



Submitted to: Skorpion Zinc (Pty) Ltd.
Attention: Ms Leone Wolhuter
Private bag 2003
Rosh Pinah, Namibia.

REPORT:

THE TRANSPORTATION OF ZINC SULPHIDE CONCENTRATE FROM ORANJEMUND TO NAMZINC REFINERY, !KARAS REGION – COMPLIANCE REPORT

PROJECT NUMBER: ECC-99-593-REP-01-A

REPORT VERSION: REV 01

DATE: 29 JANUARY 2025



TITLE AND APPROVAL PAGE

Project Name: The Transportation of Zinc Sulphide Concentrate from Oranjemund to
Namzinc Refinery, !Karas Region – Compliance Report

Client Company Name: Skorpion Zinc (Pty) Ltd.

Client Name: Ms Leone Wolhuter

Ministry Reference: APP-

Authors: Environmental Compliance Consultancy

Status of Report: Final for government submission

Project Number: ECC-99-593-REP-01-A

Date of issue: 29 January 2025

Review Period N/A

ENVIRONMENTAL COMPLIANCE CONSULTANCY CONTACT DETAILS:

We welcome any enquiries regarding this document and its content. Please contact:



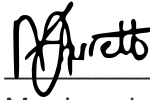
Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

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Quality Assurance

Authors:

A handwritten signature in black ink, appearing to read 'Monique Jarrett', written over a horizontal line.

Monique Jarrett

Environmental Compliance Consultancy

Checked By:

A handwritten signature in black ink, appearing to read 'Jessica Bezuidenhout', written over a horizontal line.

Jessica Bezuidenhout

Environmental Compliance Consultancy

Approved By:

A handwritten signature in black ink, appearing to read 'Jessica Bezuidenhout', written over a horizontal line.

Jessica Bezuidenhout

Environmental Compliance Consultancy

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ABBREVIATIONS

ABBREVIATION	DESCRIPTION
%	percentage
DEA	Department of Environmental Affairs
ECC	Environmental Compliance Consultancy (Pty) Ltd
EIA	environmental impact assessment
EMA	Environmental Management Act, No. 7 of 2007
EMCP	Environmental management and contingency plan
PPE	Personal protective equipment
ZnS	zinc sulphide

1 INTRODUCTION

1.1 COMPANY BACKGROUND

An environmental clearance certificate for the transportation of zinc sulphide concentrate from Oranjemund border to Namzinc Refinery in Rosh Pinah, !Kharas Region, was issued to Skorpion Zinc (Namzinc) (Pty) Ltd (herein referred to as the Proponent) by the Ministry of Environment, Forestry and Tourism on the 17th of January 2022.

Vedanta Zinc International (VZI), a global diversified mining company, owns Skorpion Zinc (Pty) Ltd, a zinc mine and refinery near Rosh Pinah in southern Namibia. Skorpion Zinc is renowned for producing Special High Grade (SHG) zinc through a rare hydrometallurgical process. The refinery operations are managed by Namzinc, a Namibian company that focuses specifically on processing zinc ore into high-purity zinc metal for export. Namzinc plays a vital role in Namibia's economy by contributing through employment, taxes, and exports.

The existing refinery plant has since not been operational and therefore no transport of sulphuric acid has taken place since the issuing of the ECC for the transport of zinc acid. Environmental Compliance Consultancy (ECC) has been engaged by the Proponent, to prepare the application to renew the environmental clearance certificate according to Environmental Management Act, No. 7 of 2007. An environmental compliance audit was not conducted as part of the renewal application, due to the fact that no activities have taken place for the period under review.

The Skorpion Zinc refinery facility is in !Karas Region, Namibia. The route from Oranjemund border to the Skorpion Zinc Refinery in Rosh Pinah is shown in Figure 1.

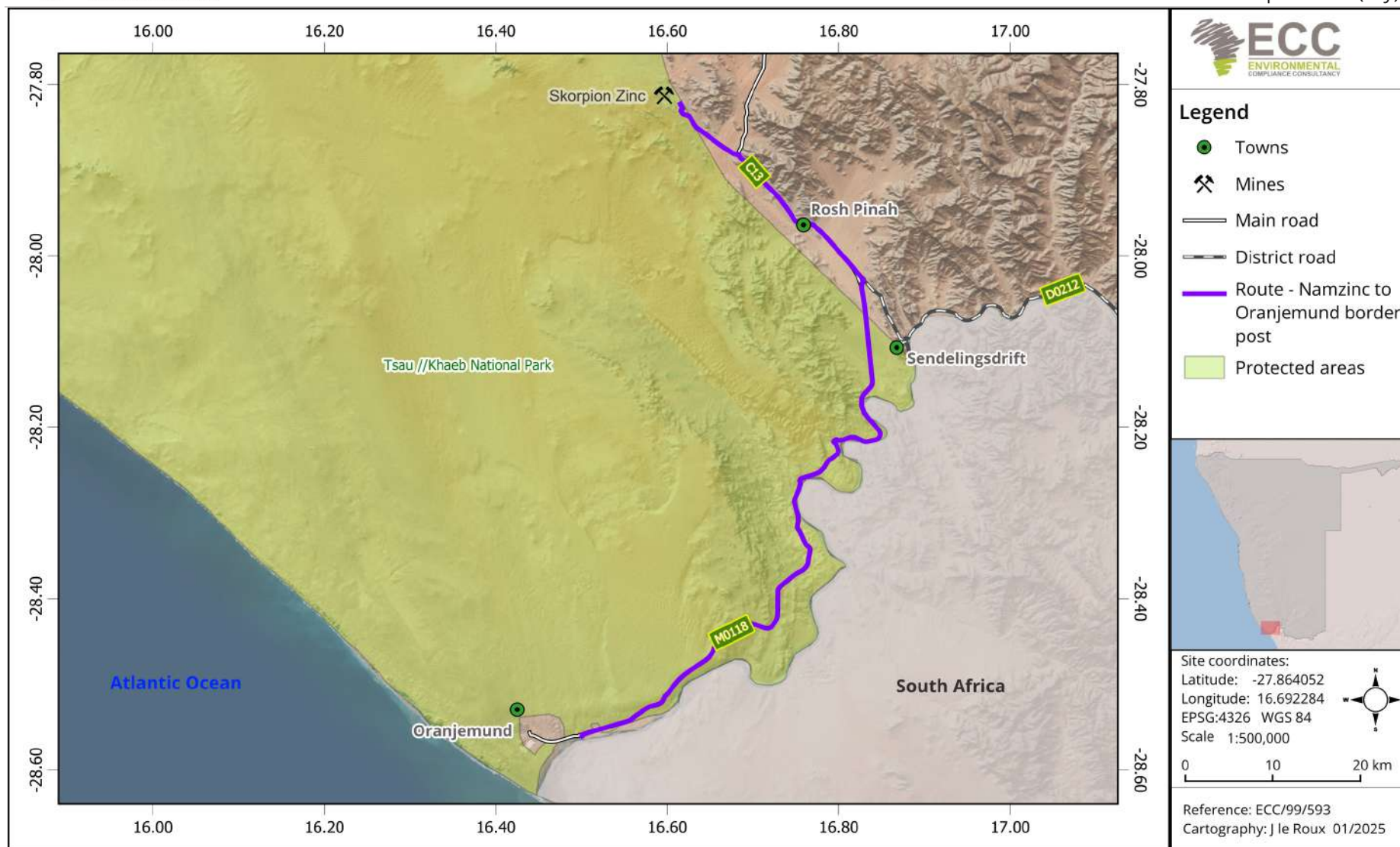


Figure 1 – Transportation route from Oranjemund border to the Skorpion Zinc (Namzinc) refinery in Rosh Pinah

1.2 THE PROPONENT OF THE PROPOSED PROJECT

The proponent's details are provided in Table 1.

Table 1 – Proponent's details

Company Representative:	Contact Details:
Leone Wolhuter	LWolhuter@cbp.vedantaresources.co.na Private bag 2003 Rosh Pinah Namibia

1.3 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Compliance Consultancy (ECC) (Reg. No. CRN 2022/0593) has prepared this renewal report and environmental management and contingency plan (EMCP) on behalf of the Proponent.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

1.4 PURPOSE OF THE REPORT

The purpose of this report is to document the findings of an environmental compliance audit, which accompanies the renewal application for the environmental clearance certificate for transportation of zinc sulphide from the Oranjemund border to the Namzinc refinery in Rosh Pinah, !Kharas Region.

The approved environmental management and contingency plan (EMCP) for the existing environmental clearance certificate is audited to monitor the proceeds of the project and ensure that all measures stipulated in the document are met and effectively adhered to, as required by the Department of Environmental Affairs (DEA). In an event where the project activities are altered, the EMCP is required to be revised and amended accordingly.

As per the Environmental Management Act, No. 7 of 2007 and its EIA Regulations of 2012, the transport of zinc sulphide concentrate cannot be undertaken without a valid environmental clearance certificate. The proposed methods of the transport activities have minor impacts, as mitigation measures are put in place and rehabilitation will be promoted upon completion of the proposed project as per the approved EMCP.

