



2nd AUDIT REPORT
For
FREEDOM PARK SUBSTATION AND 160M 88KV LOOP IN-OUT POWERLINE
NEAR RUSTENBURG, NORTH WEST PROVINCE

04 March to 31 March 2016
(March period)

PREPARED FOR:
Eskom Holdings SOC Limited
Boom Street
Rustenburg
Tel: 014 565 1056
Fax: 086 607 1955
E-mail: Lepakuab@eskom.co.za

ENVIRONMENTAL AUDIT COMPILED BY:
Envirolution Consulting (Pty) Ltd
PO Box 1898
Sunninghill
2157
Tel: (086) 144 4499
Fax: (086) 162 6222
E-mail: info@envirolution.co.za

COPYRIGHT WARNING

With very few exceptions the copyright of all text and presented information is the exclusive property of Envirolution Consulting (Pty) Ltd. It is a criminal offence to reproduce and/or use, without written consent, any information, technical procedure and/or technique contained in this document. Criminal and civil proceedings will be taken as a matter of strict routine against any person and/or institution infringing the copyright of Envirolution Consulting (Pty) Ltd.

TABLE OF CONTENTS

1. INTRODUCTION	2
2. SCOPE OF AUDIT	4
3. SUMMARY OF FINDINGS AND DISCUSSIONS	4
4. RECOMMENDATIONS	6
5. CONCLUDING REMARKS	7
6. PHOTO PLATE	7

LIST OF TABLES

TABLE 1: A COMPLIANCE STATUS REPORT FOR THE CONSTRUCTION PHASE.....	6
TABLE 2: SUMMARY OF THE AUDIT FINDINGS.....	13

Acronyms

EMPr	Environmental Management Programme
DEA	Department of Environmental Affairs
DWS	Department of Water Affairs and Sanitation
ECO	Environmental Control Officer
EO	Environmental Officer
ELO	Environmental Liaison Officer
MC	Main Contractor
OHSA	Occupational Health & Safety Act
PPE	Personal Protective Equipment
EA	Environmental Authorisation

1. Introduction

Envirolution Consulting (Pty) Ltd, as independent environmental consultants, was appointed by Eskom Distribution to undertake a monthly Environmental Management Programme (EMPr) and Environmental Authorisation (EA) compliance audit on the construction work of Freedom Park Substation and Power line which involves the construction of one substation and an approximately 160 m loop in loop out 88kV overhead power line.

The aim of this independent compliance audit is to review existing processes, document the potential areas of non-compliance, and determine potential improvements that can be made to ensure compliance with the EMPr compiled for the project and also avoid, where possible, negative impacts on project-affected ecosystems and communities. Where impacts are unavoidable, they should be reduced, mitigated, and/or compensated for appropriately as per the EMPr specifications compiled for the project.

In order to address the requirements of both Eskom and the Competent Authority, a Checklist has been prepared to discuss the findings on each of the specific areas within the construction site servitude of the Freedom Park Substation and power line. Environmental specifications included in the audit checklist were based on the Environmental Management Programme (EMPr), Environmental Authorisation and Eskom's Environmental Specifications applicable to the project.

The checklist consists of a rating column and a compliance status report, which will indicate or reflect the level of compliance of the project to the EMPr and EA. The rating column is ranked from **0 - 2**, where:

- **0** will imply that the Contractor is not complying with the requirements of the EMPr at all, and is not making any efforts/no evidence to remediate the situation.
- **1** will be applicable in areas where the Contractor has partially complied and are aware but has not fully complied with the EMPr, and is effectively making efforts to remediate the situation;
- **2** mean that the Contractor has fully complied with all EMPr requirements (and specifications and to the satisfaction of the ECO)

The compliance status reports will generally show the number of compliances and non-compliances per audit. The status report will also indicate the number of conformances versus non-conformances of the audit for the site. Please note that the audit process will classify activities/sections as **N/A** if the activity has not commenced or could not be determined by the auditors at the time this audit was undertaken.

The audit will also rate and consider some specifications as Work in progress (WIP). WIP will in this audit refer to an activity that has been started as an attempt by the Contractor to effectively curb, mitigate or address a particular environmental issue but had not fully completed by the time of the audit. All WIP's will not be scored/rated for the purposes of this audit.

This report intends to provide information demonstrating the EMPr compliance of the project; the report contains the narrative on the status quo of the health, safety and environmental compliance on site during the inspection.

