APP-006548
CONSTRUCTION AND OPERATIONS OF A JETTY AND COMMISSIONING OF A FLOATING DRYDOCK IN WALVIS BAY

ENVIRONMENTAL ASSESSMENT SCOPING REPORT

Assessed by:

Assessed for:

December 2025

Project:	**CONSTRUCTION AND OPERATIONS OF A JETTY AND COMMISSIONING OF A FLOATING DRYDOCK IN WALVIS BAY: ENVIRONMENTAL ASSESSMENT SCOPING REPORT**	
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Report Approval	 **André Faul** Conservation Ecologist	

I Andy Collins, acting as representative of Dormac Marine & Engineering Namibia (Pty) Ltd, hereby confirm that the project description contained in this report is a true reflection of the information which the Proponent provided to Geo Pollution Technologies. All material information in the possession of the Proponent that reasonably has or may have the potential of influencing any decision or the objectivity of this assessment is fairly represented in this report and the report is hereby approved.

Signed at _____ on the 9 day of December 2025.

Dormac Marine & Engineering Namibia (Pty) Ltd — 2009/0083 Company Registration Number

EXECUTIVE SUMMARY

Dormac Marine & Engineering Namibia (Pty) Ltd proposes the construction and operation of a new ship repair facility at 5 Ben Amathila Street in the Port of Walvis Bay. Geo Pollution Technologies (Pty) Ltd was appointed by the Proponent to prepare the environmental impact assessment (EIA) for the planned development. Activities assessed for the purpose of obtaining an environmental clearance certificate include the decommissioning and removal of the existing wooden jetty; land excavation and capital dredging for the positioning of the floating dry dock; construction of a new heavy-duty piled jetty; maintenance dredging to ensure safe operational depth; docking and floating of vessels within the newly commissioned floating dry dock; cleaning of hulls by scraping and pressurised water; grit blasting to remove paint and prepare surfaces; painting and mechanical repairs; submerging of the dry dock to return vessels to the water; and the general day-to-day administrative activities associated with operating the facility.

This study is conducted to determine all environmental, safety, health and socio-economic impacts associated with the proposed construction activities of the new jetty, commissioning of a floating drydock, ship repair and maintenance activities, and associated dredging. Relevant environmental data has been compiled by making use of secondary information and from a reconnaissance site visit. Potential environmental impacts and associated social impacts are identified and addressed in this report.

Due to the nature and location of the development, impacts can be expected on the surrounding environment. These include potential effects on water and sediment quality, marine biodiversity, air quality, and noise levels, during construction, ship repair and maintenance, and dredging activities. It is therefore recommended that environmental performance be monitored regularly to ensure compliance and that corrective measures be taken where necessary.

The facility will supply valuable ship repair and maintenance services to vessels operating along the west coast of Africa. This will contribute to the local economy by supporting job creation and providing opportunities for continued diversification of economic activity. By appointing local contractors and employees and by implementing educational programmes, the positive socio-economic impacts can be maximised while mitigating any negative impacts.

Main concerns associated with the project include health and safety, air quality (including dust and paint overspray), noise, waste generation, and potential marine impacts. Noise pollution must at all times comply with the Health and Safety Regulations of the Labour Act and minimum World Health Organization guidelines on community noise to prevent hearing loss and to avoid nuisance to nearby receptors. Dust and other air emissions from grit or slurry blasting and spray painting must be minimised through appropriate containment, wind-based operational limits, good housekeeping and, where feasible, the use of lower-dust surface preparation methods, to reduce off-site dust and overspray deposition. All personnel must be issued with suitable PPE, including dust masks and eye and hearing protectors. Contaminated water, hydrocarbons such as used oil, spent blasting grit, particulate matter, paint residues and dust must be prevented from entering the ocean.

Health and safety regulations must be adhered to at all times in accordance with applicable laws and internationally accepted operational standards. All waste must be removed from site and disposed of at a registered waste disposal facility, or re-used or recycled where feasible. Hazardous waste must be transported to an approved hazardous waste disposal site.

The environmental management plan (EMP) prepared as part of this EIA must be used as an on-site reference document during construction, dredging, and operational activities. Parties responsible for transgressions of the EMP should be held accountable for any rehabilitation that may be required. A health, safety, environment and quality (HSEQ) policy, or similar management system, should be applied in conjunction with the EMP. All operators and responsible personnel must be trained in the contents of these documents. Municipal and national environmental regulations and guidelines must be adhered to and compliance monitored regularly, as set out in the EMP.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BCLME	Benguela Current Large Marine Ecosystem
BID	Background Information Document
CBD	Convention on Biological Diversity
CITES	Convention on International Trade of Endangered Species
CSD	Cutter Suction Dredger
dB	Decibel (expression of the relative loudness of the un-weighted sound level in air)
dBA	Decibel (expression of the relative loudness of the A-weighted sound level in air)
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EA	Environmental Assessment
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act, 2007 (Act no. 7 of 2007)
EMP	Environmental Management Plan
EMS	Environmental Management System
GHG	Greenhouse Gas
GPT	Geo Pollution Technologies (Pty) Ltd
ha	Hectare
HIV	Human Immunodeficiency Virus
HMV	Heavy Motor Vehicle
Hr	Hour
IAP	Interested and Affected Parties
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
km	Kilometre
km/hr	Kilometre per hour
m	Meter
m/s	Meter per second
m³	Cubic meter
Ma	Million years
mbs	Meters below surface
MEFT	Ministry of Environment, Forestry and Tourism
mm	Millimetre
mm/a	Millimetres per annum
MIME	Ministry of Industries, Mines and Energy
MSDS	Material Safety Data Sheet
NaCl	Sodium Chloride
NDP	National Development Plan
NGO	Non-Government Organisation
NTU	Nephelometric Turbidity Unit
ºC	Degrees Celsius
PPE	Personal Protective Equipment
SADC	Southern African Development Community
SANS	South African National Standards
SEA	Strategic Environmental Assessment
TDS	Total Suspended Solids
TSHD	Trailing Suction Hopper Dredger
UHP	Ultra-High Pressure hydro jetting
UNFCCC	United Nations Framework Convention on Climate Change
VOC	Volatile Organic Compound
WHO	World Health Organization
SAH	South Atlantic High
ECMWF	European Centre for Medium-Range Weather Forecasts

GLOSSARY OF TERMS

Alternatives - A possible course of action, in place of another, that would meet the same purpose and need but which would avoid or minimize negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The "no-go" alternative constitutes the 'without project' option and provides a benchmark against which to evaluate changes; development should result in net benefit to society and should avoid undesirable negative impacts.

Assessment - The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making.

Competent Authority - means a body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.

Cumulative Impacts - in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Dredging - a process to remove sediment. Dredging sediment to construct new ports and navigational waterways or maintain existing ones is essential for vessels to be able to enter shallow areas. Maintenance dredging is required because sediment suspended in the water eventually settles out, gradually accumulating on the bottom. If dredging were not done, harbours would eventually fill in and marine transportation would be severely limited.

Environment - As defined in the Environmental Assessment Policy and Environmental Management Act - "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, palaeontological or social values".

Environmental Impact Assessment (EIA) - process of assessment of the effects of a development on the environment.

Environmental Management Plan (EMP) - A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.

Environmental Management System (EMS) - An Environment Management System, or EMS, is a comprehensive approach to managing environmental issues, integrating environment-oriented thinking into every aspect of business management. An EMS ensures environmental considerations are a priority, along with other concerns such as costs, product quality, investments, PR productivity and strategic planning. An EMS generally makes a positive impact on a company's bottom line. It increases efficiency and focuses on customer needs and marketplace conditions, improving both the company's financial and environmental performance. By using an EMS to convert environmental problems into commercial opportunities, companies usually become more competitive.

Evaluation – means the process of ascertaining the relative importance or significance of information, the light of people's values, preference and judgements in order to make a decision.

Hazard - Anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.

Interested and Affected Party (I&AP) - any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.

Mitigate - The implementation of practical measures to reduce adverse impacts.

Proponent (Applicant) - Any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act no. 7 of 2007, to undertake an activity or activities identified as a listed activity or listed activities; or in any other notice published by the

Minister or Ministry of Environment & Tourism.

Public - Citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Scoping Process - process of identifying: issues that will be relevant for consideration of the application; the potential environmental impacts of the proposed activity; and alternatives to the proposed activity that are feasible and reasonable.

Significant Effect/Impact - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Stakeholder Engagement - The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision-making process. The term is considered to be more appropriate than the term "public participation".

Stakeholders - A sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (I&APs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Sustainable Development - "Development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs and aspirations" – the definition of the World Commission on Environment and Development (1987). "Improving the quality of human life while living within the carrying capacity of supporting ecosystems" – the definition given in a publication called "Caring for the Earth: A Strategy for Sustainable Living" by the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme and the World Wide Fund for Nature (1991).

1 INTRODUCTION

Geo Pollution Technologies (Pty) Ltd was appointed by Dormac Marine & Engineering Namibia (Pty) Ltd, hereafter referred to as the Proponent, to prepare an environmental scoping assessment (EIA) and environmental management plan (EMP) for the proposed construction and operation of a jetty and commissioning of a floating drydock at 5 Ben Amathila Street, Walvis Bay, Erongo Region (Figure 1-1). The project is planned on Erf 3688, owned by Namport and leased to the Proponent.

Project development include the construction of a new concrete jetty, commissioning of a floating drydock, and establishment of shore-based workshops and support infrastructure to provide vessel repair, maintenance and engineering services. These operations will focus on general ship repair, mechanical and structural maintenance, surface preparation, and coating activities, as well as fabrication and refurbishment of oil and gas equipment.

General project components considered in this assessment include construction, commissioning, operations, and potential decommissioning activities. Construction will entail the decommissioning of the existing wooden jetty, piling and decking works for the new structure, and dredging to achieve the required operational depth for vessel manoeuvring and docking. During operations, vessels will be positioned within the floating drydock for maintenance, with support services provided from the onshore workshops and administrative facilities. A detailed project description is presented in Section 4.

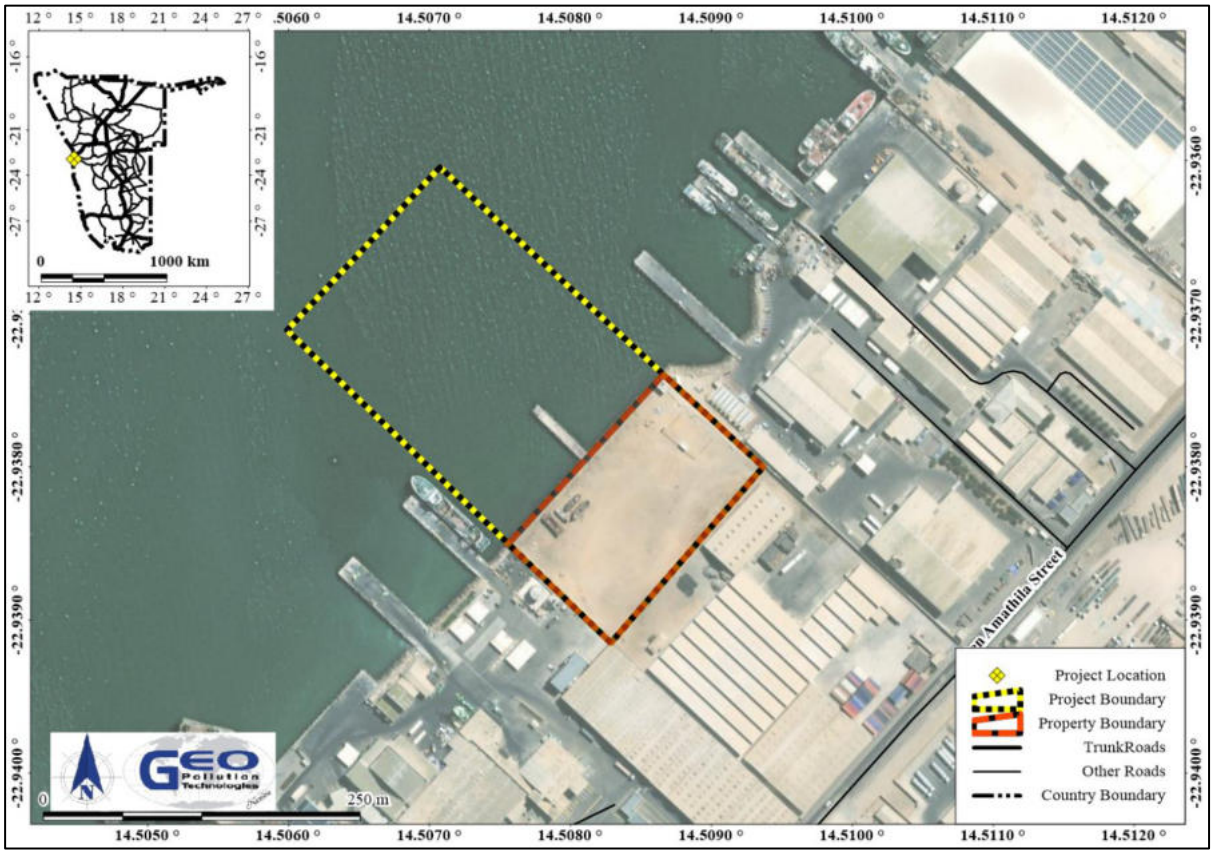

Figure 1-1 Project location

A risk assessment was undertaken to determine the potential impacts of the construction, operational and possible decommissioning phases associated with the project on the environment. The environment being defined in the Environmental Management Act as "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values".

The environmental assessment was conducted to apply for an environmental clearance certificate (ECC) in compliance with Namibia's Environmental Management Act (Act No 7 of 2007) (EMA).

Project Justification – Walvis Bay is earmarked as an industrial town and promoted as a key port of call on the west coast of Africa. Ship maintenance and repair form a vital component of port services, supporting the fishing, offshore mining and exploration, and cargo transport industries. As the harbour continues to expand in both size and operations, the demand for vessel repair and maintenance services has grown. The development of a new facility with a dry dock and ship repair services will enhance the capacity of the port by providing clients with a broader choice of service providers. The proposed development by the Proponent will strengthen the port's competitiveness, ensure timely and reliable vessel turnaround, and support the overall growth of Namibia's maritime industry.

Potential benefits of project include:

- Ship repair facilities, including grit blasting and painting, provide important services to the local and international shipping industry.
- Economic growth of Walvis Bay and Namibia as a whole.
- Employment of, and skills transfer to, local Namibian citizens.
- Stimulation of economic development (e.g. employment, housing, better markets and access to public services etc.)
- Expansion of trade and industrial activity in the town and country as a whole.
- Encouragement of additional investments in the town or region.

2 SCOPE

The scope of the environmental assessment is to:

1. Determine the potential environmental impacts emanating from the activities proposed by the Proponent.
2. Identify a range of management actions which could mitigate the potential adverse impacts to acceptable levels.
3. Comply with Namibia's Environmental Management Act (2007).
4. Provide sufficient information to the Ministry of Environment, Forestry and Tourism (MEFT) and related authorities to make an informed decision regarding the proposed construction, operational activities and possible decommissioning of the facility.

3 METHODOLOGY

The following methods were used to investigate the potential impacts on the social and natural environment due to the project:

1. Baseline information about the site and its surroundings was obtained by using up to date existing secondary information as well as from a reconnaissance site visit.
2. As part of the scoping process to determine potential environmental impacts, interested and affected parties (IAPs) were consulted about their views, comments and opinions and these are put forward in this report.
3. Based on gathered information and public and stakeholder consultation, an assessment of potential impacts was conducted and a management plan prepared.

4 PROJECT DESCRIPTION

The following sections provide details on the proposed construction and operational activities of the Proponent. Access to the erf is obtained via a panhandle access road shared with the neighbouring property (Photo 4-1). In the north-eastern corner there is a water pump house (Photo 4-2) with a pipeline supplying firefighting water to the oil and gas industries. This pipeline is registered with a servitude that runs along the full length of the access road. At the time of the site visit, heavy motor vehicles (HMVs) were parked on Erf 3688 (Photo 4-3). The neighbouring property (Erf 1278) contains a warehouse facing the Proponent's property, with a single access door to that warehouse (Photo 4-4).

Photo 4-1 Access road towards the entrance

Photo 4-2 Pump house building

Photo 4-3 HMV parked on erf 3688

Photo 4-4 HMV at the neighbouring warehouse

4.1 CONSTRUCTION

The Proponent intends to commission a floating drydock with a 10,000 ton lifting capacity, to expand their operations in Namibia. For the drydock to be installed and be operational, the Proponent will be required to excavate a portion of the land, dredge the current seabed (Section 4.1.2), construct a new jetty and decommission the current old wooden jetty. A pipeline servitude traverses the northeastern section of the property (Figure 4-1). All planned structures and infrastructure will be positioned outside the servitude boundary in compliance with the applicable safety and access requirements. The Proponent will maintain a 6 m wide unregistered, access servitude between any new infrastructure established on the property and erf 1278, in order to ensure future access to and use of the warehouses situated on the northwestern boundary of erf 1278.

Figure 4-1 Proposed site layout

4.1.1 Decommissioning of the Old Jetty

The project will include the full decommissioning and removal of the existing jetty. The decommissioning process will comprise the phased disassembly of all above-water components, followed by the extraction or cutting of submerged piles and structural elements. All materials removed from site will be sorted and disposed of in accordance with approved waste management protocols, with salvageable components recycled where feasible. Controls will be implemented to reduce the risk of sediment disturbance and debris dispersion during demolition. Decommissioning will be closely coordinated with port authorities and other relevant stakeholders to ensure safety, compliance, and minimal disruption to adjacent harbour users.