2 BACKGROUND TO THE PROJECT

The Skorpion Zinc mine and Namzinc Refinery was placed under Care and Maintenance in May 2020 following slope failures in the open pit. The existing NamZinc plant was constructed to process oxide ore. It is the intention of the Proponent to start the sulphide refinery conversion project. The Skorpion Zinc (Namzinc) Refinery will enable the treatment of zinc sulphide (ZnS) concentrate that will be transported from their sister company Black Mountain Mining (Pty) Ltd, Gamsberg Mine, Northern Cape, South Africa. Namzinc' propose to transport 314 000 tonnes of zinc sulphide concentrate from their sister company Black Mountain Mining (Pty) Ltd for processing at their Namzinc Refinery located in Rosh Pinah, Namibia. A distance of 120 kilometres, from the Namibian-South Africa, using interlink trucks.

2.1 RENEWAL ACTIVITIES

The transport of zinc sulphide concentrate from the Oranjemund border to the Namzinc refinery in Rosh Pinah, comprises of:

- The transport of 314 000 tonnes of concentrate will be trucked per annum for this project. Based on average:
 - o 1000 tonnes per day (32 tonnes per truck) on 32 trucks
 - o Operating 12 hours (2-3 trucks per hour)
 - o Trucks to only travel during 6am – 6pm

3 ENVIRONMENTAL COMPLIANCE AUDIT

3.1 ACTIVITIES FOR THE MONITORING PERIOD

No activities were carried out during the period for which the environmental clearance certificate was issued to the Proponent.

3.2 ANNUAL COMPLIANCE AUDIT

The approved EMCP covers adverse environmental impacts, including any additional potential impacts that may result from the proposed Project. The EMCP provides the technical details for each mitigation, monitoring and institutional measure, including the impact(s) to which it relates and the conditions when required, together with designs, equipment descriptions and operating procedures as granted. An annual audit is conducted, either as a desktop review or through an on-site visit, to verify the proponent's compliance with the obligations outlined in their environmental management and contingency plan (EMCP). The audit also identifies any instances of non-compliance or non-conformity and highlights areas within their operations and environmental management and contingency plan (EMCP) that could benefit from improvement. Annual audits were not carried out during the period under review because no activities have been conducted since the issuing of the environmental clearance certificate.

3.3 COMPLIANCE AUDIT FINDINGS

No activities were carried out during the period for which the environmental clearance certificate was issued to the Proponent and therefore a compliance audit was not carried out.

Table 2 - EMCP Audit

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
TRANSPORTATION ACTIVITIES				
General transportation activities	<ul style="list-style-type: none"> – Potential pollution to the environment – Potential risk to the occupational health and safety of transportation crew and project operation business partners. – Potential nuisance effect on community and surrounding communal areas 	<ul style="list-style-type: none"> – Develop and implement an operation manual or procedures to conduct work and implement monitoring programmes thereafter; – Conduct site toolbox talks before shifts commence; – Maintain continuous communication with I&APs to identify concerns and mitigation measures; – Compliance with all applicable laws and agreements; – Training and raise awareness to sensitize employees about contentious issues like working in urban spaces and control of pollutants; – Ensure appropriate supervision of all activities; - Incidents need to be reported to the proponent and recorded in the incident register; – Preventative measures will be in place when service and maintenance activities are done (drip trays, non-porous surfaces, funnels, non-damaged tankers); and – Refuelling will be done in areas with designated preventative measures in place. – Employees should be shifted as the project works require so as to avoid a large concentration of employees at any given moment. 	– Not applicable	– No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<ul style="list-style-type: none"> – Access to the beach should be restricted at all times during work hours; – Security personnel to be stationed at access points to the site at all times during transportation to manage pedestrian and vehicle entry to and exit from the site; and – A visitor's register should be placed at the main entrance of the facilities. 		
	<ul style="list-style-type: none"> – Movement of heavy equipment and vehicles, – Nuisance (noise) pollution - Light disturbances 	<ul style="list-style-type: none"> – Restrict speed of vehicles to national traffic and road use regulations and speed limits within the port; – All vehicles and machinery / equipment to be shut down between periods of use; – Control of noise emissions may include the use of silencers for machinery, equipment and noise barriers; – No loud music is allowed to be played on site; – Vehicle horns are only allowed to be used in safety situations and not for any other purpose on facilities during operation hours; – If noise cannot be reduced to acceptable levels, personal hearing protection measures would be necessary; – Continuous engagement with residents to identify any concerns or issues, and appropriate mitigation and management measures agreed upon. 	– Not applicable	– No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
	– Dust and emissions	<ul style="list-style-type: none"> – Use one identified access route only with appropriate turning circles and delivery zones; – Apply dust suppression measures where possible as a proactive measure to avoid dust creation; – Restrict speed of vehicles; – Specific activities that may generate dust and impact on nearby stakeholders shall be avoided during high wind events 	– Not applicable	– No activities were carried out during the period under review therefore, a compliance audit was not conducted.
	– Loss of soil quality due to potential incidental spills	<ul style="list-style-type: none"> – Avoid activities during windy conditions; – Equipment and vehicles must be in a good condition to ensure that incidental oil spills do not occur and contaminate soil; and – In the event of spills and leaks, polluted soils must be collected and disposed of at an approved hazardous waste site. – Contract competent drivers with the provision of awareness on the potential impacts that may result from incidents. The impacts that may occur as a result of poor consideration of further damage to the environment during the rehabilitation of contaminated sites. – Aggregate material to be obtained for rehabilitation must be obtained from authorised borrow pits and disposal of contaminated overburden removed from an incident site must be at an approved sites and under supervision of the relevant local authority. 	– Not applicable	– No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<ul style="list-style-type: none"> A contingency plan (Emergency Response Intervention Plan), which includes a step-by-step guide on procedures to be followed during an incident involving a tanker transporting the acid concentrate. In case the drivers are able to contain a spill at an incident scene, the sulphuric acid must be safely contained or blinded with an agent that reduces its corrosivity. Where a blending agent is not accessible the spill must be contained by ponding (creation of an earthen walled pond) to minimize broader spreading of the chemical. 		
	<ul style="list-style-type: none"> Disruption to traffic flow in the immediate vicinity 	<ul style="list-style-type: none"> Set up appropriate vehicle movement signage on local roads/intersections surrounding the project site to direct traffic flow in a safe manner; Whenever feasible, transportation and trucks should avoid leaving the site at peak traffic periods (07:00 to 08:30 AM, 12:00PM to 14:00PM and (17:30PM to 18:30 PM); Delivery vehicles or trucks should not be allowed to park off site, except in dedicated parking spaces (off site) as may be agreed upon between the proponent and the local authority; All necessary reflective and lighting signs should be placed on project and transportation vehicles to 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<p>maximize visibility and reduce potential incidents that may have occurred otherwise.</p> <ul style="list-style-type: none"> Operators of hazardous substances must be vigilant at all times while on duty or operating the tankers, therefore it is key that no driver should operate the tankers on public roads while under the influence of any toxic substance. Sufficient sleep where necessary must be afforded at safe demarcated rest areas along their route. 		
	<ul style="list-style-type: none"> Loss / alteration of terrestrial habitat 	<ul style="list-style-type: none"> Compulsory toolbox talks and induction of employees; - Always determine the line / route of activity beforehand and restrict all activities to a demarcated area; and Reinstate and rehabilitate where necessary 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> No activities were carried out during the period under review therefore, a compliance audit was not conducted.
Hazardous substances handling and storage, maintenance on equipment, machinery and vehicles	<ul style="list-style-type: none"> Soil contamination - Groundwater contamination Nuisance (visual impacts, litter) 	<ul style="list-style-type: none"> Good housekeeping; Training and awareness through toolbox talks and induction; Raise awareness about the importance of responsible waste management, including wastewater management; Implement a culture of correct waste collection, waste segregation and waste disposal; Avoid the disposal of hazardous waste into the environment; and 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<ul style="list-style-type: none"> All fuel and petrochemical products are to be stored on an impermeable, bunded and covered surface that is clearly marked and access controlled. 		
Transport Safety and Security Compliance	<ul style="list-style-type: none"> Risks of fire occurrences. Fire risks may result in property damage, possible 	<ul style="list-style-type: none"> The proponent shall develop a fire rescue and management procedure in collaboration with the local authority for the site and implement its provisions. A fire rescue and management procedure should be in collaboration with the local authority of the route and facilities and implement its provisions including monitoring; All personnel and business partners on the site should comply with the fire management, emergency preparedness and occupational health and safety plans in its entirety, as developed by the proponent; Fire extinguishers must be kept on site at strategic locations, easily accessed and maintained in good working order; Regular fire toolkits talks to be conducted and attendance performance is to be recorded; Adequate safety signage should be displayed on all levels of the facilities and vehicles as per the proponent's health and safety management plan principles and national regulations in this regard; 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<ul style="list-style-type: none"> - All firefighting systems to be tested and maintained regularly as well as firefighting equipment; and - All emergency escape routes to be kept uncluttered and unblocked to allow easy escape. 		
	<ul style="list-style-type: none"> - Impacts on the Safety and Security of personnel and business partners 	<ul style="list-style-type: none"> - The proponent should implement its health and safety management plan stringently; - Ensure that the appropriate PPE is adhered to at all times - Ensure all entrances and exits are structurally sound and safe to use at all times; - Ensure security personnel are adequately trained and visible throughout the public spaces within and outside the facilities; and - Ensure that effective complaints recording procedures are in place. - Verify that safety marks for the dangerous substances have been correctly displayed on vehicles and points of delivery. - Ensure the awareness on safety procedures in the event of an incident - Ensure that the load complies with the appropriate load and dimension standards. - Ensure that drivers are aware to comply with traffic rules as per the national road authority regulation. - Maintain a reliable communication system that makes it possible to reach at all times, transport 	<ul style="list-style-type: none"> - Not applicable 	<ul style="list-style-type: none"> - No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		crew and staff handling the concentrate at delivery points. – Maintain a sound information exchange network with other industry stakeholders.		
	– Increased traffic flow in the immediate vicinity Additional heavy traffic volume and flow within the storage site and via the designated route to the Port	– During operations restrict movement to agreed upon operation hours; – Establish traffic calming measures and defined routes to and from the site – The developer is responsible for ensuring a practical traffic management plan is implemented to manage the potential effects on traffic conditions surrounding the site so as to reduce the impact. – It was recommended that truck circulation on-site should only occur in a forward direction. Any reversing of trucks should be kept to a minimum and only within areas that are closed off to general public movements	– Not applicable	– No activities were carried out during the period under review therefore, a compliance audit was not conducted.
	– Soil and water contamination due to inadequate control and storage or incidental release of hazardous substances on site	Storage – Label chemicals appropriately – Chemicals with different hazard symbols should not be stored together – clear guidance on the compatibility of different chemicals can be obtained from the Materials Safety Data Sheets (MSDS) which should be readily available	– Not applicable	– No activities were carried out during the period under review therefore, a compliance audit was not conducted.

