p>good working order and to meet manufactures specification for safety, fuel consumption and emission.</p> <p>(b) Should excessive emissions be observed, the site manager needs to implement an effective vehicle and equipment service and maintenance plan.</p> <p>(c) Vehicle parking and equipment storage must be done on a hardened and sealed surface area such that oil, fuel and other fluid leaks do not pollute soil or ground water sources.</p> <p>(d) Drip trays must be placed underneath vehicles when not in use.</p>			<p>checklist for and machinery and equipment maintenance.</p>
<p>Increased noise and dust emissions from construction vehicles carrying out construction activities may occur.</p>	<p>B.5.2 Construction activities – increase in dust and noise generation</p> <p>(a) Use existing roads to access to the site in order to limit the amount of dust on site. General housekeeping should also be done.</p> <p>(b) Avoid unnecessary movement of transportation vehicles on site.</p> <p>(c) Apply appropriate dust suppression methods, if necessary.</p> <p>(d) No potable water may be used for dust suppression (as far as is practically possible).</p> <p>(e) Construction time must be restricted to working hours (07:00-17:00) Monday to Friday excluding public holidays (unless prior permission is obtained from the adjacent landowners.</p>	<p>Contractor/ EO</p>	<p>On-going/ daily</p>	<p>Contractor/ EO must ensure that the necessary noise and dust control measures be implemented and applied throughout the entire construction phase of the project.</p>

	<p>(f) All noise and sounds generated during the proposed activity must comply with the relevant SANS codes and standards.</p> <p>(g) All construction equipment or machinery should be switched off when not in use.</p> <p>(h) Construction equipment must be kept in good working condition.</p> <p>(i) Plant and vehicles must be in good working order and visually inspected daily.</p> <p>(j) Use silencers on all equipment, where appropriate.</p>			
B.6. Emergency Response to spillages		Responsibility	Frequency	Notes
<p>This section aims to provide measures to manage spillages from equipment used on site and measures for other construction materials handled on site.</p>	<p>B.6.1 Emergency Response to spillages The contractor shall take into account the following prevention measures to be applied during spillages.</p> <p>(a) Immediately repair all leaks of hydrocarbons, oil, etc.</p> <p>(b) Take reasonable measure to prevent further spills or leaks.</p> <p>(c) Dispose contaminated materials to a location designated thereto, for further disposal at a registered landfill site.</p> <p>(d) The contractor shall have its own spill response plan in the event of any spills (oil, fuel, hazardous materials) from his machinery or equipment used on site.</p>	Contractor	During spillages.	The ECO/ EO and contractor must ensure that the Emergency response procedure is well understood by all workers on site and that a summary is available for site visitors.
<p>This section aims to provide measures to prevent pollution of the environment as well as to minimise the chances of</p>	<p>B.6.2 Oil and chemicals</p> <p>(a) The contractor must provide method statements for the “handling & storage of oils and chemicals”, “fire”, and “emergency</p>	Contractor	On-going/ daily	

<p>transgression of the acts controlling pollution.</p>	<p>spills procedures”.</p> <p>(b) These substances must be confined to specific and secured areas within the contractor’s camp, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously banded with adequate containment (at least 110% times the volume of the fuel) for potential spills or leaks</p> <p>(c) Drip trays (minimum of 10cm deep) must be placed under all vehicles that stand for more than 24 hours. Vehicles suspected of leaking must not be left unattended, drip trays must be utilised.</p> <p>(d) 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 while standing.</p> <p>(e) The depth of the drip tray must be determined considering the total amount/ volume of oil in the vehicle. The drip tray must be able to contain the volume of oil in the vehicle.</p> <p>(f) Spill kits must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site. Spill kits must be made up of material/ product that is in line with environmental best practice (SUNSORB is a recommended product that is environmentally friendly).</p> <p>(g) All spilled hazardous substances must be</p>			
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	contained in impermeable containers for removal to a licensed hazardous waste site, (this includes contaminated soils, and drenched spill kit material).			
B.7. Cement handling		Responsibility	Frequency	Notes
This section aims to provide measures to minimise the possibility of cement residue entering into the surrounding environment.	<p>B.7.1 Concrete batching and mixing</p> <p>(a) The contractor must provide and maintain a method statement for “cement and concrete batching”. The method statement must provide information on proposed storage, washing & disposal of cement, packaging, tools and plant.</p> <p>(b) The mixing of concrete must only be done at specifically selected sites on mortar boards or similar structures to contain run-off into soils, streams and natural vegetation.</p> <p>(c) Cleaning of cement mixing and handling equipment must be done using proper cleaning trays and at designated areas only.</p>	Contractor	On-going/ daily	
This section aims to provide measures to minimise pollution of soil, surface and groundwater resources.	<p>B.7.2 Storage and disposal requirements</p> <p>(a) All empty cement bags must be stored in a dedicated area and later removed from the site for appropriate disposal at a licensed facility. The burning of cement bags is strictly forbidden.</p> <p>(b) Any spillage that may occur must be investigated and immediate remedial action must be taken.</p> <p>(c) The visible remains of concrete, either solid, or from washings, must be physically removed immediately and disposed of as</p>	Contractor	On-going/ daily	

