



A. Speiser Environmental Consultants cc

VAT Reg. No.: 3452708015

Reg. No.: cc 2003/0606

Alexandra Speiser
MSc MPhil

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

**AMENDMENT TO THE ENVIRONMENTAL MANAGEMENT PLAN
FOR THE PROPOSED ZINC AND LEAD STORAGE AND LOADING
FACILITY AT LÜDERITZ HARBOUR FOR RPZC**

APPENDIX L OF THE EIA REPORT

MARCH 2013

Compiled for:

Rosh Pinah Zinc Corporation (Pty) Ltd
Private Bag 2001
Rosh Pinah
Namibia

Compiled by:

A. Speiser Environmental Consultants cc
PO Box 40386
Windhoek
Namibia

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ACRONYMS

ASEC	A. Speiser Environmental Consultants
CV	Curriculum Vitae
EAP	Environmental Assessment Practitioner
EAPAN	Environmental Assessment Professionals Association Of Namibia
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management System
FEL	Front End Loader
HR	Human Resources
LTC	Lüderitz Town Council
MET	Ministry Of Environment and Tourism
MHSS	Ministry of Health and Social Services
MSDS	Material Safety Data Sheet
Pb	Lead
PPE	Personal Protective Equipment
RPZC	Rosh Pinah Zinc Corporation
SCM	Supply Chain Management
SHE	Safety Health and Environment
Zn	Zinc

1 INTRODUCTION

This [Amendment to the](#) Environmental Management Plan (EMP) contains the recommended actions for construction and operation which are designed to meet legal requirements and minimise the impacts associated with the implementation of the [revised](#) proposed zinc and lead concentrate storage and handling at Lüderitz harbour. The EMPs take the findings from the [assessment section of the amended EIA](#) process into consideration.

1.1 Keeping EMPs Up To Date

It is the intention that this EMP should be seen as a “living document” which will be amended during the operation, as the activities might change or new ones be introduced.

Should a listed activity(s) as defined in the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) be triggered (as a result of future modifications/changes at the mine), this EMP will be updated as a result of another EIA process as stipulated in the regulations.

1.2 Details of the Persons Who Prepared This EMP

A. Speiser Environmental Consultants (ASEC), the independent firm of consultants who undertook the EIA has also compiled this EMP.

Alexandra Speiser and Auriol Ashby prepared the EIA and EMP and their CVs are given in Appendix B of the EIA document.

Alex Speiser has 12 years of experience of EIA preparation in Namibia and is an Associated Member (AIEMA) of the Institute of Environmental Management & Assessment, UK and the Environmental Assessment Professionals Association of Namibia (EAPAN). She is also a member of the Southern African Institute of Ecologists and Environmental Scientists and a member of the Chamber of Mines (Namibia).

Ms Auriol Ashby has had Namibian permanent residence since 1991 and has extensive experience in the socio-economic aspects of integrated development planning, mainly in Namibia. She focuses on the socio-economic and public participation components of EIAs, EMPs and Closure Plans for large scale mines and projects. She is a member of the South African Monitoring and Evaluation Association and EAPAN.

2 SCOPE OF THE EMP

The components of the EMP are included in **Table 1** below.

Table 1: Content of the EMP

EIA Regulation requirement	Reference in the EMP
Details of the persons who prepared the EMP and the expertise of those persons to prepare an environmental management plan.	Section 1.2

EIA Regulation requirement	Reference in the EMP
Information on any proposed management or mitigation measures to address the environmental impacts that have been identified in a report contemplated by these regulations, including environmental impacts or objectives in respect of – <ul style="list-style-type: none"> i. Planning and design ii. Construction activities iii. Operation or undertaking of the activity iv. Rehabilitation of the environment v. Closure, where relevant 	Section 8 & 9
A brief description of the aspects of the activity that are covered by the EMP.	Sections 4 & 5
An identification of the persons to be responsible for the implementation of the mitigation measures.	Sections 7&9
Where appropriate, time frames within which the measures contemplated in the EMP must be implemented.	Section 9
Proposed mechanisms for monitoring compliance with the EMP and reporting on it.	Section 8& 9

3 ENVIRONMENTAL LEGISLATION

3.1 Introduction

RPZC complies with all Namibian legislation, and where legislation is lacking, it will comply with international Best Practice procedures.

Table 2 provides a summary list of the relevant legislation.