Photo 4-5 Existing wooden jetty

Photo 4-6 Existing wooden jetty

4.1.2 Land Excavation and Capital Dredging

The proposed development will require capital dredging to achieve the necessary operational depth around the planned floating drydock (Figure 4-2). Dredging in Area A around the

floating drydock will extend to a depth of approximately 13.5 m below chart datum (CD) with side slopes of 1 in 7 m, allowing safe manoeuvring and unrestricted access for vessels. The estimated dredge volume within this area is approximately 81,163 m³ of sediment. In addition, a portion to the northeast (Area B) of the site will be dredged to widen the existing access channel, improving vessel movement in the channel. This section will be dredged to a depth of approximately -6.5 mCD with a slope of 1 in 7 m, involving the removal of roughly 69,821 m³ of sediment. The exact volume and design parameters will be confirmed during the detailed design and bathymetric survey phase.

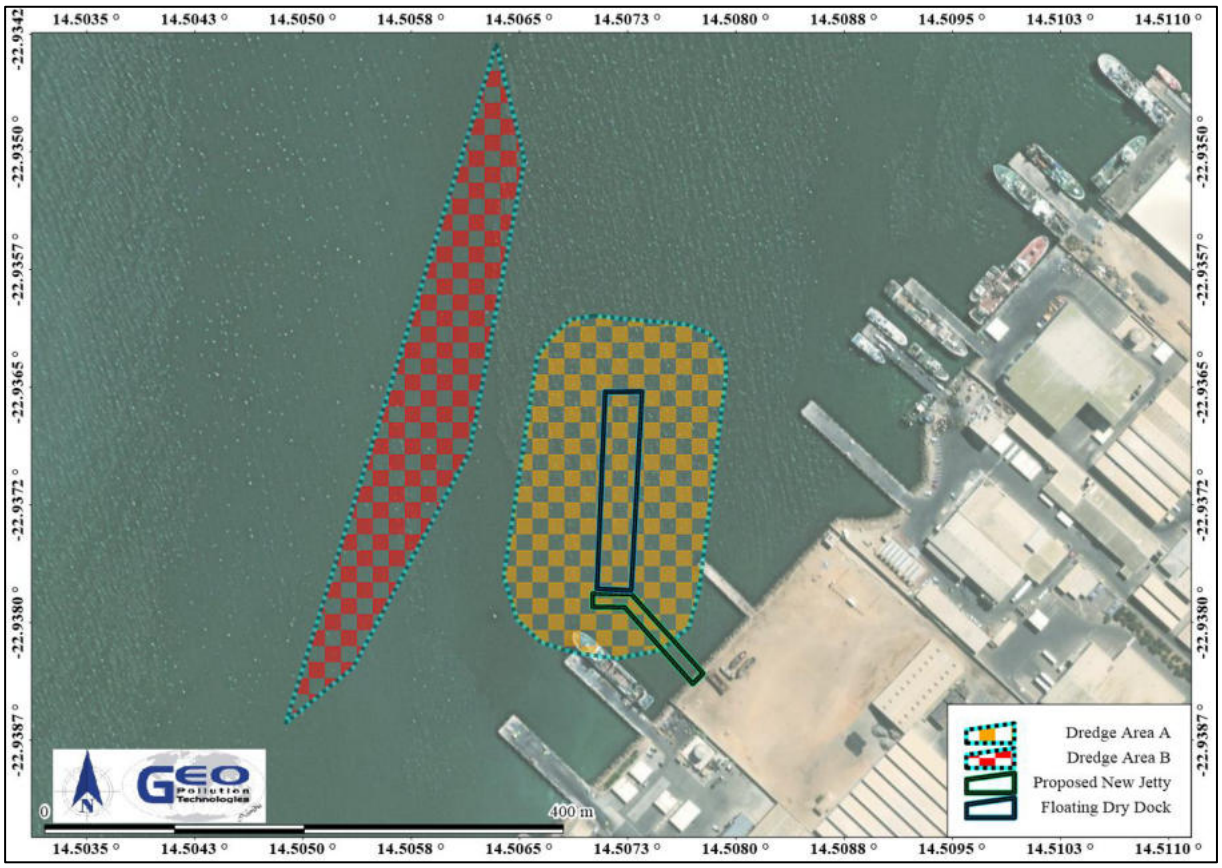

Figure 4-2 Proposed dredging areas

In total, an estimated 150,984 m³ of material is planned to be removed through both the floating dock dredging and channel widening activities. All dredged and excavated materials will be handled and disposed of in accordance with the disposal hierarchy and environmental thresholds outlined in Namport's amended EIA for capital and maintenance dredging of Walvis Bay harbour (Faul *et al.,* 2022). Dredging will be phased to maintain safe vessel operations within the fishing harbour and to minimise suspended sediment plumes during execution.

4.1.3 Construction of New Jetty

The Proponent intends to construct a new concrete jetty to accommodate the operational demands of the drydock. The structure will have a piled foundation system supporting a heavy-duty concrete deck, designed to accommodate the weight and operational requirements of large marine vessels and associated infrastructure. Construction of the jetty will see concrete piles and concrete decking being cast on land. Piles will subsequently be driven into the sediment and the decking installed on the piles (Figure 4-3).

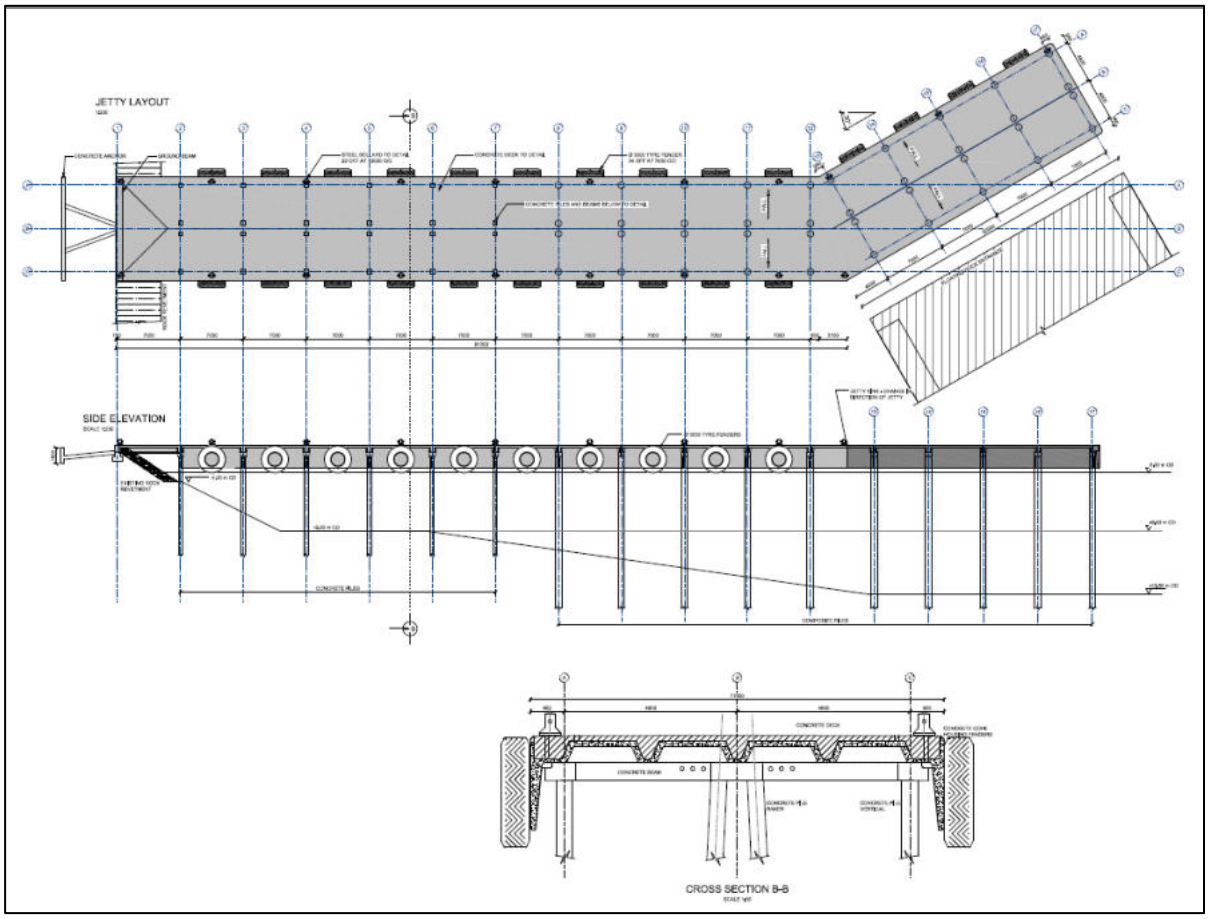

Figure 4-3 Detailed jetty layout plans for the proposed jetty

4.1.4 Floating Drydock

The proposed floating drydock will be a prefabricated structure, constructed internationally in accordance with recognised marine engineering standards, and subsequently towed to Walvis Bay for commissioning. The unit will measure approximately 139.5 m in length and 32.5 m in width, with a lifting capacity of 10,000 tons, enabling the servicing of large commercial and offshore support vessels. The drydock will be equipped with integrated ballast and pumping systems, support cranes, and on-deck service infrastructure to facilitate vessel lifting, maintenance, and repair operations. Upon arrival in Namibian waters, the floating dock will undergo structural, mechanical and operational inspections prior to final mooring and integration with the newly constructed jetty. In compliance with national ballast water management requirements, any ballast water taken on during international transit will be discharged offshore or treated appropriately to prevent the introduction of non-native marine organisms into Namibian waters. The final positioning and mooring configuration of the floating drydock will be determined through navigational safety assessments and aligned with the Port of Walvis Bay operational requirements and Namport's marine safety protocols.

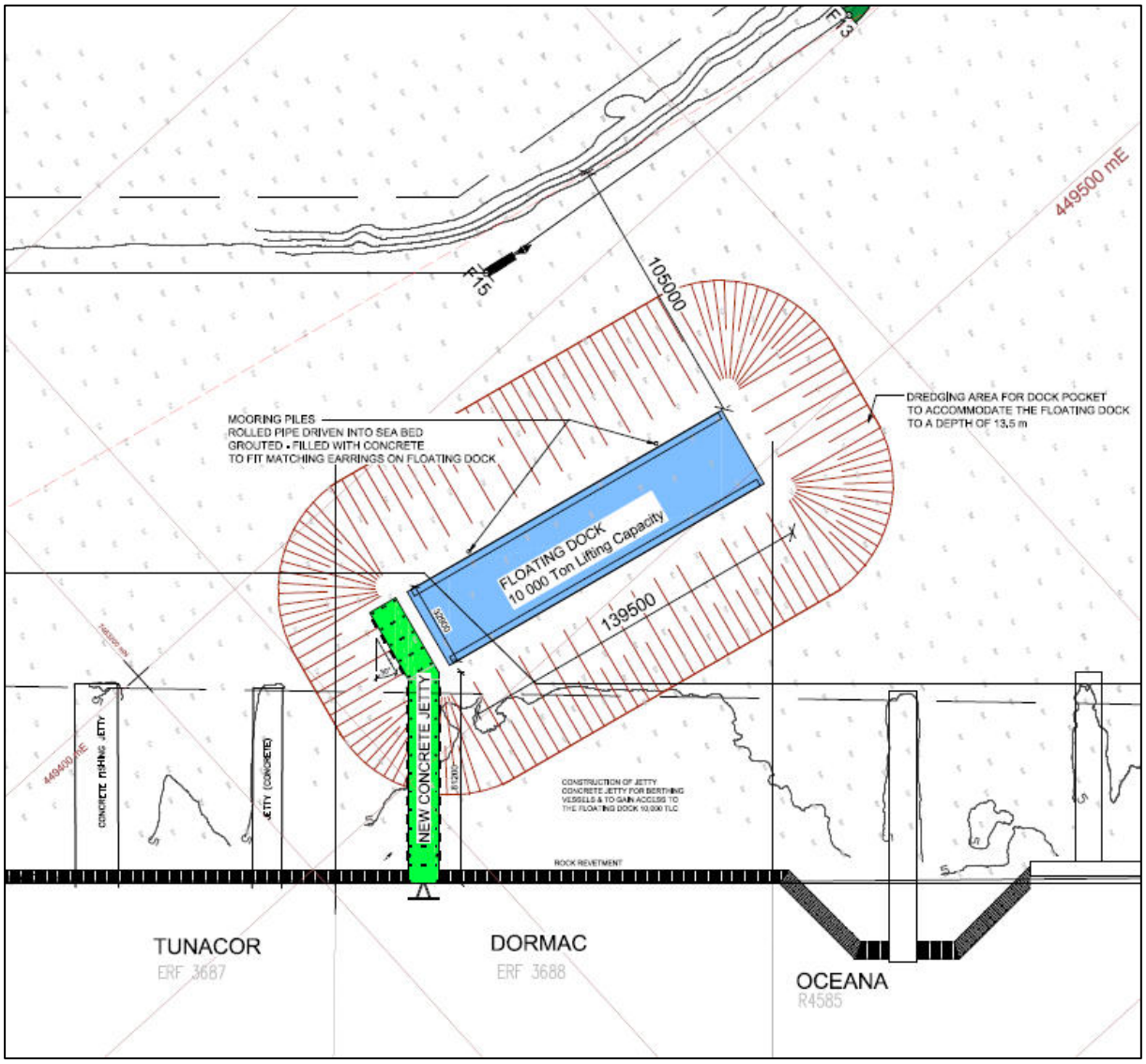

Figure 4-4 Detailed representation of the planned new jetty and drydock

4.1.5 Shore-based Infrastructure

The onshore infrastructure will consist of a workshop, storeroom, double-storey office building, parking area, and security office with induction room. A workshop measuring approximately 30 m x 25 m x 10 m high will be constructed to accommodate fabrication, mechanical, and maintenance works associated with vessel and offshore equipment repairs. Adjacent to the workshop, a storeroom measuring approximately 16 m x 5 m will be built for the safe storage of tools, consumables, and materials used in day-to-day operations.

A double-storey office building, approximately 20 m x 20 m in size, will be established to accommodate up to 60 people per shift. The ground floor will include a mess room, ablution and change room, reception area, strong room, and staircase. The first floor will consist of a boardroom, six enclosed offices, an open-plan office area, kitchen, and male and female bathrooms.

A parking area with space for approximately 20 vehicles will be provided for staff and visitors. In addition, a security office and induction room, measuring approximately 5 m x 3 m, will be constructed at the facility entrance to manage site access, security operations, and safety inductions.

All buildings will be constructed using suitable reinforced concrete and steel structures. Construction activities will include earthworks, foundation preparation, structural assembly, and installation of utilities such as electricity, water supply, and sewage connections.

4.2 Operations and Related Activities

Regular ship maintenance and repair are important to ensure the safety and reliability of seagoing vessels. Due to the nature of some repairs and maintenance, such as cleaning and painting of the hull, vessels need to be removed from the water. The size of some vessels makes this difficult without proper equipment. Vessels can therefore either be lifted out of the water and moved onto land with a specially designed ship lift system, or manoeuvred into a drydock where they remain until all work is completed. The Proponent will only employ the latter option.

A floating drydock is a U-shaped dock that can be submerged by filling its ballast tanks with water. The vessel then enters, and the water is pumped out of the ballast tanks so that the dock with the vessel is re-floated and the work area remains dry. The proposed floating drydock will operate in this manner, allowing vessels to be cleaned, inspected and repaired below the waterline.

One of the main activities to be performed by the Proponent, and in most ship repair yards, is grit blasting. This process involves propelling an abrasive material at high speed toward a surface to remove paint, rust, or dirt, and to prepare the surface before coating or finishing. Modern methods may also use high-pressure water jets as an alternative to abrasive materials.

Vessels in the dock can also undergo general repairs, maintenance, and replacement of parts. This includes work on components such as rudders and propellers, which are not accessible for major repairs while vessels are in the water. Such equipment is usually removed from the vessel and sent off-site for repair or servicing, and then returned and refitted once completed.

The warehouse will support the shore-based activities of the facility, providing secure storage and work areas for fabrication, maintenance, and handling of marine and offshore equipment. It will be used for the short-term storage of offshore and marine components, including drilling and vessel equipment awaiting cleaning, repair, or coating. Typical operations will include fabrication works, blasting and painting of structural and offshore equipment, and repairs to drilling and support components. The warehouse will also store tools, machinery, spare parts, and consumables such as paints, coatings, lubricants, and cleaning agents required for both shore-based and vessel maintenance operations. Storage areas will be managed in accordance with standard safety and environmental procedures to prevent spills, contamination, and unsafe handling of materials.

Maintenance dredging will be conducted as needed to remove sediments and debris from the docking and manoeuvring areas. This will ensure that the required depth is maintained for the safe operation of the floating drydock and the movement of vessels. Maintenance dredging also helps prevent grounding and allows for safe navigation within the harbour.

The following operational procedures form part of the grit blasting process, although operations at the proposed facility will not be limited to grit blasting and dredging alone.

4.2.1 Docking and Floating

Floating drydocks are submersible platforms which allows for the lifting of ships out of the water without taking it on land. The working platform is above a large ballast tank and the long sides of the dock also consist of tanks. The ballast tanks are flooded to allow the dock to submerge below the water surface. The ship in need of repair or maintenance is manoeuvred into the drydock and secured in place. The ballast tanks are then drained and the dock becomes more buoyant, lifting the ship and working platform out of the water. Ballast water contained in the ship may be released during the floating process.