	waste to a registered landfill site. (d) Cement batching areas must be located in consultation with the ECO to ensure residues are contained and that the proposed location does not fall within sensitive areas such as drainage lines, storm water channels, etc.			
B.8 Dangerous and toxic materials, if applicable		Responsibility	Frequency	Notes
This section aims to provide measures to prevent pollution of soil, surface and ground water resources in the immediate and surrounding environments. It also proposes measures to minimise the chances of transgression of the acts controlling pollution.	B.8.1 Provision of storage facilities (a) Materials such as fuel, oil, paint, herbicide and insecticides must be sealed and stored in bermed areas or under lock and key, as appropriate, in well-ventilated areas. (b) Sufficient care must be taken when handling these materials to prevent pollution. Training on the handling of dangerous and toxic materials must be conducted for all staff prior to the commencement of construction. (c) In the case of pollution of any surface or groundwater, the Regional Representative of the Department of Water Affairs (DWA) must be informed immediately. (d) Storage areas must display the required safety signs depicting “no smoking”, No Naked lights” and “Danger” containers must be clearly marked to indicate contents as well as safety requirements. (e) The contractor must supply a method statement for the storage of hazardous materials at tender stage. (f) Material Safety Data Sheets (MSDS) must be	Contractor	On-going/ daily	

	prepared for all hazardous substances on site and supplied by the supplier where relevant. MSDS's must be updated as required.			
B.9. Bulk storage of fuels and oils, if applicable		Responsibility	Frequency	Notes
<p>This section aims to provide measures to prevent pollution of soil, surface and ground water resources in the immediate and surrounding environments. It also proposes measures to minimise the chances of transgression of the acts controlling pollution.</p>	<p>B.9.1 Bulk storage of fuels and oils</p> <p>(a) The contractor must provide and maintain a method statement for "Diesel tanks and refuelling procedures".</p> <p>(b) Bulk fuel storage tanks on the site must be on an impervious surface that is bunded and able to contain at least 110% of the volume of the tanks. The filler tap must be inside the bunded area where possible and the bund wall must not have a tap or valve.</p> <p>(c) The bunded area should have a water/ fuel sump separator.</p> <p>(d) A Flammable Liquid License must be obtained for diesel volumes greater than 200 litres.</p> <p>(e) Bulk fuel storage tanks must be located in a portion of the construction camp where they do not pose a high risk in terms of water pollution (i.e. they must be located away from water courses and drainage lines)</p> <p>(f) Bulk fuel storage tanks must be placed so that they are out of the way of traffic, so that the risk of the tanks being ruptured or damaged by vehicles is minimised.</p> <p>(g) Bulk fuel storage areas should be covered during the rainy season.</p>	Contractor	Once of as required	

