



A. Speiser Environmental Consultants cc
Rev. No.: CC 2113/1996

Alexandra Speiser
MSc MPhil

P.O. Box 40386 Windhoek Namibia Tel: +264 61 244 782 Cell: 081 124 5655 e-mail: alexspeiser@yahoo.com

August 2005 (revised January 2016)

ENVIRONMENTAL MANAGEMENT PLAN & SPECIFICATIONS FOR EPLS 2616

1 INTRODUCTION

1.1 Background

Rosh Pinah Zinc Corporation Pty Ltd (RPZC) conducts exploration on EPL 2616 which covers the area surrounding the Rosh Pinah mining license and the area to the north (see **Figure 1**, page 2). Extensive exploration activities were carried out during the past 5 years. To ensure that environmental damage is avoided and kept to a minimum the existing Environmental Management Plan (EMP 2003) was revised to include specific aspects relating to this area. All future exploration activities will be carried out in line with this EMP and the ISO14001 and OSHAS18001 standards stipulated by the SHE Management System of Rosh Pinah Mine. Bi-annual monitoring reports have been conducted and been submitted to the Ministry of Environment and Tourism (MET) and the Ministry of Mines and Energy (MME).

1.2 Purpose of the Environmental Management Plan (EMP)

The purpose of the EMP is:

- To outline aspects of the environment that requires management.
- To summarize the project activities that have the potential for adverse environmental impacts.
- To compile project environmental specifications for inclusion in contract documents and enforcement on site.
- To set out the roles and responsibilities of all role-players with regard to environmental management.
- To specify rehabilitation requirements.

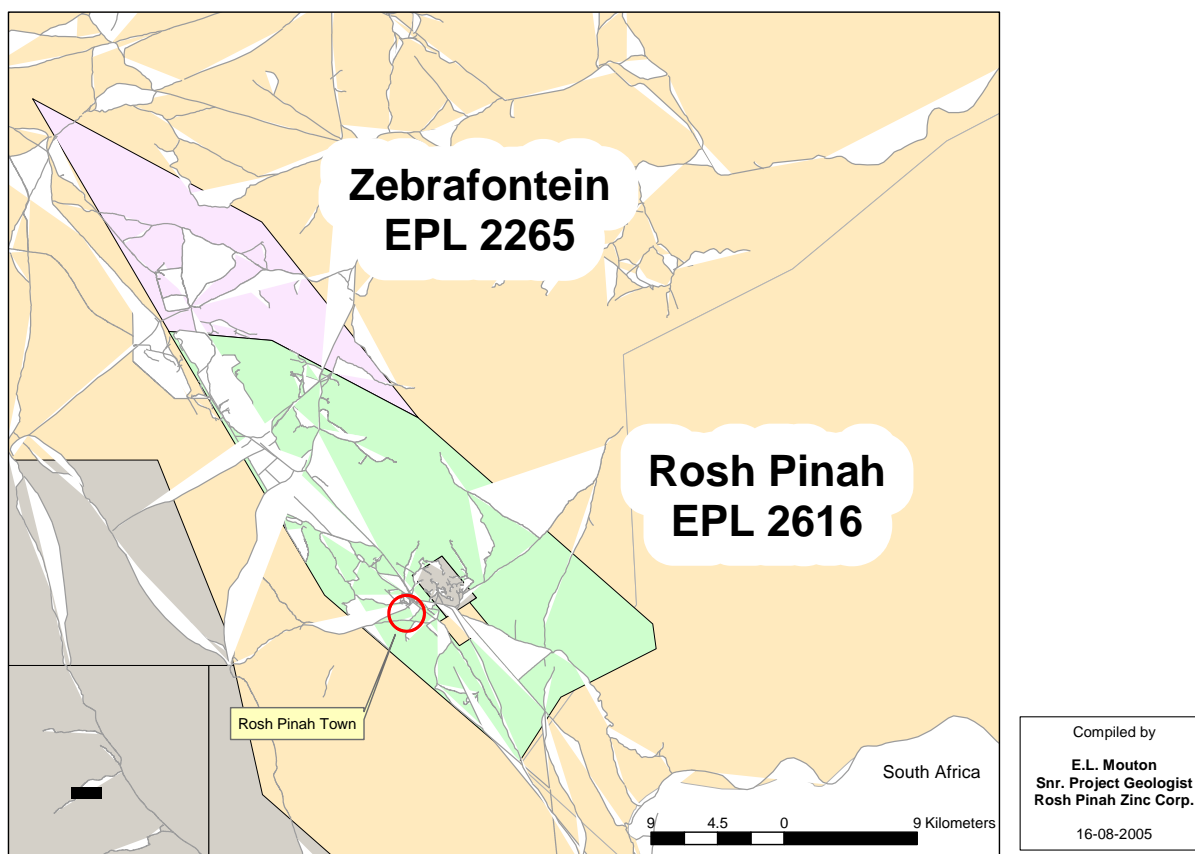


Figure 1: Location map of EPL 2616. Please note that EPL 2265 has been relinquished.

2. EXPLORATION ACTIVITIES AND REQUIRED ENVIRONMENTAL MANAGEMENT

2.1 Exploration Activities

The activities to be carried out during exploration are:

- Mapping;
- Geophysical surveys (airborne & ground);
- Grid line cutting;
- Sampling of soils and rocks
- Accessing the drill sites;
- Drilling and collecting of samples

Geological targets are drilled using reverse circulation (RC) and diamond drilling methods. It is anticipated that these techniques will also be used in future. The drilling rigs, compressor and generators used for RC drilling will be mounted on trucks suitable for most terrains. A minimal amount of water has to be transported to the drill sites by trucks. Drill pads will be kept to a minimum size and the working area will be clearly demarcated. If necessary, sumps will be dug into the ground to hold the water and drilling aids may be added. All sumps will be lined to avoid seepage of contaminated fluids if non-biodegradable drilling aids are used. Fuel to power the drill rigs will have to be brought to the site in drums or in a small truck.

The percussion chip samples will be funneled through a cyclone into 1m x 1m plastic bags. Smaller geological samples will be taken from these bags for analysis. Percussion chips that are not needed will be collected and disposed of at the Rosh Pinah waste rock site.

In contrast to percussion drilling, diamond drilling needs water. Water will be carted by truck on a daily basis. The water will either be purchased from the owner of the farm or transported from

Rosh Pinah Mine. Continuous solid cores will be recovered by diamond drilling. The core will be stored in core trays, logged on site or at RPZC's Mineral Resources office. After expiry of the EPL licenses and the decision not to proceed, the cores will be available to the Geological Survey of Namibia.

New tracks might have to be established to access the identified drill sites. Should it be necessary that new tracks have to be established, the position of the new track will be discussed between the exploration manager and the farm owner.

All contractors (geologist, geophysicists and drill crews) will be accommodated at Rosh Pinah.

2.2 Potential Environmental Impacts and Controls Required

The geologists, geophysicists and drill crews should be briefed by the exploration manager regarding the environmental specification set out below before entering any site. Measures should be in place regarding non-compliance of these environmental specifications (e.g. dismissal from site, withholding payment until caused environmental damage is mitigated). During drilling activities only tracks, which are pointed out by the exploration manager, should be used.

2.2.1 Rehabilitation

The affected area will be rehabilitated on an on-going basis and rehabilitation aspects will be clearly divided between the drilling company and RPZC. Five years after rehabilitation no scars should be visible at any of the geophysical survey or drill sites.

The following rehabilitation activities will be carried out:

- All drill chips and core cuttings will be removed from site or back filled into the boreholes. The remains will be disposed of at the Rosh Pinah Mine waste rock site;
- Cleaning and removal of diesel / oil spills. The contaminated soil will be disposed of at an appropriate waste site (e.g. Skorpion Mine as the Mine provides for storage and treatment of contaminated soil) or at the Rosh Pinah industrial mine waste dump. (Contaminated soil should not be disposed of at a domestic waste site, only at an industrial waste site. The industrial waste site should be lined or should have an impermeable layer to prevent seepage. Contaminated soil should be taken to a designated area for treatment as specified in the EMP for Hydrocarbons (SHE Office, Rosh Pinah Zinc Corporation).
- Raking, ripping, etc. of track surface and re-vegetation of the area, if applicable.

The aim is to avoid as much as possible any disturbance of the environment as rehabilitation of areas to its natural environment is always difficult.

3 DEFINITION OF ROLES AND RESPONSIBILITIES CONCERNING THE EMP

The roles and responsibilities of all parties in relation to environmental management are set out below.

3.1 Environmental Consultant

The environmental consultant will inspect the EPLs on a six monthly basis to ensure that all specifications are met. The duties of the environmental consultant will be:

- Advise the exploration manager in respect of implementation of the environmental specifications.
- Conduct monitoring visits (bi-annual monitoring reports) or after complaints that the environmental specifications are not obeyed.

- Inspect the rehabilitation areas after completion of rehabilitation activities. Provide advice regarding rehabilitation measures.

3.2 The Exploration Manager

The duties of the exploration manager are as follows:

- Be familiar with the requirements of the EMP.
- Monitor employees' and contractors' compliance with the Environmental Specifications on a daily basis and enforce compliance.
- Communicate to the environmental consultant all violations of the environmental specifications.
- Determine the imposition of penalties or other enforcement measures for violation of the environmental specification.
- Maintain a photographic record of activities relevant to environmental management, e.g. drill sites in sensitive areas such as steep slopes or gravel plains, shall be photographed before, during and after drilling activities.

3.3 Senior personnel and contractors

The duties of the senior personnel and contractors of RPZC are as follows:

- Be familiar with the contents of the EMP.
- Comply with the environmental specifications.
- Ensure that **all** staff understand the environmental specification. Explain the environmental specification if necessary. All staff on site has to sign the EMP and environmental specifications.

3.4 Monitoring

The exploration manager shall be responsible for monitoring and enforcement of the environmental specifications on a day-to-day basis. Any violation of the environmental specifications shall be recorded and the agreed on disciplinary measures are taken, e.g. penalties, dismissal from site or withholding payment until the caused environmental damage is mitigated. Any major violations should be reported to the environmental consultant to discuss any remedial measures.

The environmental consultant shall inspect the site during the bi-annual monitoring visits. Should complaints arise that violation of the environmental specifications occurred, a monitoring visit shall be conducted immediately. The findings of the rehabilitation results will be included in the bi-annual report.

4 ENVIRONMENTAL SPECIFICATIONS

4.1 Introduction

The environmental specifications outlined below are the binding document for all contractors on site. The cost for meeting the provisions of the EMP will be born by the contractor. The contract will be terminated should it be obvious that the drilling contractor is not obeying the environmental specifications set out below.

4.2 Environmental Specifications

4.2.1 Management of Natural Habitat

Disturbed areas shall be kept as small as possible. No trees shall be cut for firewood collection. No animals shall be disturbed and poaching incidents shall be reported to the exploration manager immediately.

4.2.2 Soil Management

Drip trays or PVC sheet shall be placed over areas where hazardous material is used, e.g. refueling of drill rig, greasing of the rig, etc.

If water sumps are constructed during drilling, the topsoil (top 15cm) shall be stored separately to be used during rehabilitation of the site.

4.2.3 Surface and Groundwater

Where applicable, rest water levels and water quality shall be recorded. Ensure that water is not wasted, e.g. water storage taps are closed properly.

4.2.4 Management of Hazardous Substances

The exploration manager shall identify all exploration activities that involve the handling of potentially hazardous substances and protocols for the handling shall be put in place. The exploration manager shall encourage the use of biodegradable products. Procedures for the clean up of hazardous spills shall be developed and be in place, e.g. soil contamination by fuel.

Working areas, where hazardous substances are handled or stored, shall be designed in such a way that all accidental spills are contained in this area.

The contractor shall be responsible for any accidental hazardous spill and shall be responsible for the cleaning up procedure.

4.2.5 Sanitation

A chemical toilet or long drop shall be provided near drill sites. The toilet shall be placed at a strategic point. The maintenance and rehabilitation of the toilet lies with the contractor.

4.2.6 Refuse/ Waste

Adequate, wind-proof waste refusal containers (clearly labeled for domestic and hazardous waste) shall be provided at the drill sites. The contractor shall be responsible for the disposal of the collected waste at an approved landfill site (e.g. Rosh Pinah Mine waste dump).

4.2.7 Vehicular Access

Where possible existing tracks shall be used to access the drill sites. The exploration manager will point out to the contractor the tracks for entering and exiting the different drill sites. New tracks shall be discussed with the exploration manager and only be made with authorisation.

4.2.8 Drill Site Area

The size of the drill site shall be kept as small as possible and shall be clearly demarcated.

A drip tray or plastic liner shall be placed underneath the area where refueling of machinery takes place. No maintenance shall be carried out on the drill sites, except for emergency repairs.

4.2.9 Rehabilitation

The contractor is responsible for all fuel, oil, etc. spills caused by the drilling activities and will ensure that the site is cleaned up before moving to a new site.

Rosh Pinah Zinc Corporation is responsible for the removal of all drill chips and core cuttings and disposal of this waste into the borehole or at Rosh Pinah waste rock site. All boreholes shall be capped to avoid animals (e.g. snakes, insects, etc.) of falling into them. To minimise the visual impact the borehole casing and caps shall either be blended into the natural surrounding by painting them in the appropriate colour scheme, e.g. brown, grey-brown, or the casing shall be cut immediately above the surface before been capped. RPZC shall be responsible for the rehabilitation of the grid line tracks.

Alexandra Speiser MSc MPhil

Environmental Consultant