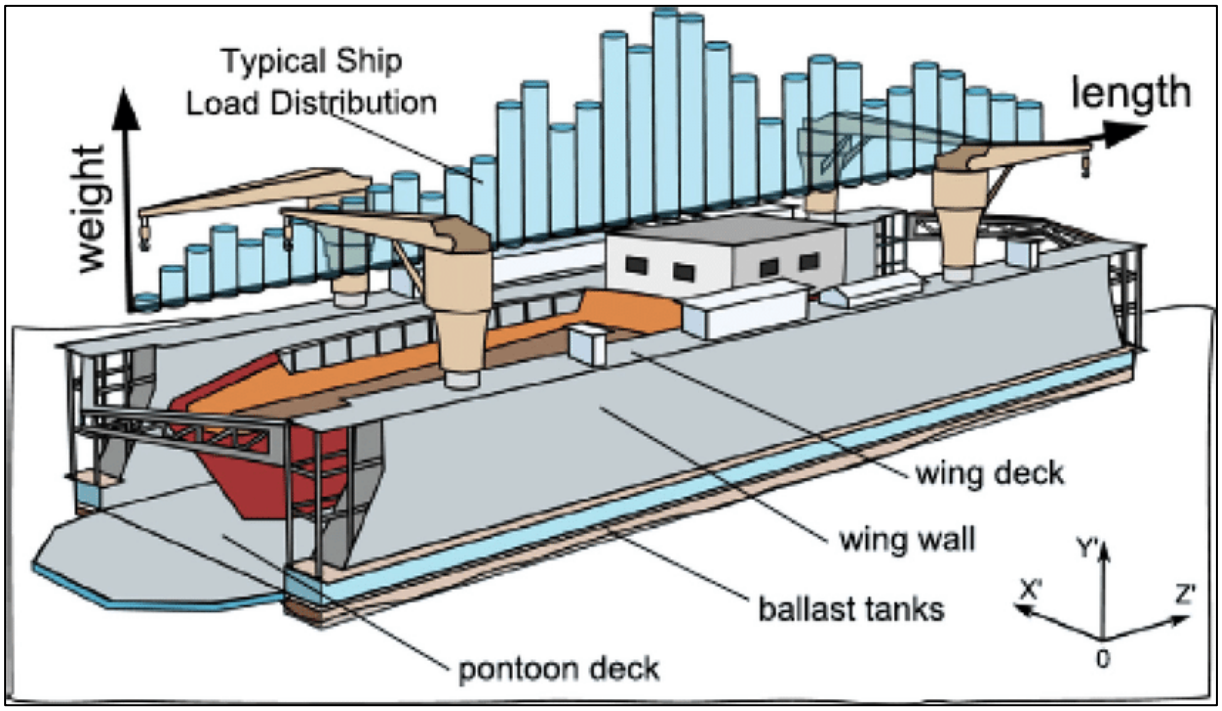

Figure 4-5 Conceptual drawing of a drydock (Kimera and Filemon, 2020)

4.2.2 Scraping and Pressurized Water Cleaning

Once the ship has been lifted from the water it has to be prepared for grit blasting. Depending on the condition of the ship's hull, it is typically manually scraped to get rid of any marine biofouling like molluscs and algae attached to the hull (see Photo 4-7). The hull is then washed using pressurised freshwater jets (Photo 4-8). Wash water from hull cleaning will be directed to internal ballast / settlement tanks, where solids and sludge will be allowed to settle. The clarified supernatant water will only be discharged back into the sea if it is free of visible oil, grit and paint residues and in accordance with Water Resources Management Act and discharge requirements. Contaminated water that does not meet these requirements will be pumped to shore for appropriate treatment or disposal. The settled sludge will be removed frequently and disposed of as hazardous waste at an appropriately classified municipal waste disposal facility.

4.2.3 Grit Blasting

Different grit blasting techniques exist, and the facility will make use of pressure abrasive blasting. The typical setup consists of an air compressor connected to a blast hose and a blast pot. The blast pot is pressurised and holds the blasting grit, which is gravity-fed into the blast hose and propelled through a blasting nozzle toward the surface to be cleaned or prepared.

Grit blasting will be conducted on vessels positioned within the floating drydock or alongside the jetty, depending on the size and type of vessel. The number of vessels blasted will depend on operational demand and weather conditions, as blasting is sensitive to strong winds and high humidity. The consumption of grit per vessel is estimated at approximately 20 – 60 kg/m^2 of treated steel surface, with a nominal planning value of 40 kg/m^2, depending on the vessel size, coating condition and total surface area prepared. Spent grit and associated paint residues will be recovered through floor cleaning and containment measures, collected as waste in containers or skips and removed from site for disposal at an appropriate waste management facility.

To limit grit, dust, and other blasting-related waste from entering the surrounding environment, high-density mesh netting will be suspended at the front and rear openings of the floating drydock during blasting activities. These nets, together with the high sides of the drydock, are expected to contain the majority of grit and dust emissions. However,

containment efficiency may be reduced during periods of strong wind or when vessels extend above the dock's sides.

4.2.4 Return of Ships to Ocean

When all maintenance and repair work is completed and vessels are ready to be returned to the water, the ballast tanks of the floating dry dock will be filled with water, allowing the dock to submerge. Before this process takes place, the working platform of the dry dock will be cleaned to remove waste, debris, and materials such as paint residues or grit. This procedure will minimise the risk of pollutants entering the marine environment during submergence.

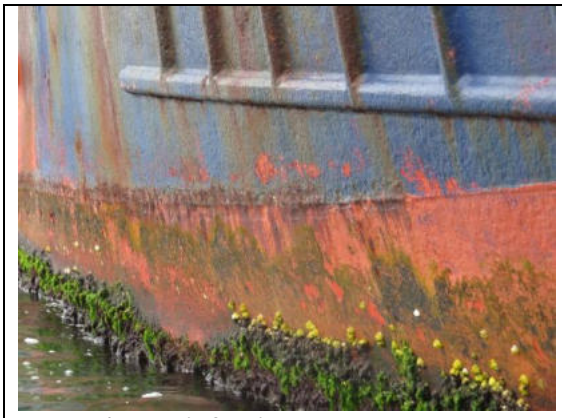

Photo 4-7 Biofouling

Photo 4-8 Compressor for freshwater pressurized cleaning

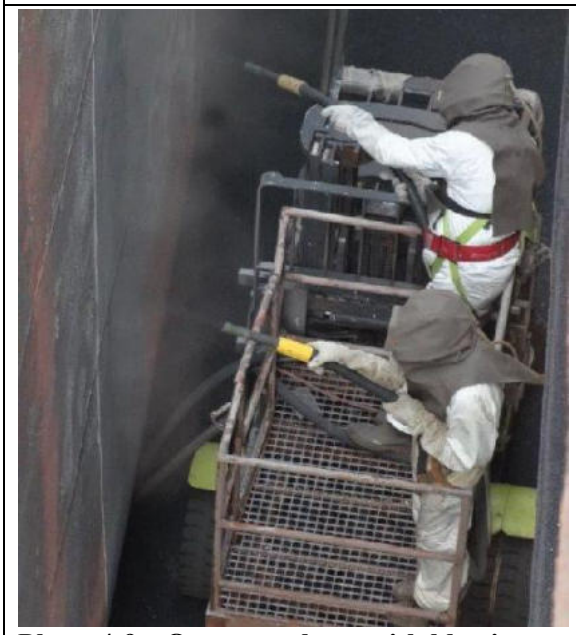

Photo 4-9 Operators busy with blasting

Photo 4-10 Copper slag often used for blasting

4.2.5 Maintenance Dredging

Maintenance dredging will be required to ensure that the operational area of the floating dry dock maintains the necessary depth for safe and efficient vessel docking and repair activities. Over time, natural sedimentation and seabed disturbance or scouring caused by vessel movements, propellers, and thrusters can lead to a gradual reduction in water depth. Periodic dredging is therefore essential to sustain adequate operational depths and to ensure navigational safety.

The Proponent will appoint a suitably qualified contractor to undertake the maintenance dredging activities as and when required. The specific dredging method to be used will be

determined at the time of execution, depending on operational requirements, sediment characteristics, and environmental considerations.

Depending on the dredging method applied, the dredged material will either be disposed of at sea at a designated and approved spoil site, or it will be pumped to a temporary onshore containment area on the property. In the latter case, the dredged material will be deposited into a temporary, bunded structure designed to allow sediment to settle and dry. Water from the structure will be permitted to return to the ocean in a controlled manner, ensuring that no suspended sediment is discharged. Once adequately dried, the sediment will be transported by truck to the Walvis Bay Municipal landfill site for disposal, or to a licensed hazardous waste facility should testing indicate elevated contaminant levels.

The maintenance dredging will cover the area beneath and around the proposed floating dry dock and jetty structure and will be conducted on an as-needed basis to ensure the continued functionality and safety of the facility.

5 ALTERNATIVES

Alternatives as referred to within the EMA and its regulations, are require for any proposed development as part of the environmental assessment process. Such alternatives proposed within a project framework aims at ensuring the most suited and environmentally sustainable options. Alternatives related to the project are considered and each of these alternatives is discussed. The alternatives can roughly be grouped into three main groups namely:

- Location alternatives
- Technical and service alternatives;
- No go alternative.

5.1 Location Alternatives

For purposes of this assessment, it should be noted that no alternative location is presented for the proposed ship repair and maintenance facility. Suitable properties within the Port of Walvis Bay that can accommodate a development of this scale are limited due to the need for direct waterfront access, sufficient depth for docking, and proximity to existing port infrastructure and services.

The selected site was therefore identified as the most practical and feasible location for the development. Namport has allocated the property to the Proponent for the establishment of a new ship repair and maintenance facility, including a floating dry dock.

5.2 Technical and Services Alternatives

The type of technology used within the industry is well known. The grit blasting process, is well established within the industry, but evolving technology in this sector should be considered.

5.2.1 Blasting Alternatives

Hydro blasting for ships uses ultra-high-pressure water (up to about 40,000 psi) to clean and remove paint, rust, and marine growth from ships' hulls. If applied correctly, this method is environmentally friendlier than conventional grit blasting, as it eliminates the need for dry abrasive materials and chemicals, limits dust generation, and can minimise waste volumes and disposal costs, while effectively preparing surfaces for repainting. Hydro blasting ensures high cleaning quality while protecting the underlying material. It can however consume large volumes of water, which is a scarce resource in the area.

Recent hydro blasting methods employ "robots" that automate the cleaning process, improving efficiency and safety. These robots can navigate the ship's hull, and the automation reduces the need for manual labour, minimises risks to workers, and ensures consistent cleaning quality. The systems are typically fitted with vacuum recovery units that capture the waste water and debris and channel it to a temporary holding tank for eventual safe disposal. Such disposal usually entails filtering of the waste water, disposal of solids at a hazardous waste disposal facility, and re-using the water or disposing of the treated water in the ocean, subject to permit conditions.

Ultra-High Pressure hydro jetting (UHP) is a specialised form of hydro blasting using very high pressures and focussed jets to remove thick coatings, corrosion and marine growth with minimal damage to the substrate. It achieves a high standard of surface preparation and, when combined with robotic systems and vacuum recovery, can further reduce dust and overspray compared to conventional methods. Waste water and solids management requirements are similar to those of other hydro blasting systems and must be carefully controlled.

Slurry blasting mixes water with an abrasive medium and propels this slurry onto the surface. The presence of water significantly reduces dust emissions compared to dry grit blasting and can improve operator visibility and safety. However, slurry blasting still generates a solid waste stream consisting of spent abrasive and removed coatings, which must be collected and disposed of at an appropriately licensed facility. Runoff water must be contained and treated to prevent contamination of the harbour.

Hydro blasting, UHP and slurry blasting are recommended as alternatives to progressively replace or supplement conventional grit blasting in the future. The potential impacts on the environment can be reduced, particularly in relation to dust and fugitive emissions, but attention should be given to the capture, recycling and discharge of water, as well as the management of solids and slurries generated by these processes. These technologies should be considered if and/or when the Proponent has sufficient resources to properly implement and maintain such systems. Such alternatives may be applied during periods of strong wind when impacts from normal grit blasting on receptors, can become problematic.

5.3 The No-Go Alternative

The “no-go” alternative refers to the option of not proceeding with the proposed development, meaning the site would remain in its current undeveloped state. Under this scenario, no new ship repair and maintenance facility would be established, and the opportunity to expand marine engineering capacity in Walvis Bay would be lost.

Currently, there is only one operational facility within the port that provides dry dock and vessel repair services. If the proposed project does not proceed, the growing demand for ship repair and maintenance will place pressure on the existing service provider. This may result in longer turnaround times, reduced operational efficiency, and potential diversion of business to foreign ports, negatively affecting Namibia’s competitiveness in the regional maritime sector.

The proposed development, including the construction of a new floating dry dock, associated jetty, and supporting infrastructure, is intended to address this service shortfall and to strengthen Walvis Bay’s position as a leading ship repair hub on the west coast of Africa.

Failure to proceed with the project would therefore limit economic growth, hinder industrial diversification, and restrict employment opportunities in the maritime engineering sector. The no-go alternative is thus not recommended, as it would impede the long-term development objectives of both the Proponent and Namport, as well as broader national goals for port and marine sector expansion.

6 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an EIA, as per the Namibian legislation. The legislation and standards provided in Table 6-1 to Table 6-4 governs the EIA process in Namibia and/or are relevant to the facility.

Table 6-1 Namibian law applicable to the development

Law	Key Aspects
The Namibian Constitution	♦ Promotes the welfare of people ♦ Incorporates a high level of environmental protection ♦ Incorporates international agreements as part of Namibian law
Environmental Management Act Act No. 7 of 2007, Government Notice No. 232 of 2007	♦ Defines the environment ♦ Promotes sustainable management of the environment and the use of natural resources ♦ Provides a process of assessment and control of activities with possible significant effects on the environment
Environmental Management Act Regulations Government Notice No. 28-30 of 2012	♦ Commencement of the Environmental Management Act ♦ Lists activities that requires an Environmental Clearance Certificate ♦ Provides Environmental Impact Assessment Regulations
Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 48 of 1991	♦ Regulates petroleum industry ♦ Makes provision for impact assessment ♦ Used Mineral Oil Regulations (Government Notice No. 48 of 1991) o Regulations relating to the purchase, sale, supply, acquisition, usage, possession, disposal, storage, transportation, recovery and re-refinement of used mineral oil
Water Resources Management Act Act No. 11 of 2013, Government Notice No. 332 of 2013	♦ Provides for management, protection, development, use and conservation of water resources ♦ Prevention of water pollution and assignment of liability
Dumping At Sea Control Act Act No. 73 of 1980, Government Gazette No. 1149 of 1980	♦ Provides for the control of dumping of substances in the sea ♦ Provides for permits to be issued to allow dumping at sea of scheduled substances
Marine Resources Act Act No. 27 of 2000, Government Notice No. 292 of 2000	♦ Prevents the discharge of anything that may be injurious to marine resources or may disturb ecological balance in any area of the sea or which may detrimentally affect the marketability of marine resources, or which may hinder their harvesting.
Aquaculture Act (2002) Act No. 18 of 2002, Government Notice No. 231 of 2002	♦ Provides for water quality monitoring to protect aquaculture activities
The Namibian Ports Authority Act Act No. 2 of 1994, Government Notice No. 30 of 1994	♦ Provides for the establishment of the Namibian Ports Authority and its functions

	♦ Responsible to protect the environment within its areas of jurisdiction
Marine Traffic Act Act No. 2 of 1981, Government Notice No. 282 of 1981	♦ Regulates marine traffic in Namibia
Local Authorities Act Act No. 23 of 1992, Government Notice No. 116 of 1992	♦ Defines the powers, duties and functions of local authority councils ♦ Regulates discharges into sewers
Public and Environmental Health Act Act No. 1 of 2015, Government Notice No. 86 of 2015	♦ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters ♦ Deals with Integrated Waste Management including waste collection disposal and re-refining; waste generation and storage; and sanitation.
Labour Act Act No 11 of 2007, Government Notice No. 236 of 2007	♦ Provides for Labour Law and the protection and safety of employees ♦ Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997)
Atmospheric Pollution Prevention Ordinance Ordinance No. 11 of 1976	♦ Governs the control of noxious or offensive gases ♦ Prohibits scheduled process without a registration certificate in a controlled area ♦ Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process
Hazardous Substances Ordinance Ordinance No. 14 of 1974	♦ Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export ♦ Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings
Pollution Control and Waste Management Bill (draft document)	♦ Provides for prevention and control of pollution and waste ♦ Provides for procedures to be followed for licence applications ♦ Not in force yet
Prevention and Combating of Pollution of the Sea by Oil Act, 1981 (Act No. 6 of 1981)	♦ Provides for the prevention of pollution of the sea where oil is being or is likely to be discharged
Prevention and Combating of Pollution of the Sea by Oil Amendment Act (No. 24 of 1991)	♦ Amends the Prevention and Combating of Pollution of the Sea by Oil Act of 1981 to be more relevant to Namibia after independence
National Marine Pollution Contingency Plan of 2017	♦ Coordinated and integrated national system for dealing with oil spills in Namibian waters.
Namibia's Draft Wetland Policy (2004 Draft)	♦ Aims to protect and conserve wetland diversity and ecosystem functioning without compromising human needs. ♦ Promotes the integration of wetland management into other sector policies. ♦ Recognises and fulfils Namibia's international and regional obligations concerning wetlands, including those laid down in the Ramsar

	Convention and the SADC Protocol on Shared Water Systems.
Integrated Coastal Zone Management Bill of 2014	♦ Aims at coastal management and give effect to Namibia's obligations in terms of international law regulating coastal management. ♦ Not adopted yet.
Marine Notice No. 04 of 2018 Ministry of Works and Transport	♦ Provides guidance on shipboard garbage management requirements in Namibia, in terms of the International Convention for the Prevention of Pollution from Ships (MARPOL).