B.10. Use of dangerous and toxic materials		Responsibility	Frequency	Notes
<p>This section aims to provide measures to prevent pollution of soil, surface and ground water resources in the immediate and surrounding environments. It also proposes measures to minimise the chances of transgression of the acts controlling pollution.</p>	<p>B.10.1 Use of dangerous and toxic materials</p> <p>(a) The contractor must keep the necessary materials and equipment on site to deal with spills/ fire of the materials present should they occur.</p> <p>(b) The contractor must set up a procedure for dealing with spills/ fire, which will include notifying the ECO and the relevant authorities prior to commencing with construction. These procedures must be developed with consultation and approval by the appointed EO.</p> <p>(c) A record must be kept of all spills and the corrective action taken.</p>	Contractor	As required	
B.11. Stockpile handling		Responsibility	Frequency	Notes
<p>Stockpiles need to be managed in accordance with the outlined specifications in order to minimise the scarring of the soil surface and land features, disturbance and loss of soil, construction footprint, sedimentation of nearby drainage lines; maintain the integrity of the topsoil for landscaping, containment of invasive plant growth as well as the contamination of storm water run-off.</p>	<p>B.11.1 Stockpiles</p> <p>(a) All stockpiled material must be easily accessible without any environmental damage.</p> <p>(b) All temporarily stockpiled material must be stockpiled in such a way that the spread of materials are minimised.</p> <p>(c) The stockpiles may only be placed within the demarcated areas the location of which must be approved by the ECO.</p> <p>(d) The contractor must avoid all clearly marked vegetated areas that will not be cleared.</p> <p>(e) Storm water run-off from the stockpile sites and other related areas must be directed</p>	Contractor	On-going/ daily	

	<p>into the storm water system with the necessary pollution prevention measures such as silt traps and may not run freely into the immediate and surrounding environments.</p> <p>(f) Stockpiles are to be stabilised if signs of erosion are visible.</p> <p>(g) Soils from different horizons must be stock piled such that topsoil stockpiles do not get contaminated by sub-soil material.</p> <p>(h) Topsoil stockpiles must be monitored for invasive exotic vegetation growth. Contractors must remediate as and when required in consultation with the ECO.</p> <p>(i) No plant, workforce or any construction related activities may be allowed onto the topsoil stockpiles.</p> <p>(j) Topsoil stockpiles must be clearly demarcated as no-go areas.</p> <p>(k) Stock piles must not be higher than 2m to avoid compaction thereby maintaining the soil integrity and chemical composition.</p>			
B.12 Fire Management		Responsibility	Frequency	Notes
<p>This section aims to provide measures to minimise the destruction of natural fauna and flora as well as maintain the general safety on site.</p>	<p>B.12.1 Fire management</p> <p>(a) The contractors must provide and maintain a method statement for “fires”, clearly indicating where and for what fires will be utilised plus details on the fuel to be utilised</p> <p>(b) Absolutely no burning of waste is permitted.</p> <p>(c) Fires will only be allowed in facilities especially constructed for this purpose</p>	Contractor	On-going/ daily	

	<p>within fenced Contractor's camps. Wood, charcoal or anthracite are the only fuels permitted to be used for fires. The contractor must provide sufficient wood (fuel) for this purpose.</p> <p>(d) Fires within the designated areas must be small in scale so as to prevent excessive smoke being released into the air.</p> <p>(e) No wood is to be collected, chopped or felled for fires from private or public property as well as from no-go or sensitive areas within the site and any surrounding natural vegetation.</p>			
B.13. Erosion and sedimentation		Responsibility	Frequency	Notes
<p>This section aims to provide measures to minimise the damage caused by erosion, impedance of the natural flow of water, scarring of the soil surface and land features, disturbance and loss of topsoil as well as enable the re-growth of disturbed areas.</p>	<p>B.13.1 Erosion and sedimentation management</p> <p>(a) To reduce the loss of material by erosion, the contractor must ensure that disturbance on site is kept to a minimum. The contractor is responsible for rehabilitating all eroded areas in such a way that the erosion potential is minimised after construction has been completed.</p> <p>(b) Should there be any disturbed areas during the construction phase, they must be rehabilitated after the completion of the construction phase.</p> <p>(c) These areas must be cordoned off so that vehicles or construction personnel cannot gain access to these areas.</p> <p>(d) Erosion of top soils needs to be prevented via management measures including berms,</p>	Contractor	On-going/ daily	