For the purposes of this audit, the description of the scoring methodology in terms of the overall compliance is briefly explained as follows:

Description	Percentage Rating
Non compliant	<50%
Satisfactory	>50% - <90%
Well compliant	>90%
Fully compliant	100%

This EMPr and EA Compliance Audit Report was compiled by:

Company Name: Envirolution Consulting (Pty) Ltd
Contact person: Thabang Sekele
Postal Address: P.O Box 1898, Sunninghill, 2157
Telephone Number: (0861) 44 44 99
Fax Number: (0861) 62 62 22
E-mail: thabang@envirolution.co.za

2. SCOPE OF THE AUDIT

The scope of this audit was limited to the **construction stage** compliance against the conditions and requirements of the EA and EMPr as construction is fully underway. The current main activity taking place is the removal of turf soil and bringing G5 material to compact to ground level.

This is report number two (2) of the audit reports that will be produced following monthly site visits for the construction phase until project completion. The environmental compliance audit represented in this report was performed on the 31 March 2016 and incorporates activities

between 04 March 2016 and 31 March 2016. The following activities were undertaken during the audit

- » Document Review;
- » Site camp inspection and;
- » Active construction site inspection

The audit report will include relevant supporting information such photographs of the site. The photographs are included in a photoplate. A full photograph plate of the site visits can be produced on request.

3. SUMMARY OF FINDINGS AND DISCUSSIONS

At the time of the audit, construction was fully underway and the main activity taking place was the excavation and removal of turf soil to lay foundation related G5 material and the compaction thereof by means of a roller. The ECO, Ezindaleni Site Supervisor (ESS) and Eskom Environmental Officer conducted a meeting to discuss current activities in an effort to determine current and future environmental management needs, current areas of concern as well as to give recommendation.

The contractor that will be responsible for the power line development is currently not yet commissioned as the power line development phase of this project has not yet been reached. The ECO will have to conduct an Environmental Awareness Training presentation to the power line contractor's entire team before they can commence with their activities once they have been commissioned. It must be noted that at this stage of the development that Ezindaleni is contracted to construct the substation only.

3.1. Waste Management

Ezindaleni Site Supervisor (ESS) indicated to the ECO that the excavated turf soil is being taken to the nearby Impala Mine as the mine uses this turf soil for their tailings dams and other uses. The ESS proceeded to supply the ECO with the related permission letter from Impala Mine indicating that they consent to receiving the turf soil from the contractor. The ESS advised that they have an agreement with the local municipality landfill to dispose turf soil; however the contractor did not provide this agreement on paper to the ECO.

The ECO noted that the site camp's waste bins do not have lids at all and observed the bin dedicated for hazardous waste was placed upside down. The ECO raised this matter with the ESS. The Eskom Environmental Officer proceeded encourage the implementation of an integrated waste management approach. The principles of reduce, re-use, recycle and waste classification were discussed in the aim of promoting integrated waste management. The ESS has committed to providing bins with appropriate lids and better overall waste management.

3.2. Hazardous Materials store

The ECO noted that the hazardous materials store is not yet in place however there is work in progress into building the store. The ECO noted that the contractor has brought in building structures related to establishing the store. The ECO emphasised the importance of having a bunded, impervious Hazardous Material Store as soon as possible. Currently, all hazardous materials are kept in a secondary container.

3.3. Emergency Spill Kit

The contractor provided an emergency spill kit for the site. The Eskom Environmental Manager advised the ESS that training of how to use the emergency spill kit must take place.

3.4. Chemical Toilets

The ESS provided the ECO with toilet maintenance slips. The contractor however is in the process of obtaining an agreement document from the local municipality indicating that the chemical toilet service provider is safely disposing toilet waste through the municipality.

3.5. Invasive alien vegetation

The ECO advised the ESS to conduct regular invasive alien vegetation management around the active construction site and site camp. This is to be compliant with Condition 29 of the Environmental Authorisation.

3.6. Erosion and storm water control

On inspection the ECO noted that there are some measures in place to manage both storm water and erosion. The contractor has established erosion berms on certain sections of the site to curb erosion. Also, the ECO noted that the contractor has created cut off trenches and diversion berms on areas susceptible to storm water run-off and accumulation.