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<ul style="list-style-type: none"> – Store chemicals in a dedicated, enclosed, and secure facility with a roof where appropriate and a paved/concrete floor. – Chemical tanks should be completely contained within secondary containment such as bunding – Storage and handling of fuels and chemicals shall be in compliance with relevant legislation and regulations – Fuels, lubricants, and chemicals are to be stored within appropriately sized, impermeable bunds or trays with a capacity not less than 110% of the total volume of products stored. <p>Spills</p> <ul style="list-style-type: none"> – The kits with the following items as a minimum should be made available on site: <ul style="list-style-type: none"> ○ Absorbent materials according to the chemical type - Heavy-duty plastic bags ○ Protective clothing (e.g. gloves and overalls) ○ Major servicing of equipment shall be undertaken offsite or in appropriately equipped workshops ○ For small repairs and required maintenance activities all reasonable precautions to avoid spills must be taken (e.g. spill trays, impervious sheets). 		

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<ul style="list-style-type: none"> Provision of adequate and frequent training on spill management, spill response and refuelling must be provided to all onsite staff Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks All major petroleum product spills (spill of more than 200 litres per spill) should be reported to the Ministry of Mines and Energy (MME) on Form PP/11 titled "Reporting of major petroleum product spill", <p>In an event of a spill the following points therefore apply to all areas on the site:</p> <ul style="list-style-type: none"> Assess the situation for potential hazards. Notify trained personnel immediately, such as the company fire officer or the local fire department. Untrained persons or those without proper personal protective equipment must not enter areas with high concentrations of sulphuric acid. Evacuate and restrict people from the hazardous area of sulphuric acid release. Do not come into contact with the spilled substance until it has been characterised, and necessary personal protective equipment (PPE) is provided. Stop or control the source of exposure. Isolate the area as required. 		

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
		<ul style="list-style-type: none"> Collect or confine the spill. Dilute and neutralize the spill and dispose in a secured landfill. Sulphuric acid may be absorbed in vermiculite, dry sand, or similar material. <p>The following measures are to be implemented in response to a spill:</p> <ul style="list-style-type: none"> Spills are to be stopped at source as soon as possible (e.g. close valve or upright drum) Spilt material is to be contained to the smallest area possible using a combination of absorbent material, earthen bunds or other containment methods Spilt material is to be recovered as soon as possible using appropriate equipment. Acid spills should be neutralized and then cleaned up. Do not use a strong base, to neutralize a strong acid. All contaminated materials recovered subsequent to a spill, including soils, absorbent pads and sawdust, are to be disposed of at an appropriately licensed facility A written Incident Report must be submitted to the general manager and local authority or the Port of Lüderitz management. 		
Job creation, skills development	<ul style="list-style-type: none"> Beneficial socio-economic impacts 	<ul style="list-style-type: none"> Maximise local employment and local business opportunities; 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> No activities were carried out during the period under

Aspect	Potential Impacts	Management/mitigation measures	Compliance	Comments
and business opportunities	on a local and regional scale.	<ul style="list-style-type: none"> Enhance the use of local labour and local skills as far as reasonably possible; Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible. 		review therefore, a compliance audit was not conducted.
Waste Management	<ul style="list-style-type: none"> Environmental pollution (littering and poor storage of waste) 	<ul style="list-style-type: none"> Implement a waste management plan as per the waste hierarchy, covering all aspects of waste generated on sites or points of delivery Training and toolbox talk about importance of waste management Solid waste shall be stored in an appointed area in covered, tip-proof metal drums/skips for collection and disposal to an approved waste management site. Return packaging of hazardous and non-hazardous materials (wherever possible), such as empty bags, to farmers for reuse See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers Liaise with the municipality regarding the waste and handling of hazardous waste. Hydrocarbon and chemical contaminated solids have the potential to cause contamination to the soil, ground and/or surface water, thus correct storage and disposal methods are required 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> No activities were carried out during the period under review therefore, a compliance audit was not conducted.

4 CONCLUSION AND RECOMMENDATIONS

All proposed activities shall be carried out in compliance with the relevant requirements and conditions of the granted licence in accordance with the approved EMCP. It is recommended that the Proponent adhere to all environmental legislation and company standards to ensure that best practical environmental protection continues as the Project activities progress.

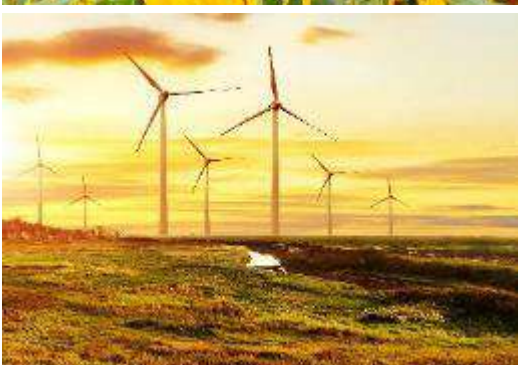
APPENDIX A – ENVIRONMENTAL MANAGEMENT AND CONTINGENCY PLAN

APPENDIX B – ENVIRONMENTAL CLEARANCE CERTIFICATE



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ECC-99-313-REP-16-D

ENVIRONMENTAL MANAGEMENT & CONTINGENCY PLAN

TRANSPORTATION OF ZINC SULPHIDE CONCENTRATE FROM THE ORANJEMUND BORDER TO THE
NAMZINC REFINERY, IN THE !KARAS REGION, NAMIBIA

PREPARED FOR



JUNE 2021

TITLE AND APPROVAL PAGE

Project Name:	The transportation of zinc sulphide concentrate from the Oranjemund border to the Namzinc refinery, in the !Karas Region, Namibia
Project Number:	ECC-99-313-REP-16-D
Client Name:	Skorpion Zinc (Namzinc) (Pty) Ltd
Authors:	Lester Harker, Laina Wilhelm and Jessica Bezuidenhout
Ministry Reference:	APP-002304
Status of Report:	Final for Government submission
Date of issue:	June 2021
Review Period:	

Environmental Compliance Consultancy Contact Details:

We welcome any enquiries regarding this document and its content. Please contact:

Stephan Bezuidenhout

Environmental Consultant & Practitioner
Tel: +264 81 699 7608
Email: stephan@eccenvironmental.com
www.eccenvironmental.com

Jessica Bezuidenhout (Mooney)

Environmental Consultant & Practitioner
Tel: +264 81 699 7608
Email: jessica@eccenvironmental.com
www.eccenvironmental.com

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DEFINITIONS AND ABBREVIATIONS

ECP	Contingency Plan for Emergency Environmental Incidents
ECC	Environmental Compliance Consultancy
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
I&APs	Interested and affected parties
ZnS	Zinc Sulphide

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Environmental Compliance Consultancy (ECC) was engaged by Skorpion Zinc (Namzinc) (Pty) Ltd and to compile a contingency plan in accordance with the Environmental Management Act, No. 7 of 2007. Skorpion Zinc (Namzinc) (Pty) Ltd herein referred to as 'Namzinc' propose to transport 314 000 tonnes of zinc sulphide concentrate from their sister company Black Mountain Mining (Pty) Ltd for processing at their Namzinc Refinery located in Rosh Pinah, Namibia. A distance of 120 kilometres, from the Namibian-South Africa border, using interlink trucks.

The processing of this material will produce an excess of 75 000 tonnes per annum of sulphuric acid as a by-product. This would then be transported within Namibia to local consumers, and to the Skorpion Zinc warehouse at the Port of Lüderitz for export, by road over a distance of 293 kilometres. Within the existing warehouse at the port, a purpose-built storage facility will be constructed to store 15 000 tonnes of sulphuric acid.