Table 2: List of relevant legislation

Year	Name
Current Namibian legislation	
1990	The Constitution of the Republic of Namibia of 1990
1992	The Labour Act, No. 6 of 1992
1992	The Minerals (Prospecting and Mining) Act No. 13 of 1992
1997	Regulations relating to the Health and Safety of Employees at Work (promulgated in terms of Section 101 of the Labour Act, No. 6 of 1992 (GN156, GG 1617 of 1 August 1997)
1998	Affirmative Action (Employment) Act No. 29 of 1998
1998	The Health Act No. 21 of 1998
1999	Road Traffic and Transport Act No. 22 of 1999

Year	Name
2007	Labour Act No. 11 of 2007
2007	Environmental Management Act No. 7 of 2007
Former South African and SWA legislation still applicable in Namibia	
1919	Public Health Act No. 36 of 1919
1975	Nature Conservation Ordinance No. 14 of 1975
1976	Atmospheric Pollution Prevention Ordinance No. 11 of 1976
Namibian policy	
1994	Policy for the Conservation of Biotic Diversity and Habitat Protection
1994	Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation
2002	Minerals Policy for Namibia
Relevant International law to which Namibia is a signatory	
1992	The Rio de Janeiro Convention on Biological Diversity
1992	United Nations Framework Convention on Climate Change

3.2 Permits

As stipulated in the Environmental Impact Assessment Regulations, the Environmental Clearance Certificate for the [original EIA / EMP was obtained from the Ministry of Environment and Tourism \(MET\) on 11 December 2012](#). The Environmental Management Act provides a list of activities that may not be undertaken without Environmental Clearance Certificate and Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) were promulgated on 6 February 2012. This entails that a project may only be implemented after the Environmental Clearance Certificate has been obtained and the project needs to follow the design and operations described in the EIA / EMP. In the meantime, [RPZC has critically reviewed the ship loading facility which received Environmental Clearance, and recommends changing it from a conveyor-ship-loader-system to a container-to-bulk-system. From 2 to amend the current Environmental Clearance has been submitted to MET.](#)

4 PROJECT OVERVIEW

4.1 Introduction

The detailed project description can be found in the EIA document, **Section 6**. Below is a brief overview of the construction and operation phases. A site plan of the proposed zinc/lead storage shed is provided as **Figure 1**.

4.2 Construction Phase

The purpose of the construction phase is primarily to establish the infrastructure and activities required for the operational phase. The construction phase will commence in Q1 2013 and last for approximately 6 months. A summary of the key construction facilities, activities and other construction related issues are discussed below.

4.2.1 Construction facilities

The area lies within Namport's harbour in Lüderitz, hence no fence will be required. Site access is controlled via the Namport entrance gate. Namport's first aid and fire fighting facilities will be utilized if necessary. The workforce will be accommodated in Lüderitz. The following facilities will be established on site:

- Stores for storing and handling fuel, lubricants, solvents, paints and construction materials;
- Bunded areas for waste handling and storage;
- Contractors lay-down areas;
- Mobile site offices;
- Waste collection and storage areas;
- Ablution facilities.

4.3 Operational Phase

4.3.1 Site Facilities for Operations

The operational phase will consist of the following on-site facilities (some of these facilities are indicated on **Figure 1**):

- Storage shed;
- Administration office;
- Ablution facilities
- Parking areas;
- [Container storage area](#)

4.4 Decommissioning and closure phase

At a conceptual level, decommissioning can be considered a reverse of the construction phase with the demolition and removal of the majority of infrastructure and activities very similar to those described with respect to the construction phase. However, RPZC might consider selling the storage shed to another company instead of demolishing it, or it might be taken over by Namport.