Table 6-2 Municipal by-laws, guidelines and regulations

Municipal By-laws, Guidelines or Regulations	Key Aspects
Integrated Urban Spatial Development Framework for Walvis Bay	♦ Overall vision to transform Walvis Bay to being the primary industrial city in Namibia ♦ Aims to ensure that appropriate levels of environmental management is enforced for all developments in Walvis Bay
Integrated Environmental Policy of Walvis Bay (Agenda 21 Project)	♦ Indicates the directions that the Municipality of Walvis Bay will move towards in the forthcoming years to fulfil its responsibilities to manage the environment of Walvis Bay together with the town's residents and institutions ♦ Strong focus on conservation and protection of environment
Drainage and Plumbing By-Law of 1958 (updated in 1982)	♦ Regulations regarding discharges into sewers

Table 6-3 International conventions and standards

Standard or Code	Key Aspects
Benguela Current Commission	♦ Interim Agreement between Namibia, South Africa and Angola to establish a permanent mechanism for the sustainable management the marine environment and its resources, the Benguela Current Large marine Ecosystem (BCLME) ♦ Proposes a set of sediment and water quality guidelines.
Convention on Biological Diversity	♦ Primary goal is the conservation of biodiversity ♦ Prescribes the precautionary principle ♦ Parties to the convention are obliged to: ♦ Establishes a network of protected areas; o Create buffer areas adjacent to these protected areas using environmentally sound and o sustainable development practices; and o Rehabilitate degraded habitats and populations of species.
The Convention on Wetlands of International Importance especially as Waterfowl Habitat (referred as the Ramsar Convention)	♦ It is a framework for international cooperation in the conservation and wise use of wetlands and their resources. ♦ Recognizes the Walvis Bay Nature Reserve – a tidal lagoon consisting of Pelican Point, adjacent intertidal areas, sandbars serving as roosting sites and mudflats exposed during low tide (12,600 ha) as a Wetland of International Importance.

UN Convention for the Prevention of Marine Pollution from Land-based Sources	♦ Concerns itself with the protection of marine fauna and flora by preventing marine pollution from land-based sources. ♦ Contracted parties, are committed to take all possible steps to prevent pollution of the sea as well as the direct or indirect introduction of substances or energy by humans into the marine environment resulting in such adverse effects as harm to living resources and to marine ecosystems, hazards to human health, damage to services/ facilities or interference with other legitimate uses of the area.
Stockholm Declaration on the Human Environment, Stockholm 1972.	♦ Recognizes the need for a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment

Table 6-4 Standards, codes of practice

Standard or Code	Key Aspects
Namport Specifications and Legislation	♦ Enforced standards and codes which govern construction and operations relating to the port. ♦ Includes the EMP for the operations of the Port of Walvis Bay. ♦ Includes the EIA and EMP for dredging within the Port

The proposed operations is listed as a project requiring an ECC as per the following listed activity under the Environmental Management Act (section 2, 8, 9 and 10 of Government Notice No. 29 of 2012):

- 2.3 "The import, processing, use and recycling, temporary storage, transit or export of waste."
- 9.1 "Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976."
- 9.2 "Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste."
- 10.1 The construction of- "(e) any structure below the high water mark of the sea"

7 ENVIRONMENTAL CHARACTERISTICS

This section lists the most important environmental characteristics of the study area and provides a statement on the potential environmental impacts on each.

7.1 Locality and Surrounding Land Use

The site (22.938316°S; 14.508526°E) is located in the Municipal area of Walvis Bay (Figure 7-1), within an area zoned for industrial use (Figure 7-2). Off shore activities will be within the fishing harbour. The onshore premises is zoned for industrial land use and is surrounded by properties of similar nature. Offshore operations fall within the port limits which is managed by Namport. The proposed onshore operations fall under the authority of the Municipality of the Walvis Bay. Access to Erf 3688 is obtained via a shared panhandle entrance extending from the main internal port road, which is also used by a neighbouring property. The Property boundary lines illustrated in Figure 1-1 and Figure 4-1 corresponds with the noting plans of Erf 3688, as received from the Directorate of Deeds Registration. Erf 1278 located to the southeast of Erf 3688, is owned by Etosha Fishing Corporation who operates existing warehouses on site (Figure 7-3).

Figure 7-1 Project location in relation to the larger setting

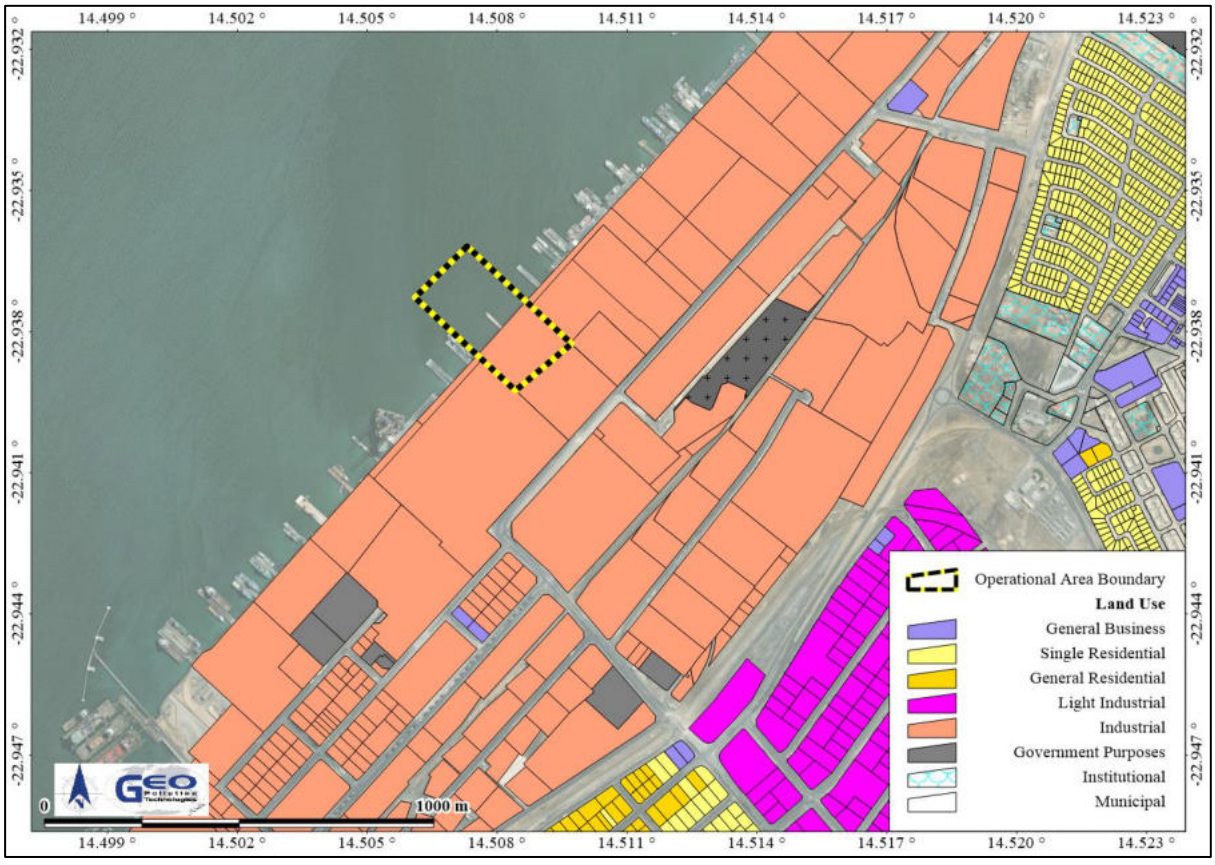

Figure 7-2 Land use at the project location

Figure 7-3 Nearby neighbours

Implications and Impacts

The planned construction and future operations of the jetty and floating dry dock are in line with activities conducted in the harbour and on industrial properties. If pollutants from ship repair activities are not contained, fishing industry seawater intakes and other receptors may be impacted.

7.2 Climate

Namibia's climate is dominated by dry conditions for most of the year and particularly so in the west. The location of Namibia with respect to the Intertropical Convergence Zone, Subtropical High Pressure Zone and Temperate Zone is what determines the climate, with the Subtropical High Pressure Zone being the major contributor to the dry conditions (Atlas of Namibia Project, 2022; Bryant, 2010), see Figure 7-4.

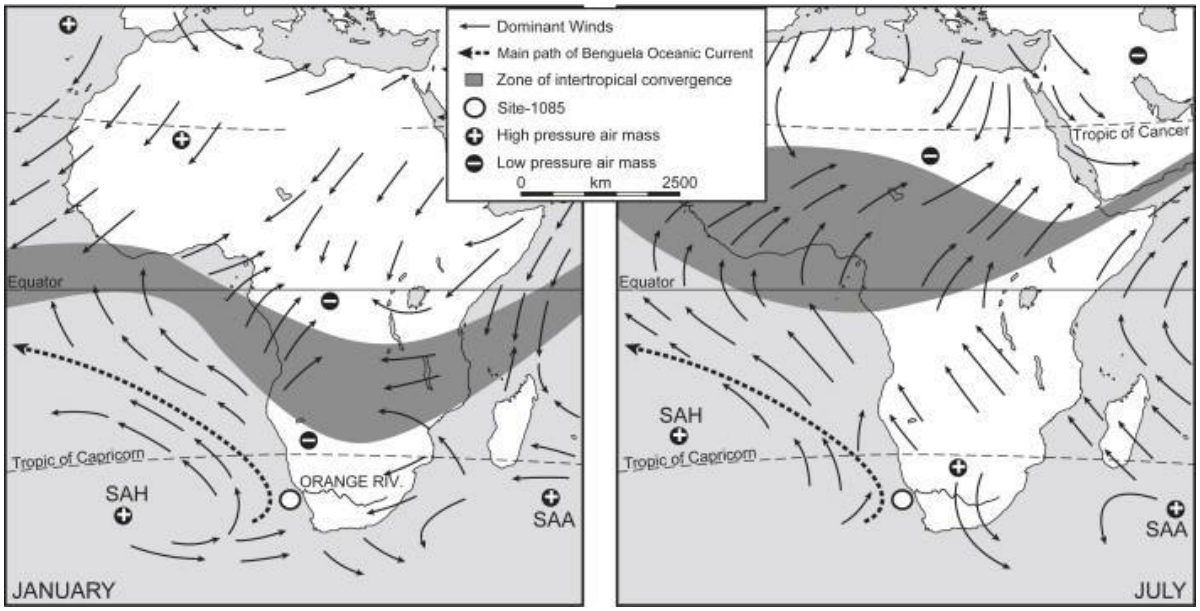

Figure 7-4 Map indicating the Intertropical Convergence Zone, Subtropical High Pressure Zone (SAH), Benguela Current and Temperate Zone south of Tropic of Capricorn (not indicated) (from: http://www.meteoweb.eu)

Precipitation over Namibia is mainly controlled by the South Atlantic High (SAH), a high pressure cell (anticyclone) situated west of Namibia in the Subtropical High Pressure Zone. The SAH shifts during the year and is at higher latitudes in winter and lower latitudes in summer. In winter, as a result of being situated more north, the high pressure cell pushes any moisture originating from the Intertropical Convergence Zone northwards, preventing rain over Namibia. In summer, because the high pressure cell moves further south, and has less of an effect on the Intertropical Convergence Zone, moist air reaches Namibia, resulting in summer rains.

Long term precipitation data was obtained from the CHIRPS-2 database (Funk et al., 2015). The CHIRPS-2 dataset (Climate Hazards Group Infra-Red Precipitation with Station data version 2) consist of long term precipitation data (1981 to near-present) obtained from satellite imagery and in-situ station data and therefore represents more recent data. Data is averaged over an area of roughly 5 km by 5 km. This averaging effect should be kept in mind during data analyses as high precipitation from single thunder storm cells would be averaged out, thereby providing a reduced daily maximum precipitation value.

The average annual precipitation for the last 43 years was calculated as 78 mm/a, with a coefficient of variance of 29%. Heavier precipitation (single day events) occur between November and February, with a single event of 30 mm in April (last 43 years data) being the highest. Fog plays a very significant role as source of precipitation and Walvis Bay has up to 900 hours of fog per year and it results from the cold Benguela water cooling the humid air above it to such a temperature that the water vapour condenses to form fog and low level clouds (Mendelsohn et al., 2002).

Daily and seasonal precipitation data (Funk et al., 2015) is presented in Table 7-1 and in Figure 7-5. Seasonal (July to June) total precipitation, centred on the average line for the last 43 years, is presented, with the daily total precipitation and the seasonal cumulative precipitation. From the figure it is clear that 9 of the last 10 seasons were below the average.

As explained above, the SAH severely limits the amount of rainfall over Namibia and especially at the coast and over the Namib Desert. Infrequent, heavy rainfall does occur and typically results in rather chaotic conditions as Walvis Bay, and other coastal towns, has not been developed to cater for large volumes of storm water.

Table 7-1 Precipitation statistics based on CHIRPS-2 data (Funk et al., 2015)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum (mm)	0	5	0	5	0	0	0	0	0	0	6	0
Maximum (mm)	22	29	39	37	10	2	1	1	1	9	28	19
Average (mm)	9	14	12	12	1	0	0	0	0	6	13	10
Variability (%)	50	42	60	59	245	262	323	334	283	40	35	47
Daily maximum (mm)	13	19	25	30	6	1	1	1	1	8	12	18
Average rain days	2	2	2	2	0	0	0	0	0	2	3	2

Season July - June average: 78 mm | Season coefficient of variation: 29 %

Date range: 1981-July-1 to 2025-June-30 | Lat: 22.93830°S; Long: 14.54850°E

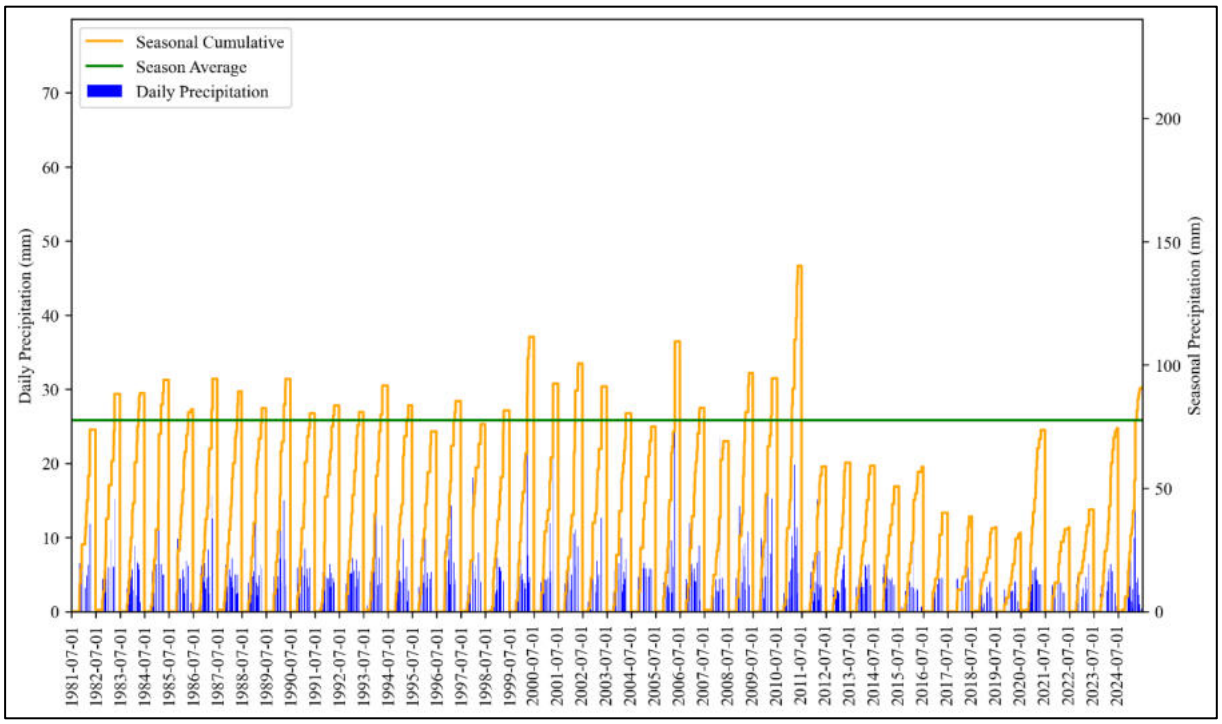

Figure 7-5 Daily and seasonal precipitation from CHIRPS-2 data (Funk et al., 2015)

Studies indicate the presence of a thermal inversion layer at Walvis Bay. Originally this was thought to be at approximately 500 mamsl (Taljaard and Schumann 1940), but recent studies indicate it as low as 200 mamsl (Patricola and Chang, 2017; Corbett, 2018). A marine atmospheric boundary layer (MBL) exists offshore of the coastline that thins from more than 500 mamsl to 200 mamsl as it nears the coast (Figure 7-6). The MBL is a layer of cool, well-mixed, stable air that is capped by a thermal inversion (Patricola and Chang, 2016; Corbett 2018). This thermal layer or inversion layer will prevent the escape of pollutants such as smoke higher into the atmosphere. The MBL however contribute to high velocity wind speeds by funnelling the winds created by the SAH, resulting in what is referred to as the Benguela Low-Level Coastal Jet (Figure 7-6). Since the MBL overlap partially with the coastal plain, the wind generated by the Benguela Low-Level Coastal Jet also reaches inland, but diminishes relatively quickly further inland.