Overall compliance for the audit conducted is **88%**

Table 1: A Compliance Status Report for the construction phase

Eskom: Freedom Park Substation and power line	Compliances	19
	Partial Compliances	4
	Non compliances	1
	Work in progress	1
	Not Applicable	6
*Total aspects audited (excl. N/A & WIP)		24
*Total aspects audited (incl. N/A& WIP)		31

*Total Score Obtained (compliances + partial compliance)		42
*Total Potential Score (= to sum of all compliances excl. N/A & WIP)		48
Percentage Score %		88%

* **Total aspects** are the sum of all the environmental aspects (compliances, non compliances, WIP and N/A) that are listed in the checklist

* **Total Score obtained** would include the sum of compliances, partial and non-compliances that were audited during the time of the audit

***Total Potential Score** is the sum of the total possible score excluding the N/A

4. RECOMMENDATIONS

- A dedicated store area for hazardous materials should be built immediately as it was a concern in the previous audit. Vehicles parked for long periods must place drip trays underneath.
- An alien invasive plan/method statement should be created and implemented.
- The contractor must source a service agreement the toilet service provider has with the local municipality as proof of correct disposal of toilet waste.
- Integrated waste management must be practised to encourage the principle of incorporating reduction, recycling, re-use. Also, waste bins must have appropriate lids.
- The availability of the project complaints register must be in place.
- The EMPr and the EA must be used as a blue print, to ensure sound environmental management of this development takes place.

5. CONCLUDING REMARKS

In conclusion, the project scored 88% during this audit. The project is satisfactorily compliant to the requirements of the EMPr and EA. The contractor is encouraged to improve its waste management of the site. The recommendations provided in this report will assist the contractor to ensure they retain the good environmental management standards observed on site.

Photo-Plate

Photo	Description
	<p>Photo 1: Emergency contact numbers displayed at the site camp.</p>
	<p>Photo 2: Improper management of waste bins. No lids and one is upside down.</p>



Photo 3: The provision of drinking water for all staff.



Photo 4: Hazardous chemicals stored in the secondary container.



Photo 5: Topsoil being preserved for future rehabilitation purposes.



Photo 6: A storm water diversion berm near the site camp entrance.



Photo 7: Traffic points personnel along the adjacent secondary road.



Photo 8: Traffic caution signs on both sides of the adjacent road.



Photo 9: Dust suppression on the access track leading to the active construction site.



Photo 10: A cut-off trench on the west side of the construction site.

Table 2: Summary of the audit Findings

Rating Scale	<p>2 – Fully compliant;</p> <p>1 – Partially compliant;</p> <p>WIP - Work in progress</p> <p>0 – Non compliant;</p> <p>N/A - Could not Be determined</p>					
Freedom Park Substation and Power line						
Construction Phase						
Activity/issue	Action required	Responsibility	Compliance Status	Findings	Comments	Rating
EA 15 - Monitoring	The applicant must appoint a suitably experienced Independent Environmental Control Officer (ECO) for the construction phase of the development.	Developer	In place		An independent ECO from Envirolution Consulting (Pty) Ltd has been appointed to audit the project's compliance to the EA and EMP.	2
EA 26 - Vegetation Clearing	Vegetation clearing must be limited to the required footprint. Mitigation measures must be implemented to reduce risk of erosion and the invasion of alien species.	Developer, Contractor, ELO,	In place		Clearing is taking place in a phased manner within the required footprint	2
EA 27 - Reclamation	All areas of disturbed soil must be reclaimed using only indigenous grass and shrubs. Reclamation activities should be undertaken as early as possible.	Developer, Contractor, ELO,	N/A		Project still in the construction phase.	N/A

EA 28 – Exotic plants	No exotic plants may be used for rehabilitation purposes; only indigenous plants in the area may be utilised.	Developer, Contractor, ELO,	N/A		Project still in the construction phase	N/A
EA 29 & EMP 8.1.6. – Invasive species	Removal of alien species or other vegetation and follow up procedures must be in accordance with the Conservation of Agricultural Resources Act, 1983 (43 of 1983)	Developer, Contractor, ELO,	Partially complaint	The ECO did not note any invasive species propagation however the contractor did not have active mitigation measures in place	The ECO recommends that a alien invasive method statement be created by the contractor.	1
EA 30 & EMP 8.1.14 – Noise Pollution	The applicant must ensure that the National Noise Control Regulations and SANS10103:2008 are adhered to and reasonable measures to limit noise from the work site are implemented.	Developer, Contractor, ELO,	In place		No unreasonable noise levels were noted.	2
EA 31 – Protective Ear Equipment	The applicant must ensure that the construction staff working in areas where the 8-hour ambient noise levels exceed 7Dba must wear protective equipment.	Developer	N/A		N/A	N/A
EA 32 – Public Notification	The applicant must provide prior warning to the community when a noisy activity e.g Blasting is to take place	Developer, Contractor, ELO,	N/A		N/A	2
EA 33 – Working hours	All noisy construction operations should only occur during daylight hours if possible.	Developer, Contractor, ELO,	In place		All works are taking place during daylight hours.	2
EA 34 – Visual Impacts	Reduce visual impacts during construction by minimising areas of surface disturbance, controlling of erosion, using dust suppression techniques and restoring exposed soil as closely as possible to their original contour and vegetation.	Developer, Contractor, ELO,	In place		Dust suppression is taking place. Erosion control measures are visible. Topsoil is preserved for future rehabilitation.	2
EA 35 & EMP 8.1.17 – Hazardous Content Management	An effective monitoring system must be put in place during the construction phase of the development to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. The applicant must ensure that precautionary measures are in place to limit the possibility of oil and other liquids from entering the soil	Developer, Contractor, ELO,	Partially compliant	A bunded, impermeable Hazardous materials storage area is not yet constructed, however hazardous materials are kept in secondary container on a drip tray. A water tank truck is parked without a drip tray.	Training of how to use the emergency spill kit must take place. Vehicles parked for long periods must place drip trays underneath.	1