The Namzinc Refinery is located in the !Karas Region of Namibia, approximately 100 km north-east of Oranjemund and 20 km north-west of Rosh Pinah. Sulphuric acid is a by-product of the zinc refining process. The Namzinc Refinery is situated inside the eastern boundary of the Tsau //Khaeb (formally known as the Sperrgebiet) National Park. The route from the Namzinc Refinery to the Port of Lüderitz is indicated in the locality map below for the proposed transportation. The route from the Oranjemund border to the Namzinc Refinery is indicated in the locality map below for the proposed transportation (Figure 1).

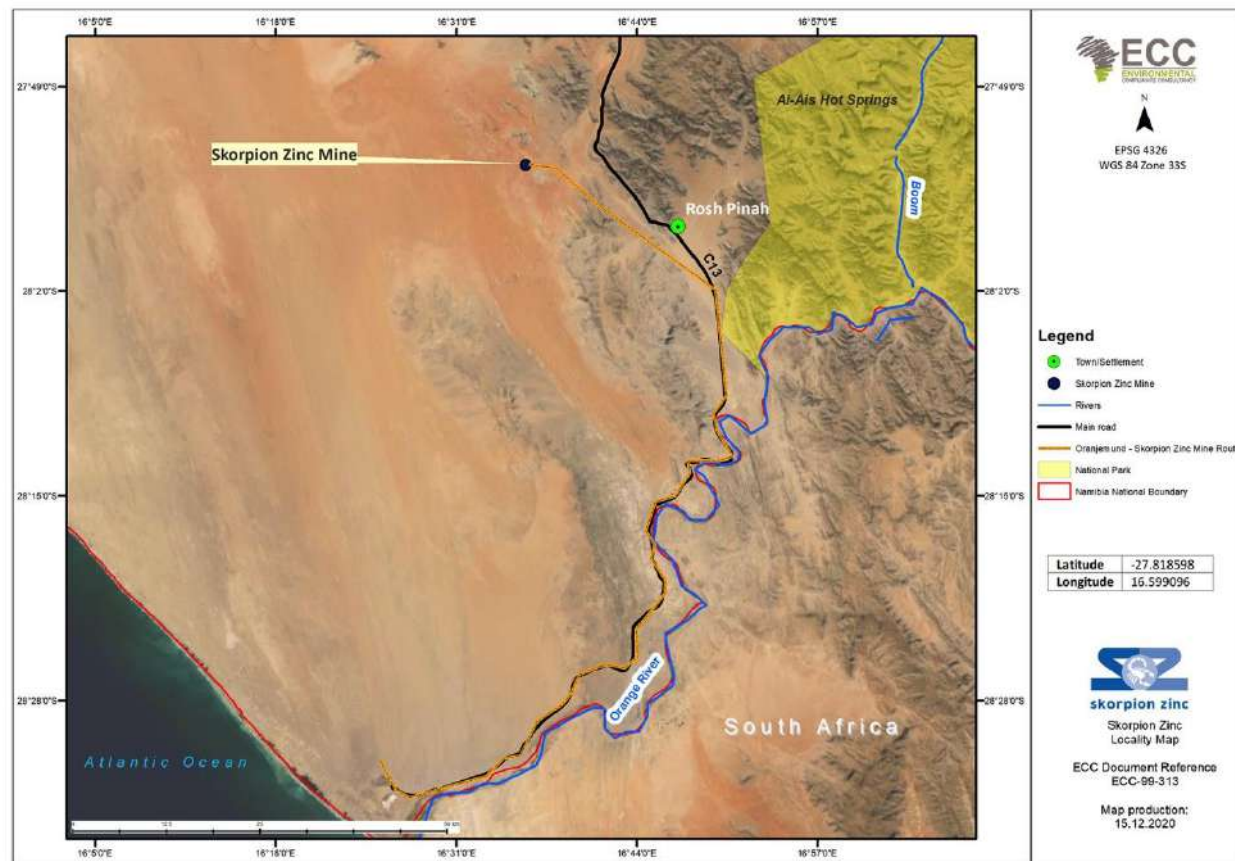


FIGURE 1 – LOCALITY MAP OF THE PROPOSED PROJECT

The Skorpion Zinc mine and Refinery was placed under Care and Maintenance in May 2020 following slope failures in the open pit. This was deemed to have an economic impact on both the Rosh Pinah community and the Namibian economy as a whole. To prolong the life of the Skorpion Zinc facilities and to reduce the economic and social impacts of full-scale closure of the site, the Company is working on a project to convert the existing facility into a zinc sulphide concentrate treatment smelter. An application for an environmental clearance certificate was submitted for the conversion of the Skorpion Zinc Refinery. This was granted by the Ministry of Environment, Forestry and Tourism (MEFT) on the on the 31 August 2020 to 31 August 2023. The conversion and modification to the Skorpion Zinc (Namzinc) Refinery will enable the treatment of zinc sulphide (ZnS) concentrate that will be transported from their sister company Black Mountain Mining (Pty) Ltd, Gamsberg Mine, Northern Cape, South Africa.

The modification of the existing refinery involved the construction of a sulphide roaster, gas cleaning, acid plant and leaching facilities, in order to prepare the sulphide ore for refining within the existing plant. Sulphuric acid would be generated as a by- product in the roasting process from the Roaster off gas post Gas cleaning in the Acid plant section.

The primary source of zinc is the mineral sphalerite (ZnS), which is the source of about 90% of the world zinc production today. Metallic zinc has many uses in the industry, the primary uses of zinc are as a protective coating for steel (galvanizing), as alloys in die casting, as an alloying metal with copper to make brass and bronze, and in chemical compounds (e.g., zinc oxide) in rubber and paints. Some of the risks associated with the use of zinc are that powdered zinc may be explosive and may burst into flames if stored in damp places.

Namzinc will manage the program for the proposed project, engage with the business partners and ensure that the norms of health, safety and environment are met.

The proposed development is expected to generate income and job opportunities for the local community. It is estimated direct and indirect employment opportunities could be created for the transportation activities.

1.2 ENVIRONMENTAL REGULATORY REQUIREMENTS

In terms of the Environmental Impact Assessment (EIA) Regulations and the Environmental Management Act, No. 7 of 2007, the proposed operations qualify as a listed activity. Therefore, an application for an environmental clearance certificate is to be submitted to the Directorate of Environmental Affairs. An Environmental Scoping Report and contingency plan are required to be submitted as part of the application process, as well as to support the decision-making process. This report presents the contingency plan and has been undertaken in terms of the requirements of the act and its regulations.

Unauthorised and unforeseen releases of hazardous and/or polluting substances can present an immediate and unacceptable short-term or long-term threat to the environment and persons. Similarly, a natural event that arises external to construction or operational activities can present immediate and unacceptable short-term or long-term threats to assets (including environmental assets) and persons. Dependent on the risks to environmental values or proximity to sensitive receptors, such releases require timely or immediate action – emergency action – for coordinating and implementing countermeasures to protect the environment, persons and assets from adverse effects and for notifying appropriate stakeholders and authorities.

The supporting Contingency Plan for Emergency Environmental Incidents (herein referred to as the ECP) aims to provide an overview of management practices in place to minimise environmental harm during emergency environmental incidents. The ECP identifies potential emergency environmental incidents and details of a response to an emergency environmental incident, including escalation, communication, reporting and monitoring (as provided in Appendix A).

1.3 PURPOSE AND SCOPE OF THIS REPORT

The purpose of this contingency plan is to provide a management framework for the proposed activities so that the potential environmental impacts identified through the scoping process are avoided, minimised and mitigated as far as reasonably practicable, and that statutory requirements and other legal obligations are fulfilled.

This contingency plan also presents protocols, procedures, roles and responsibilities to ensure the management arrangements are appropriately and effectively implemented. This contingency plan forms an appendix to the environmental assessment report and has been based on the findings of the assessment; therefore, the environmental assessment report should be referred to for further information on the proposed project, assessment methodology, applicable legislation, and assessment findings.

This contingency plan is a live document and shall be reviewed at predetermined intervals, and or updated when the scope of works alters, or when further data or information can be added. All personnel working on the project will be legally required to comply with the standards set out in this contingency plan.

As part of the contingency plan an emergency response plan is required in cases of involving spill of chemicals for the follow purposes:

- Provide the required means to protect people's health

- Make personnel familiar with the emergency procedures and response measures
- Provide the best organizational arrangements to support the operations
- Response tasks are efficiently coordinated and managed
- Provide a procedure for resuming the normal operations.

The scope of this contingency plan includes all transportation and operational activities carried out for this project.

1.4 MANAGEMENT OF THIS CONTINGENCY PLAN

The proponent, Skorpion Zinc (Namzinc) (Pty) Ltd will hold the environmental clearance certificate for the proposed project and will be responsible for the implementation and management of this contingency plan. The implementation and management of this contingency plan and thus the monitoring of compliance shall be undertaken through daily duties and activities and monthly inspections.

1.5 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS OF THIS CONTINGENCY PLAN

This contingency plan does not include measures for compliance with statutory occupational health and safety requirement, which includes the component, fire safety management. This will be provided in the overall Health and Safety Management Plan (HSMP) to be developed by the proponent.

Where there is any conflict between the provisions of this contingency plan and any business partners obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines, and relevant laws), the contract and statutory requirements are to take precedence.

The information contained in this contingency plan has been based on the project description as provided in the environmental scoping report. Where the design or transportation methods alter, this contingency plan may require updating and potential further assessment to be undertaken.