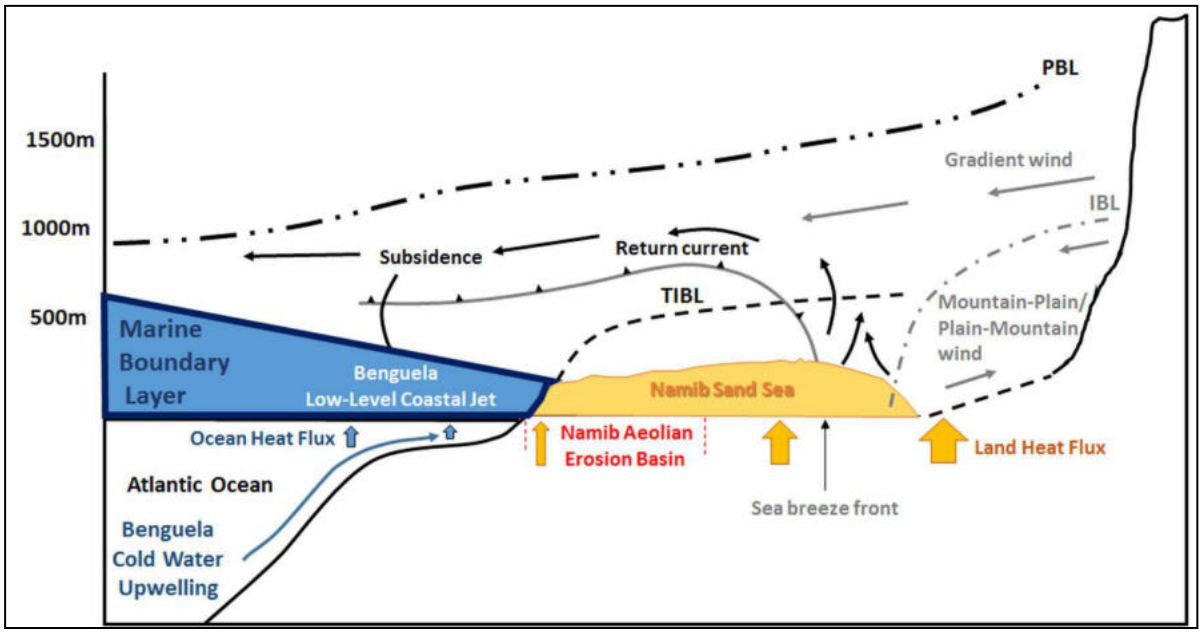

Figure 7-6 Marine atmospheric boundary layer (from: Corbett, 2018)

On a more localised scale, the climatic conditions on the central Namibian coast, and inland thereof (coastal plains), are strongly influenced by the cold Benguela Current, the SAH and the relatively flat coastal plains that are separated from the central highlands by a steep escarpment.

The anticlockwise circulation of the high pressure SAH and the action of the earth's Coriolis force results in strong southerly (longshore) winds blowing northwards up the coastline of Namibia (Bryant, 2010; Corbett, 2018). This longshore wind is responsible for upwelling of the cold, deep waters of the Benguela Current. As a result of the temperature difference between the cold surface water of the Benguela Current and the warm coastal plains, the southerly wind is diverted to a south southwesterly to southwesterly wind along the coast. At Walvis Bay the temperature gradient that forms over the warmer darker sands south of the Kuiseb River, compared with the cooler, lighter coloured gravel plain to the north of the river, leads to the formation of cyclonic circulation (localised low-pressure systems) centred over the dune area, due to warm air that rises over the dune area. This, together with topographical changes and land-use, causes a local deflection of wind flow over the Walvis Bay area, from south to southwest in Walvis Bay (Figure 7-6), to more southwest to westerly further inland, as well as reduced wind speeds. The more low speed, westerly winds are for example experienced at the Walvis Bay Airport (Rooikop).

The winds are strongest in early to mid-summer (September to January) when the SAH is at its strongest and most persistent, and the temperature difference between the sea and the desert plains are at its greatest (Figure 7-7). Wind speeds then occasionally exceed 32 km/hr (8.9 m/s) and usually peaks late morning (Figure 7-8) to early afternoon. In winter, the SAH loses strength and the southerly to southwesterly winds are at their weakest. Winter winds do not have enough strength to reach far inland. Autumn to winter conditions do however promote the formation of east wind conditions (berg winds) that can reach speeds of more than 50 km/hr (13.9 m/s) and transport a lot of sand. East winds occur when the inland plateau is cold with a localised high pressure cell, while a low pressure system is present at the coast. The high pressure cell forces air off the escarpment and as the air descents, it warms adiabatically as well as create a low pressure system due to the vertical expansion of the air column. The warm air flows toward the coastal low and as it passes over the Namib plains, it heats up even further. The wind manifests itself as very strong, warm and dry wind during the mornings to early afternoon, but dissipate in the late afternoon.

Outside the MBL, throughout the year the prevailing night time regional wind is a weak easterly wind. This results when the mainland cools to below the temperature of the coastal water, resulting in a coastal low versus an onshore high pressure system with first no wind in the early

evening, when temperatures between water and land is similar, and then weak easterly winds as the temperature difference increase.

Wind within the MBL remains dominated by the Benguela Low-Level Coastal Jet, causing a localised southerly wind over Walvis Bay during the night, slowly loosing speed and dominant wind direction during the morning (Figure 7-8). In the afternoon the wind becomes stronger and the direction more from the southwest, with the windspeed decreasing and the direction shifting to wind blowing more from a southerly direction.

Wind data presented in Figure 7-7 and in Figure 7-8 was sourced from the ERA5 data set from 2000 to 2025 (Hersbach, 2020). ERA5 is a fifth generation European Centre for Medium-Range Weather Forecasts (ECMWF) atmospheric reanalysis of the global climate. ERA5 provides hourly estimates of atmospheric, land and oceanic climate variables on a 0.25° grid. ERA5 data is produced by the Copernicus Climate Change Service (C3S) at ECMWF and wind data at a height of 10 m above surface was downloaded from this facility.

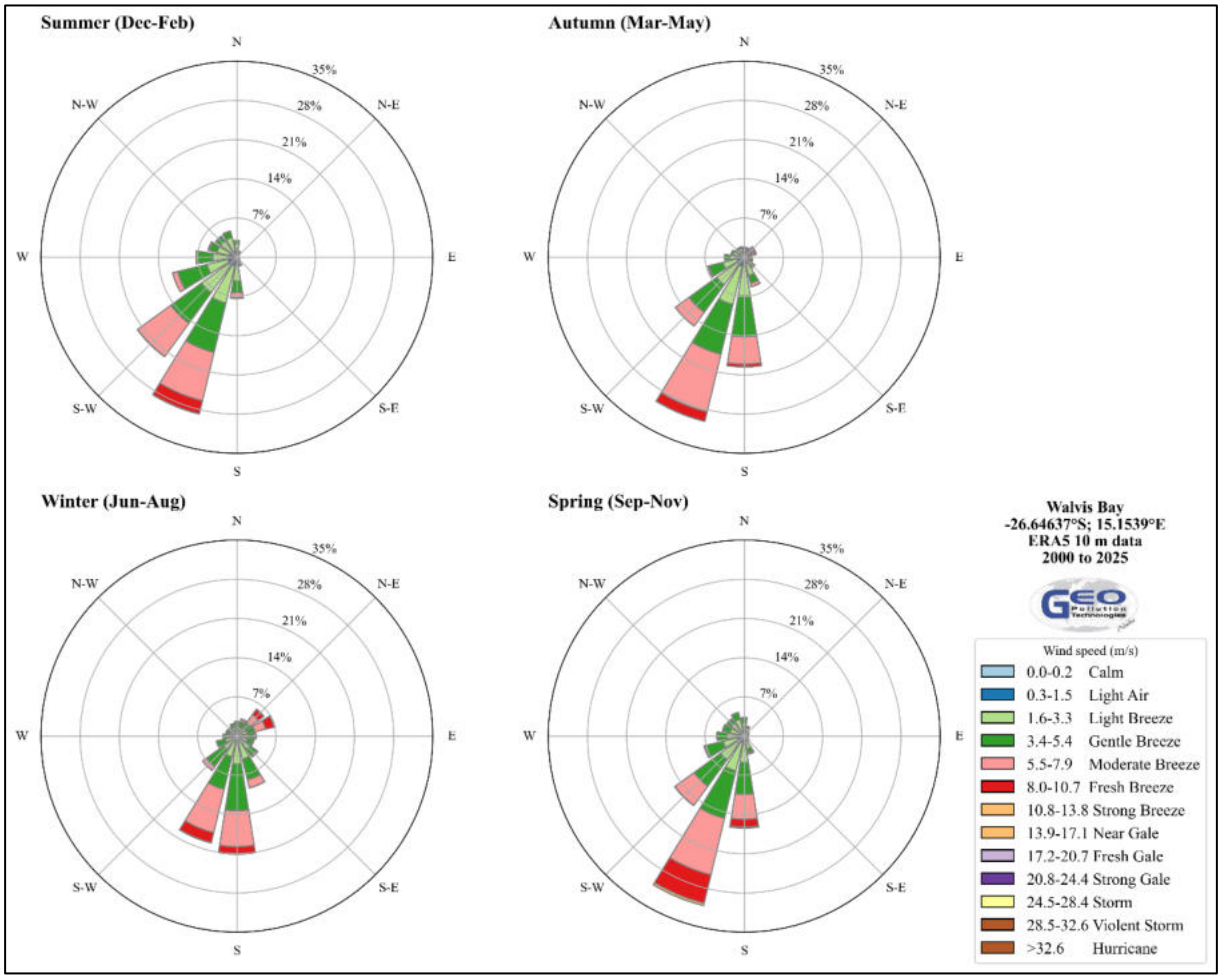

Figure 7-7 Seasonal wind rose - 2000 to 2025 (ERA4 10m data)

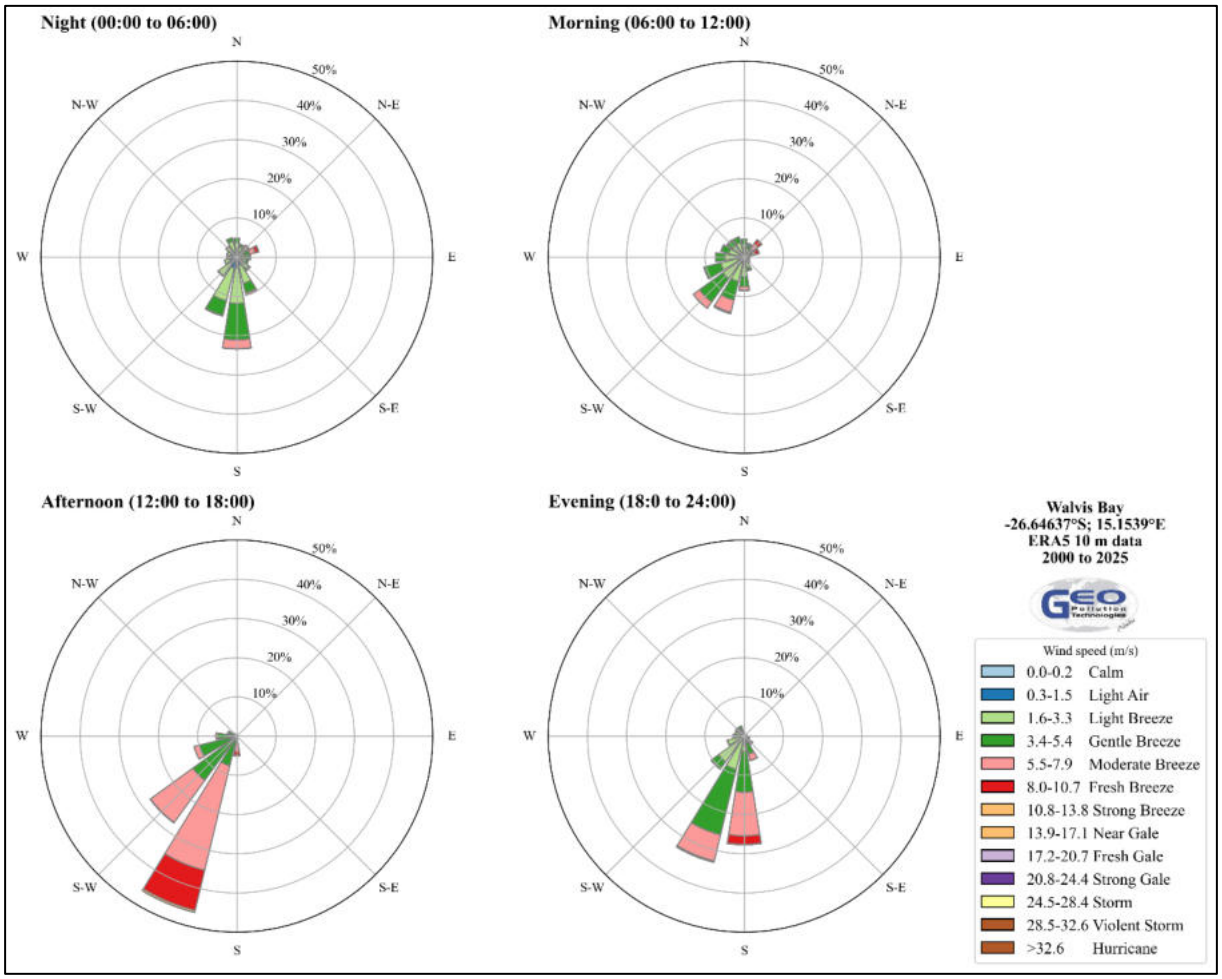

Figure 7-8 Quarter day wind rose

Temperature at Walvis Bay is strongly regulated by the cold Benguela current. As a result, there is typically limited variation between diurnal and seasonal temperatures (Table 7-2). As one moves inland from Walvis Bay, daytime temperatures increases rather quickly while night time temperatures can get significantly colder in the desert environment.

Temperature data was retrieved from the Modern-Era Retrospective analysis for Research and Applications version 2 (MERRA-2) data set for a height of 2 m above surface (Gelaro et al., 2017). This data set is a NASA atmospheric reanalysis, incorporating satellite data integration and aims at historical climate analyses at 0.5 ° x 0.625 ° spatial resolution. Table 7-2 presents statistics of daily data abstracted from the data set for the last 43 years. Lowest temperature (8.92 °C) over the data period was recorded in July, with on average no days in the year being below freezing point. A maximum temperature of the data period of 35.18 °C, was measured in September.

Table 7-2 Temperature statistics based on Merra-2 data (Gelaro et al., 2017)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum (°C)	14	14	13	11	11	9	9	9	9	10	12	13
Maximum (°C)	33	34	35	35	34	32	31	33	35	35	35	31
Average (°C)	19	20	19	19	19	18	17	16	16	16	17	18
Diurnal (°C)	4	5	5	6	7	7	8	7	6	6	5	5
Average days < 0°C	0	0	0	0	0	0	0	0	0	0	0	0

Implications and Impacts

Prevailing winds are from the south to southwest and strong winds are a regular occurrence, mainly during the afternoons. Under these dominant conditions, dust generated during grit blasting and construction activities is likely to be carried northwards and northeastwards, dispersing over the harbour basin. During periods of northerly or westerly winds, dust may be blown towards receptors located to the southeast and east of the site. In the absence of effective containment and housekeeping, this could result in nuisance dust, localised air quality impacts and deposition on buildings, loading areas and sensitive food-handling environments. It should be noted that the buildings of the Proponent will be between the drydock and such receptors during the mentioned conditions.

7.3 Air Quality

The project area is located within the Fishing Harbour of Walvis Bay, an industrial harbour environment where existing air quality is influenced by a combination of marine aerosols (e.g. H_2S), emissions from ship movements and cargo handling, road traffic, fuel combustion in generators and boilers, and dust from construction, engineering and surface preparation activities. Typical pollutants include smells from fish processing facilities, respirable particulate matter ($PM_{2.5}$ and PM_{10}), combustion gases and volatile organic compounds (VOCs) associated with coating applications and fuel handling.

Local air quality is strongly shaped by the regional and local wind patterns described under Section 7.2, with predominant winds from the south to southwest that promote dispersion of emissions over the harbour basin and surrounding industrial areas. Under these conditions, dust and other pollutants released in the port area are generally transported northwards and northeastwards across the bay. During periods of northerly, northwesterly or westerly winds, emissions can be directed towards receptors located to the south and southeast of the drydock.

Fog, low cloud and temperature inversions that frequently occur along the coast (Section 7.2) can temporarily reduce vertical mixing and dispersion of pollutants, resulting in the short-term build-up of emissions close to ground level. Studies for Walvis Bay indicate the presence of a relatively low marine inversion layer, which can trap dust and other pollutants within the lower atmosphere and enhance their recirculation near the surface. The hard, largely paved nature of the port environment and the absence of natural vegetation also mean that there is limited natural trapping of dust, and deposited material can readily be re-entrained by strong winds if housekeeping is inadequate. The dust fallout and overspray monitoring further indicated that dust at the sampling locations originates from a combination of sources, including current blasting activities, resuspended deposits from previous blasting, and natural or regional dust carried into the area by wind (Botha, 2022).

Implications and Impacts

Given the industrial character of the Port of Walvis Bay, the existing air quality in the vicinity of the proposed facility is already influenced by a range of emission sources. The construction and operation of the jetty and floating drydock will add further localised sources of dust and emissions, primarily from grit and slurry blasting, spray painting, welding and cutting, engine testing, traffic, and materials handling. While blasting dust tends to remain relatively localised under calm conditions, strong winds can carry dust and resuspended grit further afield and elevate dust levels across the wider area. Overspray from spray painting can, under certain conditions, travel at least 100 m and further downwind of the application point, even where walls and nets are in place. In the context of the proposed facility, this implies that off-site dust and overspray deposition cannot be excluded, particularly during unfavourable wind conditions or if containment and housekeeping are inadequate. Proper management is required.

