ESKOM HOLDINGS
(SOC) LTD

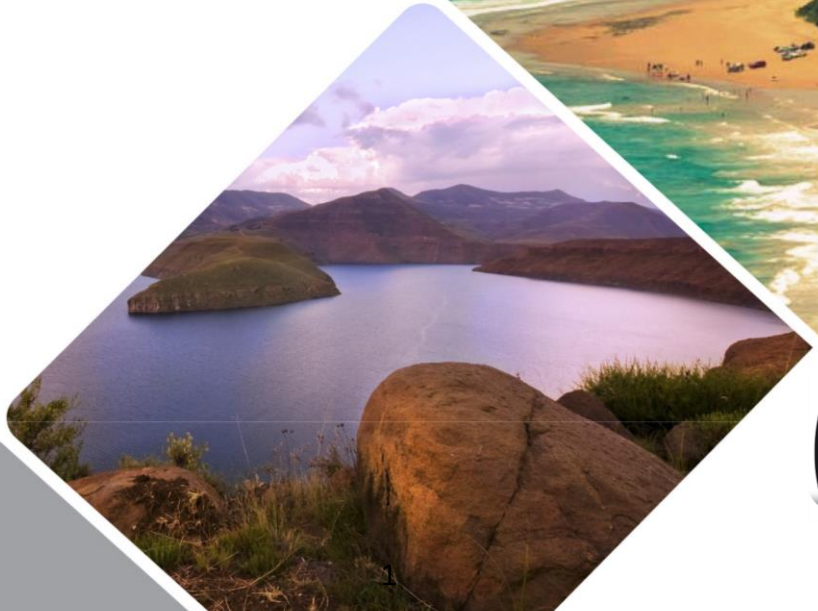
ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR THE CONSTRUCTION OF THE OLIEN-KARATS 132KV POWERLINE, EXTENDING FROM THE EXISTING OLIEN SUBSTATION TO THE KARATS SUBSTATION, NORTHERN CAPE PROVINCE

GIBB REF: J34152

DEA REF: 14/12/16/3/3/1/1356/AM1

March 2018



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ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE CONSTRUCTION OF THE OLIEN-KARATS 132KV POWERLINE, NORTHERN CAPE PROVINCE

TABLE OF CONTENTS

ANNEXURES

CONTACT DETAILS OF RESPONSIBLE PERSONS

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GLOSSARY OF TERMS, DEFINITIONS AND ABBREVIATIONS

Construction Activity	A construction activity is any action taken by the Contractor, his subcontractors, suppliers or personnel during the construction process.
Contractor	That main organisation appointed by the Developer, through the Project Manager, to undertake construction activities on the site.
Demolition	The tearing down of buildings and other structures: the opposite of construction.
Developer	Eskom Holdings (SOC) Ltd, Eskom Distribution – Northern Cape Operating Unit (Eskom)
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer. The ECO monitors compliance with the EMPr during the construction phase and advises the Project Manager on environmental matters relating to construction.
EMPr	Environmental Management Programme: The EMPr for the project sets out general instructions that will be included in a contract document for the construction phase of the project. The EMPr will ensure the construction activities are conducted and managed in an environmentally sound and responsible manner.
Environment	Means the surroundings within which humans exist and that are made up of: a. The land, water and atmosphere of the earth; b. Micro-organisms, plant and animal life; c. Any part or combination of a) and b) and the interrelationships among and between them; and d. The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
Environmental Specifications	Instructions and guidelines for specific construction activities designed to help prevent, reduce and/or control the potential environmental implications of these construction activities.
DEA	Department of Environmental Affairs
I&AP(s)	Interested and Affected Party(ies)

Method Statement	A written submission by the Contractor to the Project Manager in response to the Specification setting out the plant, materials, labour, timing and method the Contractor proposes using to carry out an activity. The Method Statement shall cover applicable details with regard to: • Construction procedures; • Materials and equipment to be used; • Getting the equipment to and from site; • How the equipment/material will be moved while on site; • How and where material will be stored; • The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or solid material that may occur; • Timing and location of activities; • Compliance/ non-compliance with the Specifications; and • Any other information deemed necessary by the PM.
MSDS	Material Safety Data Sheet
Project	This refers to all construction activities associated with the proposed activities.
PM	Project Manager: Appointed firm responsible for overall management of the construction phase of the project including the management of all contractors.
PPE	Personal Protective Equipment
Rehabilitation	Rehabilitation is defined as the return of a disturbed area, feature or structure to a state that approximates to the state (where possible) that it was before disruption, or to an improved state.
SHE	Safety, Health and Environment
Solid Waste	Means all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).
SSC	Species of Special Concern

1 INTRODUCTION

Eskom Holdings (SOC) Ltd, Eskom Distribution – Northern Cape Operating Unit (Eskom) proposes to construct a 20km 132kV single circuit powerline extending from the existing Olien substation to the Karats substation, near the town of Lime Acres, Northern Cape Province.

Eskom has received a positive Environmental Authorisation (EA) from the National Department of Environmental Affairs (DEA) dated 02 June 2015 for the proposed construction of the proposed Olien-Karats 132kV powerline. This EA was subsequently amended, and the amended EA was granted on 08 August 2017.

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 EMPr will look at the potential environmental impacts the proposed development 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.

The proposed project, triggers listed activities 10(i), 11(xi) and 18(i) of Government Notice Regulation (GNR) 544 of 2010 and listed activity 14(a)(i) of GN R 546 of 2010 published in terms the National Environmental Management Act, 1998 (Act No. 107 of 1998), which reads as follows:

GNR 544:

10): 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.**

The proposed distribution line connecting Olien Substation to the Karats Substation will be 132kV and lies outside an urban area.

11) The construction of **infrastructure or structures covering 50 square metres or more**, where such construction occurs within a watercourse or within 32 metres of watercourse, measured from the edge of a watercourse excluding where such construction will occur behind the development setback line.

Several watercourses may be crossed along the powerline route, and as such pylons may be constructed within 32 metres of the watercourse.

18) The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from **a watercourse.**

Several watercourses may be crossed along the powerline route, and as such pylons may be constructed within the watercourse.

GNR 546:

14) The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation in Eastern Cape, Free State, KwaZulu-Natal, Gauteng, Limpopo, Mpumalanga, Northern Cape, Northwest and Western Cape - **all areas outside urban areas.**

Vegetation will be cleared to allow for the erection of the pylons. Bush clearing of approximately 8m wide will be required for the 132kV powerline.

Please refer to Figure 1 below, which details the route alignment for the 132Kv Powerline as well as all the built infrastructure and ecologically sensitive areas that the Line crosses over.

Please refer to Annexure 6 for development maps showing detailed sections of the powerline.

The Draft EMPr was made available for public review and comment for a period of 30 days from **Monday, 19 February to Thursday, 22 March 2018 (inclusive).** The Draft EMPr was made available at the Lime Acres Library as well as on the GIBB website. Please refer to Annexure 7 for proof of Public Participation.