1.6 ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy (ECC), a Namibian consultancy with registration number 2013/11401, has prepared this contingency plan on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across southern Africa, in the public and private sectors. ECC is independent of the proponent and has no vested or financial interest in the proposed project, except for fair remuneration for professional services rendered.

All compliance and regulatory requirements regarding this document should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy

PO BOX 91193

Klein Windhoek, Namibia

Tel: +264 81 669 7608

Email: info@eccenvironmental.com

2 PROJECT MANAGEMENT PERSONNEL

This contingency plan provides measures, guidelines, and procedures for managing and mitigating potential environmental impacts. The contingency plan also indicates monitoring and reporting requirements and sets responsibilities for those carrying out management and mitigation measures. Namzinc shall provide a project team to oversee activities and responsibilities.

2.1 ORGANISATIONAL STRUCTURE, ROLES, AND RESPONSIBILITIES

The proponent shall be responsible for:

- Ensuring all members of the project team, including business partners, comply with the procedures set out in this contingency plan;
- Ensuring that all persons are provided with sufficient training, supervision, and instruction to fulfil this requirement; and
- Ensuring that any person's allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

The proponent and business partners shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this contingency plan, and meet the responsibilities listed above.

The key personnel and environmental responsibilities of each role are presented in Table 1.

TABLE 1 - KEY ROLES AND RESPONSIBILITIES

ROLE	RESPONSIBILITY & DUTIES
Proponent	<ul style="list-style-type: none"> – Overall responsibility for the implementation and management of this contingency plan; – Ensure the environmental policy is communicated to all personnel throughout the proposed project and ensure that employees, business partners and visitors understand and adhere to the contingency plan; – Responsible for providing the required resources (including financial and technical) to complete the required tasks; – May appoint a project manager and a site manager (or nominated supervisor), to who they may delegate tasks and responsibilities within the mandate of the proponent; and – Ensure that all employees, business partners and visitors are inducted on environmental measures.
Site Manager (or nominated supervisor)	<ul style="list-style-type: none"> – Responsible for ensuring compliance with this contingency plan including overseeing all day-to-day activities during the duration of the project, including routine and non-routine maintenance works, as well as decommissioning tasks;

ROLE	RESPONSIBILITY & DUTIES
	<ul style="list-style-type: none"> - Ensure adequate resources are made available for implementation of this contingency plan; - Responsible for the management, maintenance and revisions of this contingency plan; - Ensure all personnel are aware of the commitments made in this contingency plan and any other relevant regulatory requirements applicable to the project; - Ensure all employees and business partners participate in a site induction process prior to commencing work on the project; - Maintain the community issues and concern register, and keep records of complaints; - Ensure that best environmental practice is undertaken throughout the duration of the project; and - Report any non-compliance or incidents to the regulatory authority. - Ensure that all employees, business partners and visitors to the site are conversant with the requirements of this contingency plan, relevant to their roles on site and adhere to this contingency plan at all times; - Provide environmental awareness / management training and site inductions for all employees, business partners and visitors; - Monitor daily operations and ensure adherence by personnel to the contingency plan; - Receive, respond to and record complaints; and - Report any non-compliance or incidents to the proponent.
Employees (and business partners and visitors where applicable)	<ul style="list-style-type: none"> - Responsible for being compliant with this contingency plan throughout the project; - Adhere to this contingency plan at all times; - Ensure attendance of project inductions; - Ensure appropriate briefings for certain activities have been provided and are fully understood; and - Report any operations and conditions that deviate from the contingency plan or any non-compliant issues or incidents to the site manager and proponent.

2.2 BUSINESS PARTNERS

All business partners hired during the project (including partners appointed for maintenance activities) shall be compliant with this contingency plan, and shall be responsible for the following:

- Undertaking activities in accordance with this contingency plan as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements;
- Implement appropriate environmental and safety management measures;

- Report environmental issues, including actual or potential environmental incidents and hazards, to the proponent; and
- Ensure appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported.

2.3 EMPLOYMENT

The proponent should ensure that a locals first policy be adopted on the project pertaining to employment opportunities during the transportation and operational phase of the project. The following shall be complied with:

- In liaison with the relevant authorities, the proponent shall ensure that local people have access to information about job opportunities and are considered first for contract employment positions;
- The number of job opportunities shall be made known together with the associated skills and qualifications;
- The maximum length of time jobs is likely to last for shall be clearly indicated;
- Foreign employees with no proof of permanent legal residence shall not be hired; and
- Every effort shall be made to recruit from the pool of the unemployed living in the local area.

3 COMMUNICATIONS AND TRAINING

To ensure potential risks and impacts are minimised, it is vital that personnel are appropriately informed and trained on operational procedures that include the above mitigation measures. It is also important that regular communications are maintained with all the stakeholders and made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the contingency plan.

3.1 COMMUNICATIONS

During the entire project, the proponent and / or site manager (or nominated site supervisor) shall communicate site-wide environmental issues to the project team through the following means (as and when required):

- Sites and project induction;
- Site notices;
- Audits and inspections;
- Toolbox talks, including instruction on incident response procedures; and
- Briefings on key project-specific environmental issues.

This contingency plan shall be distributed to the project team, including business partners, to ensure that the environmental requirements are communicated effectively. Key activities and environmentally sensitive operations shall also be briefed to employees and business partners.

During the entire project regular communications between the management team shall include discussing any complaints received and actions to resolve them; any inspections, audits or non-conformance with this contingency plan and any objectives or target achievements.

3.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

Table 2 contains a list of numbers to be contacted in case of an emergency. All personnel will be made aware of these numbers.

TABLE 2 - EMERGENCY CONTACT DETAILS

TOWN	EMERGENCY CONTACT	POLICE / FIRE	AMBULANCE
Rosh Pinah		+264(0) 63 274 597	+264 (63) 274 911 / +264 (63) 274 918 / +264 81 161 8734
Orangemund	+264 (63) 23-5511	+264 (63) 23-2228	+264 (63) 23-5555
Namzinc (Pty) Ltd	Mr. Tshiningayamwe Eliakim ETshiningayamwe@vedantaresources.co.na		

063 2712381

For large-scale spills and other significant environmental incidents, the fire services should be contacted as required and the MEFT office informed of the incident (telephone +264 61 284 2111). All correspondence with MEFT should be undertaken by the General Manager as guided by the SHE Representative.

For road entry at the Oranjemund border, the correspondence number is +264 63 232757.

Site notices with the emergency contact details will be posted and site employees made aware of the contents and numbers.

3.3 RESPONSE CONCEPT

Possible incidents involving spill of chemical substances may include:

- Release of chemicals as a result of truck incidents;
- Release as a result of capsized or damaged trucks;
- Accompanied by fire, explosives, property damage and involving environmental pollution; with corrosive or toxic products resulting from vehicle collision; and
- As a result of handling of chemical substances while in transit.

Road incidents may occur at point of section the Oranjemund- Namzinc refinery roads corridor while the zinc sulphide is being transport, however such incidents may impose minor to negligent threats on the health and lives of communities living along the route (should such occurs near/within inhabited areas) as well as on the natural environment.

3.4 COMPLAINTS HANDLING AND RECORDING

Any complaints received verbally or in writing by any personnel on the project site shall be recorded by the receiver. Information recorded should include:

- The name and contact details of the complainant;
- Date and time of the complaint; and
- The nature of the complaint.

The information shall be given to the proponent who is overall responsible for the management of complaints and will provide a written response to the complainant. The proponent shall inform employees of issues, concerns or complaints.

The proponent shall maintain a complaint register that will detail the name and contact details of the complainant, date and time of the complaint, nature of the complaint, action is taken to resolve issues, and date of complaint handover. The proponent shall be responsible for nominating the correct personnel to coordinate and resolve the issue.

The workforce shall be informed about the complaints register, its location and the person responsible, in order to refer local residents or the general public who wish to lodge a complaint. The complainant shall be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons are to be recorded in the register.

The complaints register shall be kept for the duration of the project and will be available for government or public review upon request.

3.5 TRAINING AND AWARENESS

All personnel working on the project shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training and experience.

3.6 SITE INDUCTION

All personnel involved in the project, business partners and visitors shall be inducted to the site with specific environmental and social awareness training, and health and safety issues. The environment and social awareness training shall ensure that everybody on site is familiar with the principles of this contingency plan, the environment and social aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures.

The proponent shall ensure a register of completed training is maintained.

The site induction should include, but not limited to the following:

- A general site-specific induction that outlines:
 - What is meant by “environment” and “social”;
 - Why the environment needs to be protected and conserved;
 - How transportation activities can impact on the environment; and
 - What can be done to mitigate against such impacts;
- The inductee’s role and responsibilities with respect to implementing the contingency plan;
- The site environmental rules and policies;
- Details of how to deal with, and who to contact if environmental problems should occur;

- Focal themes such as compliance, reporting of incidents, good housekeeping and standard procedures for waste management;
- The potential consequences of non-compliance with this contingency plan and relevant statutory requirements;
- The role of responsible people for the project; and
- Emergency response training.

4 EMERGENCY RESPONSE PLANS AND PROCEDURES

Namzinc emergency preparedness plans for potential emergency environmental incidents shall be implemented. All plans may include the following minimum content:

- Clearly defined roles and responsibilities of relevant emergency response personnel through Duty Cards;
- Emergency response procedures;
- Resources to be used in response to an emergency environmental incident;
 - Availability of emergency response documentation and procedures;
 - Site specific Emergency response training;
 - Emergency response and management teams;
 - Emergency equipment;
- Monitoring (including procedures for accessing monitoring locations during emergency environmental incidents);
- Communication procedures and coordination with stakeholders (e.g. emergency services, local government and state government);
- Notifications and reporting;
- Incident investigation; and
- Site clean-up and remediation.