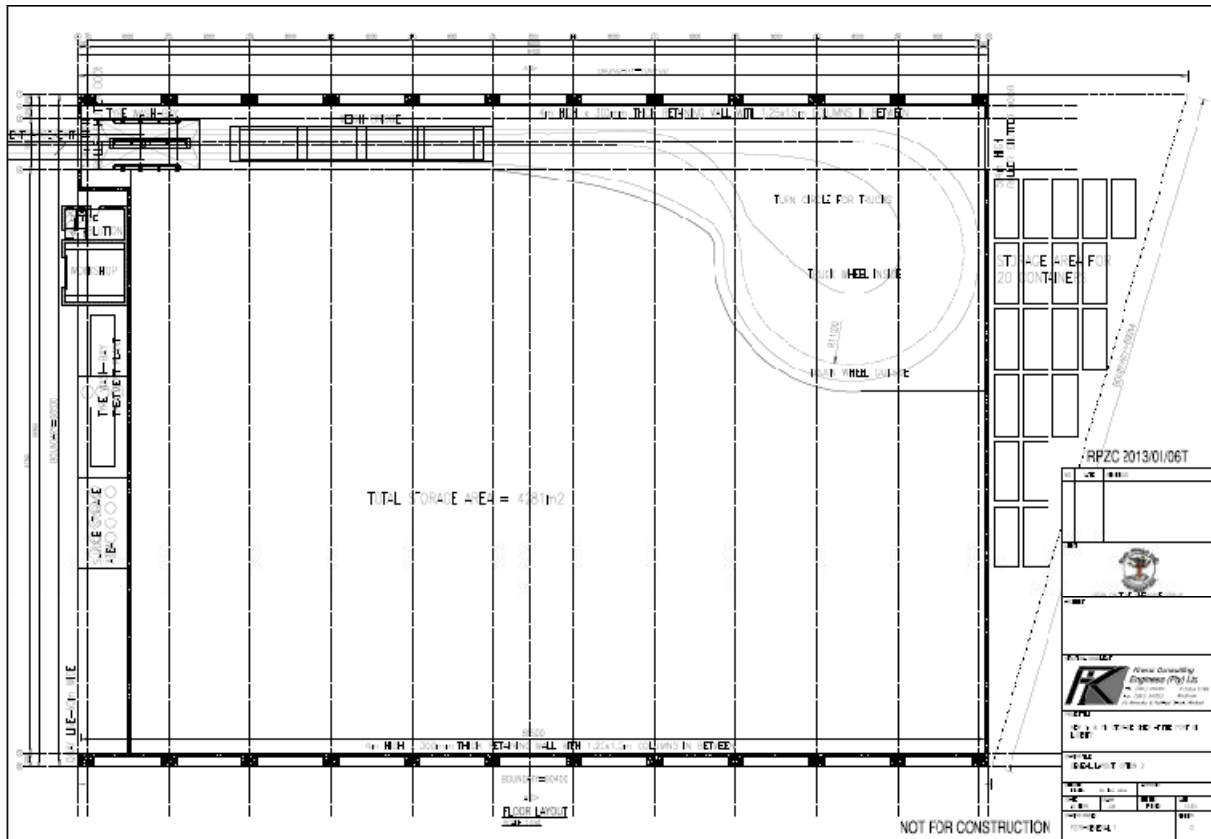


Figure 1: Proposed site layout

5 ENVIRONMENTAL MANAGEMENT SYSTEM (ASPECTS AND IMPACTS)

RPZC will develop and implement an environmental management system (EMS) for all their proposed activities and facilities at the Lüderitz harbour. This EMS will adopt the principles spelled out in ISO14001 (International Organisation for Standardisation, 2004) or a similar standard. The use of this system will ensure that the environmental management requirements on RPZC's activities at the harbour are not only properly planned for, but a robust mechanism for implementation is also ensured and, most importantly that the environmental management function is always reviewed in a spirit of continual improvement.

This EMP will form the basis of the EMS and all the associated procedures, work instructions, etc. will be developed taking cognizance of the relevant commitments in this EMP.

As part of the EMS development, RPZC will roll out the Environmental Management Action Plans to the various RPZC Departments and develop detailed work instruction to ensure the objectives provided in this EMP are achieved and commitments are implemented. Responsibilities and target dates for implementing relevant commitments will therefore be included in the work instructions and other relevant documents.

5.1 Environmental Aspects & Impacts

Understanding the biophysical and human environment in which the proposed project operates is the first step to understanding environmental impacts. The next and possibly

more important step is to identify the environmental aspects that give rise to the impacts. Successful management will be gauged by how well RPZC avoids, minimises or mitigates all the impacts associated with each environmental aspect at their proposed operation.

As part of the EIA process for the proposed project, environmental aspects and potential environmental impacts associated with the activities and facilities were identified. The full suite of RPZC's facilities and activities, associated with the construction and operation phases are described in **Section 6** of the EIA Report and are summarized in **Section 4** of this EMP.

6 OVERALL ENVIRONMENTAL OBJECTIVES FOR THE EMP

The following overall environmental objectives have been set for the RPZC zinc/lead storage shed and operation and Lüderitz harbour:

- i. To comply with national legislation and standards for the protection of the environment.
- ii. To comply with corporate sustainable development policies and objectives.
- iii. To keep surrounding communities informed of proposed activities through mutually agreed forums for communication and constructive dialogue.
- iv. To ensure the legal and appropriate management and disposal of general and hazardous waste, through the implementation of a strategy for the minimisation, recycling, management, temporary storage and removal of waste.
- v. To minimise the potential for dust emissions through the implementation of dust control measures.
- vi. To minimise the potential for noise in surrounding areas.
- vii. To develop, implement and manage monitoring systems to ensure good environmental performance.
- viii. To support and encourage environmental awareness and responsibility amongst all employees, contractors and service providers.
- ix. To provide appropriate environmental education and training for all employees, contractors and service providers.
- x. To prevent and minimise pollution.
- xi. To incorporate the relevant requirements stipulated in this EMP into the design.
- xii. To ensure the all contractors adhere to the construction related management commitments.
- xiii. To ensure compliance to the EMP.