Please note that no comments were received from Interested and Affected Parties or any Organs of State during the Public Review period of the Draft EMPr.

Table 1: GPS Positions of the Pylons

Pylon Number	Latitude	Longitude
1	28°22' 30.791" S	23°26' 56.222" E
2	28°22' 28.379" S	23°26' 58.601" E
3	28°22' 25.059" S	23°27' 01.876" E
4	28°22' 22.506" S	23°27' 04.394" E
5	28°22' 20.491" S	23°27' 01.801" E
6	28°22' 16.078" S	23°27' 05.810" E
7	28°22' 12.263" S	23°27' 09.275" E
8	28°22' 08.510" S	23°27' 12.684" E
9	28°22' 04.944" S	23°27' 15.923" E
10	28°22' 00.734" S	23°27' 19.746" E
11	28°21' 56.878" S	23°27' 23.249" E
12	28°21' 51.881" S	23°27' 27.787" E
13	28°21' 46.276" S	23°27' 32.878" E
14	28°21' 42.467" S	23°27' 36.338" E
15	28°21' 39.060" S	23°27' 39.431" E
16	28°21' 34.267" S	23°27' 43.784" E
17	28°21' 30.130" S	23°27' 47.541" E
18	28°21' 26.995" S	23°27' 50.387" E
19	28°21' 22.876" S	23°27' 54.128" E
20	28°21' 18.544" S	23°27' 58.062" E
21	28°21' 15.034" S	23°28' 01.248" E

22	28°21' 11.584" S	23°28' 04.381" E
23	28°21' 07.398" S	23°28' 08.182" E
24	28°21' 03.377" S	23°28' 11.833" E
25	28°20' 59.867" S	23°28' 15.020" E
26	28°20' 56.180" S	23°28' 18.366" E
27	28°20' 51.602" S	23°28' 22.523" E
28	28°20' 47.950" S	23°28' 25.839" E
29	28°20' 44.695" S	23°28' 28.794" E
30	28°20' 40.876" S	23°28' 32.261" E
31	28°20' 36.122" S	23°28' 36.575" E
32	28°20' 31.958" S	23°28' 40.355" E
33	28°20' 28.420" S	23°28' 43.567" E
34	28°20' 24.289" S	23°28' 47.317" E
35	28°20' 20.292" S	23°28' 50.945" E
36	28°20' 16.550" S	23°28' 54.341" E
37	28°20' 13.072" S	23°28' 57.498" E
38	28°20' 09.194" S	23°29' 01.017" E
39	28°20' 05.175" S	23°29' 04.665" E
40	28°20' 01.338" S	23°29' 08.147" E
41	28°19' 57.760" S	23°29' 11.394" E
42	28°19' 54.216" S	23°29' 14.610" E
43	28°19' 50.518" S	23°29' 17.966" E
44	28°19' 46.374" S	23°29' 21.727" E
45	28°19' 42.981" S	23°29' 24.806" E
46	28°19' 38.859" S	23°29' 28.550" E
47	28°19' 38.539" S	23°29' 35.720" E
48	28°19' 38.284" S	23°29' 41.417" E
49	28°19' 37.976" S	23°29' 48.319" E
50	28°19' 37.503" S	23°29' 58.880" E
51	28°19' 37.195" S	23°30' 05.762" E
52	28°19' 39.012" S	23°30' 12.129" E
53	28°19' 41.522" S	23°30' 20.918" E
54	28°19' 44.009" S	23°30' 29.628" E
55	28°19' 46.333" S	23°30' 37.767" E
56	28°19' 49.252" S	23°30' 39.329" E
57	28°19' 51.472" S	23°30' 47.028" E
58	28°19' 53.810" S	23°30' 55.137" E
59	28°19' 56.073" S	23°31' 02.986" E
60	28°19' 58.400" S	23°31' 11.059" E
61	28°20' 00.557" S	23°31' 18.539" E
62	28°20' 02.696" S	23°31' 25.962" E
63	28°20' 04.846" S	23°31' 33.421" E
64	28°20' 06.965" S	23°31' 40.770" E
65	28°20' 09.500"S	23°31' 51.550"E
66	28°20' 12.210"S	23°31' 50.860"E
67	28°20' 12.983" S	23°31' 53.689" E
68	28°20' 15.230" S	23°32' 02.605" E

69	28°20' 17.458" S	23°32' 11.442" E
70	28°20' 19.514" S	23°32' 19.600" E
71	28°20' 17.436" S	23°32' 20.447" E
72	28°20' 20.036" S	23°32' 28.206" E
73	28°20' 22.344" S	23°32' 35.097" E
74	28°20' 24.745" S	23°32' 42.262" E
75	28°20' 27.241" S	23°32' 49.712" E
76	28°20' 29.524" S	23°32' 56.527" E
77	28°20' 32.083" S	23°33' 04.169" E
78	28°20' 34.349" S	23°33' 10.932" E
79	28°20' 36.757" S	23°33' 18.123" E
80	28°20' 38.975" S	23°33' 24.743" E
81	28°20' 40.902" S	23°33' 30.497" E
82	28°20' 39.108" S	23°33' 36.147" E
83	28°20' 37.551" S	23°33' 41.051" E
84	28°20' 34.967" S	23°33' 49.190" E
85	28°20' 32.638" S	23°33' 56.526" E
86	28°20' 30.246" S	23°34' 04.062" E
87	28°20' 27.826" S	23°34' 11.681" E
88	28°20' 25.731" S	23°34' 18.295" E
89	28°20' 26.666" S	23°34' 25.541" E
90	28°20' 27.823" S	23°34' 34.512" E
91	28°20' 28.806" S	23°34' 42.136" E
92	28°20' 27.710" S	23°34' 48.426" E
93	28°20' 26.382" S	23°34' 56.045" E
94	28°20' 25.095" S	23°35' 03.429" E
95	28°20' 23.821" S	23°35' 10.732" E
96	28°20' 22.491" S	23°35' 18.360" E
97	28°20' 21.152" S	23°35' 26.041" E
98	28°20' 19.775" S	23°35' 33.935" E
99	28°20' 18.432" S	23°35' 41.637" E
100	28°20' 14.696" S	23°35' 47.800" E
101	28°20' 10.895" S	23°35' 54.069" E
102	28°20' 07.314" S	23°35' 59.977" E
103	28°20' 03.472" S	23°36' 06.314" E
104	28°19' 59.750" S	23°36' 12.454" E
105	28°19' 56.010" S	23°36' 18.622" E
106	28°19' 52.475" S	23°36' 24.452" E
107	28°19' 49.216" S	23°36' 29.828" E
108	28°19' 44.604" S	23°36' 35.437" E
109	28°19' 39.509" S	23°36' 41.632" E
110	28°19' 36.864" S	23°36' 49.839" E
111	28°19' 34.477" S	23°36' 57.242" E
112	28°19' 34.326" S	23°37' 05.092" E
113	28°19' 40.418" S	23°37' 07.974" E
114	28°19' 46.591" S	23°37' 10.893" E
115	28°19' 50.562" S	23°37' 12.771" E