7.4 Surface Water

The project area is located directly adjacent to the Walvis Bay harbour, and the surrounding surface water environment consists entirely of marine and tidal waters connected to the Atlantic Ocean. No natural freshwater bodies occur within or near the site.

Implications and Impacts

Any pollutants not properly contained can deteriorate the water quality within the harbour, with potential for downstream impacts on sensitive receptors such as the fish factory water intakes or the Walvis Bay lagoon. Similarly, suspension of potentially contaminated sediments during capital dredging may negatively affect water quality. If dredged material is temporarily placed on land for dewatering, the return flow to the ocean must be adequately filtered to prevent the release of fine sediments or residual contaminants.

7.5 Geology and Hydrogeology

Walvis Bay is located in the Central Western Plain of Namibia. The Kuiseb River forms the southern boundary of this landscape group, with the Namib Dune Field being present south of the Kuiseb River. Northerly dune migration is forcing the Kuiseb River in a northerly direction, with Kuiseb River paleochannels being present as far south as Sandwich Harbour.

Following the breakup of West-Gondwana during the early Cretaceous (130 – 135 Ma ago), continental uplift took place, enhancing erosional cutback and the formation of the Namibian Escarpment. A narrow pediplain formed, mainly over Damara Age rocks. The South Atlantic Ocean started filling in over the pediplain, with marine conditions established around 80 Ma ago. Towards the end of the Cretaceous (70 – 65 Ma ago) a relative level surface was created, on which later deposition of sediments took place. Marine deposition took place in the parts covered by the newly formed South Atlantic Ocean, while terrestrial deposits took place on land. Further continental uplift moved the shoreline to its present position.

Northwards migration of sand covered parts of the exposed marine deposits, with Kuiseb floods also depositing material over the marine sediments. Depth to bedrock in Walvis Bay is expected to be deeper than 40 m below surface. Based on previous work conducted in the area, it is expected that the sediments under the project area would consist of medium to coarse grain sand with thin lenses of more clayey material and layers of shell material.

Groundwater in the area is expected less than 2 m below surface and most probably related to seawater intrusion. Shallow freshwater lenses might be present. The origin of these freshwater lenses would mostly be freshwater leakages from the water supply reticulation.

Implications and Impacts

As the facility is mainly operating offshore no groundwater impacts are expected.

7.6 Public Water Supply

Public water supply to Walvis Bay and the surrounding developments is provided by NamWater from the NamWater Kuiseb Water Supply Scheme.

Implications and Impacts

Groundwater at the site is not a source of potable water and as such public water supply should not be at risk as a result of activities at the facility. Should hydro blasting be implemented, it will place additional strain on the Kuiseb Water Supply Scheme.

7.7 Aquatic Environment

7.7.1 Currents and Tides

The Benguela Current flows in a north-westerly direction along the Namibian coast. The average speed of the current is between 0.25 and 0.35 m/s (DMC-CSIR, 2010). The most important hydraulic conditions are shown in Table 7-3 (Tractebel, 1998; COWI, 2003a; DMR-CSIR, 2010). Water enters and exits the bay at the northern tip of Pelican Point (DMC-CSIR 2010). Water entering is flowing below the exiting water. Current velocities are on average 0.12 m/s with sporadic maximums up to 0.25 m/s.

A study in 1965 indicated a pre-dominant clockwise circulation of currents in the bay (Tractebel, 1998). This was later confirmed in the COWI (2003b) and DMC-CSIR (2010)

studies. Circulation occurs mostly in the upper layer and it depends on the wind direction. The current pattern is clockwise in the morning, towards the south. At Pelican Point, the current moves mostly northward for the whole day. A general northward current is found along the east side of the bay very close to the coast. Water currents prior to the construction of the new container terminal as well as modelling of currents once construction is completed are depicted in Figure 7-9. From the figure, the water currents in the vicinity of the proposed facility are very weak, moving in a north-easterly direction along the quay walls.

Table 7-3 The oceanographic and hydraulic conditions of the bay and the sea (adapted from Tractebel, 1998; COWI, 2003b; DMR-CSIR, 2010).

Hydrological Conditions	Description
Tides and sea level -Tide statistics for Walvis Bay from SA Tide Tables	Highest Astronomical Tide +1.97 Mean High Water of Spring Tide +1.69 Mean High Water of Neap Tide +1.29 Mean Level +0.98 Mean Sea Level +0.966 Mean Low Water of Neap Tide +0.67 Mean Low Water of Spring Tide +0.27 Lowest Astronomical Tide 0.00
Waves	60 % southerly 23 % south-south-westerly 7 % south-westerly
Ocean current	The Benguela current runs north-westerly along the Namibian coastline at a speed between 0.25 m/s to 0.35 m/s
Tidal current	Negligible

Implications and Impacts

The construction and operational activities related to the jetties and floating dry dock may cause pollutants to enter the water. These could be carried toward sensitive receptors, specifically seawater intakes of the fishing industry.

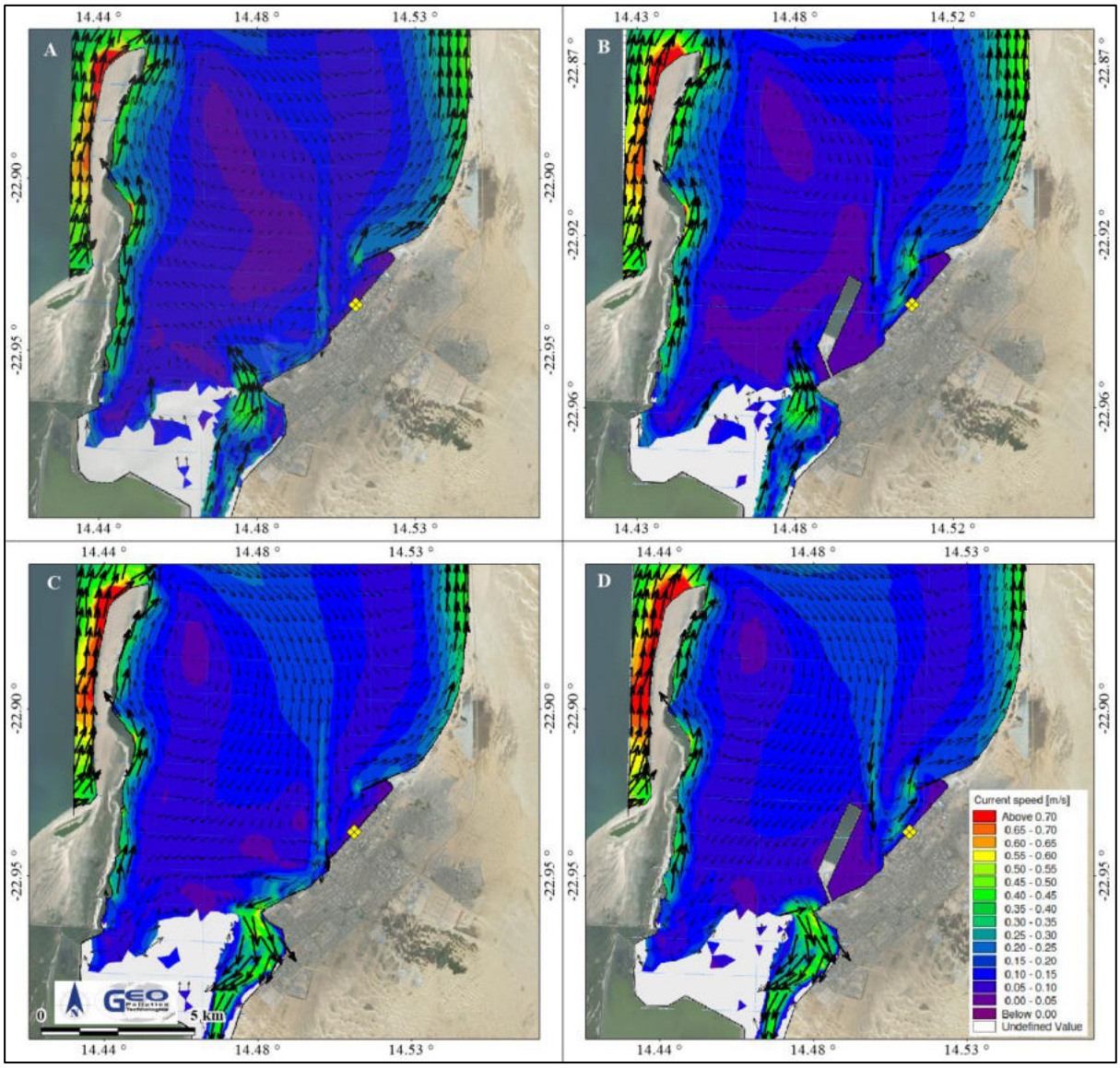

Figure 7-9 Comparison of ebb (top) and flood (bottom) scenarios for before and after the construction of the new container terminal (Source: Hydrodynamic Modelling Report of DMC-CSIR 2010)

7.7.2 Water and Sediment Quality

Harbour sediments often contain elevated concentrations of toxic compounds, most typically heavy metals, poly aromatic hydrocarbons (PAH) and/or tributyltin (TBT). TBT originates from marine paints which typically contain an agent to prevent fouling of the ship with barnacles and other organisms, which eventually will slow the ship and impede its movements.

Sediment sample locations for the maintenance dredging of the fishing harbour in 2015 are presented in Figure 7-10 (Botha and Faul, 2015). Thirty composite samples consisting of three samples each were collected and analysed. The results of the analyses are presented in Table 7-4 to Table 7-6. Some chemicals of concern were elevated above BCLME recommended and probable effect concentrations in a number of locations. Notable among these are cadmium, lead, arsenic, copper, chromium and TBT. Note that sampling points 7,8 and 9 is closest to the floating drydocks and arsenic, cadmium, copper and TBT was elevated above BCLME recommended guideline values at this location.

Figure 7-10 Sediment sampling locations prior to maintenance dredging in 2015 (Botha and Faul, 2015)

Table 7-4 Sediment sampling results (samples 1 to 10) prior to maintenance dredging in 2015 (Botha and Faul, 2015)

Walvis Bay Fishing Harbour Baseline Sediment Sampling

Project number	G139-18
Certificate number	2015101521
Start date	15-09-2015
Report date	22-09-2015
Date sampling	08-09-2015
Sampler	P. Botha

	Map Number			1	2	3	4	5	6	7	8	9	10
Analysis	**Unit**	**BCLME Sediment (Recommended Guideline Value)**	**BCLME Sediment (Probable Effect Concentration)**										
TerrAttesT													
Version number				7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23
Characteristics													
Dry matter	% (w/w)			65.1	69.4	51.2	31.6	55.8	61.8	45.5	26.8	40.4	36.5
Organic matter	% (w/w) dm			4	2.1	4.8	8.9	4.4	3.7	5.5	10.8	5.9	6.7
Fraction < 2 µm (Clay)	% (w/w) dm			3.2	3.8	6.9	24.5	5.9	5.1	7.3	27.9	21.2	15.3
Metals													
Arsenic (As)	mg/kg dm	7.24	41.6	14	18	22	29	17	17	19	33	24	19
Barium (Ba)	mg/kg dm	No Value	No Value	28	41	44	59	39	35	39	56	44	41
Cadmium (Cd)	mg/kg dm	0.68	4.21	1.5	1.5	3.2	7	2.7	2.2	3.5	7.3	4.9	4.4
Chromium (Cr)	mg/kg dm	52.3	160	16	22	27	53	27	25	29	50	35	33
Copper (Cu)	mg/kg dm	18.7	108	87	110	150	210	110	110	120	220	150	110
Lead (Pb)	mg/kg dm	30.2	112	21	34	43	84	34	28	44	73	47	47
Molybdenum (Mo)	mg/kg dm	No Value	No Value	1.7	2.7	4.9	11	4.4	3.2	4.8	8.6	5	6.2
Nickel (Ni)	mg/kg dm	15.9	42.8	5.4	6.7	9.3	16	9.8	8.3	10	15	11	12
Vanadium (V)	mg/kg dm	No Value	No Value	12	16	19	34	18	19	20	28	22	24
Zinc (Zn)	mg/kg dm	No Value	No Value	51	83	140	260	120	100	140	190	130	140
Cobalt (Co)	mg/kg dm	No Value	No Value		3.1	3.4	4.8	3.2	2.9	3.2	4	3.4	3.6
Mercury (Hg)	mg/kg dm	0.13	0.7				0.092	0.066		0.06	0.077	0.058	0.063
Phenols													
p-Cresol	mg/kg dm	No Value	No Value	0.02	0.05								
Cresols (sum)	mg/kg dm	No Value	No Value	0.02	0.05								
Phenol	mg/kg dm	No Value	No Value										
Polycyclic Aromatic Hydrocarbons													
Pyrene	mg/kg dm	153	1398	0.01	0.02	0.03	0.09	0.03	0.02	0.04	0.11	0.05	0.06
PAH 16 EPA (sum)	mg/kg dm	1684	16770	0.01	0.09	0.09	0.41	0.15	0.04	0.19	0.39	0.24	0.19
Phenanthrene	mg/kg dm	86.7	544		0.02	0.01	0.04	0.02		0.02	0.04	0.02	0.02
Fluoranthene	mg/kg dm	113	1494		0.02	0.02	0.06	0.03	0.01	0.03	0.03	0.03	0.04
Chrysene	mg/kg dm	108	846		0.01	0.02	0.06	0.02	0.01	0.03	0.05	0.04	0.03
Benzo(b)fluoranthene	mg/kg dm	No Value	No Value		0.01	0.01	0.04	0.02		0.02	0.03	0.02	0.02
PAH 10 VROM (sum)	mg/kg dm	No Value	No Value		0.05	0.05	0.27	0.1	0.03	0.13	0.2	0.15	0.12
Benzo(a)anthracene	mg/kg dm	74.8	693				0.02						
Benzo(k)fluoranthene	mg/kg dm	No Value	No Value				0.02			0.01	0.01	0.01	0.01
Benzo(a)pyrene	mg/kg dm	88.8	763				0.03	0.01		0.02	0.02	0.02	0.02
Benzo(ghi)perylene	mg/kg dm	No Value	No Value				0.02	0.01		0.02	0.02	0.01	
Indeno(123cd)pyrene	mg/kg dm	No Value	No Value				0.02			0.01	0.01	0.01	
Fluorene	mg/kg dm	21.2	144								0.06	0.02	
Anthracene	mg/kg dm	46.9	245								0.02		
Naphtalene	mg/kg dm	34.6	391										
Phtalates													
Bisethylhexylphtalate	mg/kg dm	No Value	No Value	0.2	0.2	0.6	1.7	0.8	0.6	2.6	2	0.6	0.8
Phtalates (sum)	mg/kg dm	No Value	No Value	0.2	0.2	0.6	1.7	0.8	0.6	2.6	2	0.6	0.8
Dimethylphtalate	mg/kg dm	No Value	No Value										
Total Petroleum Hydrocarbons													
TPH (C12-C16)	mg/kg dm	No Value	No Value	15	13	20	69	24	15	12	78	55	27
TPH (C16-C21)	mg/kg dm	No Value	No Value	17	22	38	93	40	30	33	100	73	52
TPH (sum C10-C40)	mg/kg dm	No Value	No Value	43	65	110	280	110	68	65	300	200	120
TPH (C21-C30)	mg/kg dm	No Value	No Value		18	28	69	30	16	14	59	43	24
TPH (C30-C35)	mg/kg dm	No Value	No Value		7.8	13	35	13			36	13	7.1
TPH (C35-C40)	mg/kg dm	No Value	No Value			6.4	11				23	7.2	
TPH (C10-C12)	mg/kg dm	No Value	No Value									12	
Miscellaneous Organic compounds													
Biphenyl	mg/kg dm	No Value	No Value										
Volatile Organic Hydrocarbons													
1,2,4-Trimethylbenzene	mg/kg dm	No Value	No Value										
1,3,5-Trimethylbenzene	mg/kg dm	No Value	No Value										
Styrene	mg/kg dm	No Value	No Value										
Organic Chlorinated Pesticides													
4,4 -DDT	mg/kg dm	No Value	No Value										
DDT/DDE/DDD (sum)	mg/kg dm	No Value	No Value										
Dieldrin	mg/kg dm	No Value	No Value										
Drins (sum)	mg/kg dm	No Value	No Value										
4,4 -DDD + 2,4 -DDT	mg/kg dm	No Value	No Value										
PolyChlorinated Biphenyl (PCB)													
PCB 101	mg/kg dm	No Value	No Value										
PCB 138	mg/kg dm	No Value	No Value										
PCB 153	mg/kg dm	No Value	No Value										
PCB 180	mg/kg dm	No Value	No Value										
PCB (6) (sum)	mg/kg dm	21.6	189										
PCB (7) (sum)	mg/kg dm	21.6	189										
Miscellaneous Organic compounds													
Tributyltin (TBT)	mg/kg dm	No Value	No Value	0.076	0.22	0.35	0.77	0.31	0.098	0.18	0.28	1.1	0.25
Triphenyltin (TPhT)	mg/kg dm	No Value	No Value		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Tributyltin (TBT) Sn	mg Sn/kg dm	0.005	0.07	0.031	0.091	0.14	0.32	0.13	0.04	0.075	0.11	0.43	0.1
Triphenyltin (TPhT) Sn	mg Sn/kg dm	No Value	No Value		0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Organotin sum Sn factor 0,7	mg Sn/kg dm	No Value	No Value	0.043	0.1	0.16	0.33	0.14	0.052	0.087	0.13	0.44	0.12
Organotin sum (factor 0.7)	mg/kg dm	No Value	No Value	0.11	0.26	0.39	0.81	0.35	0.13	0.22	0.32	1.1	0.29