7 PARTIES RESPONSIBLE FOR THE IMPLEMENTATION OF THE EMP

This section describes the roles and responsibilities for implementing the management plans.

7.1 General Manager

The RPZC General Manager has overall responsibility for environmental management on the mine and all related activities, e.g. transport, storage; and for ensuring this EMP is implemented.

7.2 Environmental Department

The RPZC Safety Health and Environment (SHE) Department will be responsible for assisting the General Manager and various other managers in all environmental and community issues, and specifically for ensuring that the commitments as set out in this EMP are implemented during the design, construction and operation.

In addition to the above, the SHE Department is responsible for ensuring that all persons involved comply with this EMP.

As outlined in **Section 7.3**, each contractor will be required to develop their own individual EMP and/or relevant Method Statements (MS) based on this EMP, any other relevant RPZC requirements and specifications, and any permits or authorisations issued to RPZC. Each contractor's EMP/MS will focus on the specific aspects of the contractor's work requirements and work areas, e.g. transport.

The SHE Department will be responsible for the following aspects related to compliance of this EMP:

- i. Implement the Environmental Management Plans
- ii. Regular inspections and auditing compliance to this EMP and any other relevant legal requirements e.g. permits and authorisations.
- iii. Conduct environmental awareness training during induction training and on an ad hoc basis thereafter.
- iv. Conduct scheduled monitoring as outlined in **Section 8** as well as any additional monitoring required by permit and authorisations issued to RPZC by relevant authorities.
- v. Ensure compliance to this EMP and permits and authorisations issued to RPZC by relevant authorities. Ensure responsibilities and target dates are developed for each one of the commitments in this EMP. This will be through one of the following mechanisms:
 - vi. Design requirements; or
 - vii. Construction tender documents and contracts; or
 - viii. Work instructions and procedures
- ix. Submit required information to relevant authorities such as reporting related to monitoring and with regard to compliance with the EMP, permit and relevant authorisations.
- x. Liaise with RPZC Management and various external stakeholders such as authorities and interested and affected parties on environmental management (where required).

7.3 Contractors

The Contractor Managers will be contractually required to comply with the various commitments in this EMP. As indicated above, the contractors will also be required to develop their own EMP/method statements related to their specific work requirements and work areas based on the EMP, any other relevant RPZC requirements, specifications, authorisations, procedures and/or permits.

The EMP contained in the returned tender documents will be adjudicated by the contractor and/or the project Owner's Team. This adjudication will be against aspects such as the equipment to be used, waste to be generated, provision of Material Safety Data Sheet (MSDS) etc. An adjudication checklist will be developed for this purpose.

The SHE Department will contract the Contractor's Environmental Manager to conduct monthly informal inspections at the shed and while ships are being loaded. Non-compliances will be recorded in the EMS to be developed, and action plans developed in conjunction with the contractor that contravened the clause of the EMP.

Contractors will be formally audited on a quarterly to six monthly basis in order to determine compliance with the relevant EMP. In the event of non-conformances, the contractor will be required to take corrective action according to the requirements of the SHE Department. Clean up may be done on their behalf, and if so, the contractor will be back-charged accordingly. Final payment certificates can be withheld by the SHE Department until the manager is satisfied with the rehabilitation of the contractor's sites.

Two of these formal audits will form the basis of the information to be provided in the Bi-Annual reports to the relevant authorities.

7.4 External Specialists

RPZC may appoint external environmental specialists, as and when required, to assist with the implementation of certain commitments made in the various management plans.

An independent auditor will also assess compliance against the EMP on a bi-annual basis.

8 MONITORING AND AUDIT

8.1 Monitoring

The Environmental Management Plan in **Section 9** has covered various aspects of the proposed monitoring. This section both augments those requirements and sets further detail where relevant. RPZC will develop detailed monitoring procedures as part of their EMS, including the relevant monitoring commitments spelled out in this EMP.

As a general approach, the monitoring procedures will comprise the following:

- A formal procedure.
- Appropriately calibrated equipment – regular inspections and calibration of equipment will be undertaken in line with the equipment calibration/validation procedure.

- Where samples require analysis they will be preserved according to laboratory specifications.
- Where practical, an accredited, commercial laboratory will undertake sample analyses.
- Parameters to be monitored can be identified in consultation with a specialist in the field and/or the relevant authority.
- If necessary, following the initial monitoring results, certain parameters may be removed from the monitoring programme in consultation with a specialist and/or the relevant authority.
- Monitoring data will be stored in a structured database.
- Data will be interpreted and reports on trends in the data will be compiled on a quarterly basis.
- Both the data and the reports will be kept on record for the life of mine.

