

ENVIRONMENTAL MANAGEMENT PLAN FINAL

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Acronyms

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties

JBIC	Junior Baiano Industrial Consultants
MET: DEA	Ministry of Environment and Tourism's Directorate of
	Environmental Affairs

1. CHAPTER ONE: BACKGROUND

1.1. Introduction

Atlantic Logistix Services has identified the need a logistical center for materials composed on minerals and mineral processing chemicals and materials to service mines in the Erongo region, the rest of the country and outside the country. This will also allow for a logistical hub for the transition from road haulage to ocean freight carriers. In this respect, the proponent has taken on a venture to compliantly operate an existing a storage facility at the existing Atlantic Logistix Warehouse in Walvisbay in order to ease logistical and financial costs in supply and demand for logistics in minerals, chemicals, materials transportation and storage.

In terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007)) and the Environmental Assessment Regulations of 2012; an EIA is required to obtain an Environmental Clearance Certificate from the Ministry of Environment and Tourism (MET) before the project can proceed.

Furthermore, as per the requirements of the Environmental Management Act No. 7 of 2007, Powercom has appointed JBIC to conduct an Environmental Assessment (EA) and develop an Environmental Management Plan (EMP) for the warehouse. This has been followed by an application for Environmental Clearance Certificate (ECC) to the Ministry of Environment and Tourism (MET): Directorate of Environmental Affairs (DEA).

In this respect, this document forms part of the application to be made to the DEA's office for an Environmental Clearance certificate for the proposed warehouse, in accordance with the guidelines and statutes of the Environmental Management Act No.7 of 2007 and the environmental impacts regulations (GN 30 in GG 4878 of 6 February 2012).

1.2. Project Location

The proposed project site is located at Erf 2624, Moses Garoeb Street in Walvisbay, Erongo Region-Namibia. The exact project site shown below:

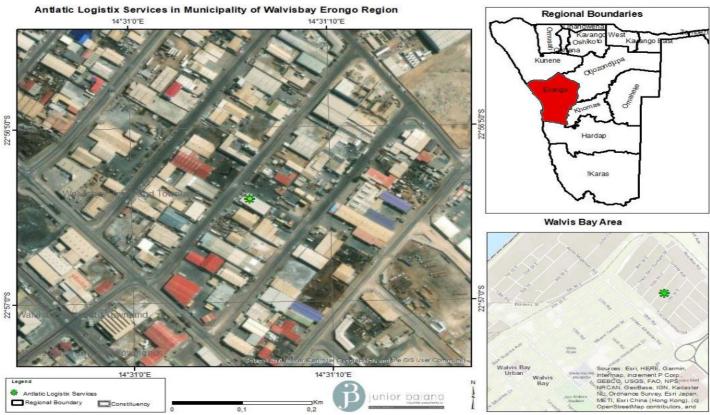


Figure 1: Proposed Project Site

1.3. PURPOSE OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

This EMP has been developed for the upgrade and operation of a chemicals, minerals and materials storage warehouse at Atlantic Logistix Services Warehouse in Walvisbay, proposed by Atlantic Logistix Services. It forms the operational framework within which the proposed project is to operate within. All anticipated environmental and social impacts identified in the environmental scoping report are addressed, with a mitigation action, monitoring requirements, key indicator and responsibilities.

This EMP is incessant, and it requires compliance monitoring, updating and or amendment if the scope of operations change. All personnel working on the project will be legally required to comply with the standards set out in this EMP.

This section describes the Environmental Management Plan (EMP) for impacts associated with the proposed development. The EMP stipulates the management of environmental programs in a systematic, planned and documented manner. The EMP below includes the organizational structure, planning and monitoring for environmental protection at the proposed farm area development and other areas of its influence. The aim is to ensure that the proponent maintains adequate control over the project operations to:

- To prevent negative impacts where possible;
- Reduce or minimize the extent of impact during project life cycle;
- Prevent long-term environmental degradation.
- Ensure public safety and health is protected

1.4. LEGAL AND OTHER REQUIREMENTS COMPLIANCE

This report presents the EMP and has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and the Environmental Assessment regulations of 2012. As such, key requirements in accordance to this Act, classifies the proposed project as listed

and invokes the need for an environmental management plan to sustainably implement this project. However, legal compliance is not only limited to the EMA, but also applies to all applying legal requirements identified in the ESR. When licenses are required such as wastewater discharge, the proponent should ensure that all licenses and permits are obtained and fulfilled as per conditions.