Notes:

Only parameters detected are reported on

Not Detected / No Guideline Value
< BCLME Sediment (Recommended Guideline Value)
> BCLME Sediment (Recommended Guideline Value) < BCLME Sediment (Probable Effect Concentration)
> BCLME Sediment (Probable Effect Concentration)
> BCLME Sediment (Probable Effect Concentration) x 100

Table 7-5 Sediment sampling results (samples 11 to 20) prior to maintenance dredging in 2015 (Botha and Faul, 2015)

Walvis Bay Fishing Harbour Baseline Sediment Sampling

Project number	G139-18
Certificate number	2015101521
Start date	15-09-2015
Report date	22-09-2015
Date sampling	08-09-2015
Sampler	P. Botha

			Map Number	11	12	13	14	15	16	17	18	19	20
Analysis	**Unit**	**BCLME Sediment (Recommended Guideline Value)**	**BCLME Sediment (Probable Effect Concentration)**										
TerrAttesT													
Version number				7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23
Characteristics													
Dry matter	% (w/w)			51.3	40.1	55	47.5	32.4	41.1	28.2	40.4	56.1	44.3
Organic matter	% (w/w) dm			4.5	6.4	5.5	4.8	8.1	5.4	8.6	6.1	3.7	4.6
Fraction < 2 µm (Clay)	% (w/w) dm			8.2	22.6	15.1	6.1	18.3	7.5	22.7	9	2.7	6.2
Metals													
Arsenic (As)	mg/kg dm	7.24	41.6	16	22	14	14	26	9.4	25	19	11	12
Barium (Ba)	mg/kg dm	No Value	No Value	41	50	35	35	53	36	49	45	34	33
Cadmium (Cd)	mg/kg dm	0.68	4.21	3.2	4.2	2.4	3.2	5.6	2.9	5.7	3.5	1.4	2.2
Chromium (Cr)	mg/kg dm	52.3	160	30	37	28	28	46	29	45	34	17	23
Copper (Cu)	mg/kg dm	18.7	108	100	150	99	99	200	69	180	130	46	73
Lead (Pb)	mg/kg dm	30.2	112	35	46	26	24	44	33	45	34	43	19
Molybdenum (Mo)	mg/kg dm	No Value	No Value	4	6.6	4	3.8	7	8.6	7.1	5.9	2.8	4.1
Nickel (Ni)	mg/kg dm	15.9	42.8	10	13	9.6	9.2	14	11	15	13	6.2	8.4
Vanadium (V)	mg/kg dm	No Value	No Value	21	23	16	19	25	23	26	20	14	21
Zinc (Zn)	mg/kg dm	No Value	No Value	120	180	120	110	200	120	170	140	430	86
Cobalt (Co)	mg/kg dm	No Value	No Value	3.6	4	3.4	2.6	3.6	3.3	3.6	3.2	2.8	2.8
Mercury (Hg)	mg/kg dm	0.13	0.7	0.052	0.064			0.069		0.057	0.083		
Phenols													
p-Cresol	mg/kg dm	No Value	No Value					0.02					
Cresols (sum)	mg/kg dm	No Value	No Value					0.02					
Phenol	mg/kg dm	No Value	No Value									0.06	
Polycyclic Aromatic Hydrocarbons													
Pyrene	mg/kg dm	153	1398	0.04	0.05	0.04	0.03	0.08	0.06	0.06	0.04	0.01	0.03
PAH 16 EPA (sum)	mg/kg dm	1684	16770	0.09	0.18	0.09	0.04	0.27	0.15	0.19	0.07	0.01	0.05
Phenanthrene	mg/kg dm	86.7	544		0.02	0.01		0.04		0.02			
Fluoranthene	mg/kg dm	113	1494	0.02	0.03	0.01	0.01	0.02	0.03	0.02	0.02		0.02
Chrysene	mg/kg dm	108	846	0.02	0.03	0.02		0.02	0.01	0.02			
Benzo(b)fluoranthene	mg/kg dm	No Value	No Value		0.02			0.02	0.02	0.02	0.01		
PAH 10 VROM (sum)	mg/kg dm	No Value	No Value	0.04	0.11	0.04	0.01	0.17	0.08	0.09	0.02		0.02
Benzo(a)anthracene	mg/kg dm	74.8	693					0.01					
Benzo(k)fluoranthene	mg/kg dm	No Value	No Value		0.01			0.02					
Benzo(a)pyrene	mg/kg dm	88.8	763		0.01			0.02	0.01	0.01			
Benzo(ghi)perylene	mg/kg dm	No Value	No Value		0.01			0.02	0.01	0.01			
Indeno(123cd)pyrene	mg/kg dm	No Value	No Value										
Fluorene	mg/kg dm	21.2	144	0.02		0.02				0.02			
Anthracene	mg/kg dm	46.9	245					0.01					
Naphtalene	mg/kg dm	34.6	391					0.01	0.01	0.01			
Phtalates													
Bisethylhexylphtalate	mg/kg dm	No Value	No Value	0.9	2	1.9	1.8	4	1.2	2.4	1.8	0.4	1.1
Phtalates (sum)	mg/kg dm	No Value	No Value	0.9	2	1.9	1.8	4	1.5	2.4	1.8	14	1.1
Dimethylphtalate	mg/kg dm	No Value	No Value						0.2			14	
Total Petroleum Hydrocarbons													
TPH (C12-C16)	mg/kg dm	No Value	No Value	54	76	64	100	190	68	140	49	38	120
TPH (C16-C21)	mg/kg dm	No Value	No Value	76	94	88	120	240	110	170	71	56	130
TPH (sum C10-C40)	mg/kg dm	No Value	No Value	200	310	260	430	790	330	620	220	150	450
TPH (C21-C30)	mg/kg dm	No Value	No Value	42	69	56	100	190	82	150	44	29	97
TPH (C30-C35)	mg/kg dm	No Value	No Value	14	36	27	40	83	28	67	28	14	35
TPH (C35-C40)	mg/kg dm	No Value	No Value	6	24	17	28	57	25	53	20	11	30
TPH (C10-C12)	mg/kg dm	No Value	No Value	5	12	13	30	38	13	27	6	4.9	44
Miscellaneous Organic compounds													
Biphenyl	mg/kg dm	No Value	No Value					0.014					
Volatile Organic Hydrocarbons													
1,2,4-Trimethylbenzene	mg/kg dm	No Value	No Value						0.38				
1,3,5-Trimethylbenzene	mg/kg dm	No Value	No Value						0.21				
Styrene	mg/kg dm	No Value	No Value									0.4	
Organic Chlorinated Pesticides													
4,4 -DDT	mg/kg dm	No Value	No Value							0.003			
DDT/DDE/DDD (sum)	mg/kg dm	No Value	No Value							0.003			0.004
Dieldrin	mg/kg dm	No Value	No Value							0.003			
Drins (sum)	mg/kg dm	No Value	No Value							0.003			
4,4 -DDD + 2,4 -DDT	mg/kg dm	No Value	No Value										0.004
PolyChlorinated Biphenyl (PCB)													
PCB 101	mg/kg dm	No Value	No Value										
PCB 138	mg/kg dm	No Value	No Value										
PCB 153	mg/kg dm	No Value	No Value										
PCB 180	mg/kg dm	No Value	No Value										
PCB (6) (sum)	mg/kg dm	21.6	189										
PCB (7) (sum)	mg/kg dm	21.6	189										
Miscellaneous Organic compounds													
Tributyltin (TBT)	mg/kg dm	No Value	No Value	0.31	0.31	0.1	0.12	0.23	0.36	0.24	0.14	0.034	0.052
Triphenyltin (TPhT)	mg/kg dm	No Value	No Value	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Tributyltin (TBT) Sn	mg Sn/kg dm	0.005	0.07	0.13	0.13	0.042	0.051	0.093	0.15	0.097	0.056	0.014	0.021
Triphenyltin (TPhT) Sn	mg Sn/kg dm	No Value	No Value	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Organotin sum Sn factor 0,7	mg Sn/kg dm	No Value	No Value	0.14	0.14	0.054	0.063	0.1	0.16	0.11	0.067	0.026	0.033
Organotin sum (factor 0.7)	mg/kg dm	No Value	No Value	0.34	0.34	0.14	0.16	0.26	0.39	0.27	0.17	0.069	0.087

Notes:

Only parameters detected are reported on

Not Detected / No Guideline Value
< BCLME Sediment (Recommended Guideline Value)
> BCLME Sediment (Recommended Guideline Value) < BCLME Sediment (Probable Effect Concentration)
> BCLME Sediment (Probable Effect Concentration)
> BCLME Sediment (Probable Effect Concentration) x 100

Table 7-6 Sediment sampling results (samples 21 to 30) prior to maintenance dredging in 2015 (Botha and Faul, 2015)

Walvis Bay Fishing Harbour Baseline Sediment Sampling													
Project number	G139-18												
Certificate number	2015101521												
Start date	15-09-2015												
Report date	22-09-2015												
Date sampling	08-09-2015												
Sampler	P. Botha												
	Map Number			21	22	23	24	25	26	27	28	29	30
Analysis	**Unit**	**BCLME Sediment (Recommended Guideline Value)**	**BCLME Sediment (Probable Effect Concentration)**										
TerrAttesT													
Version number				7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23
Characteristics													
Dry matter	% (w/w)			59	66.4	65.7	63.2	25.6	39.6	52.3	68.6	49.7	29.8
Organic matter	% (w/w) dm			4.7	2.7	2.4	2.5	10.1	6.2	3.7	2.4	4.4	8.7
Fraction < 2 µm (Clay)	% (w/w) dm			3.8	7.3	5.3	5.5	16.4	13.5	6.5	4.5	8.6	17.4
Metals													
Arsenic (As)	mg/kg dm	7.24	41.6	5.1	8.9	12	12	23	17	9.6	15	19	20
Barium (Ba)	mg/kg dm	No Value	No Value	34	27	21	30	55	50	39	35	38	53
Cadmium (Cd)	mg/kg dm	0.68	4.21	2.4	1.5	1.5	1.7	5.8	4.3	2.8	1.7	2.9	6.4
Chromium (Cr)	mg/kg dm	52.3	160	25	21	21	20	40	32	26	22	27	43
Copper (Cu)	mg/kg dm	18.7	108	16	35	49	45	100	71	50	72	96	130
Lead (Pb)	mg/kg dm	30.2	112	9.5	12	12	13	53	32	37	28	41	74
Molybdenum (Mo)	mg/kg dm	No Value	No Value	2.9	1.3	1.7	1.2	8.3	3.5	3.1	2	2.4	6.5
Nickel (Ni)	mg/kg dm	15.9	42.8	9.2	6.8	7.9	6.6	14	11	9.6	7.7	8.7	14
Vanadium (V)	mg/kg dm	No Value	No Value	20	16	14	15	29	22	20	17	22	27
Zinc (Zn)	mg/kg dm	No Value	No Value	27	27	34	38	100	96	66	61	82	130
Cobalt (Co)	mg/kg dm	No Value	No Value	2.8	2.1	2.1	2.1	3.8	3.1	3	2.7	2.9	3.8
Mercury (Hg)	mg/kg dm	0.13	0.7					0.065	0.054			0.061	0.062
Phenols													
p-Cresol	mg/kg dm	No Value	No Value	0.02	0.22		0.09						
Cresols (sum)	mg/kg dm	No Value	No Value	0.02	0.22		0.09						
Phenol	mg/kg dm	No Value	No Value	0.68	0.17	0.05	0.04						
Polycyclic Aromatic Hydrocarbons													
Pyrene	mg/kg dm	153	1398									0.02	0.03
PAH 16 EPA (sum)	mg/kg dm	1684	16770									0.07	0.07
Phenanthrene	mg/kg dm	86.7	544									0.02	
Fluoranthene	mg/kg dm	113	1494										0.02
Chrysene	mg/kg dm	108	846									0.01	0.02
Benzo(b)fluoranthene	mg/kg dm	No Value	No Value										
PAH 10 VROM (sum)	mg/kg dm	No Value	No Value									0.03	0.04
Benzo(a)anthracene	mg/kg dm	74.8	693										
Benzo(k)fluoranthene	mg/kg dm	No Value	No Value										
Benzo(a)pyrene	mg/kg dm	88.8	763										
Benzo(ghi)perylene	mg/kg dm	No Value	No Value										
Indeno(123cd)pyrene	mg/kg dm	No Value	No Value										
Fluorene	mg/kg dm	21.2	144									0.01	
Anthracene	mg/kg dm	46.9	245										
Naphtalene	mg/kg dm	34.6	391										
Phtalates													
Bisethylhexylphtalate	mg/kg dm	No Value	No Value									0.3	0.5
Phtalates (sum)	mg/kg dm	No Value	No Value									0.3	0.5
Dimethylphtalate	mg/kg dm	No Value	No Value										
Total Petroleum Hydrocarbons													
TPH (C12-C16)	mg/kg dm	No Value	No Value			53				12	9.5	29	30
TPH (C16-C21)	mg/kg dm	No Value	No Value			48				15	16	36	41
TPH (sum C10-C40)	mg/kg dm	No Value	No Value			210				66	73	110	150
TPH (C21-C30)	mg/kg dm	No Value	No Value			46				16	21	23	32
TPH (C30-C35)	mg/kg dm	No Value	No Value			17				7.7	13	13	24
TPH (C35-C40)	mg/kg dm	No Value	No Value			14				11	13	8.8	21
TPH (C10-C12)	mg/kg dm	No Value	No Value			27				3.8		4.4	3.1
Miscellaneous Organic compounds													
Biphenyl	mg/kg dm	No Value	No Value										
Volatile Organic Hydrocarbons													
1,2,4-Trimethylbenzene	mg/kg dm	No Value	No Value										
1,3,5-Trimethylbenzene	mg/kg dm	No Value	No Value										
Styrene	mg/kg dm	No Value	No Value										
Organic Chlorinated Pesticides													
4,4 -DDT	mg/kg dm	No Value	No Value										
DDT/DDE/DDD (sum)	mg/kg dm	No Value	No Value										
Dieldrin	mg/kg dm	No Value	No Value										
Drins (sum)	mg/kg dm	No Value	No Value										
4,4 -DDD + 2,4 -DDT	mg/kg dm	No Value	No Value										
PolyChlorinated Biphenyl (PCB)													
PCB 101	mg/kg dm	No Value	No Value					0.004					
PCB 138	mg/kg dm	No Value	No Value					0.01					
PCB 153	mg/kg dm	No Value	No Value					0.009					
PCB 180	mg/kg dm	No Value	No Value					0.008					
PCB (6) (sum)	mg/kg dm	21.6	189					0.031					
PCB (7) (sum)	mg/kg dm	21.6	189					0.031					
Miscellaneous Organic compounds													
Tributyltin (TBT)	mg/kg dm	No Value	No Value	0.42	0.032	0.032	0.032	0.064	0.061	0.043	0.032	0.34	0.48
Triphenyltin (TPhT)	mg/kg dm	No Value	No Value	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Tributyltin (TBT) Sn	mg Sn/kg dm	0.005	0.07	0.17	0.013	0.013	0.013	0.013	0.025	0.018	0.013	0.14	0.2
Triphenyltin (TPhT) Sn	mg Sn/kg dm	No Value	No Value	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Organotin sum Sn factor 0,7	mg Sn/kg dm	No Value	No Value	0.19	0.021	0.021	0.021	0.021	0.037	0.03	0.021	0.15	0.21
Organotin sum (factor 0.7)	mg/kg dm	No Value	No Value	0.46	0.057	0.057	0.057	0.11	0.096	0.078	0.057	0.37	0.52

Notes:

Only parameters detected are reported on

Not Detected / No Guideline Value
< BCLME Sediment (Recommended Guideline Value)
> BCLME Sediment (Recommended Guideline Value) < BCLME Sediment (Probable Effect Concentration)
> BCLME Sediment (Probable Effect Concentration)
> BCLME Sediment (Probable Effect Concentration) x 100

Implications and Impacts

The introduction of pollutants, specifically heavy metals and tributyltin (TBT), during grit blasting operations could have deleterious effects on marine biodiversity and human health. Sediment disruption caused by dredging activities, particularly capital dredging, may lead to the mobilisation and dispersion of previously buried contaminants within the harbour area. Comprehensive mitigation measures must be in place to prevent grit blasting dust and waste, as well as sediment plumes from dredging and demolition activities, from entering the marine environment.

7.8 Fauna of the Bay

Of note nearby is the Walvis Bay Lagoon, the salt works and the southern part of the bay west of the lagoon, which are the key components of the 9,000 km^2 Ramsar site (Wetland of International Importance). It is important both as an over-wintering area for Palaearctic migrant wader species as well as for African species such as Greater and Lesser Flamingos, Great White Pelican and Chestnut-Banded Plovers.

The marine mammals, occurring at various times in the Walvis Bay area, are the cetaceans which are the Common Bottlenose Dolphins, the Namibian endemic Heaviside's Dolphins, Dusky Dolphins, Humpback Whales, Southern Right Whales and Pigmy Right Whales as well as the Cape Fur Seals. The Common Bottlenose Dolphin, Heaviside's dolphin and Cape Fur Seal are seen most frequently (daily), the Pigmy Right Whale less frequently (monthly) and the rest infrequently as they are seasonal or infrequent visitors. The Common Bottle Nose Dolphin with a population of less than a 100 individuals is thought of as quite unique in being one of the smallest mammal populations in Africa.