	<p>soil traps, hessian curtains and stormwater diversion away from areas susceptible to erosion.</p> <p>(e) As much vegetation growth as possible should be promoted within the proposed development area in order to protect soils.</p> <p>(f) Monitor all wetland areas for erosion and incision.</p> <p>(g) All soils compacted as a result of construction activities falling outside of project footprint areas should be ripped and profiled.</p> <p>(h) All wetland areas affected by construction should be rehabilitated upon completion of the construction phase of the development. Areas should be reseeded with indigenous grasses as required.</p>			
B.14. Fauna and flora		Responsibility	Frequency	Notes
<p>This section aims to provide measures to minimise the disturbance to animals, interruption of breeding patterns of birds as well as the destruction of habitats.</p>	<p>B.14.1 Fauna management</p> <p>(a) All activities on site must comply with the regulations of the Animals Protection Act, 1962 (Act No. 71 of 1962), as amended.</p> <p>(b) All construction workers must be informed that the intentional killing of any animal is not permitted as faunal species are a benefit to society. Employees must be trained on how to deal with fauna species as intentional killing will not be tolerated. In the case of a problem animal e.g. a large snake, a specialist must be called in to safely relocate the animal if the EO or ECO is not able to.</p>	<p>Contractor</p>	<p>On-going/ daily</p>	

	<p>(c) Environmental induction training and awareness must include aspects dealing in safety with wild animals into and on site. Focus on animals such as snakes and other reptiles that often generate fear by telling workers how to move safely away and to whom to report the sighting. Workers should also be informed where snakes most often hide so that they can be vigilant when lifting stones, etc.</p> <p>(d) Disturbances to nesting sites of birds must be avoided, as far as possible.</p> <p>(e) No areas falling outside of the study area may be cleared for construction purposes.</p> <p>(f) Edge effects of all construction activities, such as erosion and alien plant species proliferation, which may affect faunal habitat within surrounding areas, need to be strictly managed in all areas of increased ecological sensitivity.</p> <p>(g) Restrict vehicles to designated roadways to limit the ecological footprint of the proposed development activities as well as to reduce the possibility of collisions.</p> <p>(h) No trapping or hunting of fauna is to take place.</p> <p>(i) Should any RDL faunal species or species of conservational concern be found within the development footprint area, these species should be relocated to similar habitat within</p>			
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	the vicinity of the study area with the assistance of a suitably qualified specialist.			
This section aims to provide measures to minimise the disturbance to vegetation, prevent litigation concerning removal of vegetation, encourage natural habitat fauna, minimise scarring of the soil surface and land features, minimise disturbance and loss of topsoil as well as the risk of fauna and flora destruction.	<p>B.14.2 Flora management</p> <p>(a) The contractor must rehabilitate any disturbed areas once construction activities have terminated for e.g. by removing all contaminated soils. The crew camp during construction must be located in an area that will be developed to impervious surfaces after construction, so as to ensure that natural vegetation cover is not disturbed. A method statement must be provided and maintained by the contractor.</p> <p>(b) Once construction is complete, rehabilitation of un-built areas must be undertaken in order to restore the aesthetic & ecological value of the area. Active re-vegetation, where necessary must take place with locally indigenous vegetation under the supervision of the ECO.</p> <p>(c) No open fires shall be allowed on site under any circumstances, fires will only be permitted in adequate facility within the crew camp, Forest Act, 1984 (Act No. 122 of 1984).</p> <p>(d) Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.</p> <p>(e) Proliferation of alien and invasive species is expected within any disturbed areas. These</p>	Contractor	As and when required	

	<p>species should be eradicated and controlled to prevent their spread beyond the power line servitude.</p> <p>(f) Reseeding of indigenous grasses should be implemented in all impacted areas.</p> <p>(g) Rescue and relocate medicinal species (<i>Hypoxis hemerocallidea</i>) within any proposed infrastructure area.</p> <p>(h) Ensure that the proposed development footprint area remain as small as possible.</p> <p>(i) Prohibit the collection of plant material for medicinal purposes.</p> <p>(j) Species specific and area specific eradication recommendations:</p> <ul style="list-style-type: none"> • Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used; and • Footprint areas should be kept as small as possible when removing alien plant species. <p>(k) Edge effect control needs to be implemented to ensure no further degradation.</p>			
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3.3 Section C: Operation Phase Activities