1.5. THE EMP ADMINISTRATION

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (Site Manager) to ensure the successful implementation of the EMP.

It solely remains the responsibility of Atlantic Logistix Services to ensure; that all members of the project team, including contractors, comply with the procedures set out in this EMP;

- That all personnel 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.

Table 1: Roles and Responsibilities in EMP Implementation

ROLE	ENVIRONMENTAL RESPONSIBILITIES					
Site/Warehouse Manager	Responsible to enforce EMP implementation to contractors					
Environmental Control Officer	Implement, review and update the EMP.					
(ECO)	Ensure all reporting and monitoring required under EMP is undertaken, documented and					
	distributed as needed					
	Conduct environmental site training (tool box talks) and inductions					
	Conducts environmental audit at work site with the support of environmental consultant.					
	Close out all non-conformances.					
	Ensure materials being used on site are environmentally friendly and safe.					
The Department of Environmental	Approve the EMP and any amendments to the EMP.					
Affairs	Approve reports of environmental issues and non-conformances as issued.					
	Review and approve environmental reports submitted as part of EMP implementation					
Site Foreman	Control and monitor actions required by the EMP.					
	Report all environmental issues to Environmental Control Officer					
	Ensure documented procedures are followed and records kept on site.					
	Ensure any complaints are passed onto the management within 24 hours of receiving the complaint.					

Workers	Follow requirements as directed by site engineers.
	• Report any potential environmental issues to site engineer/Site Manager, indicating spilt oil, excess waste, excessive dust generation, dirty water running off the site and other possible nonconformances

Table 2: Operation EMP (C&O EMP)

Impact	Description	Effects	Class	Time frame	Responsibil ity	Action	Phase
Noise pollution	Noise will be generated through: -Warehouse upgrading -Warehouse Operating activities -Haulage trucks	- The health of working personnel could be disturbed Community residents could be disturbed by the noise General annoyance -Driving away of local animals' species near the project site	Environmental	Permanent	-Environmental Control Officer -Site Manger	- A operation interval will be established, used and adhered to Workers will be issued earplugs to protect them from excessive noise Public will be notified through printed timetable stating planned operational activities Operation activities will be conducted during daytimeSite notices will be erected on, around the site-notifying visitors, and nearby residents of different hazards on site No go areas marked as sensitive environments, especially for birds needs to be avoided during construction and operationNoise assessments should be conducted every quarter to ensure that operational activities are generating noise within the allowable threshold.	Operation
Dust Generation	On major contributor to deteriorated air quality is windblown dust generated during chemical (e.g. sulphur)	- Can lead to respiratory illnesses especially to those working in the area General air pollution.	Environmental	Permanent	-Environmental Control Officer -Site Manager	Actions Prevention: Implement dust suppression methods where applicable (e.g., wetting with water, covering loads, netting, etc.) Care should however be taken to limit	Operation

	Description	Effects	Class	Time frame	Responsibil ity	Action	Phase

and mining ore handling. This	Dust not only poses		the volume of water used for dust
is aggravated during periods of	health impacts to		suppression.
strong wind (41 to 61 km/h)	workers and nearby		-All bulk cargo on trucks or trains
which is a frequent occurrence	residents, but can also		entering and exiting the warehouse
in Lüderitz.	impact on the fishing		must be covered to contain dust.
	industry by		-Any loading / offloading activities must
	contaminating fish from		cease if dust becomes airborne.
	fishing vessels during		Loading / offloading can continue after
	offloading, and cause		mitigation measures to reduce dust
	deterioration of seawater		have been implemented. Mitigation:
	quality.		-All staff working in dust producing
			environments must wear dust masks
	Deteriorated seawater		and related PPE.
	quality can in turn impact		
	on marine ecology as		-Bulk cargo vessels must be loaded /
	well as the mariculture		offloaded downwind from fishing
	industry		vessels.
			-A complaints register should be kept
			for any air quality related issues and
			mitigation steps taken to address
			complaints where necessary.
			Data Sources and Monitoring:
			-Namport Operating
			and System Procedures
			-Any complaints received regarding
			dust or other air quality impacts should
			be recorded with notes on action taken.