	or storm water system.					
EA 36 – Waste Management	An integrated waste management system must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste shall be disposed at landfill licenced in terms of section 20(b) of NEMWA (Act 59 of 2008)	Developer, Contractor, ELO,	Non-compliant	There is no evidence of an integrated waste management approach implemented. Some empty bottles and cardboard was lying on the ground at the time of audit. No landfill disposal slips were provided.	Appropriate lids must be provided for the bins. Reduction, recycling, re-use principle must be adopted. Good housekeeping practices are encouraged.	0
EA 37 – Excavations	Foundations and trenches must be backfilled with originally excavated materials as much as possible. Excess excavation materials must be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities.	Developer, Contractor, ELO,	In place		Legally sourced G5 fill material is used for foundations. The excess turf material is transported to the nearby Impala mine who has gave permission.	2
EA 38 – Borrow Materials	Borrow materials must be obtained only from authorized and permitted sites	Developer, Contractor, ELO,	In place		G5 fill material is legally sourced from Wys Seuns Trust (WST) as advised by the ESS who provides slips for every load.	2
EA 39 & EMPr 8.1.12 – Heritage Resources	The discovery of previously undetected subterranean heritage remains on the terrain must be reported to SAHRA or an archaeologist.	Developer, Contractor, ELO,	In place		No heritage features have been uncovered as per the ESS.	2
EA 40 – General	A copy of the EA and approved EMPr must be kept at the property where the activity will be undertaken.	Developer, Contractor, ELO,	In place		EA and EMPr are kept on site	2
EMPr 8.1.1. Environmental awareness and training	The Contractor must ensure that all site personnel have a basic level of environmental awareness training	Developer, Contractor, ELO,	In place		The contractor has conducted environmental toolbox talks recently.	2
EMPr 8.1.2. Emergency preparedness	A site specific emergency preparedness plan must be undertaken for by the Contractor/Applicant. The Contractor shall ensure that a copy of the site specific emergency preparedness plan is easily accessible to all relevant staff and the CLO or a suitable community representative.	Developer, Contractor, ELO,	In place		The ESS provided an emergency preparedness plan. Emergency numbers are displayed outside the site camp office.	2
EMPr 8.1.3. Construction	The contractor shall establish his construction camps, offices, workshops and any other infrastructure in a	Developer, Contractor, ELO,	In place		The site camp is located near the substation construction site.	2

camp	manner that does not adversely affect the environment. Site establishment shall take place in an orderly manner and all required amenities shall be installed at camp sites before the main workforce move onto site. The construction camp shall have the necessary facilities required for the day to day running of the site.					
EMPr 8.1.4. Site clearing	Site clearing must take place in phased manner, as and when required. Areas which are not to be affected by construction within two months of time must not be cleared, in order to reduce erosion risks. The area to be cleared must be clearly demarcated and this footprint strictly maintained. Spoil that is removed from the site must be removed to an approved spoil site or municipal licensed landfill site. Erosion control measures must be implemented in areas where these risks are more prevalent such as wetlands and steep areas.	Developer, Contractor, ELO,	In place		Clearing is taking place in a phased manner within the required footprint. Erosion measures are in place.	2
EMPr 8.1.5. Access routes	Existing access routes are to be utilized during construction, that is the tarred secondary road and the gravel road leading to the mine dump.	Developer, Contractor, ELO,	In place		No further unnecessary access routes are being created.	2
EMPr 8.1.7. Plan Rescue and Protection Plan	Disturbed areas around the construction sites should be re-vegetated using a specified seed mix and/or appropriate indigenous locally occurring grasses, forbs, shrubs or trees. Lists of plant species must be approved by a qualified vegetation ecologist and/or appropriate government authorities.	Developer, Contractor, ELO,	N/A		Project still in construction phase	N/A
EMPr 8.1.8. Restriction to working areas	Working areas are defined as those areas required by the contractor to undertake construction. It is important that activities are conducted within a limited area to facilitate control and to minimize impacts on the natural environment. For this reason, no-go areas and working areas must be identified. This must be done to ensure minimal disturbance to the surrounding environment.	Developer, Contractor, ELO,	In place		Works are continuing within the designated construction footprint.	2

<p>EMPr 8.1.9. Ablution facilities</p>	<p>The Contractor shall make provision of chemical toilets on the site. Staff shall be sensitised to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed. Ablution facilities shall be within 100m from workplaces but not closer than 100m from any natural water bodies or boreholes. There should be enough toilets (1 per 15 people) available to accommodate the workforce. Male and females must be accommodated separately where possible. Alternatively ablution facilities may be located in a place approved by the ECO. Toilets shall be serviced regularly and the ECO shall inspect toilets regularly.</p>	<p>Developer, Contractor, ELO,</p>	<p>Partially compliant</p>	<p>The contractor must source a service agreement that the toilet service provider has with the local municipality as proof of correct disposal of toilet waste.</p>	<p>The chemical toilets are however maintained regularly and appropriately gender marked.</p>	<p>1</p>
<p>EMPr 8.1.10. Soils disturbances and erosion</p>	<p>Special care needs to be taken during the construction phase to prevent surface storm water rich in sediments and other pollutants from entering the natural drainage systems. In order to prevent erosion, mechanisms are required for dissipating water energy.</p>	<p>Developer, Contractor, ELO,</p>	<p>In place</p>		<p>Diversion berms and cut-off trenches have been established by the contractor.</p>	<p>2</p>
<p>EMPr 8.1.11. Refuse and waste management</p>	<p>The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at a municipal registered landfill. A certificate of disposal shall be obtained by the contractor and kept on file. Where a registered waste site is not available close to the construction site, the contractor shall provide a method statement with regard to waste management. The disposal of waste shall be in accordance with all relevant legislation. Under no circumstances may solid waste be burnt on site.</p>	<p>Developer, Contractor, ELO,</p>	<p>Partially compliant</p>	<p>Waste bins continue not to have lids. The hazardous waste bin was observed to be placed upside down.</p>	<p>Turf material is appropriately disposed at the nearby mine with their consent. The contractor must print out the service agreement with the local municipal landfill.</p>	<p>1</p>
<p>EMPr 8.1.13. Air quality</p>	<p>No burning of waste or any other material from any clearing operations will be allowed. Dust suppression measures must be implemented in areas susceptible to wind erosion. Construction vehicle must travel at maximum speed of 40km/h allowed within the area so as to generate less dust in exposed areas. All construction vehicles and machinery must be well</p>	<p>Developer, Contractor, ELO,</p>	<p>In place</p>		<p>No burning of waste was noted, dust suppression is taking place.</p>	<p>2</p>

	maintained and kept in good order so as not to release excessive emissions.					
EMPr 8.1.15. Safety and security	A health and safety plan should be developed in respect of construction worker safety. Community safety concerns should be addressed by the Contractor, such that the construction team must stay in the designated area without venturing into private community property without authority. A Health and Safety Officer must be employed to monitor project activities for any potential problems. He or she must be always at site throughout the construction phase.	Developer, Contractor, ELO,	In place		A safety plan was provided by the ESS. There is 24hr security at the site.	2
EMPr 8.1.16. Traffic Management Plan	The roads leading and leaving the construction must be sign posted with construction ahead sign. Construction vehicles must keep left and travel at a maximum speed of 40km per hour within the construction area. Delivery of material must be at off peak hours to reduce congestion on the road.	Developer, Contractor, ELO,	In place		There are caution signs at the side of the roads. Points personnel are deployed to calm traffic.	2
EMPr 8.1.18. Site rehabilitation Plan	The contractor should commence rehabilitation of exposed soil surfaces such as pylon hole and substation excavations as soon as practical after completion of earthworks. Rehabilitation also include re-vegetation with local indigenous tree species.	Developer, Contractor, ELO,	N/A		Project still in the construction phase	N/A
8.1.19. Socio-economic impacts	A complaints register should be kept on site. Details of complaints should be incorporated into the audits as part of the monitoring process. This register is to be tabled during monthly site meetings. Damage to existing infrastructure shall not be tolerated and any damage shall be rectified immediately by the Contractor to the satisfaction of the land owner. A record of all damage and remedial actions shall be kept on site. Construction traffic should only make use of approved routes.	Developer, Contractor, ELO,	WIP	The ESS informed the ECO of the existence of a complaints register, however at the time of audit the ESS could not find it within his files	The complaints register must be organised an utilised when necessary.	WIP