C.1. General Housekeeping & Waste Management		Responsibility	Frequency	Notes
	<p>C.1.1 Housekeeping and Waste Management</p> <p>(a) The site should be kept neat and tidy at all times.</p> <p>(b) General maintenance (vegetation) and removal of litter must be conducted regularly.</p>	Facilities Manager	Weekly	
C.2. Fauna and Flora		Responsibility	Frequency	Notes
<p>Access roads used for maintenance might impact on fauna and flora.</p> <p>Maintenance of vegetation within the servitude must be ongoing</p>	<p>C2.1. Fauna and Flora</p> <p>(a) Vehicles should be restricted to travelling only on designated roadways to limit the disturbance of ecological footprint of the proposed development</p> <p>(b) Edge effects need to be strictly managed during the operational phase of the activities e.g. monitoring of erosion, monitoring and control of alien infestation.</p> <p>(c) Ensure that operational related activities are kept strictly within the footprint area.</p> <p>(d) Alien and invasive vegetation control should take place throughout the operational phase of the development.</p> <p>(e) Prohibit the collection of plant material for medicinal purposes.</p> <p>(f) Speed limits must be adhered to.</p> <p>(g) Proliferation of alien and invasive species is expected within any disturbed areas. These species should be eradicated and controlled to prevent their spread beyond the project footprint. Alien plant seed dispersal within the top layers of the soil within footprint areas, that will have an impact on</p>	Facilities Manager	On-going throughout operational phase of project	

	<p>future rehabilitation, has to be controlled.</p> <p>(h) Maintenance of vegetation must be in accordance with Eskom's Standard for Bush Clearance and Maintenance within Overhead Power line Servitudes.</p>			
<p>Bird collisions with power lines and possible bird electrocutions</p>	<p>C3.1. Avifauna</p> <p>(a) Bird diverters should be monitored to ensure effective diversion of bird to avoid collisions. Should a large number of collisions be observed it may be necessary to investigate additional bird diversion techniques.</p>	<p>Facilities Manager</p>	<p>On-going throughout operational phase of project</p>	

3.4 Section D: Decommissioning Phase Activities

D.1. Waste Management	Responsibility	Frequency	Notes	
<p>Activities in the decommissioning site such as office work, usage of decommissioning materials, etc., generate different types of waste that requires to be managed properly. These wastes could result in environmental pollution such as soil contamination/ pollution or health hazards to employees working on-site, if not managed properly.</p>	<p>D.1.1 On-site waste management</p> <p>(a) Waste is grouped into “general” or “hazardous”, depending on its characteristics. The classification determines the handling methods and the ultimate disposal of the material. The Contractor/ ECO must classify waste into general or hazardous based on the toxicity or hazard nature of waste.</p> <p>(b) Waste must be placed in the designated or marked skips/ bins which must be emptied on a regular basis by a contracted waste collector. These should remain within the demarcated areas and should be designed to prevent refuse from being blown out by wind.</p> <p>(c) Separation of waste and recycling of paper, glass, cans, scrap, metals, plastic bottles, etc., must be considered prior to disposal. The disposal at the landfill site should be considered as the last option, after having taken into consideration the prevention of waste generation, reduction waste generation, reuse and recycling.</p> <p>(d) Hazardous waste that require disposal (oily rags, used fuel/ oil, etc.) must be placed in a suitable leak proof skip or wheelie bin for disposal at an approved hazardous waste disposal facility.</p> <p>(e) The contractor is responsible for arranging the removal of all waste from site generated through construction activities. Waste must be removed to a registered, appropriate disposal and recycling facilities.</p>	<p>Contractor/ PM EO/</p>	<p>During decommissioning.</p>	<p>ECO and PM needs to ensure that all decommissioning staff is educated on waste management.</p>

	<p>(f) No burning and littering of waste on site should be allowed.</p> <p>(g) Request the following from the waste contractors that are used to collect waste:</p> <ul style="list-style-type: none">• Copies of the weighbridge receipt from the waste removal contractor for all waste collected on site.			
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Please note that Section D must be updated closer to the time when decommissioning activities are to take place.

ANNEXURE 1

DECLARATION OF UNDERSTANDING BY THE DEVELOPER

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:

Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 2

DECLARATION OF UNDERSTANDING BY THE ENGINEER

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:

Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 3

DECLARATION OF UNDERSTANDING BY THE CONTRACTOR

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:

Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 4 A

METHOD STATEMENT: Solid Waste Management

CONTRACT:.....**DATE:**.....

WHAT WORK IS TO BE UNDERTAKEN? [Give a brief description of the works to be undertaken on site that will generate waste (hazardous and non-hazardous wastes)]: * Note: please attach extra pages if more space is required.

***Insert additional pages as required**

WHERE ARE THE WORKS TO BE UNDERTAKEN? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

METHOD STATEMENT: Solid Waste Management (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.....**End Date:**.....

HOW IS WASTE TO BE MANAGED ON SITE? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

DECLARATIONS for Method Statement : Solid Waste Management (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

ANNEXURE 4 B

METHOD STATEMENT: Crew Camps and Construction Lay Down Areas

CONTRACT:.....DATE:.....

WHAT CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS ARE REQUIRED ON SITE DURING CONSTRUCTION? (Give a brief description of these): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

WHERE ARE THE CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS TO BE LOCATED? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

METHOD STATEMENT:

Crew Camps and Construction Lay Down Areas (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.....**End Date:**.....

HOW ARE CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS TO BE MANAGED? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

DECLARATIONS for Method Statement

Crew Camps and Construction Lay Down Areas (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

ANNEXURE 4 C

METHOD STATEMENT: Cement and Concrete Batching

CONTRACT:.....**DATE:**.....

WHAT WORK IS TO BE UNDERTAKEN? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

METHOD STATEMENT:

Cement and Concrete Batching (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.....**End Date:**.....

HOW ARE THE WORKS TO BE UNDERTAKEN? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

DECLARATIONS for Method Statement

Cement and Concrete Batching (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

ANNEXURE 4 D

METHOD STATEMENT: Dust Control

CONTRACT:.....**DATE:**.....

WHAT WORK IS TO BE UNDERTAKEN ON SITE THAT COULD GENERATE DUST? (Give a brief description of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

METHOD STATEMENT: Dust Control (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.....**End Date:**.....

HOW ARE THE WORKS TO BE UNDERTAKEN SO AS TO MINIMISE AND CONTROL DUST GENERATION ON SITE? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

DECLARATIONS for Method Statement: Dust Control (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

ANNEXURE 4 E

METHOD STATEMENT:

Hydrocarbon and Emergency Spill Procedure

CONTRACT:.....**DATE:**.....

WHAT HAZARDOUS SUBSTANCES (INCL. FUELS) ARE TO BE STORED ON SITE? (Give a brief description of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

WHERE ARE THE THESE SUBSTANCES TO BE STORED ON SITE? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

METHOD STATEMENT:

Hydrocarbon and Emergency Spill Procedures (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.....**End Date:**.....

HOW ARE HAZARDOUS SUBSTANCES TO BE MANAGED TO AVOID SPILLAGES AND WHAT EMERGENCY PROCEDURES ARE TO BE IMPLEMENTED IN CASE OF A SPILLAGE? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

DECLARATIONS for Method Statement

Hydrocarbon and Emergency Spill Procedures (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

ANNEXURE 4 F

METHOD STATEMENT: Fire Management

CONTRACT:.....**DATE:**.....

WHAT WORK IS TO BE UNDERTAKEN? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

METHOD STATEMENT:

Fire Management (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.....**End Date:**.....

HOW ARE THE WORKS TO BE UNDERTAKEN? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

***Insert additional pages as required**

DECLARATIONS for Method Statement

Fire Management (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated: _____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

ANNEXURE 5

INCIDENT AND ENVIRONMENTAL LOG




ENVIRONMENTAL INCIDENT LOG				
Date	Env. Condition	Comments <i>(Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)</i>	Corrective Action Taken <i>(Give details and attach documentation as far as possible)</i>	Signature

DOCUMENT CONTROL

FORM IP180_B



CLIENT : Eskom
PROJECT NAME : Eskom Libanon 132kV powerline **PROJECT No.** : J34079
TITLE OF DOCUMENT : ENVIRONMENTAL MANAGEMENT PROGRAMME FOR
 THE PROPOSED CONSTRUCTION OF THE ESKOM LIBANON 132KV POWER LINE

	Approved By	Reviewed By	Prepared By
ORIGINAL	NAME Elisabeth Nortje	NAME Umeshree Naicker	NAME Chevonne Stevens
DATE	SIGNATURE 	SIGNATURE 	SIGNATURE 

	Prepared by	Prepared By	Prepared By
ORIGINAL	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE

	Approved By	Reviewed By	Prepared By
REVISION	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE

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