116	28°19' 54.648" S	23°37' 14.703" E
117	28°19' 58.513" S	23°37' 16.531" E
118	28°20' 01.809" S	23°37' 18.090" E

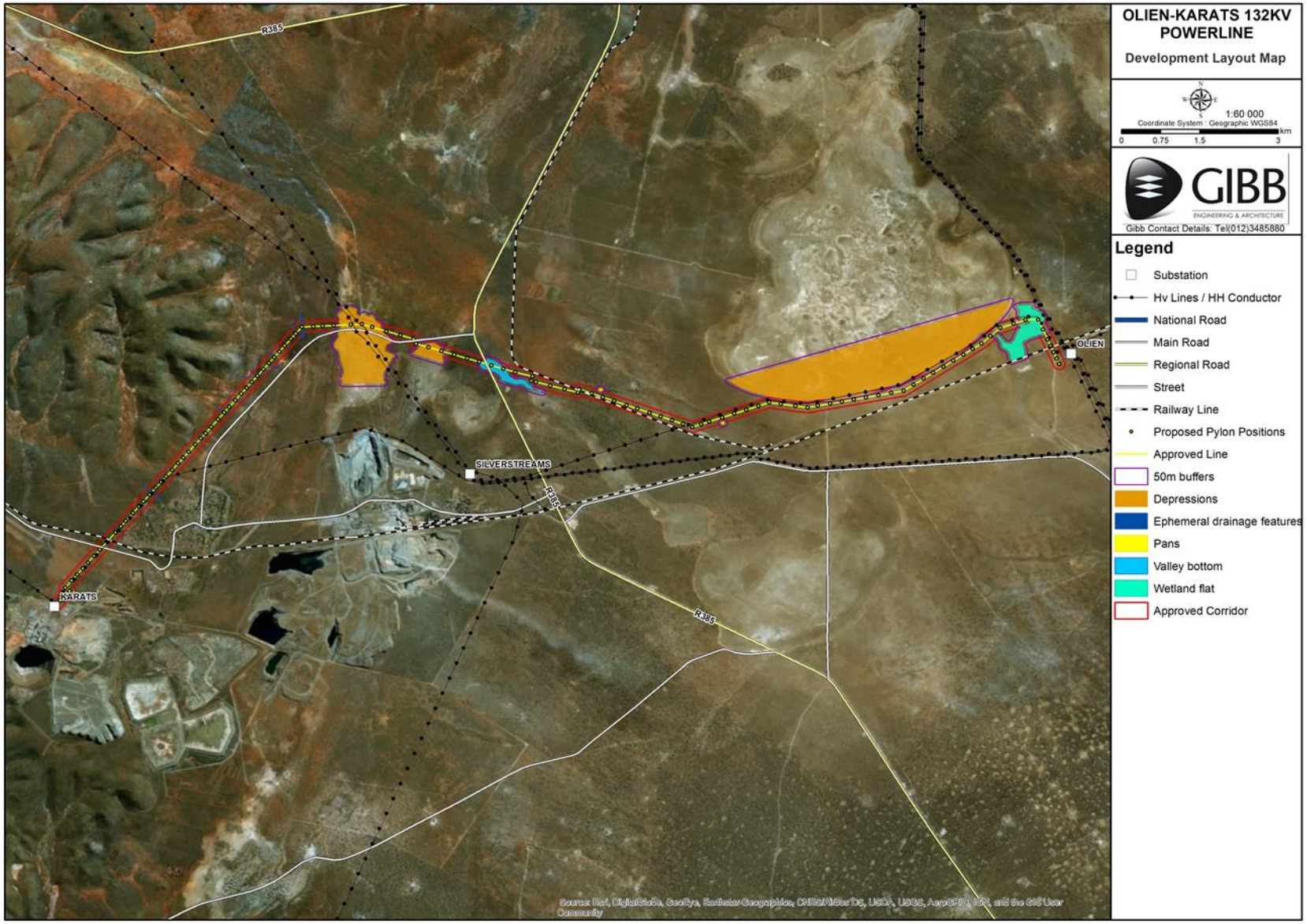

Figure 1: High Level Development Layout Map of the proposed Olien-Karats 132kV powerline alignment

1.1 Applicable Documentation

The following environmental documentation is applicable for the project, and should be read in conjunction with this Environmental Management Programme (EMPr):

- Environmental Authorisation granted on 02 June 2015 and the amended EA granted on 08 August 2017.
- The Water Use General Authorisation (GA) for the proposed powerline was granted on 02 September 2016 and subsequently amended on 11 December 2017.

1.2 Structure of the Environmental Management Programme

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

- **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 Co-ordinator and Environmental Control Officer, in terms of the construction contract.

- **Operation Phase**
  This section of the EMPr provides management principles for the operation phase of the project. Environmental actions, procedures and responsibilities as required from Eskom within the operation phase are specified.

- **Decommissioning Phase**
  Due to the nature of the project and its operational lifespan, decommissioning is not envisaged. This EMPr will have to be updated when decommissioning is to take place.

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.

1.3 Objectives of the EMPr

The 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.

The Developer / 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 developer (Eskom) as an independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of EA's, and the EMPr for the project.
- The developer is further responsible for providing and giving a mandate to enable the ECO to perform responsibilities. The developer must ensure that the ECO is integrated as part of the project team.

The Consulting Engineer (CE):

- Contracted by the developer 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.

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. The CE may also act as the PM. All decisions regarding environmental procedures must be approved by the PM. The PM has the authority to stop any construction activity in contravention of the EMPr in accordance with an agreed warning procedure.

Engineers Representative (ER):

- The consulting engineer's representative on site. Has the power/mandate to issue site instructions and in some instances, variation orders to the contractor, following request by the EO or ECO. The ER oversees site works, liaison with Contractor and ECO.

Environmental Officer / Environmental Manager (EO):

- Appointed by the Consulting Engineers as their environmental representative on site. The EO is not independent but must rather act on behalf of the consulting engineers with the mandate to enforce compliance under the project contract, which must include the EMPr. The EO has the directive to issue non-conformance and hazard certificates. Further, in terms of accepted industry

practice the EO could issue the equivalent of a “cease works” instruction only in exceptional circumstances where serious environmental harm has been or is about to be caused i.e. in cases of extreme urgency and then only when the ER is absent.