4.1 EMERGENCY RESPONSE PROCEDURES

Emergency response procedures are provided in the relevant emergency preparedness plans in the form of Emergency Situation Checklists. These Emergency Situation Checklists are scenario based and act as a guide to assist the relevant emergency response personnel when responding to a specific emergency. Variations to the checklists will be based upon sound emergency response management, engineering judgement and operational experience, and are at the discretion of the response leaders (e.g. the site manager or nominate site supervisor).

The emergency response and management teams will serve a critical role in controlling an incident. The emergency response and management teams may meet regularly to review the emergency response procedures and to update the procedures as site conditions warrant.

Additionally, if improvements in the response procedures are identified, the ECP and other relevant emergency preparedness plans will be updated accordingly.

4.2 EMERGENCY RESPONSE ACTIONS

4.2.1. GENERAL RESPONSE TO AN EMERGENCY ENVIRONMENTAL INCIDENT

The general measures provided in the sections below apply to all environmental incident scenarios. These measures will be executed in response to an environmental emergency to:

- Reduce the threat to human life or injury;
- Protect against environmental damage; and
- Preserve infrastructure, product, and equipment.

More specific response actions will be dependent on the type and location of the emergency environmental incident and detailed in the relevant emergency preparedness and response plan.

4.2.2. GENERAL RESPONSE MEASURES

1. Evacuate (all non-essential personnel);
2. Eliminate (sources of ignition, sparks, etc.);
3. Stop and Coordinate (stop source of the incident (e.g. spill) and coordinate shut down of relevant equipment, if possible);
4. Notify (internal and external notifications):
 - All emergency environmental incidents must be reported to the site manager immediately upon discovery; and
 - Conduct regulatory or emergency services report, as required.
5. Identify (material (if unknown) and identify PPE, hazards, and response procedures using SDSs);
6. Contain / Isolate (contain released material / incident using emergency response equipment and/or set up perimeter to isolate area);
7. Stabilise and Neutralise (neutralise / stabilise spilt material (where relevant), use absorbents to stabilise other released materials etc);
8. Clean up (remove released materials, spill response materials, any affected media etc.); and
9. Evaluate, document and Investigate and Remediate (if necessary).

If initial monitoring conducted in response to an environmental release indicates the potential for environmental impact, a Contaminated Site Assessment is to be conducted to assess whether the site contamination poses a potential risk to human health and/or the environment (either on or off the site), and if the release is of sufficient magnitude to warrant remediation or a management control appropriate to the current or proposed land use.

On the basis of the release and potential area of impact, an investigation work plan will be developed. This work plan will consider the fluids / chemical released, the media impacts (land and/or water), and the environmental setting.

Once the situation has stabilised, refer to the following sections for additional information:

- Section 3 – Communication: ensure that the proper notifications are made;
- Section 5 – Environmental Monitoring: coordinate and implement the appropriate monitoring regimen, determined on a case-by-case basis.

5 REPORTING, COMPLIANCE, AND ENFORCEMENT

5.1 ENVIRONMENTAL INSPECTIONS AND COMPLIANCE MONITORING

Environmental monitoring will be conducted to ensure compliance to the EMP and Environmental authorisation conditions as well as in response to an emergency environmental incident. Compliance monitoring will consist of daily, weekly and monthly inspections. These inspections will be conducted against commitments made in the EMP and compliance conditions as stipulated in the environmental authorisation.

5.1.1. EMERGENCY MONITORING

The specific aspects of the environmental monitoring activities, including suitable monitoring locations, will vary depending on the nature of the incident and will be determined at the time of the incident. Typical monitoring that will be required may include:

- Visual inspections to determine the nature and extent of impacts and ongoing response actions;
- Vapour monitoring associated with the release of gases and petroleum hydrocarbon and/or chemical vapours to atmosphere;
- Field measurements of pH and conductivity in released waters, waters contained within temporary containment structures or tanks and receiving waters; and/or
- Laboratory measurements to identify constituents of concern in affected media where required (e.g., waters, soils).

More robust sampling and analysis may be conducted in the post incident investigation, assessment and, if required, remediation activities. This will include the implementation of receiving environment monitoring programs where contaminants have been released to land or water, so as to determine the extent of any environmental impact.

5.1.2. DAILY COMPLIANCE MONITORING

A copy of this contingency plan shall be on-site throughout the duration of the project and shall be available upon request. It is the responsibility of the proponent and site manager (or nominated site supervisor) to ensure this contingency plan is complied with through their daily roles. Daily and weekly inspections will be undertaken. Daily and weekly inspections should include as a minimum the following:

- Housekeeping inspections;

- Condition of emergency response equipment such as spill kits;
- Integrity of containment facilities;
- Condition of signage;
- Condition of transport trucks;
- Couplings and line integrity during stevedoring;
- Condition and capacity of waste management facilities.

Inspection records will be kept by the site manager. Any environmental problems or risks identified shall be notified to the proponent and actioned as soon as is reasonably practicable.

5.1.3. MONTHLY COMPLIANCE MONITORING

Monthly inspections shall be undertaken by the site manager to check that the standards and procedures set out in this contingency plan are being complied with and pollution control measures are in place and working correctly. Any non-conformance shall be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action taken and any necessary follow up measures required. As a minimum monthly inspection should include:

- Storm water management infrastructure;
- Sumps and bunds;
- Illumination especially around offloading area;
- Integrity of protective infrastructure at offloading facilities;
- Storage tank integrity; and
- Condition of couplings.

5.2 REPORTING

There shall be a requirement to ensure that any incident or non-compliance, including any environmental issue, failure of equipment or incident, is reported to the proponent immediately.

5.3 ENVIRONMENTAL PERMITS

The proponent will apply for the relevant permits and shall operate in accordance with any conditions stipulated.

5.4 NON-COMPLIANCE

Where it has been identified that activities are not compliant with this contingency plan, the proponent shall employ corrective actions so that the activities return to being compliant as soon as possible. In instances where the requirements of the contingency plan are not upheld, a non-conformance and corrective action notice shall be produced. The notice shall be generated during the inspections and the proponent shall be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

A non-compliance event / situation, for example, is considered if:

- There is evidence of the contravention of this contingency plan and associated indicators or objectives;
- The proponent and / or site manager (or nominated supervisor) have failed to comply with corrective or other instructions issued by the proponent or qualified authority; or
- The proponent and /or site manager (or nominated supervisor) fail to respond to complaints from the public

Activities shall be stopped in the event of a non-compliance until corrective action(s) has been completed.

5.5 INCIDENT REPORTING

The proponent must ensure that an incident (including minor or near-miss) reporting system is maintained so that all applicable statutory requirements are covered. For any serious incident involving a fatality, or permanent disability, the incident scene must be left untouched until witnessed by a representative of the police. For a serious environmental incident, the required statutory reporting needs to be adhered to.

The proponent with the site manager or nominated supervisor shall investigate the cause of all safety and environmental significant incidents and must provide the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

5.6 DISCIPLINARY ACTION

This contingency plan is a legally binding document and non-compliance with it shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- Fines / penalties;
- Legal action;
- Monetary penalties imposed by the proponent on the business partners;
- Withdrawal of license/s; and
- Suspension of work.

The disciplinary action shall be determined according to the nature and extent of the transgression or non-compliance, and penalties are to be weighed against the severity of the incident.

6 ENVIRONMENTAL AND SOCIAL MANAGEMENT

6.1 OBJECTIVES AND TARGETS

Environmental objectives for the project are as follows:

- Zero pollution incidents;
- Minimal disturbance to traffic;
- Minimise noise pollution;
- Minimise light pollution (the correct placement of lights);
- Minimise dust pollution; and
- Minimise the generation and disposal of waste.

6.2 REGISTER OF ENVIRONMENTAL RISKS AND ISSUES

An environmental review of the proposed project has been completed to identify all the commitments and agreements made within the environmental assessment report. From this, a list of environmental commitments and risks were produced, which details deliverables including measures identified for the prevention of pollution or damage to the environment during the project.

6.3 IMPACTS IDENTIFIED FOR FURTHER ACTIONS

6.3.1. CHANGE IN AMBIENT NOISE LEVELS ALONG THE B4 AND WITHIN ORANJEMUND TO ROSH PINAH

Transportation activities and related increases in traffic flow along the designated route from the Oranjemund border post to the Namzinc Refinery will change and increase in noise levels emanating from the road use. A noise impact assessment was carried out to determine baseline conditions and suitable mitigation measures to manage noise related impacts.

The recommended mitigation measures include restricting operation hours, traffic calming measures, defined routes to and from the sites, maintaining designated road networks. The speed of the trucks should be adhering to 40km/h within town centres and through residential areas and 80 km/h on the highways.