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Impact	Description	Effects	Class	Time	Responsibil	Action	Phase
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						-Real time wind direction and velocity	
						monitoring which can be linked to air	
						quality monitoring should be initiated.	
						-Dust (air quality) monitoring must be	
						conducted to determine the extent and	
						source of dust pollution.	
						-All information and reporting to be	
						included in a bi-annual repo	
	Dust generation from haulage	-Dust fallout can lead to	Environmental	Permanent	-Environmental	-Ensure that protective equipment such	Operation
	trucks offloading/ loading materials into the warehouse	respiratory			Control Officer	as respirators are distributed to	
	materials into the wateriouse	illnesses			-Site Manager	employees, and ensure their useSite	
		especially to				notices to be erected on and around the	
		those working				site to inform visitors and surrounding	
		in the area General				residents.	
		air pollution.				-Dust fallout measurement and	
		-Nuisance to nearby				collection.	
		residents				-Warehouse dust scrubbers should be installed to prevent the dust from escaping the warehouse.	
Loss of	-Pollution from potential	-Declining marine and	Environmental	Permanent	-Environmental	- The proposed project area is	Operation
Biodiversity	pollution ca result in marine	terrestrial biodiversity.			Control Officer	already disturbed, hence there is little	
	biodiversity loss due to	-Unbalanced ecosystem			-Site Manager	vegetation to be affected by the	
	contamination.	resulting in species loss.				development.	
						- No ground disturbances are anticipated from the remodelling	

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Impact	Description	Effects	Class	Time frame	Responsibil ity	Action	Phase
Greenhouse gas emissions	Green House Gasses (GHGs) emissions will be produced from the following activities: • Fuels combustion for trucks and equipment • Chemicals and ore being handles on site such as Sulphur can have particulate matter generation.		Environmental	Construction phase	-Environmental Control Officer -Site Manager -Department of Environmental Affairs.	-Develop SOPs for any martials with potential to emit GHGs -Design an operation system that cuts on emissions.	

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Waste	-operation are associated with	-Pollution from waste	Environmental	Construction	-Environmental	- Waste reduction measures should be	Operation
Generation	a lot of raw material and			phase	Control Officer	implemented and all waste that can be	
	activities that results in				-Site Manager	re-used / recycled must be kept	
	pollution					separate.	
	-The waste from the					-Ensure adequate waste storage	
	warehouse might include hazardous waste.					facilities (bins, drums and / or bags) are	
	Hazardous waste.					available and that these are clearly	
						labelled to allow for segregation of	
						wastes into different classes.	
						-Education of personnel is paramount	
						to create awareness for the proper	
						handling and disposal of waste	
						Ensure waste cannot be blown away by	
						wind.	
						-Prevent scavenging (human and	
						nonhuman) at waste storage sites.	
						-Contaminated bilge water, wash water, etc. should be treated as potentially	

Impact	Description	Effects	Class	Time	Responsibil	Action	Phase
				frame	ity		

ENVIRONMENTAL MANAGEMENT PLAN: THE PROPOSED UPGRADE AND OPERATION OF A CHEMICAL AND MINERALS STORAGE WAREHOUSE IN WALVISBAY, ERONGO REGION NAMIBIA.

hazardous waste that must be disposed

			hazardous waste that must be disposed	
			of at appropriately classified facilities.	
			-Ships at anchor in the port area must	
			be monitored for any illegal dumping of	
			wastes.	
			-Waste in the warehouse area and on	
			the coastline within port limits must be	
			regularly removed and disposed of	
			No waste streams may be directed into	
			the ocean without a disposal permit and	
			then only under conditions imposed by	
			the permit conditions	
			-Liaise with the municipality or private	
			contractors regarding handling of	
			different waste streams.	
			-Waste should be disposed of regularly	
			and at appropriately classified disposal	
			facilities in Lüderitz, this includes hazardous material (empty chemical	
			containers, contaminated rugs, paper,	
			water and soil) that are collected by	
			authorised and licenced private waste collection and handling companies	
			The MSDS available from suppliers for	
			disposal of contaminated products and empty containers should be shared with	
			waste handling companies.	
			,	

 Impact
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 -Waste water and sewage must be disposed of according to their relevant permit requirements.

Safety and	Every activity associated with	-	Health an		ECO	Prevention:	Operation
Health risks	the warehouse is reliant on	as Occupational dermatitis, slips and fall	safety	phase		-All Health and Safety standards	
	human labour and therefore	of humans and objects,				specified in the Labour Act should be	
	exposes them to health and	musculoskeletal				complied with.	
	safety risks. Injuries can occur	disorders, etc.				Consider the World Health	
	due to incorrect lifting of heavy					Organisation: International Health	
	equipment and materials,					Regulations (2005) with specific	
	falling from heights, stacked					reference to Section 4 (no. 3):	
	items tipping over, getting					"Strengthen public health security in	
	caught in moving parts of					travel and transport".	
	machines, accidents involving						
	forklifts and vehicles, and					Strict security control at the entrance	
	exposure to hot and cold					gate including alcohol testing and	
	temperatures.					access permit checks.	
						access permit checks.	
	Some chemicals handled and						
	stored on site are hazardous					For any mining ore that will be	
	with inherent health risks to					transported via the port, the health	
	personnel on site when					related risks should be assessed,	
	inhalation, accidental					including whether asbestos is present	
	ingestion, eye or skin contact					or whether the ore has radioactive	
	occurs.					properties.	

Impact	Description	Effects	Class	Time	Responsibil	Action	Phase
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Liaison with the Ministry of Health and Security risks are related to unauthorized entry, theft and Social Services and the National sabotage. Asbestos may be Radiation Protection Authority is present in old buildings. These essential. present a health especially during upgrade and Clearly label dangerous and restricted construction. areas as well as dangerous equipment and products. Mining ore that is transported via the warehouse may Clearly demarcate areas where access contain materials that have is prohibited without special permission inherent health risks. This may or areas where specific personal include for example asbestos. protective equipment (PPE) is required. Ore may also have Provide all employees with required and radioactive properties adequate PPE where needed. Equipment and products on site must be placed in a way that does not encourage criminal activities (e.g. theft). Ensure that all personnel receive adequate training on operation of equipment and handling of hazardous substances.

Impact	Description	Effects	Class	Time	Responsibil	Action	Phase
				frame	ity		

Always follow safe stacking and storage methods. Implementation of maintenance register for all equipment, fuel and hazardous substance storage areas. Lockout / tagout procedures should be followed where applicable. Compile and maintain hazard analysis and critical control points (HACCP) program for all activities. Mitigation: -Selected personnel should be trained in first aid and a first aid kit must be available on site. The contact details of all emergency services must be readily available. Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool, which includes: colour coding of areas, operational, safe work and medical procedures, permits to work, emergency response plans,

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Impact	Description	Effects	Class	Time frame	Responsibil ity	Action	Phase
						Housekeeping rules, MSDS's and signage requirements (PPE, flammable etc.). Security procedures and proper security measures must be in place to protect workers and clients. Strict security that prevents unauthorised entry into restricted areas. Asbestos structures, if any, must be replaced or made inert. All asbestos demolitions must be performed by accredited contractors	
	Electrical hazards	-Fatalities and fires	Health and safety	Construction and operation	ECO	-Employees should be trained on electrical safety before working on siteSafety representative with training on electrical hazards emergency management should be station on site always during construction -Safety signs during construction and operation should be put on site, no go areas should be labelled, PPE specifications should be clear to maintenance personnel.	Operation

Radiation (Non Ionizing)	Carcinogenic consequences	-Health -Social	Permanent	-Environmental Control Officer	-There are studies that indicate potential of radiation from some mineral	Operation

Impact	Description	Effects	Class	Time	Responsibil	Action	Phase
				frame	ity		
					-Site Manager	ore to have carcinogenic impacts after	
						prolonged exposure.	
						-However there will be no prolonged exposure to anyone.	