- The EO must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. On certain types of activities, such as linear developments (fences, pipelines, etc.), the EO must also be the liaison between the contractor and landowners (where required).
- The EO must attend relevant project meetings, conduct daily inspections to monitor compliance with the EMPr, and be responsible for providing reports and feedback on potential environmental problems associated with the development to the project team and ECO.
- The EO must convey the contents of this EMPr to the Contractor site team and discuss the contents in detail with the Contractor as well as undertake to conduct an induction and an environmental awareness training session prior to site handover to all contractors and their workforce.
- The EO must be suitably experienced with the relevant qualifications and preferably competent in construction related methods and practices.

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 geologists, heritage specialists, etc.
- The ECO must conduct audits on compliance to relevant environmental legislation, conditions of EA, and the EMPr for the project. The size and sensitivity of the development, based on the EIA, and the EA will determine the frequency at which the ECO will be required to conduct audits. (A minimum of a monthly site inspection must be undertaken).
- The ECO must be the liaison between the relevant authorities and the project team. The ECO must communicate and inform the developer and consulting engineers 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 construction 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.

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.

2.1 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 construction 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].
- 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 Contractors 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 Contractor 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 EO, on behalf of the Contractor, is to be appointed to implement this EMPr. The EO and not the Contractor is to deal with any landowner related matters.
- Environmental Audits to be carried out prior, during and upon completion of construction.

2.2 Awareness Training

The EO or ECO where an EO is not appointed, 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 EO must ensure daily toolbox talks include alerting the workforce to particular environmental concerns associated with the tasks for that day 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).

2.3 Contractor Environmental Method Statements

Method Statements are written submissions to the Engineer by the Contractor, in collaboration with his/her EO, in response to a request by the Engineer. The Method Statements set out the plant, materials, labour and method that the contractor proposes using to carry out an activity, identified by the EO and/or Engineer. The Method Statements contain the appropriate detail such that the EO and Engineer are able to assess whether the Contractor's proposal is in accordance with the requirements of the EMPr. The contractor must sign each Method Statement along with the EO and Engineer 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 Engineer 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 EO and Engineer 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 EO, ECO and Engineer for approval before construction commences *inter alia*:

- Solid waste management;
- Crew camps and construction lay down areas;
- Cement and concrete batching;
- Dust control;
- Noise control
- Hydrocarbon and emergency spills procedures;
- Fire Management; and
- Diesel tanks and refuelling procedures (if applicable).

2.4 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.

2.4.1 Pro forma Documentation

(a) Prior to the 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 Engineer;
- Declaration of understanding by the Contractor;
- Method statements; and
- ECO / Engineer 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 / Engineer 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**
Contingencies for minimising negative impacts anticipated to occur during the construction phase needs to be implemented Ensure environmental awareness and formalise environmental responsibilities and implementation	**A.1.1 Project contract and programme** (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. (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.	Proponent		
A.2. Appointments and duties of project team		**Responsibility**	**Frequency**	**Notes**
	A.2.1 Pro forma document and contracts (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.	Proponent	Once - off	

	This document must be made available to the approving authority on request. (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 dumping site is the responsibility of the subcontractor in question and that the subcontractors are bound to the management activities stipulated in this EMPr.			
	A.2.2 Roles and responsibilities (a) Before construction activities commence, role players must have a clear indication of to their role in the implementation of this EMPr.	Proponent	Once - off	
A.3. Method Statements		**Responsibility**	**Frequency**	**Notes**
	A.3.1 Method Statements (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. (b) Where applicable, the contractor will provide job-specific training on an ad hoc basis when workers are engaged in activities, which require	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.

	method statements.			
A.4. Emergencies, non-compliance and communication		**Responsibility**	**Frequency**	**Notes**
	A.4.1 Emergencies and communication (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 construction may begin: Contamination of natural water resources from spills; contamination of soils from spills; and fire. (b) Communication in emergencies must follow the suggested lines of communication.	Contractor	On-going	
	A.4.2 Non-compliance The contractor understands that failure to adhere to the requirements of the EMPr will result in fines over and above the costs incurred for any remediation required as result of the specific non-compliance.	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. Therefore the camp should be established on previously disturbed areas such as school / municipal show grounds etc.	**A.5.1 Layout** (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. (b) The camp should be located on already disturbed areas, such as school grounds, sports fields or previous construction camp sites. (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. 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. Access to the construction camp must be through an existing route that is clearly demarcated and agreed upon. (d) The construction camp can comprise of the following (as required): a. Site office b. Ablution facilities c. Designated first aid area d. Eating area e. Laydown areas	PM/ Contractor	Prior to site establishment	

	A.5.2 Ablutions (a) Ablution facilities must be provided and should be located within the construction camp at a ratio of 1:20 workers.	PM/ Contractor		
	A.5.3. Provision for camp waste disposal (a) Bins and skips shall be provided at convenient intervals for disposal of waste within the construction camp/site. (b) Recycling and provision of separate waste receptacles for different types of waste should be encouraged.	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.	**A.6.1. General Substances and Materials** (a) When deciding on the location of temporary stockpiles, the following needs to be considered: • road access, • length of time the stockpile will exist. (b) Additionally all stockpiles should be located away from sensitive ecosystems (depressions, pans, wetlands and drainage lines) and protected from the prevailing winds. (c) Storage areas must be designated, demarcated and fenced if necessary. (d) Storage areas should be secured, to minimize the risk of crime and contamination.	EO/ ECO approval	During site establishment.	

	A.6.2 Hazardous Substances and Materials (a) Fuel must be stored in a bunded area with at least a volume of 110% of the tank. (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. (c) Provide adequate firefighting equipment at or close to the fuel storage and dispensing area(s). (d) Keep fuel under lock and key at all times. (e) Hazardous chemical working/ refuelling areas must be bunded with an impermeable liner. (f) Ensure that there is always a supply of absorbent material readily available to absorb/break down any hydrocarbon spillage. (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.	EO/ ECO approval	During site establishment	
A.7. Set up of waste management activities		**Responsibility**	**Frequency**	**Notes**
	A.7.1 Waste management (a) A dedicated area must be allocated for waste sorting and storage. (b) Individual waste skip or wheelie bins for different types of waste should be provided (if none currently exist).	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.	**A.8.1. Environmental Education and Awareness** Ensure that all site personnel have a basic level of environmental awareness training. Topics covered should include: • 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. It is the contractor's responsibility to provide the site foreman with no less than 1 hour's environmental training (per week or as directed by the ECO) and to ensure that the foreman has sufficient understanding to pass the information onto the construction staff. (a) Translators are to be used where necessary. (b) The use of pictures and real-life examples is encouraged as these are easier to remember. The need for a 'clean site' policy also needs to be explained to the construction workers.	EO/ ECO	During staff induction and weekly Toolbox Talks	Toolbox talks and lunchtime Q&A.

	A.8.2. Worker Conduct on Site 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: • 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 resources.	**A.9.1. Water Quality** (a) Equipment and machinery must be in good operation condition, clean (power washed), free of leaks, excess oil and grease. The equipment must be washed/ cleaned in the wash bays or demarcated areas only. (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.	EO/ ECO	During site set up.	