6.3.2. ADDITIONAL HEAVY TRAFFIC LOAD ON THE C13 DISTRICT ROAD FROM ORANJEMUND TO ROSH PINAH

During transportation, increased traffic may disrupt normal traffic flow for the affected towns of Rosh Pinah and Oranjemund. This could potentially impact local residents that might find the need to find alternative routes through the area may be necessitated, increasing traffic flow times. This may result in the increased traffic congestion on the road to the port and within, increase in the risk of incidents, result in deterioration of road surfaces, and cause vibration related damage to

existing infrastructure. The proponent is responsible for ensuring a practical traffic management plan is implemented to manage the potential effects on traffic conditions surrounding the site so as to reduce the level of significance on sensitive receptors. A traffic impact assessment was carried out to determine baseline conditions and suitable mitigation measures to manage traffic related impacts.

Vehicles such as trucks during operation should not be allowed to obstruct any traffic or access points to any businesses and facilities on the routes through to Lüderitz. If any extraordinary traffic impacts are expected, traffic management should be performed in conjunction with local traffic department, to prevent these. Traffic regulation on the national road should be adhered to.

6.3.3. DE-CONTAINMENT OF ZINC SULPHIDE CONCENTRATE ALONG THE TRANSPORTATION ROUTE TO THE REFINERY

The transportation of non-hazardous chemicals involve steps aimed at preserving their performance properties, regulating temperature and humidity, and protection against mechanical impact. The potential uncontrolled or incidental spillage of the non-hazardous zinc sulphide concentrate during transportation was considered to be a significant impact, which could result into the type of event that increases the confusion that exists at a normal traffic incident, and it may greatly reduce the normal capacity of roadways beyond the confines of the incident locality. All spillage should be contained and management as quick as possible to reduce the surface area and exposure into the environment.

Table 3 provides a register of environmental risks and issues, which identifies mitigation and monitoring measures, as well as the responsible person. This register will be subject to regular review by the proponent and updated when necessary. The proponent will use this register to undertake monthly inspections to ensure the project is compliant with this contingency plan.

TABLE 3 - ENVIRONMENTAL RISKS AND ISSUES, AND MITIGATION AND MONITORING MEASURES

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
TRANSPORTATION ACTIVITIES				
General transportation activities	<ul style="list-style-type: none"> - Potential pollution to the environment - Potential risk to the occupational health and safety of transportation crew and project operation business partners. - Potential nuisance effect on community and surrounding communal areas 	<ul style="list-style-type: none"> - Develop and implement an operation manual or procedures to conduct work and implement monitoring programmes thereafter; - Conduct site toolbox talks before shifts commence; - Maintain continuous communication with I&APs to identify concerns and mitigation measures; - Compliance with all applicable laws and agreements; - Training and raise awareness to sensitize employees and business partners about contentious issues like working in urban spaces and control of pollutants; - Ensure appropriate supervision of all activities; - Incidents need to be reported to the proponent and recorded in the incident register; - Refuelling will be done in designated areas with adequate preventative measures in place. - Employees should be shifted as the project works require so as to avoid a large concentration of employees at any given moment. - Security personnel to be stationed at access points to the site at all times during transportation to manage pedestrian and vehicle entry to and exit from the site; and - A visitor's register should be placed at the main entrance of the facilities. 	Weekly, monthly	Site Manager (or nominated supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	<ul style="list-style-type: none"> – Movement of heavy equipment and vehicles, – Nuisance (noise) pollution – Light disturbances 	<ul style="list-style-type: none"> – Restrict speed of vehicles of vehicles to national traffic and road use regulations and speed limits within town boundaries; – All vehicles and machinery / equipment to be shut down between periods of use; – Control of noise emissions may include the use of silencers for machinery, equipment and noise barriers; – No load music is allowed to be played on site; – Vehicle horns are only allowed to be used in safety situations and not for any other purpose on facilities during operation hours; – If noise cannot be reduced to acceptable levels, personal hearing protection measures would be necessary; – Continuous engagement with residents to identify any concerns or issues, and appropriate mitigation and management measures agreed upon; 	Daily throughout the transportation period	
	<ul style="list-style-type: none"> – Dust and emissions 	<ul style="list-style-type: none"> – Use one identified access route only with appropriate turning circles and delivery zones; – Apply dust suppression measures where possible as a proactive measure to avoid dust creation; – Restrict speed of vehicles; – Specific activities that may generate dust and impact on nearby stakeholders shall be avoided during high wind events; and 	Daily, weekly	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	<ul style="list-style-type: none"> – Loss of soil quality due to incidents resulting from the potential uncontrolled spillages 	<ul style="list-style-type: none"> – Avoid activities during windy conditions; – Equipment and vehicles must be in a good condition to ensure that incidental oil spills do not occur and contaminate soil at any given point; and – In the event of spills and leaks, polluted soils must be collected and disposed of at an appropriate waste site. – Contract competent drivers with the provision of awareness on the potential impacts that may result from incidents. The impacts that may occur as a result of poor consideration of further damage to the environment during the rehabilitation of contaminated sites – A contingency plan (Emergency Response Intervention Plan), which includes a step-by-step guide on procedures to be followed during an incident involving a truck transporting the concentrate. 	Weekly	
	Disruption to traffic flow in the immediate vicinity	<ul style="list-style-type: none"> – Set up appropriate vehicle movement signage on local roads/intersections surrounding the project site to direct traffic flow in a safe manner; – Whenever feasible, transportation and trucks should avoid leaving the site at peak traffic periods (07:00 to 08:30 AM, 12:00PM to 14:00PM and (17:30PM to 18:30 PM); – Delivery vehicles or trucks should not be allowed to park off site, except in dedicated parking spaces (off site) as may be agreed upon between the proponent and the local authority; – All necessary reflective and lighting signs should be placed on project and transportation vehicles to maximize visibility and reduce potential incidents that may have 	Daily	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		<p>occurred otherwise.</p> <ul style="list-style-type: none"> Operators of trucks must be vigilant at all times while on duty, therefore it is key that no driver should operate the trucks on public roads while under the influence of any toxic substance. Sufficient sleep where necessary must be afforded at safe demarcated rest areas along their route. 		
	Loss / alteration of terrestrial habitat	<ul style="list-style-type: none"> Compulsory toolbox talks and induction of employees; Always determine the line / route of activity beforehand and restrict all activities to a demarcated area; and Reinstate and rehabilitate where necessary. 	Depending on active activity on site	
Concentrate handling and storage, maintenance on equipment, machinery and vehicles	<ul style="list-style-type: none"> Soil pollution Nuisance (visual impacts, litter) 	<ul style="list-style-type: none"> Good housekeeping; Training and awareness through toolbox talks and induction; Raise awareness about the importance of responsible waste management, including wastewater management; Implement a culture of correct waste collection, waste segregation and waste disposal; Avoid the disposal of waste into the environment; and All fuel and petrochemical products are to be stored on an impermeable, bunded and covered surface that is clearly marked and access controlled. 	Daily	Site Manager (or nominated supervisor)
	<ul style="list-style-type: none"> Soil and water contamination due to inadequate control and storage or incidental release of substances on site 	<p>Storage</p> <ul style="list-style-type: none"> Label chemicals appropriately Store chemicals in a dedicated, enclosed, and secure facility. Fuels, lubricants, and chemicals are to be stored within appropriately sized, impermeable bunds or 	Weekly	Site Manager (or nominated supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		<p>trays with a capacity not less than 110% of the total volume of products stored</p> <p>Spills</p> <p>The following items as a minimum should be made available on site:</p> <ul style="list-style-type: none"> – Cleaning up of concentrate require mechanical loading of all spilled material. – Heavy-duty plastic bags may be needed to load the recovered concentrate – Protective clothing should always be maintained when managing any spillages (e.g. gloves and overalls) – Provision of adequate and frequent training on spill management, spill response <p>Any major petroleum product spills (spill of more than 200 litres per spill) should be reported to the Ministry of Mines and Energy (MME) on Form PP/11 titled “Reporting of major petroleum product spill”, attached as Appendix B.</p> <p>The following measures are to be implemented in response to a spill:</p> <ul style="list-style-type: none"> – Spilt material is to be recovered as soon as possible using appropriate equipment. In most cases, it will be necessary to excavate the underlying soils until clean soils are encountered 		