Groundwater,	Operations at the warehouse	Pollution	and	Environmental	Permanent	-Environmental	Prevention:	
Surface Water	entail the storage and handling	contamination	of			Control Officer	-Spill control structures and procedures	
And Soil	of various potential pollutants	groundwater, water and soil.	ocean			-Site Manager	related to fuel installations must be in	
Contamination	that may present a	water and som.					place according to SANS 10089	
	contamination risk of the						standards or better.	
	environment.						-All fuel installations and tanks must	
	• • • • • • • • • • • • • • • • • • • •						conform to relevant SANS standards	
							Regular inspection and maintenance of	
	These include hydrocarbon						sumps, separators, vehicles, forklifts,	
	and synthetic fuels, oils and						cranes, etc. should take place.	
	hydraulic fluids, chemicals,						-Any leaks detected must be repaired	
	mineral ores, waste products						·	
	not contained, effluent						without delay and any maintenance that	
	discharges, etc.						must occur within the port area must be	
							performed on spill containment slabs or	
							over drip trays.	
							-Hazardous waste and contaminated	
							water and soil must be disposed of at	
							an appropriately classified facility or by	
							approved contractors.	
							-Hazardous waste disposal certificates	
							must be kept on file.	
							-The warehouse when it is handling mineral ore and chemical storage must remain closed with adequate dust	

Impact	Description	Effects	Class	Time	Responsibil	Action	Phase
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			suppression systems to limit or prevent	
			the formation of windblown dust.	
			-Any mineral ore and / or chemicals	
			trapped in tyres must be cleaned prior	
			to vehicles leaving warehouses or bulk	
			storage areas of these products.	
			-The use of rumble grids and physical	
			inspection of tyres should be	
			implemented.	
			-For bulk bags the stacking heights	
			must be observed to prevent bag	
			damage and product spillage.	
			Mitigation:	
			- Any fuel spillage of more than 200 litre	
			must be reported to the Ministry of	
			Mines and Energy.	
			-Emergency response plans and spill	
			contingency plans must be in place and	
			include all fuels, chemicals or	
			hazardous substances being handled.	
			In the case of tenants, copies of these	
			documents must be submitted to	
			Namport.	
			-Spill containment equipment such as booms and absorbents must be readily accessible. Training in the use of these are paramount.	

Impact	Description	Effects	Class	Time	Responsibil	Action	Phase
				frame	ity		

			-For any chemicals that may form part
			of effluent to be discharged into the
			ocean, environmental effects must be
			considered and alternative chemicals
			investigated if needed. Effluent must
			meet standards as per the effluent
			discharge permits.
			-Any mineral ore, chemical dust (e.g.
			sulphur), hydrocarbon spills or any
			other hazardous substance spill on the
			quay area must be cleaned and
			disposed of to prevent it from entering
			the ocean either by wind or water
			runoff.
			-Use of reputable and well trained
			contractors are essential.
			-A report should be compiled biannually
			of all spills or leakages reported and
			any monitoring results.
			The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, comparison of pre-exposure baseline data (previous pollution conditions survey results if available) with post remediation data (e.g. soil/groundwater hydrocarbon

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Impact	Description	Effects	Class	Time frame	Responsibil ity	Action	Phase	
						concentrations) and a copy of documentation in which the spill was reported to Ministry of Mines and Energy (where required for hydrocarbon spills).		
Positive Impacts								
Employment creation	The development provides an opportunity of outsourcing work	- Improves disposable income to those employed and their immediate families.	Socio-economic	Project life time	-Site Manager	- Work with local leadership (councillor) on acquiring non-skilled labour from the residents.	Operation	
Business linkages	-Raw materials acquiring and contracting companies provide an opportunity for businesses.	-Local suppliers will be presented with an opportunity to empower their businessesConstruction workers can be provided with accommodation, food and services from the local community increasing business activities.	-Socioeconomic	Construction phase	-Site Manager	-The proponent will outsource most of its materials and services from Tsumeb	Operation	

2. CHAPTER FOUR: CONCLUSION AND RECOMMENDATIONS

2.1. RECOMMENDATION FROM ENVIRONMENTAL ASSESSMENT PRACTITIONER

Based on the information provided it is the opinion of JBIC CC that no fatal flaws have been identified for the proposed development and that the information contained in this report is sufficient enough to allow DEA to make an informed decision.

Junior Baiano Industrial Consultants cc therefore recommends that Environmental Clearance be granted for the proposed development. However, the proposed activity is anticipated to have potential impacts on the surrounding neigbours and the marine environment, as such the Environmental Clearance Certificate should have the following set conditions:

- Potential dust pollution MUST be monitored using dust collection buckets.
- Effluent sampling should be conducted every month.
- An Environmental Control Officer with an Environmental Science Degree should be appointed for the implementation of the EMP.

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