A.10. Security and safety		Responsibility	Frequency	Notes
	A.10.1. Risk Associated with materials on site (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). (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.	PM/ Contractor	On-going	
A.11. Conditions as per the Environmental Authorisation for the Planning Phase		**Responsibility**	**Frequency**	**Notes**
	A.11.1. Planning Phase 1. The Route situated along the Submitted co-ordinates is approved. 2. Authorisation of the activity is subject to the conditions contained in this environmental authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation. 3. The holder of the authorisation is responsible for ensuring compliance with the conditions contained in this environmental authorisation. This includes any person acting on the holder's behalf, including but not limited to, an agent, servant, contractor, sub-contractor, employee,	PM/ Contractor	On-going	

	consultant or person rendering a service to the holder of the authorisation. 4. The activities authorised may only be carried out at the properties as described in the Environmental Authorisation issued on 02 June 2015 and the Amended Environmental Authorisation issued on 08 August 2017. 5. Liaison with land owners/farm managers must be done prior to construction in order to provide sufficient time for them to plan agricultural activities. 6. A permit must be obtained from the relevant nature conservation agency for the removal or destruction of indigenous protected or endangered plant or animal species. 7. A copy of this environmental authorisation and the approved EMPr must be kept at the property where the activity will be undertaken. The environmental authorisation and approved EMPr must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who undertakes work at the property.			

3.2 Section B: Construction Phase Activities

B.1. Site Access		Responsibility	Frequency	Notes
	B.1.1 Access to the site (a) Existing access roads must be used as far as possible. Please note that all existing access roads utilised will have to be maintained to the satisfaction of the landowners. (b) If access roads must pass through drainage lines, the footprint should be as small as possible. (c) A road management plan should be compiled, showing that only one road inside the construction footprint is allowed. (d) Construction vehicles must be limited to a speed of 20km/h on access roads and keep to the speed limit on public roads.	Proponent		
B.2. Maintenance of construction camp (as applicable)		**Responsibility**	**Frequency**	**Notes**
	B.2.1 Ablution (a) Portable chemical toilets should be acquired and placed at the construction site(s). At least 1 toilet to 20 workers should be erected. (b) Chemical toilets to be used on site, grey water should be disposed of off-site at a licensed waste treatment works. (c) The toilets should be located within the construction camp site(s) or as directed by the ECO / PM. (d) Construction camps, toilets and temporary	Proponent	As per Eskom current procedures or as directed by the EO / PM	

	laydown areas should be located at least 30m from the edge of any wetlands and drainage lines			
	B.2.2. Eating Areas (a) Because of the linear nature of the project, construction employees usually eat where ever they are on site. It is recommended that the contractors be provided with bins or bags to dispose there litter in after eating. These bins/bags are to be taken back to site after each shift and disposed of at the site camp. (b) All litter throughout the site should be picked up and placed in the appropriate recycling bins provided.	Contractor	Daily and Weekly inspection	
	B.2.3. Housekeeping (a) The contractor shall ensure that his camp and working areas are kept clean and tidy at all times. (b) The contractor shall implement good housekeeping practises to minimise the visual impact of waste and discarded materials.	Contractor	Daily	
B.3. Staff Conduct		**Responsibility**	**Frequency**	**Notes**
	B.3.1. Environmental Education and Awareness/ Safety (a) The contractor must monitor the performance of construction workers to ensure that all the topics that where covered in the induction meeting is properly understood, and followed. (b) HIV & AIDS awareness talks should be given at the construction camp sites on a regular basis by the relevant personnel.	Contractor	Daily/ Weekly	Toolbox talks and lunch time Q&A.

B.4. Waste Management		**Responsibility**	**Frequency**	**Notes**
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.	**B.4.1 On-site waste management** (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. (b) An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. (c) 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. (d) 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. (e) Any solid waste, which will not be recycled, must be disposed of at a landfill licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008	Contractor/ EO/ PM	During the start-up of construction on site and on-going thereafter. During waste collection Prior to signing an agreement with the waste removal contractor.	ECO and PM needs to ensure that all construction staff is educated on waste management.

	(Act No.59 of 2008). No waste material may be left on site after construction. (f) 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. (g) 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. (h) No burning and littering of waste on site should be allowed. (i) All wetlands and drainage lines should generally be treated as "no-go" areas and appropriately demarcated as such. No vehicles, machinery, personnel, construction materials, cement, fuel, oil or waste should be allowed into these areas without the express permission of and supervision by the ECO. (j) Keep waste in vermin proof bins with lids. (k) Request the following from the waste contractors that are used to collect waste: • Copies of the weighbridge receipt from the waste removal contractor for all waste collected on site.			
B.5. Construction vehicles/		**Responsibility**	**Frequency**	**Notes**

equipment				
Engine machines such as compressors, pumps, air 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.	**B.5.1 Construction equipment** (a) Vehicles and machinery are to be kept in good working order and to meet manufactures specification for safety, fuel consumption and emission. (b) Should excessive emissions be observed, the site manager needs to implement an effective vehicle and equipment service and maintenance plan. (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. (d) Drip trays must be placed underneath vehicles when not in use.	Contractor/ EO	On going	Contractor must follow a detailed checklist for machinery and equipment maintenance.
Increased noise and dust emissions from construction vehicles carrying out construction activities may occur.	**B.5.2 Construction activities – increase in dust and noise generation** (a) Use existing roads to access the site in order to limit the amount of dust on site. General housekeeping should also be maintained. (b) Avoid unnecessary movement of transportation vehicles on site. (c) Apply appropriate dust suppression methods. (d) No potable water may be used for dust suppression (as far as is practically possible).	Contractor/ EO	On-going/ daily	Contractor/ EO must ensure that the necessary noise and dust control measures be implemented and applied throughout the entire construction phase of the project.

	As an alternative, a non-toxic, biodegradable chemical Dust Palliative should be used (example, Dustex). (e) Construction time must be restricted to working hours (07:00-18:00) Monday to Friday excluding public holidays (unless prior permission is obtained from the adjacent landowners. (f) All noise and sounds generated during the proposed activity must comply with the relevant SANS codes and standards. (g) All construction equipment or machinery should be switched off when not in use. (h) Construction equipment must be kept in good working condition. (i) Plant and vehicles must be in good working order and visually inspected daily. (j) Use silencers on all equipment, where appropriate.			
B.6. Emergency Response to spillages		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to manage spillages from equipment used on site and measures for other construction materials handled on site.	**B.6.1 Emergency Response to spillages** The contractor shall take into account the following prevention measures to be applied during spillages. (a) Immediately repair all leaks of hydrocarbons, oil, etc. (b) Take reasonable measure to prevent further spills or leaks. (c) Dispose contaminated materials to a location designated thereto, for further disposal at a	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.

	registered landfill site. (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.			
This section aims to provide measures to prevent pollution of the environment as well as to minimise the chances of transgression of the acts controlling pollution.	**B.6.2 Oil and chemicals** (a) The contractor must provide method statements for the "handling & storage of oils and chemicals", "fire", and "emergency spills procedures". (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 bunded with adequate containment (at least 110% the volume of the fuel) for potential spills or leaks (c) Drip trays (minimum of 10cm deep) (or appropriate alternative *viz*. eco-blocks) 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. (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. (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. (f) Spill kits must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the	Contractor	On-going/ daily	

	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). (g) All spilled hazardous substances must be 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.	**B.7.1 Concrete batching and mixing** (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. (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. (c) No mixing of cement/concrete should take place within 30m of aquatic features. (d) Cleaning of cement mixing and handling equipment must be done using proper cleaning trays and at designated areas only. (e) Water used to clean concrete off of machinery should be treated as grey water and disposed of at a licensed water treatment works.	Contractor	On-going/ daily	
This section aims to provide measures to minimise pollution of soil, surface and	**B.7.2 Storage and disposal requirements** (a) All empty cement bags must be stored in a dedicated area and later removed from the site	Contractor	On-going/ daily	

groundwater resources.	for appropriate disposal at a licensed facility. The burning of cement bags is strictly forbidden. (b) Any spillage that may occur must be investigated and immediate remedial action must be taken. (c) The visible remains of concrete, either solid, or from washings, must be physically removed immediately and disposed of as 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		**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 hazardous materials must be conducted for all staff prior to the commencement of construction if required. (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”	Contractor	On-going/ daily	

	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 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 (as 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.9.1 Bulk storage of fuels and oils** (a) The contractor must provide and maintain a method statement for “Diesel tanks and refuelling procedures”. (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. (c) The bunded area should have a water/ fuel sump separator. (d) A Flammable Liquid License must be obtained for diesel volumes greater than 200 litres. (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) (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	Contractor	Once of as required	

	vehicles is minimised. (g) Bulk fuel storage areas should be covered during the rainy season. (h) No fuel storage, refuelling, vehicle maintenance or vehicle depots should be allowed within 30 m of the edge of any wetlands or drainage lines. (i) Refuelling and fuel storage areas, and areas used for the servicing or parking of vehicles and machinery, should be located on impervious bases and should have bunds around them. Bunds should be sufficiently high to ensure that all the fuel kept in the area will be captured in the event of a major spillage.			
B.10. Use of dangerous and toxic materials		**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.10.1 Use of dangerous and toxic materials** (a) The contractor must keep the necessary materials and equipment on site to deal with spills/ fire of the materials present should they occur. (b) The contractor must set up a method statement for dealing with spills/ fire, which will include notifying the ECO prior to commencing with construction. These must be approved by the appointed EO as a minimum. (c) A record must be kept of all spills and the corrective action taken.	Contractor	As required	
B.11. Stockpile handling		**Responsibility**	**Frequency**	**Notes**
Stockpiles need to be managed in accordance with	**B.11.1 Stockpiles**	Contractor	On-going/ daily	

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.	(a) All stockpiled material must be easily accessible without any environmental damage. (b) All temporarily stockpiled material must be stockpiled in such a way that the spread of materials are minimised. (c) All stockpiles may only be placed within the servitude line. (d) The contractor must avoid all clearly marked vegetated areas that will not be cleared. (e) Storm water run-off from the stockpile sites and other related areas must be directed 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. (f) Stockpiles are to be stabilised if signs of erosion are visible. (g) During construction, all materials and stockpiles will be covered with tarps to prevent erosion, as well as dust arising from it, and to mitigate the visibility thereof (where required and as directed by the ECO). (h) Soils from different horizons must be stock piled such that topsoil stockpiles do not get contaminated by sub-soil material. (i) Topsoil stockpiles must be monitored for invasive exotic vegetation growth. Contractors must remediate as and when required in consultation with the ECO. (j) No plant, workforce or any construction related activities may be allowed onto the topsoil stockpiles. (k) Topsoil stockpiles must be clearly demarcated as no-go areas. (l) Stock piles must not be higher than 2m to avoid compaction thereby maintaining the soil			

	integrity and chemical composition. (m) No spoil material, including stripped topsoil, should be temporarily stockpiled within 30 m of the edge of any wetland or drainage line.			
B.12 Fire Management		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the destruction of natural fauna and flora as well as maintain the general safety on site.	**B.12.1 Fire management** (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 (b) Absolutely no burning of waste is permitted. (c) Fires will only be allowed in facilities especially constructed for this purpose 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. (d) No fires to be lit on site and smoking to occur in designated areas only. (e) Fires within the designated areas must be small in scale so as to prevent excessive smoke being released into the air. (f) 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. (g) Employ a fire officer for on-site control. (h) Fire-fighting equipment to be kept on site and serviced regularly.	Contractor	On-going/ daily	
B.13. Erosion and sedimentation		**Responsibility**	**Frequency**	**Notes**

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.	**B.13.1 Erosion and sedimentation management** (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. (b) Should there be any disturbed areas during the construction phase, they must be rehabilitated after the completion of the construction phase. (c) These areas must be cordoned off so that vehicles or construction personnel cannot gain access to these areas.	Contractor	On-going/ daily	
B.14. Fauna and flora		**Responsibility**	**Frequency**	**Notes**
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.	**B.14.1 Fauna management** (a) All activities on site must comply with the regulations of the Animals Protection Act, 1962 (Act No. 71 of 1962), as amended. (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. Poaching is illegal and it must be a condition of employment that any employee caught poaching will be dismissed. 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. (c) Environmental induction training and awareness must include aspects dealing in	Contractor	On-going/ daily	

	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. (d) Disturbances to nesting sites of birds must be avoided, as far as possible. (e) Anti-collision devices such as bird flappers must be installed where the power line may cross avifaunal corridors, as recommended by the avifaunal specialist. The input of an avifaunal specialist must be obtained for the fitting of the anti-collision devices onto specific sections of the line once the exact positions of the pylons have been surveyed and pegged if so determined by the ECO. (f) Vegetation clearance should be conducted systematically from the start to the end of the route to allow fauna to move away. (g) Construction activities should be restricted to daylight hours when the majority of faunal species are inactive. (h) Species such as tortoises and porcupines should be removed to surrounding areas if encountered on site and not collected as this is illegal.			
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	**B.14.2 Flora management** (a) Trees and natural vegetation or any other natural features inside and outside the work area, which will not be cleared for construction purposes as indicated by the ECO, must be clearly demarcated and not be defaced, removed, painted for benchmarks or otherwise	Contractor	As and when required	

soil surface and land features, minimise disturbance and loss of topsoil as well as the risk of fauna and flora destruction.	damaged, even for survey purposes. The latter can only be done if stipulated in the Environmental Authorisation and must be overseen by the EO and ECO. Any feature defaced by the contractor must be reinstated to the satisfaction of the ECO and penalties/fines may be imposed by the ER. (b) 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. (c) Once construction is complete, rehabilitation of un-built areas must be undertaken in order to restore the aesthetic & ecological value of the area. It is recommended that the ECO be consulted with regard to the most appropriate rehabilitation vegetation and structures. Active re-vegetation must take place with locally indigenous vegetation under the supervision of the ECO. (d) 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). (e) Avoid strip clearing. (f) Vegetation should be removed only where construction is to take place. (g) A permit must be obtained from the relevant nature conservation agency for the removal or destruction of indigenous protected or endangered plant species.			

	(h) Clearing of the servitude should be as narrow as possible to prevent major destruction of habitats. (i) No trees may be affected in the grassland habitats where sufficient space is available for the tweaking of pylon positions.			
B.15. Heritage and Archaeological Resources		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the disturbance to heritage and archaeological resources.	**Pylons 31 to 45:** 1. An archaeologist should be retained to monitor excavations for tower positions (31 – 45) because this section has medium to high potential to yield subsurface archaeological traces, which could be linked to discernible archaeological sites previously recorded in the vicinity of the servitude.	Contractor	As and when required	
B.16. Conditions as per the Environmental Authorisation for the Construction Phase		**Responsibility**	**Frequency**	**Notes**
	B.16.1. Construction Phase 4. The activities authorised may only be carried out at the properties as described in the	Contractor/ EO/ECO/ PM	At the beginning of construction. As and when	

	Environmental Authorisation issued on 02 June 2015 and the Amended Environmental Authorisation issued on 08 August 2017. 5. Any changes to, or deviations from, the project description set out in this environmental authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further environmental authorisation in terms of the regulations. 6. This activity must commence within a period of five (05) years from the date of issue of this environmental authorisation. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken. 7. Commencement with one activity listed in terms of this environmental authorisation constitutes commencement of all authorised activities. 8. The holder of an environmental authorisation must apply for an amendment of the environmental authorisation with the competent authority for any alienation, transfer		required, for the duration of the Construction Phase.	

	or change of ownership rights in the property on which the activity is to take place. 15. The holder of the authorisation must appoint an experienced independent Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation/rehabilitation measures and recommendations referred to in this environmental authorisation are implemented and to ensure compliance with the provisions of the approved EMPr. 15.1 The ECO must be appointed before commencement of any authorised activities. 15.2 Once appointed, the name and contact details of the ECO must be submitted to the Director: Compliance Monitoring of the Department. 15.3 The ECO must keep record of all activities on site, problems identified, transgressions noted and a schedule of tasks undertaken by the ECO. 15.4 The ECO must remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation. 15.5 Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development. 16. All documentation e.g. audit/ monitoring/ compliance reports and notifications, required			

	to be submitted to the Department in terms of this environmental authorisation, must be submitted to the Director: Compliance Monitoring of the Department. 17. The holder of the authorisation must submit an environmental audit report to the Department within 30 days of completion of the construction phase (i.e. within 30 days of site handover) and within 30 days of completion of rehabilitation activities. 18. The environmental audit report must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the environmental authorisation conditions as well as the requirements of the approved EMPr. 19. Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development. 20. The authorised activity must not commence within twenty (20) days of the date of signature of the environmental authorisation. 21. A written notification of commencement must be given to the Department no later than fourteen (14) days prior to the commencement of the activity. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence, as well as a reference number.			

	This notification period may coincide with the notice of intent to appeal period. 26. Anti-collision devices such as bird flappers must be installed where the power line may cross avifaunal corridors, as recommended by the avifaunal specialist. The input of an avifaunal specialist must be obtained for the fitting of the anti-collision devices onto specific sections of the line once the exact positions of the towers have been surveyed and pegged. 28. A permit must be obtained from the relevant nature conservation agency for the removal or destruction of indigenous protected or endangered plant or animal species. 29. Vegetation clearing must be kept to an absolute minimum. Mitigation measures must be implemented to reduce the risk of erosion and the invasion of alien species. 30. Immediate rehabilitation of all disturbed areas must be undertaken once construction is complete. 31. No exotic plants may be used for rehabilitation purposes. Only indigenous plants occurring within a ten (10) kilometre radius of the development site must be utilised. 32. Construction must include design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off.			

	33. An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. 34. Any solid waste, which will not be recycled, must be disposed of at a landfill licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No.59 of 2008). No waste material may be left on site after construction. 35. If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ ash concentrations), unmarked human burials, fossils or other categories of heritage resources are found during construction, the South African Heritage Resources Agency (SAHRA) must be alerted immediately, and a professional archaeologist or palaeontologist, must be contacted as soon as possible to inspect the findings.			

3.3 Section C: Operation Phase Activities

C.1. Powerlines		Responsibility	Frequency	Notes

	C.1.1 Powerlines (a) Inspect powerlines regularly for signs of vandalism or theft of support structures or conductors. (b) Install anti-climb wires to deter individuals from climbing towers. (c) Monitor the growth of vegetation in the servitude and keep the clearance between vegetation and lines to those legally required. (d) Monitor bird nests on powerlines, which if present must be managed according to Eskom's Bird Nesting Guidelines.	Proponent	In accordance with Eskom specifications and guidelines	
C.2. Access Tracks		**Responsibility**	**Frequency**	**Notes**
	C.2.1 Access Tracks (a) The maintenance of access tracks is the responsibility of Eskom. (b) Access tracks must be repaired when necessary to avoid the formation of ruts. (c) Eskom's Erosion Guidelines should be used manage erosion of access and servitudes. (d) All weeds and invasive vegetation in the electrical servitude should be monitored and eradicated on a continuous basis for the period the servitude will be in use.	Proponent	In accordance with Eskom specifications and guidelines	
C.3. Conditions as per the Environmental Authorisation for the Operational Phase		**Responsibility**	**Frequency**	**Notes**

	C.3.1. Operational Phase 1. All documentation e.g. audit/ monitoring/ compliance reports and notifications, required to be submitted to the Department in terms of this environmental authorisation, must be submitted to the Director: Compliance Monitoring of the Department. 2. The holder of the authorisation must submit an environmental audit report to the Department within 30 days of completion of the construction phase (i.e. within 30 days of site handover) and within 30 days of completion of rehabilitation activities. 3. The environmental audit report must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the environmental authorisation conditions as well as the requirements of the approved EMPr. 4. Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.	Proponent	In accordance with Eskom specifications and guidelines	

3.4 Section D: Decommissioning Phase Activities

Please note that that it is not envisaged that the Olien-Karats 132kV powerline will be decommissioned. However should this come into effect at a later point in time, this EMPr will have to be updated to include specific measures and methodologies for the decommissioning activities. Below are the major activities anticipated to occur during decommissioning.

D.1. Waste Management		**Responsibility**	**Frequency**	**Notes**
	D.1.1 Waste Management (a) Waste generation must be managed according to international best practice. (b) An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. (c) All materials that can be recycled must be recycled where possible. (d) Any solid waste, which will not be recycled, must be disposed of at a landfill licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No.59 of 2008). No waste material may be left on site after construction.	Proponent	In accordance with Eskom specifications and guidelines	
D.2. Emergency Response for spillages		**Responsibility**	**Frequency**	**Notes**
	D.2.1 Soil Contamination (a) Contaminated soil must be removed and disposed of at an appropriate registered landfill site.	Proponent	In accordance with Eskom specifications and guidelines	
D.3. Decommissioning Activities and associated Heavy Machinery and Equipment		**Responsibility**	**Frequency**	**Notes**

	D.3.1 Alteration of Hydrology of Drainage lines and Wetlands (a) All decommissioning vehicles should be kept in good working condition; (b) All decommissioning vehicles should be parked in demarcated areas when not in use, and the soil in this area should be rehabilitated (if required); (c) No vehicles, machinery, personnel, construction material, cement, fuel, oil or waste should be allowed outside of the demarcated working areas; (d) No fuel storage, refuelling, vehicle maintenance or vehicle depots should be allowed within 30 m of the edge of any wetlands or drainage lines; **(e)** Vehicles and machinery should not be washed within 30 m of the edge of any wetland or drainage line; and **(f)** No effluents or polluted water should be allowed to discharge into any drainage lines or wetland areas.	Proponent	In accordance with Eskom specifications and guidelines	
D.4. Conditions as per the Environmental Authorisation for the Decommissioning Phase		**Responsibility**	**Frequency**	**Notes**
	D.4.1. Decommissioning Phase 1. Should the activity ever cease or become redundant, the holder of the authorisation must undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at that time	Proponent	In accordance with Eskom specifications and guidelines	

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 4 G

METHOD STATEMENT:
Diesel tanks and refueling procedures

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:
Diesel tanks and refuelling procedures (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

Diesel tanks and refuelling 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 H

METHOD STATEMENT: Noise 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: Noise 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: Noise 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: _____

TYPICAL INCIDENTS INCURRING PENALTIES	VALUE
Failure to secure construction site from public access	R5,000
Failure to demarcate working areas and servitudes and/or maintain fences and/or demarcation tape.	R1,000
Failure to stockpile topsoil correctly (per incident)	R2,000
Failure to stockpile materials in designated areas (per incident)	R500
Discharging effluent and/or polluted stormwater onto the ground or into surface water (per incident)	R2,000
Failure to provide adequate sanitation, waste disposal facilities or services (per incident)	R1,000
Failure to demarcate construction area boundaries before commencing construction clearance and other activities (per incident)	R5,000
Venturing into or undertaking construction related activities within no-go areas, without formal written approval from the ECO (per incident)	R5,000
No induction regarding environmental matters and site housekeeping practices (per employee)	R2,000
Stockpile of soils and materials outside demarcated areas (per incident)	R1,000
Inappropriate mixing of cement/concrete and poor management of concrete slurry (per incident)	R2,000
Burning of waste on site (including cement bags) (per incident)	R 2,000
Untidiness and litter at camp (per incident)	R200
Unauthorised removal of indigenous trees, medicinal or other plants (per incident)	R2,000
Damaging/killing animals/birds (per incident)	R 1,500
Failure to erect temporary fences as required (per incident)	R2,000
Failure to reinstate disturbed areas within the specified timeframe (per incident)	R2,000
Fire – costs of runaway fires will be borne by the Contractor, should he/she be proven responsible for such fires (per incident)	R25,000
Failure to provide adequate equipment for emergency situations (per incident)	R5,000
Defacing, painting or damaging natural or heritage features (per incident) – mandatory removal of employee from site	R5,000
Damaging cultural, historical and/or archaeological sites of importance (per incident) – mandatory removal of employee from site	R5,000
Failure to maintain basic safety measures on site	R1,000
Failure to carry out required community liaison, damage to property etc, without prior negotiation and/or compensation and other social infringements (per incident)	R1,000
Persistent and un-repaired oil leaks from machinery. The use of inappropriate methods of refuelling (per incident)	R2,000
Failure to provide drip trays and/or empty them frequently (per incident)	R500

TYPICAL INCIDENTS INCURRING PENALTIES	VALUE
Inappropriate use of bins and poor waste management on site (per incident)	R500
Inappropriate off-site disposal of waste from site (per incident)	R10,000
Deliberate lighting of illegal fires on site (per incident)	R1,000
The eating of meals on site outside the defined eating area. Individual not making use of the site ablution facilities (per incident)	R200
Inappropriate use of adjacent watercourses and water bodies – such as for unapproved water abstraction, washing of vehicles, wastewater disposal and use by employees for washing (per incident)	R1000
Any person, vehicle, item of plant, or anything related to the Contractor's operations causing a public nuisance (per incident)	R500
Construction vehicles not adhering to speed limits (per incident)	R200
Failure to maintain and register incidents in the incident register (per incident)	R1,000
Failure to remove all temporary features and leftovers from the construction site and works areas upon completion of the works (per incident)	R50,000
Any contravention with a Method Statement (per incident)	R5,000
Repeated contravention of the specifications or failure to comply with instructions (per incident)	R5,000

NOTE: THE SUBJECTION AND PAYMENT OF A PENALTY DOES NOT ABSOLVE THE CONTRACTOR FROM FULLY REMEDYING ANY TRANGRESSION OR ENVIRONMENTAL DAMAGE. SHOULD THE CONTRACTOR FAIL TO ADDRESS HIS NON-CONFORMANCE, ESKOM HAS THE RIGHT TO REMEDY THE INCIDENT AND RECOVER THE COSTS FROM THE CONTRACTOR.

INCIDENT AND ENVIRONMENTAL LOG

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

ANNEXURE 6: DEVELOPMENT PLANS SHOWING DETAILS SECTIONS OF THE POWERLINE

ANNEXURE 7: PROOF OF PUBLIC PARTICIPATION

Document Control
Form IP180_B

CLIENT	:	Eskom Holdings (SOC) Ltd, Eskom Distribution – Northern Cape Operating Unit (Eskom)
PROJECT NAME	:	Olien-Karats 132kV Powerline
PROJECT NO	:	J34152
TITLE OF DOCUMENT	:	J34152 Olien Karats EMP
ELECTRONIC LOCATION	:	

	Approved By	Reviewed By	Prepared By
ORIGINAL	NAME **Tashriq Naicker**	NAME **Tashriq Naicker**	NAME **Alecia Barnard**
DATE **2018/03/27**	SIGNATURE	SIGNATURE	SIGNATURE

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