As a general comment, if monitoring points become damaged or redundant then they can be replaced with new points.

8.2 Auditing Compliance of the EMP

The commitments contained in this EMP will, once an environmental clearance certificate has been obtained, be RPZC's contractual agreement with the Namibian authorities for sound environmental management. All employees, contractors and sub-contractors and any visitors to site will be expected to comply with the commitments contained herein.

8.2.1 Audits and Inspections

The SHE Department will conduct internal management audits against the commitments in the EMP. During the construction phase, these audits will be conducted every month. In the operational phase, these audits will be conducted on a quarterly to bi-annual basis. The audit findings will be documented for both record keeping purposes and for informing continual improvement.

In addition, an independent professional will conduct an EMP performance assessment at least once a year for the Bi-Annual Report. RPZC's compliance with the provisions of the EMP and the adequacy of the EMP relative to the on-site activities will be assessed in this report.

The SHE Department will furthermore conduct at least monthly inspections during construction and quarterly to bi-annual inspections during operations. The SHE Department will contract the Contractor's Environmental Manager to conduct inspections while ships are being loaded.

8.2.2 *Submission of Information*

As a minimum, the following documents will be submitted to the relevant authorities on an ongoing basis:

- The bi-annual report required by the MET will be submitted every six months.
- Other monitoring reports will be provided to the relevant authorities as per the permit and other agreements.

9 ENVIRONMENTAL MANAGEMENT PLANS

Below the Environmental Management Plans for construction and operation are provided. The approach provided by Namport's System Procedure – Environmental Assessment was followed.

Table 3 and **Table 4** provide the EMPs for construction and operation. Where it states that responsibility for implementation and monitoring will be the SHE Department, please note that it will be the SHE Department itself or another authorized designated department of RPZC.

Table 3: Environmental Management Plan and recommended Action for the Construction Phase

Construction Activities	Identified Environmental Aspects and Impacts	Actions to be taken	Responsibility for implementation and monitoring
Operational Area 2: Lüderitz storage facility			
<ul style="list-style-type: none"> Foundation excavations Compacting bases 	Nuisance to neighbours	Restrict construction activities to daylight	SHE Department Contractor
<ul style="list-style-type: none"> Use of construction vehicles, earth moving equipment and cranes Using of Generators 	Increase in disturbing noise levels (nuisance)	Construction should only be carried out during day-times	
	Increase in dust levels (nuisance & health impacts)	Use water to minimize dust.	
	Pollution of surface water, potential run-off into harbour	Have emergency procedures in place regarding accidental hydrocarbon spills	
	Contamination of groundwater resources	none	
<ul style="list-style-type: none"> General building activities (i.e. painting, grinding, welding, concrete mixing, etc.) 	Pollution of surface water resources	Have emergency procedures in place regarding accidental spills	
	Contamination of groundwater resources	none	
	Contamination of seawater resources	Ensure that all spills are contained within the working area. Have emergency procedures in place regarding accidental spills	
<ul style="list-style-type: none"> Storage shed 	Pollution of surface water resources	Shed design is such that no polluted run-of water will come from shed.	SHE Department Contractor
<ul style="list-style-type: none"> Waste management (hazardous & non- 	Emissions to land and the sea	Ensure that all contractors adhere to the waste management	

Construction Activities	Identified Environmental Aspects and Impacts	Actions to be taken	Responsibility for implementation and monitoring
hazardous)	(negative) Nuisance impacts (negative)	procedures within Lüderitz Harbour. Put requirement into tender document.	
• Employment	Positive impact – short term job creation, 20 – 30 jobs	Recruit local labour	SHE Department Contractor
• Purchase of Namibian goods and services	Small contribution to GDP, government revenue & to the local economy	Give tender preference to contractors who are from Lüderitz, the Karas Region and who are Namibian and contract to buy Namibian goods and services wherever possible.	
• Temporary workforce	Temporary construction workforce could bring risks to local population	All contractors must have an HIV policy and workplace programme and must provide proof of implementation with invoicing. Work with LTC, MHSS & NGOs to coordinate HIV prevention measures.	
• Traffic due to construction activities	Additional traffic carrying construction materials through the town	Keep LTC & NamPol traffic department informed of activities. Include awareness of road safety, particularly of school children, tourists and Lüderitz residents in tender documents.	

Table 4: Environmental Management Plan and recommended Action for the Operational Phase

Operation Activities	Identified Environmental Aspects and Impacts	Actions to be taken	Responsibility for implementation and monitoring
Operational Area 1: Transport of zinc and lead concentrate from Aus to Lüderitz harbour			
<ul style="list-style-type: none"> Transporting zinc / lead concentrate from Aus to Lüderitz harbour via trucks 	<p>Road safety - Fifteen 32ton heavy vehicles daily on National Road B4 to and from Lüderitz and through the town. (This may increase to 22 trucks per day if production increases).</p>	<p>Ensure implementation of a detailed safety code of conduct for transport contractor; to be closely monitored with penalties enforced if necessary.</p> <p>Notify NamPol traffic department and the public of transport schedule.</p> <p>Minimise trucks as per schedule during lunch hour and when school closes.</p> <p>Ensure there are procedures in place should the schedule be severely disrupted.</p> <p>Ensure the trucks keep their distance from one another, to allow other road users to pass safely.</p> <p>Install tracking devices in trucks to monitor speed and location.</p> <p>Ensure that emergency plans are in place, in event of an accident.</p> <p>RPZC commits to re-evaluate rail option once it is operational.</p>	SHE Department
<ul style="list-style-type: none"> Transporting / lead concentrate from Aus to Lüderitz harbour via trucks 	<p>Increase in road kills involving wildlife e.g. Brown hyena, oryx, ostrich and wild horses</p>	<p>Operations plan will avoid night driving</p> <p>Awareness training of truck drivers to wildlife hotspots (e.g. Garub) and procedures to report & deal with accidents with wildlife.</p> <p>Tender documents will specify to fit warning whistles on trucks</p>	SHE Department
	<p>Reduced Sense of Place - Heavy traffic and parked trucks in town centre during day and night.</p> <p>Noise and fumes from trucks</p>	<p>Specify in tender documents:</p> <ul style="list-style-type: none"> no parking and overnight staying of trucks in Lüderitz town centre. road contractor must look into establishing a standing place for his trucks at entrance to Lüderitz. 	SHE Department

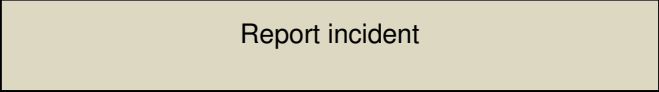
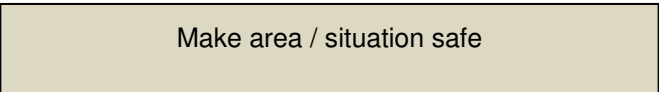
Operation Activities	Identified Environmental Aspects and Impacts	Actions to be taken	Responsibility for implementation and monitoring
	<ul style="list-style-type: none"> Spillages/ pollution along the road - Biodiversity (Flora) Soil contamination Pollution of surface water resources Burst tyres on verges 	<ul style="list-style-type: none"> the trucks will be maintained, serviced regularly and inspected. Side tipper trucks are enclosed, therefore the potential for spillages only arises when the tarpaulins are not fitted correctly. Maintenance of side tipper units and tarpaulins to be carried out on a regular basis, as per preventative maintenance schedule Ensure that the route is regularly checked regarding spillages Ensure that emergency plans and clean-up procedures are put in place. Clean-up procedure for picking up burst tyres. 	SHE Department
<ul style="list-style-type: none"> Transporting zinc / lead concentrate from Aus to Lüderitz harbour via trucks 	TransNamib will lose road/railway revenue of zinc and lead concentrate to Walvis Bay w. It could win road contract to Lüderitz (tender process) Reduced employment in Aus for casual workers as transfer of goods from road to rail will cease.	The road haulage contractor (could be TransNamib), will increase number of jobs for road transport drivers. If RPZC expands requirement for material to be transported, it will increase revenue and more jobs.	SHE Department
<ul style="list-style-type: none"> Transporting zinc / lead concentrate from Aus to Lüderitz harbour via trucks 	Cumulative deterioration of road surfaces on B4 & in Lüderitz town due to all heavy vehicle road users	None. LTC, not RPZC, is the owner of the road and is thus responsible. An alternative tar road is available but LTC have requested RPZC to use the gravel one.	SHE Department
	Cumulative impact of truck vibrations cause damage to buildings	Suggest that property owners should monitor and propose alternative route if buildings show signs of damage	SHE Department
<ul style="list-style-type: none"> Empty vehicles 	Potential contamination of	Ensure that procedures are in place to clean all tyres and truck walls	SHE Department

Operation Activities	Identified Environmental Aspects and Impacts	Actions to be taken	Responsibility for implementation and monitoring
returning from Lüderitz harbour to RPZC mine	roads in Lüderitz Town from truck tyres, truck walls. Contaminated by zinc / lead concentrate	before leaving the storage shed, using brooms not water.	
Operational Area 2: Lüderitz storage facility			
<ul style="list-style-type: none"> Discharge of zinc / lead concentrate from the side tipper trucks, stack and load containers within the shed with front-end loader. 	Increase in disturbing noise levels Increase in dust levels Increase in sulphide smell	Ensure that all employees wear correct PPE and adhere to the health procedures, e.g. no food intake in the storage shed. Ensure doors are shut as soon as a vehicle has entered/left the shed.	SHE Department
<ul style="list-style-type: none"> Storage shed 	Pollution of surface water and run off into the harbour	Shed design includes a concrete floor and underneath lining to avoid rising moisture and seepage.	Engineering Department
	Visual impact of view towards and from the historic hospital building (now occupied by MFMR)	Use natural colour scheme to help blend the shed into surroundings. Stack the 20 containers when not in use, on the western side of the shed to reduce visual impact from the town.	Engineering Department
Operational Area 3: Loading of ships			
<ul style="list-style-type: none"> Ship-loading via revolving containers 	Increase in disturbing noise levels	Ensure the equipment is well maintained to prevent noise generation.	SHE Department
	Increase in dust levels	Ensure the equipment is designed to prevent dust generation and spillage	
	Impact on marine environment	Ensure that loading procedure is followed. Ensure that emergency procedures are in place.	
<ul style="list-style-type: none"> Ship-loading via 	Economic impact on fishing	RPZC will commit to compensation, if proven that contamination was	SHE Department

Operation Activities	Identified Environmental Aspects and Impacts	Actions to be taken	Responsibility for implementation and monitoring
revolving containers	industry in the event of spillage / contamination of fish	due to RPZC material, by a thorough investigation by a competent independent third party. RPZC will only pay for the cost of such an investigation in the event that contamination was caused by RPZC material. In the event that investigation shows that contamination was not due to RPZC material the other party has to pay for the cost of the investigation. Very low risk of dust emission and spillages with container-to-bulk ship loading system	
<ul style="list-style-type: none"> Ship-loading via revolving containers 	Zinc and lead concentrate loading prevents fishing vessels from unloading their perishable products – economic loss	<p>Namport has committed to meet the needs of all users (it is a port management issue rather than for RPZC). The new loading via containers allows the consigned ship to dock at any berth. The restriction using the conveyor belt has been eliminated.</p> <p>RPZC should notify all harbour users of its loading dates, in advance.</p> <p>RPZC will minimise moving the loading ship along the quay and disrupting other port users.</p>	SHE Department
Operational Area 2 and 3			
<ul style="list-style-type: none"> General waste management 	Emissions to land and the sea. Nuisance impacts	Ensure that all storage shed operators adhere to the waste management procedures within Lüderitz Harbour.	SHE Department
<ul style="list-style-type: none"> Employment creation at harbour 	Approximately 5 additional permanent job positions created for the contractor which will handle operations. Probably operators, clerk & supervisor.	<p>Selection preference to people from Lüderitz and the Karas Region and who are Namibian, if skills can be acquired through a minimum three month training programme.</p> <p>Namport Luderitz personnel will be used as far as possible for ship loading operation</p>	SCM Department
<ul style="list-style-type: none"> Purchase of Namibian goods and services 	Small contribution to GDP, increase in government revenue and to the local economy	Give tender preference to contractors who are Namibian and who contract to buy Namibian goods and services wherever possible.	SCM Department

APPENDIX A: EMERGENCY PROCEDURES FOR SPILLAGE AND ACCIDENTS

DEALING WITH LARGE CONCENTRATE SPILLAGE DURING LOADING AT LÜDERITZ HARBOUR

Trigger	Process	Method	Responsibility
<p>• MATERIAL SPILLAGE FROM ANY PART(S) OF REVOLVING CONTAINERLOADING</p>	<p>Report incident</p> 	<ul style="list-style-type: none"> - Operator(s) or any other person discovering the spillage will take all steps possible to immediately contact / notify the site supervisor and/or relevant Namport officials. - All relevant emergency numbers are displayed on notice boards. 	<p>Identifier / discover</p>
	<p>Make area / situation safe</p> 	<ul style="list-style-type: none"> - Initiate control action(s) to confine and contain the release to the smallest area possible, if safe to do so. These control actions will include 1) immediate shutdown of loading operation - Senior person on the scene or site supervisor warn people within the immediate area. Notify port users in downwind areas if applicable. Prevent any vehicles or people from entering the area if necessary. - Isolate the discharge spill area if safe to do so. - Make area safe to allow for clean-up by front end loader - The site will be re-entered only after clearance is given. 	<p>Operator(s)/most senior person/Site supervisor/ Namport officials</p>