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		<ul style="list-style-type: none"> - All contaminated materials recovered subsequent to a spill, including soils are to be disposed of at an appropriate facility - A written Incident Report must be submitted to the general manager. 		
Transport safety and security compliance	Fire outbreaks	<ul style="list-style-type: none"> - The proponent shall develop a fire rescue and management procedure in collaboration with the local authority for the site and implement its provisions. - A fire rescue and management procedure should be in collaboration with the local authority of the route and facilities and implement its provisions including monitoring; - All personnel and business partners on the facilities should comply with the fire management, emergency preparedness and occupational health and safety plans in its entirety, as developed by the proponent; - Fire extinguishers must be kept at strategic locations, easily accessed and maintained in good working order; - Regular fire toolkits talks to be conducted and attendance performance is to be recorded; - Adequate safety signage should be displayed on all levels of the facilities and vehicles as per the proponent's health and safety management plan principles and national regulations in this regard; - All firefighting systems to be tested and maintained regularly as well as firefighting equipment; and - All emergency escape routes to be kept uncluttered and unblocked to allow easy escape. 	Daily	Site Manager (or nominated supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	Impacts on the safety and security of personnel and business partners	<ul style="list-style-type: none"> - The proponent should implement its health and safety management plan stringently; - Ensure that the appropriate PPE is adhered to at all times - Ensure all entrances and exits are structurally sound and safe to use at all times; - Ensure security personnel are adequately trained and visible throughout the public spaces within and outside the facilities; and - Ensure that effective complaints recording procedures are in place. - Verify that safety marks for the dangerous substances have been correctly displayed on vehicles and points of delivery - Ensure the awareness on safety procedures in the event of an incident - Ensure that the load complies with the appropriate load and dimension standards. - Ensure that drivers are aware to comply with traffic rules as per the national road authority regulation. - Maintain a reliable communication system that makes it possible to reach at all times, transport crew and staff handling the concentrate at delivery points. - Maintain a sound information exchange network with other industry stakeholders. 	Daily	Site Manager (or nominated supervisor)
Waste Management	Environmental pollution (littering and poor storage of waste)	<ul style="list-style-type: none"> - Implement a waste management plan as per the waste hierarchy, covering all aspects of waste generated on sites or points of delivery - Training and toolbox talk about importance of waste 	Daily	<ul style="list-style-type: none"> - Site Manager (or nominated supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		<p>management</p> <ul style="list-style-type: none"> – Solid waste shall be stored in an appointed area in covered, tip-proof metal drums/skips for collection and disposal to an approved waste management site. – Return packaging of waste materials (wherever possible), such as empty bags, to facilities for reuse – See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers – Liaise with the municipality regarding the waste and handling of hazardous waste. – Hydrocarbon and chemical contaminated solids have the potential to cause contamination to the soil, ground and/or surface water, thus correct storage and disposal methods are required. 		– All staff members
Job creation, skills development and business opportunities	Beneficial socio-economic impacts on a local and regional scale.	<ul style="list-style-type: none"> – Maximise local employment and local business opportunities; – Enhance the use of local labour and local skills as far as reasonably possible; – Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible. 	Quarterly	Site Manager (or nominated supervisor)

7 IMPLEMENTATION OF THE CONTINGENCY PLAN

All transportation activities will be carried out in compliance with the relevant legal requirements. Whilst the transportation and operation of the proposed project does not fall under the listed activities of the EMA, No. 7 of 2007 it is recognised that as an indirect consequence of the project, some activities may infer to the act – therefore the contingency plan considers the relevant guidelines and requirements of the act.

No significant impacts are anticipated for the activities that have been identified and management and mitigation measures are in place for potential risks.

This contingency plan:

- Has been prepared pursuant to a contract with the proponent
- Has been prepared on the basis of information provided to ECC up to May 2021
- Is for the sole use of the proponent, for the sole purpose of an contingency plan
- Must not be used (1) by any person other than the proponent or (2) for a purpose other than an contingency plan, and
- Must not be copied without the prior written permission of ECC.

ECC has prepared the contingency plan on the basis of information provided by the proponent and the environmental and social impact assessment report

APPENDIX A – AN EXAMPLE OF THE CONTINGENCY FOR EMERGENCY ENVIRONMENTAL INCIDENTS (ECP) DOCUMENTS

INCIDENT REPORT FORM

DEPARTMENT				DATE & TIME			
TYPE OF INJURY / INCIDENT							
<input type="checkbox"/> LTI <input type="checkbox"/> NEAR MISS <input type="checkbox"/> ENVIRONMENTAL INCIDENT <input type="checkbox"/> UNSAFE ACT <input type="checkbox"/> UNSAFE CONDITION <input type="checkbox"/> DAMAGE TO PROPERTY <input type="checkbox"/> MINOR INJURY <input type="checkbox"/> FATALITY							
PERSON INJURED / INVOLVED/ WITNESSING THE INCIDENT							
NAME				DESIGNATION			
Employee		Temporary Worker		Contractor		Other	(visitors, delivery personnel, etc)
Section 1	Completed by the person/persons witnessing the Incident – Description of Incident						
LOCATION OF THE INCIDENT							
Section 2	Root Cause – What was the underlying root cause of the Incident						
Corrective/ Preventive Action (What is the action taken to reduce the likelihood of a reoccurrence?)							
Actioned by:				Action date:			
Reported By:				Signature			
Departmental Supervisor				Signature			
Departmental Manager				Signature			
Health, Safety & Environmental Officer				Signature			

APPENDIX B - REPORTING OF MAJOR PETROLEUM PRODUCT SPILL FORM PP/11

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FORM PP/11

MINISTRY OF MINES AND ENERGY

PETROLEUM PRODUCTS AND ENERGY ACT, 1990
PETROLEUM PRODUCTS REGULATIONS (2000)

REPORTING OF MAJOR PETROLEUM PRODUCT SPILL

(Regulation 49(1))

(Please note that where form is completed by hand it must be completed in capital letters)

1. Name of licence/certificate-holder/person

*(*Delete whichever is not applicable)*

2. Postal address

3. Physical address

4. Telephone Number (including code)

5. Facsimile Number (including code)

6. Licence/certificate* number and date of issue, if applicable

*(*Delete whichever is not applicable)*

7. Date of petroleum product spill

8. Location of petroleum product spill

9. Reasons for petroleum product spill

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10. Type of petroleum product involved in petroleum product spill

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11. Quantity of the petroleum product spill

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12. Indicate whether the petroleum product has or will have any negative effect on the environment and the safety and health of person or the property of persons

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13. Provide full details of all remedial actions taken to minimise risks associated with petroleum product spills and all cleaning-up operations taken in connection therewith

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DECLARATION

I,
hereby declare that the information submitted by me in this application is true and correct.

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Signature

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Place

.....
Date

APPENDIX C - TEMPLATE FOR MONITORING

INSPECTION DATE: _____

INSPECTION COMPLETED BY: _____

SUMMARY OF ACTIVITIES OCCURRING:

Ref No.	Item	Requirements	Responsibility	Compliant	Notes / Action Taken / Corrective Action Required
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Ref No.	Item	Requirements	Responsibility	Compliant	Notes / Action Taken / Corrective Action Required
1	Noise	<ul style="list-style-type: none"> – Is the facility avoiding noise generating activities at night? – Is scheduling of works to avoid disturbance between the hours of 22pm and 5 am in place? – Are Saturday operational periods from 8 am – 12 noon, when near residential areas? – Are procedures for receiving complaints from nearby land users or residents in place and mitigation measures implemented should operations generate excessive noise? 	– SHE Representative	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
2	Operations of mechanical equipment and engines	<ul style="list-style-type: none"> – Are regular checks of all equipment conducted routinely? – Are equipment services up to date? – Are spill kits and/or drip trays available? 	<ul style="list-style-type: none"> – SHE Representative, and – General Manager 	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
3	Production and effluent discharge	<ul style="list-style-type: none"> – Is the domestic and industrial effluent discharged off into approved systems? – If not, are regular water quality samples taken to ensure the treated wastewater complies to the prescribed general standards as set out in the Water Resources Management Act, 2004 (Act No. 24 of 2004)? 	<ul style="list-style-type: none"> – SHE Representative, and – General Manager 	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

TRANSPORTATION OF ZINC SULPHIDE CONCENTRATE FROM THE
ORANJEMUND BORDER TO THE NAMZINC REFINERY
ENVIRONMENTAL MANAGEMENT & CONTINGENCY PLAN
NAMZINC (PTY) LTD

Ref No.	Item	Requirements	Responsibility	Compliant	Notes / Action Taken / Corrective Action Required
4	Solid waste generation	<ul style="list-style-type: none"> – Has the waste management plan and the application of the waste management hierarchy implemented? – Are suitable collection points in place for waste collection at the factory? – Is waste collected regularly and transported correctly? – Is hazardous waste such as waste oil/lubricant stored in a hazardous waste storage area and disposed of by accredited hazardous waste handlers such as Rent A Drum? 	<ul style="list-style-type: none"> – SHE Representative, and – General Manager 	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
5	Lighting	<ul style="list-style-type: none"> – Are energy-efficient light bulbs installed? – Is unnecessary lighting avoided where possible? – Are lights switched off at night? 	<ul style="list-style-type: none"> – SHE Representative, and – General Manager 	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
7	Air Emissions	<ul style="list-style-type: none"> – Are the dust extractors cleaned regularly? – Are vehicles serviced regularly to reduce emissions? – Is there dust monitoring system in place? 	– SHE Representative	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
8	PPE	<ul style="list-style-type: none"> – Are personnel wearing the correct PPE? – Is PPE in good condition? – Are there any complaints on the health of employees 	– SHE Representative	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

APPENDIX D - COMPLAINTS REGISTER TEMPLATE

NAME	CONTACT DETAILS	DATE AND LOCATION OF COMPLAINT	NATURE OF COMPLAINT	ACTION TAKEN TO RESOLVE	NOMINATED PERSON TO RESOLVE ISSUE (Signature)	DATE OF RESOLUTION/ CLOSED OUT COMPLAINT

APPENDIX E - MONTHLY INTERNAL COMPLIANCE CERTIFICATE
FOR THE PERIOD TO

MANAGEMENT REPRESENTATIVE:	SIGN:
SHE Representative:	SIGN:
Date of Submission:	
Key activities on site during the month:	
NON-CONFORMANCE:	
Area of activity:	

Reason:	
Responsible party:	
Results:	

Correction action taken:	

Intended follow-up:	

GOOD PERFORMANCE:

<p>Description of activity or action in which the area/person went beyond compliance towards responsible care for the environment:</p>

ADDITIONAL COMMENTS:
