

APPENDIX J

**UPDATED ENVIRONMENTAL
MANAGEMENT PLAN TO INCLUDE THE
ZINCUM SUBSTATION AND AURUS
METERING STATION**



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**THE ENVIRONMENTAL MANAGEMENT PLAN
FOR THE**

**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE NEW NAMPOWER
POWERLINE FROM OBIB TO ZINCUM SUBSTATION AND AURUS
METERING STATION FOR RPZC MINE**

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1. INTRODUCTION

From the Environmental Impact Assessment (EIA) covered in the main report, the following different facets of the powerline construction and operation that should be considered in the Environmental Management Plan (EMP) are listed below.

This Environmental Management Plan (EMP) aims to ensure environmental protection, meet legal requirements, and maintain good community relations. NamPower developed a 'General Environmental Management Plan for the Construction of Powerlines and Substations' (NamPower EMP), which was approved by the Ministry of Environment and Tourism in 2006. This EMP will address the site specific mitigation measures and should be read in conjunction with the NamPower EMP.

This EMP will form in addition to NamPower's EMP part of the Contractor's contractual agreement with NamPower and will be legally binding. Contractors are to use also this section of the report to calculate and allocate an adequate sum of money to ensure that the environmental requirements stipulated in the EMP can be implemented. Mitigation measures applicable for the final design need to be incorporated by the technical team of NamPower.

The project activities are grouped according to the NamPower EMP and reference is given where applicable. Essentially, many of the potential impacts can be avoided through good housekeeping.

A list of the applicable legislation is provided in the EIA. Where applicable the required permits or procedures to be followed are stated in the EMP.

For each section, the person(s) who should be held responsible for ensuring that the specific elements of the plan should be implemented is given. The following abbreviations have been used:

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- PO = NamPower as the Project Owner
- PE = NamPower Project Engineer
- SHE = Contractor Safety Health and Environmental Officer
- CONT = Contractor and any of the contractor's senior staff (e.g. foremen)
- ECO = NamPower Environmental Officer / External Environmental Consultant
- WF = Workforce

2. RESPONSIBILITIES OF IMPLEMENTATION OF THE EMP

In Section '2. Introduction' of NamPower's EMP already stipulates the different responsibilities to implement and monitor the EMP.

The monitoring, auditing and project handover is described in Section 6 of the NamPower EMP. In addition, as it is stipulated in the Environmental Management Regulations, bi-annual environmental audit reports need to be submitted to the Department of Environmental Affairs.

Aspect reference NamPower EMP	Potential impacts	Mitigation measures
Archaeology / 3.3	Loss or disturbance of archaeological sites.	<ul style="list-style-type: none"> • However, it is recommended that contractors working on the site are made aware that under the National Heritage Act any items protected under the definition of heritage found in the course of development should be reported to the National Heritage Council. The attention of the project proponent is therefore drawn to the “chance finds” procedure in Appendix 1 of the Archaeological report (Appendix I).
Social / 3.4	Influx of job seekers, few employment opportunities during construction and decommissioning of the pipeline.	<ul style="list-style-type: none"> • Recruit local labour from Rosh Pinah, Senderlingsdrif and other nearby settlements, to minimise migrants. • Any specialist members of the construction team coming into the area should be reminded of and implement relevant parts of NamPower’s HIV/AIDS prevention programme. This will assist in reducing the spread of HIV and other sexually transmitted diseases, to and from the area.
Waste Management including hazardous material/ 4.1 & 4.2	<p>Hazardous spills and contaminants have the potential to contaminate soil and water, which in turn can harm plants and animals.</p> <p>Also general waste, e.g. plastic, cardboard, paper, needs to be managed properly to avoid any risk to animals.</p>	<ul style="list-style-type: none"> • Spillage-management and response procedures need to be developed for all hazardous substances used on site. All hazardous storage facilities should be bunded; the volume of the bunded area is to be at least 110% of the total volume of the tanks in which the hazardous material is stored. • Spills to be cleaned immediately and contaminated soils and water to be remediated or treated. • Hazardous waste and contaminated soil needs to be disposed of at the mine. • Implement a strong anti-litter and clean surroundings policy among all staff and contractors. • All domestic waste to be disposed of in waste bins. Temporary storage of collected waste should be within a fenced area to prevent scavenging and dispersal by wind. • All domestic waste bins to have lids so as to reduce the likelihood of windborne litter. • Regularly inspect and clean up litter at site and in the general proximity of the mine. • All waste to be disposed of in appropriate waste-disposal facilities (e.g. specific facilities designed for hazardous wastes). Wastes are to be stored on site but removed from the lay-down areas for disposal at the Rosh Pinah waste disposal site. • Implement a strong occupational safety and clean surroundings policy among all staff and contractors.
Temporary camp site / 4.3	Disturbance of previously undisturbed areas	<ul style="list-style-type: none"> • Consult flora map in Appendix 6 of the Flora Specialist report (Appendix G).
Fauna / 5.3	Increased poaching and disturbance during	<ul style="list-style-type: none"> • Poaching and disturbance of animals is illegal in a National Park. Construction and maintenance staff should be educated and informed of their environmental obligations. Meaningful penalties for

Aspect reference NamPower EMP	Potential impacts	Mitigation measures
	construction	damages should be stipulated, and the main contractor should be held responsible for all transgressions.
Flora / 5.4	Physical destruction of habitat and vegetation, including species of high conservation concern during construction and operation	<ul style="list-style-type: none"> • The no-go area should be avoided at all costs. (See Appendix 5 of the Flora Specialist report in (Appendix G)). • The final route should stay on the plains habitat as much as possible. Damage to the other sensitive areas should be avoided as far as possible, particularly to the succulent plain near the Obib substation. Consult flora map in Appendix 6 of the Flora Specialist report (Appendix G). • Uncontrolled vehicle activity is of major concern. Outside the plains habitat vehicle movement should be controlled and restricted to the future service track as far as possible. Even in the plains habitat uncontrolled driving should not be permitted. Careful pre-planning of construction activities should be done to identify where tracks will be absolutely necessary for both construction and maintenance, overlapping these as far as possible. These should be clearly marked prior to construction activities beginning, together with designated turning points and construction laydown areas. Turning points for heavy vehicles should be designated and adhered to. <i>Ad lib</i> turns should not be permitted. The area used should be constrained as far as possible, and should be rehabilitated once construction is complete. • During the operational phase only the service track should be used. No new tracks should be created. • All construction laydown should be done in previously damaged areas, where construction camps should also be located unless crews could be accommodated in Rosh Pinah, which would be preferable. Several previously damaged areas that could be used are indicated in Appendix 6 of the specialist report, see Appendix G. • In the undesirable event that the no-go area will be impacted, plant relocation should be considered. Previous work of this kind done in the Sperrgebiet has shown that relocation should take place as soon as possible (A. Burke, pers. comm.). Plant storage is a possibility, but will not work for many species unless the period of storage is very short (no more than 3 weeks). Plants should be relocated to areas damaged by the project. Undisturbed areas should generally not be disturbed in order to relocate plants, although possible exceptions might be species of very high conservation concern. • Fixed point photography, initiated prior to construction activities, should be extensively utilised to assess compliance by contractors. • Construction and maintenance staff should be educated and informed of their environmental obligations. Meaningful penalties for damages should be stipulated, and the main contractor

Aspect reference NamPower EMP	Potential impacts	Mitigation measures
		<p>should be held responsible for all transgressions.</p> <ul style="list-style-type: none"> • Due to the very low and sparse nature of the plant growth in this area, it is unlikely that any vegetation clearing will be necessary for this route in the future. If any is necessary it should be done manually.
	<p>Illegal plant or firewood harvesting for fuel or ornamental purposes during construction and operation</p>	<ul style="list-style-type: none"> • Collection of plants, or parts of plants (including seed and/or fuelwood) should be forbidden. Staff should be expressly forbidden to collect any plant material, dead or alive (including seed), for any purpose whatsoever and should be provided with fuel (preferably gas) for both heating and cooking. • Construction and maintenance staff should be educated and informed of their environmental obligations. Meaningful penalties for damages should be stipulated, and the main contractor should be held responsible for all transgressions.

3. Amendment areas for EMP

The following section serves as an amendment to the areas covered in the Environmental Impact Assessment (EIA). Areas to include are the Zincum Substation (Figure 1) and Aurus Metering Station (Figure 3) in the construction and operation. As well as the 400m temporary (potentially permanent) line from Aurus to Zincum (Figure 2). The main activities at the substations and metering station will entail:

- Civil works for the powerline feeder bay,
- Mechanical mainly erection of columns, beams, and installation of electrical equipment.
- Electrical installation will include pulling of the cables from equipment to the junction boxes and to the control room.
- Commissioning and testing: conducted prior to energisation.
- Transmission of power is a listed operational activity which will happen after energisation.

No changes to the EMP will arise from this, as the activities will take place within the existing Zincum Substation and Aurus Metering Station. Access roads exist to both facilities.

There will be no environmental changes, as construction will either be conducted in the existing footprint or in already heavily damaged area (400m powerline).

The environmental performance requirements, as seen above, set out in the Environmental Management Plan (Environmental Impact Assessment for the new Nampower powerline from Obib to Zincum substation for RPZC mine) are sufficient and cover the mitigation measures for laydown areas, waste management and impacts on flora, fauna and archaeology are not applicable, as the upgrades do not involve the change of the current footprint. The 400m temporary (potentially permanent) line from Aurus to Zincum runs in an already heavily impacted area, e.g. pipeline to the tailings dam (see Photo 1).

Zincum coordinates



ZIMCUM SUBSTATION		
NAME	LATITUDE	LONGITUDE
ZIMCUM Sub - A	-27.9609500°	16.7669722°
ZIMCUM Sub - B	-27.9610861°	16.7677417°
ZIMCUM Sub - C	-27.9606556°	16.7673139°
ZIMCUM Sub - D	-27.9613667°	16.7674056°

Figure 1: Zincum substation coordinates

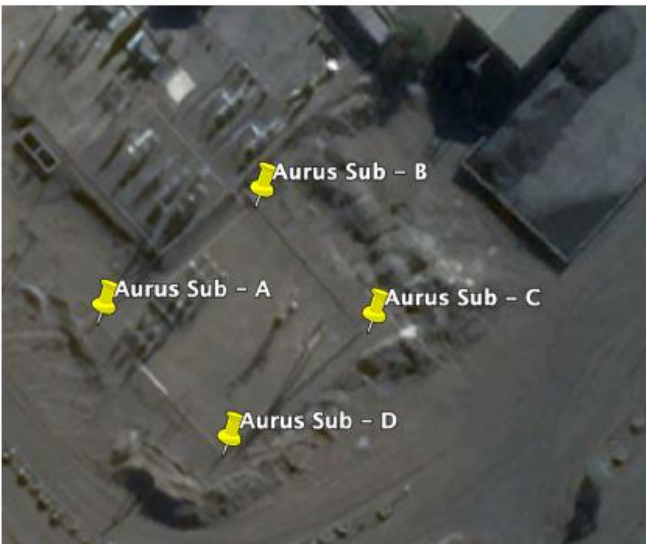
66kV temporary line – coordinates



ZIMCUM OHL		
NAME	LATITUDE	LONGITUDE
OHL 1	-27.9608222°	16.7671389°
OHL 2	-27.9595000°	16.7652556°
OHL 3	-27.9599222°	16.7661750°
OHL 4	-27.9583500°	16.7644833°
OHL 5	-27.9579278°	16.7649889°

Figure 2: 400m OHL from Zincum to Aurus coordinates

Aurus Metering Station – coordinates



AURUS SUBSTATION		
NAME	LATITUDE	LONGITUDE
AURUS Sub - A	-27.9579167°	16.7816111°
AURUS Sub - B	-27.9577222°	16.7651667°
AURUS Sub - C	-27.9579167°	16.7653333°
AURUS Sub - D	-27.9580833°	16.7651389°

Figure 3: Aurus Metering Station coordinates