Trigger	Process	Method	Responsibility
	<div data-bbox="461 328 1117 424" style="border: 1px solid black; padding: 5px; text-align: center;"> Assess the severity of the spill and determine the method of handling the spill </div> <div data-bbox="792 424 808 632" style="text-align: center;"> </div>	<ul style="list-style-type: none"> - Conduct a quick assessment to determine the severity of the spillage. The assessment will be done through an observation, supplemented by knowledge of installation operations, characteristics of material released. - Summon front end loader to spillage area and pick-up spillage with front end loader and transport to and discharge inside shed at designated area. - Sweep together remaining concentrate and pick up with shovel into FEL bucket. Transport to and discharge inside shed. - Clean-up by FEL done in direction away from quay edge to prevent spillage into sea 	<p>Most senior person / Site supervisor</p>
	<div data-bbox="472 871 1128 967" style="border: 1px solid black; padding: 5px; text-align: center;"> Investigation and reporting of incident </div>	<ul style="list-style-type: none"> - Once area is cleaned up site supervisor assess whether root cause can immediately be resolved. Assessment will be made through an observation, supplemented by knowledge of installation operations. - If root cause can immediately be resolved, rectify cause of spillage to satisfactory level and commence with loading operation. - If root cause cannot be immediately resolved, loading operation will have to be cancelled - Report the incident to Namport officials and RPZC SHE department on applicable documentation. Investigate incident as soon as practically possible and implement remedial actions 	<p>Site supervisor/Namport officials/RPZC responsible person.</p>

DEALING WITH LARGE CONCENTRATE SPILLAGE DURING ROAD TRANSPORT

Trigger	Process	Method	Responsibility
<ul style="list-style-type: none"> • CARRIER VEHICLE (TRUCKS) SPILLAGE, • CARRIER VEHICLE ACCIDENT 	<div style="text-align: center; border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Report incident</div> <div style="text-align: center; margin-top: 10px;">↓</div>	<ul style="list-style-type: none"> - Truck driver or any person discovering the accident will take all steps possible to immediately contact / notify the road contractor supervisor and RPZC control room - RPZC Control room will notify SHE & Plant departments - Local Police to be notified if required - All relevant emergency numbers are displayed on trucks 	Truck driver/ discover/RPZC control room
	<div style="text-align: center; border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Make area / situation safe</div> <div style="text-align: center; margin-top: 10px;">↓</div>	<ul style="list-style-type: none"> - The truck driver, if possible, will ensure that the situation is made safe and that the necessary actions are safely conducted. - Initiate control action(s) to confine and contain the spillage to the smallest area possible, if safe to do so. - RPZC responsible persons and/or road contractor supervisor will drive to site of accident. - Summon for necessary equipment (front end loader and trucks) to be taken to accident site to clean spillage. - If the driver and/or any occupants are injured, refer to the emergency preparedness and response procedure regarding medical emergency. - Senior person on the scene or road contractor supervisor to warn personnel within the immediate area if required. Have non-essential personnel evacuate from downwind areas if applicable. Evacuated personnel (if any) should prevent any vehicles (other than emergency response) from entering the area if necessary. - Isolate the accident area if safe to do so. - If the spillage affects national roads or part of a town the emergency team and Police will assist with the closure of the road if required - The site will be re-entered only after clearance is given. 	Identifier / discover / most senior person / RPZC responsible person/ Road contractor supervisor

Trigger	Process	Method	Responsibility
	<div data-bbox="461 371 1117 464" style="border: 1px solid black; padding: 5px; text-align: center;"> Assess the severity of the spill and determine the method of containing / handling the spill </div> <div data-bbox="792 464 808 676" style="text-align: center;"> </div>	<ul style="list-style-type: none"> - Conduct an assessment to determine the severity of the spillage. The assessment will be done through an observation, supplemented by knowledge of operations and characteristics of material(s) released. - Make spillage area safe for front end loader and trucks to have access. - Pick up spilled material with front end loader and load onto empty trucks. - Trucks to transport material back to RPZC Mine site for disposal - Once clean-up is sufficient and accident scene cleared, area can be opened again 	<p>RPZC responsible person , Road contractor supervisor</p>
	<div data-bbox="472 834 1128 927" style="border: 1px solid black; padding: 5px; text-align: center;"> Investigation and reporting of incident </div>	<ul style="list-style-type: none"> - Report the incident to Road contractor and RPZC SHE department on applicable documentation. Investigate incident as soon as practically possible and implement remedial actions 	<p>Plant Manager / Supervisor / Road contractor/SHE Department</p>