The Namibian coastal waters are home to five species of turtles and all five species are listed as threatened under the IUCN which is controlled through CITES. The most common occurring turtles near the proposed development are the Leatherback Turtle and Green Sea Turtle with the Hawksbill Sea Turtle occurring occasionally.

Implications and Impacts

Whales, dolphins and seals are often considered flagship species to which people attach significant inherent and economic value, as reflected in the thriving marine tourism industry. Their ecological role within the marine food web is equally critical. Pollutants entering the marine environment may adversely affect these animals directly, or indirectly through disruption of the food chains that support them. In addition to chemical pollutants, the proposed works, particularly capital dredging, jetty removal, and the delivery and positioning of the floating drydock, may result in elevated underwater noise levels and increased vessel traffic. These factors can lead to temporary displacement, behavioural changes, or stress responses in marine mammals.

7.9 Demographic and Economic Characteristics

At local level, Walvis Bay has an urban population of 51,618 (Namibia Statistics Agency, 2024). Walvis Bay is the principal port of Namibia and serves as an import/export hub for processed fish, mining products, general and hazardous cargo, and fuel. The port also plays a growing role in supporting the offshore oil and gas industry, with increasing vessel traffic related to exploration, rig maintenance and associated logistics.

The area is strategically linked to Namibia's air, rail and road network, making the port well positioned to service Zambia, Zimbabwe, Botswana, southern Angola and South Africa. The fishing industry remains the major employer of low-skilled workers on both a permanent and seasonal basis, contributing approximately 2% of total national employment. In addition to these industrial sectors, Walvis Bay is an emerging tourism gateway, providing access to attractions such as Sandwich Harbour, the Namib Desert and the wider Erongo coastline. This combination of industrial activity, logistics functions and tourism makes Walvis Bay a key economic centre for Namibia.

Implications and Impacts

The project will provide employment to people from the area. Skills development and training would also be a benefit to employees. The development may have an influence on further stimulating economic growth of the town and region which may result in more job opportunities.

Table 7-7 Demographic characteristics of Walvis Bay, the Erongo region and nationally (Namibia Statistics Agency, 2023; Namibia Statistics Agency, 2023)

	Walvis Bay Urban	**Erongo Region**	**Namibia**
Population (Males)	26,212	122,322	1,474,224
Population (Females)	25,406	117,884	1,548,177
Population (Total)	51,618	240,206	3,022,401
Population Density (persons/km^2)	2,730.8	3.8	3.7

8 PUBLIC CONSULTATION

Consultation with the public forms an integral component of an environmental assessment investigation and enables interested and affected parties (IAPs) e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with projects and to identify additional issues which they feel should be addressed in the environmental assessment.

Public participation notices were advertised twice for two weeks in the national papers: Republikein and Namibian Sun on 29 October and 5 October 2025. A site notice was placed at the property boundary. Interested and affected parties were identified and notified of the project. Notification letters were hand delivered to available neighbours as well as the Municipality of Walvis Bay and Namport. See Appendix A for proof of the public participation processes. For a list of the notified and registered IAPs, comments received please see Appendix A.

9 ASSESSMENT OF IMPACTS

The purpose of this section is to assess and identify the most pertinent environmental impacts that are expected from the construction, operational and potential decommissioning activities of the proposed project. An EMP based on these identified impacts are also incorporated into this section.

For each impact an environmental classification was determined based on an adapted version of the Rapid Impact Assessment Method (Pastakia, 1998). Impacts are assessed according to the following categories: Importance of condition (A1); Magnitude of Change (A2); Permanence (B1); Reversibility (B2); and Cumulative Nature (B3) (see Table 9-1)

Ranking formulas are then calculated as follow:

Environmental Classification = A1 x A2 x (B1 + B2 + B3)

The environmental classification of impacts is provided in Table 9-2.

The probability ranking refers to the probability that a specific impact will happen following a risk event. These can be improbable (low likelihood); probable (distinct possibility); highly probable (most likely); and definite (impact will occur regardless of prevention measures).

Table 9-1 Assessment criteria

Criteria	Score
Importance of condition (A1) – assessed against the spatial boundaries of human interest it will affect	
Importance to national/international interest	4
Important to regional/national interest	3
Important to areas immediately outside the local condition	2
Important only to the local condition	1
No importance	0
Magnitude of change/effect (A2) – measure of scale in terms of benefit / disbenefit of an impact or condition	
Major positive benefit	3
Significant improvement in status quo	2
Improvement in status quo	1
No change in status quo	0
Negative change in status quo	-1
Significant negative disbenefit or change	-2
Major disbenefit or change	-3
Permanence (B1) – defines whether the condition is permanent or temporary	
No change/Not applicable	1
Temporary	2
Permanent	3
Reversibility (B2) – defines whether the condition can be changed and is a measure of the control over the condition	
No change/Not applicable	1
Reversible	2
Irreversible	3
Cumulative (B3) – reflects whether the effect will be a single direct impact or will include cumulative impacts over time, or synergistic effect with other conditions. It is a means of judging the sustainability of the condition – not to be confused with the permanence criterion.	
Light or No Cumulative Character/Not applicable	1
Moderate Cumulative Character	2
Strong Cumulative Character	3

Table 9-2 Environmental classification (Pastakia 1998)

Environmental Classification	Class Value	Description of Class
72 to 108	5	Extremely positive impact
36 to 71	4	Significantly positive impact
19 to 35	3	Moderately positive impact
10 to 18	2	Less positive impact
1 to 9	1	Reduced positive impact
0	-0	No alteration
-1 to -9	-1	Reduced negative impact
-10 to -18	-2	Less negative impact
-19 to -35	-3	Moderately negative impact
-36 to -71	-4	Significantly negative impact
-72 to -108	-5	Extremely Negative Impact

9.1 Risk Assessment and Environmental Management Plan

The EMP provides management options to ensure impacts of the project is minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The environmental management measures are provided in the tables and descriptions below. These management measures should be adhered to during the various phases of the operation of the project. This section of the report can act as a stand-alone document. All personnel taking part in the operations of the project should be made aware of the contents in this section, so as to plan the operations accordingly and in an environmentally sound manner.

The objectives of the EMP are:

- to include all components of construction activities (including upgrades, maintenance, etc.) and operations of the project;
- to prescribe the best practicable control methods to lessen the environmental impacts associated with the project;
- to monitor and audit the performance of construction and operational personnel in applying such controls; and
- to ensure that appropriate environmental training is provided to responsible construction and operational personnel.

Various potential and definite impacts will emanate from the construction, operations and decommissioning phases. The majority of these impacts can be mitigated or prevented. The impacts, risk rating of impacts as well as prevention and mitigation measures are listed below.

As depicted in the tables below, impacts related to the operational phase are expected to mostly be of medium to low significance and can mostly be mitigated to have a low significance. The extent of impacts are mostly site specific to local and are not of a permanent nature. Due to the nature of the surrounding areas, cumulative impacts are possible and include groundwater contamination and traffic impacts.

9.1.1 Planning

During the phases of planning for construction, operations and decommissioning of the facility and drydock, it is the responsibility of the Proponent to ensure they are and remain compliant with all legal requirements. The Proponent must also ensure that all required management measures are in place prior to and during all phases, to ensure potential impacts and risks are minimised. The following actions are recommended for the planning phase and should continue during various other phases of the project:

- Ensure that all necessary permits from the various ministries, local authorities and any other bodies that governs the project are in place and remains valid.
- Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel present or who will be present on site.
- Make provisions to have a health, safety and environmental (HSE) coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site. Provision should be made for monthly environmental performance audits and reports during the initial phases.
- Have the following in place where relevant to deal with all potential emergencies:
  - Risk management / mitigation / EMP/ emergency response plan and HSE manuals
  - Adequate protection and indemnity insurance cover for incidents;
  - Relevant safety standards;
  - Procedures, equipment and materials required for emergencies.
- Establish and / or maintain a reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- Prepare and submit EMP compliance reports to the MEFT in accordance with the conditions of the ECC.
- Appoint a specialist environmental consultant to update the EIA and EMP and apply for renewal of the ECC in accordance with the conditions of the ECC.

9.1.2 Ship Repair and Maintenance Services

The proposed facility will provide a platform for ship repair and maintenance in Walvis Bay. Activities such as grit blasting, painting, welding and mechanical repairs are essential to maintain the functionality, efficiency and safety of maritime vessels. By offering these services locally, the project will help to reduce waiting times for repairs, increase the availability of service slots, and minimise the need for vessels to divert to other ports. This, in turn, supports Namibia's maritime economy and strengthens Walvis Bay's position as a regional repair hub.

While ship repair and maintenance activities are associated with environmental, health and safety risks, these can be effectively managed. Appropriate management and mitigation measures will be implemented to ensure that operations are undertaken in a safe, controlled and environmentally responsible manner, thereby allowing the positive economic and operational benefits of the facility to be realised.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Daily Operations	Provision of ship repair and maintenance services	4	3	3	2	2	84	5	Definite

Desired Outcome: Provision of ship repair and maintenance services.

Actions:

Enhancement:

- Maximise utilisation of the floating drydock and associated workshops to increase local and regional capacity for ship repair and maintenance, thereby reducing waiting times and ensuring that more vessels can be serviced in Walvis Bay rather than diverting to other ports.
- Implement adequate health, safety and environmental policies and procedures to ensure the operations of the facility, and provision of ship repair and maintenance services, can continue without disruptions.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- The number of vessels handled on the floating drydock to be included in a six monthly environmental monitoring report.

9.1.3 Employment

The construction and operation of the facility will create local employment opportunities and sustain existing skills within Walvis Bay's industrial sector. During dredging operations, a small specialised crew will be required. If an international dredging contractor is appointed, the dredging vessel will likely be operated by a foreign crew, while local Namibian companies and consultants will provide support services such as logistics, environmental monitoring, and maintenance, thereby creating and sustaining local employment.

Operators in Namibia currently have the capacity to conduct only minor dredging activities along quays and jetties; therefore, major dredging works are expected to be undertaken by an international contractor. All foreign employees will be required to obtain the necessary work permits before commencing any activities in Namibia.

Through the development and operation of the new jetty and floating dry dock, employment and service opportunities within the Port of Walvis Bay will be indirectly supported across a range of marine engineering, logistics, and port-related industries.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Employment of contractors	3	1	2	2	2	18	2	Definite
Daily Operations	Sustaining or creating employment opportunities through support services	3	2	2	2	2	36	4	Definite
Dredging Operations	Sustaining or creating employment opportunities through normal operations, dredging and through support services offered to the Proponent and the dredging contractor	3	1	2	2	2	18	2	Definite

Desired outcome: Provision of employment to local Namibians and adhering to Namibian legal requirements with respect to work permits.

Actions:

Enhancement:

- If the skills exist locally, contractors and employees must first be sourced from the town, then the region and then nationally. Deviations from this practise must be justified.
- Ensure work permits for foreign employees are obtained prior to calling at the port.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Employee contracts on file
- Bi-annual reporting, whichever comes first, based on employee records that provides details on number of employees and demographic profile such as male vs. female, local vs. foreign, and disabled employees.

9.1.4 Skills, Technology and Development

During the different phases of construction and operation, training will be provided to employees. Skills will be transferred to unskilled and semi-skilled workers. The development of people and technology within the marine engineering sector forms an important component of economic growth, promoting local expertise and sustainable industrial development in Walvis Bay.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Employment and skill development of contractors	3	1	2	2	2	18	2	Definite
Dredging Operations	Technological development and transfer of skills to the local population	2	1	2	2	1	10	2	Probable
Indirect Impacts	Growth in port services and operations and associated technological development and transfer of skills	3	2	3	2	2	42	4	Probable
Daily Operations	Employment, technological development and transfer of skills	2	1	2	3	2	14	2	Definite
Indirect Impacts	Transfer of skills and technological development	2	1	2	3	3	16	2	Definite

Desired Outcome: Increasing the skills of local Namibians, as well as development and technology advancements in associated industries.

Actions

Enhancement:

- If the skills exist locally, contractors and employees must first be sourced from the town, then the region and then nationally. Deviations from this practise must be justified.
- Skills development and improvement programs to be made available as identified during performance assessments.
- Training and skills development must be focussed on Namibians.
- Employees to be informed about parameters and requirements for references upon employment.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Record should be kept of training provided.
- Ensure that all training is certified or managerial reference provided (proof provided to the employees) inclusive of training attendance, completion and implementation.
- Bi-annual summary report based on records kept.

9.1.5 Revenue Generation

An increase in skilled and professional labour will result from the continuing operations, and related wages and salaries will be paid. Revenue will be generated through the contracting of port and related contractor services. During dredging operations, resources and services will be procured locally, contributing to the economy of the town, region, and Namibia.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Local procurement of resources and contractors resulting in revenue generation	3	2	2	2	2	36	3	Definite
Dredging Operations	Local procurement of resources and support services by the dredging contractor resulting in revenue generation	3	2	2	2	2	36	3	Definite
Daily Operations	Employment contribution to local economy	3	1	3	3	2	24	3	Definite
Indirect Impacts	Ship repair operations continuously require resources and services resulting in revenue generation	3	3	2	2	3	63	4	Definite
Indirect Impacts	Decrease in unemployment, contribution to local economy	3	1	3	3	3	27	3	Definite

Desired Outcome: Contribution to the local and national economy. Contribution to national treasury.

Actions

Enhancement:

- The Proponent must employ local Namibians and source Namibian contractors, goods and services as far as is practically possible. Deviations from this practise must be justified.
- Resources and services must be procured locally, if available. Deviations from this must be justified.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Bi-annual summary report based on employee records.

9.1.6 Demographic Profile and Community Health

The operations of the facility will be reliant on labour once the facility is constructed and operational. Community health may be exposed to factors such as communicable diseases, including HIV/AIDS, and alcohol or drug abuse, which can be associated with the increased spending power of the labour force. The presence of foreign personnel in the area may also increase the cumulative risk of communicable diseases in Walvis Bay.

During dredging activities, there may be an influx of foreign crew members operating the dredging vessel. Most of these personnel will remain on the vessels and may only visit the town for short periods, while management staff may be stationed in town. Additional contractors, employees, or consultants may be sourced locally and could require temporary accommodation and offices in Walvis Bay. Due to the scale and duration of dredging, the influx of people is not expected to cause a significant or lasting change in the demographic profile of the local community, nor result in notable instances of socially deviant behaviour. The potential impact is further reduced as employment will be sourced locally as far as possible.

Positive impacts will relate to the increased economic resilience and improved livelihoods of employees and contractors.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	In-migration and related social ills	2	-1	2	2	2	-12	-2	Probable
Dredging Operations	Social ills and deviant behaviour resulting from the temporary presence of the dredging team	2	-1	1	2	2	-10	-2	Probable
Indirect Impacts	Social ills and deviant behaviour resulting from an influx of jobseekers into the town and related unemployment	2	-1	1	2	2	-10	-2	Probable
Daily Operations	In-migration and social ills related to unemployment	1	-1	1	1	2	-4	-1	Probable
Indirect Impacts	The spread of disease	1	-1	2	1	2	-4	-1	Probable

Desired Outcome: To prevent the in-migration and growth in informal settlements, prevent the spread of communicable disease and prevent / discourage socially deviant behaviour.

Actions:

Prevention:

- Employ local people from the area where possible, deviations from this practise should be justified appropriately.
- Adhere to all municipal by-laws relating to environmental health which includes, but is not limited to, sanitation requirements for workers on site.
- Appointment of reputable contractors.

Mitigation:

- Educational programmes for employees on HIV/AIDs and general upliftment of employees' social status.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Facility inspection sheet for all areas which may present environmental health risks, kept on file.
- Bi-annual summary report based on educational programmes and training conducted.
- Bi-annual report and review of employee demographics.

9.1.7 Health, Safety and Security

Activities associated with the construction and operational phases of the facility will rely on human labour and therefore expose workers to various health and safety risks. During construction, risks include working at heights, use of heavy machinery, and exposure to dust and noise.

During operations, risks will relate to the use of machinery and tools, unsafe stacking of materials, and handling of hazardous substances such as paints, solvents, and blasting grit. In the workshop, welding, grinding, and fabrication activities may pose additional risks if not properly managed. If not contained, windblown dust and grit may also pose a health risk to nearby receptors.

The Namibian coast is characterised by very cold water and rough conditions. Falling from the quay, the dry dock, or dredging platform and being exposed to cold water may quickly result in hypothermia, which can be fatal.

During dredging, there is a potential risk of exposure to hydrogen sulphide and methane gas. Hydrogen sulphide is especially dangerous and can be fatal at concentrations between 300 and 600 ppm. It is first detected as a rotten egg smell, but prolonged exposure causes loss of smell, creating a false sense of safety.

Security risks may include unauthorised entry, theft, or sabotage, and will be managed through access control and on-site supervision.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Physical injuries, chemical exposure, hypothermia or drowning, etc.	1	-3	3	3	2	-24	-3	Probable
Dredging Operations	Physical injuries, health and theft	2	-2	2	2	1	-20	-3	Probable
Daily Operations	Physical injuries, exposure to chemicals and gaseous emissions, and criminal activities	2	-2	3	2	2	-28	-3	Highly Probable

Desired Outcome: To prevent injury, health impacts and theft.

Actions

Prevention:

- All Health and Safety standards specified in the Labour Act, or better, should be followed.
- Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- Provide all employees with required and adequate personal protective equipment (PPE) including dust masks and protective clothing for workers in close proximity to, or working with, the dust producing equipment. Accidental inhalation, ingestion, dermal or eye contact with dust must be prevented at all times.
- Ensure that all personnel receive adequate training on operations of equipment / handling of harmful materials.
- Equipment on site must be stored in a way that does not encourage criminal activities (e.g. locked away to prevent theft).
- Security procedures and proper security measures must be in place to protect workers.
- Strict security that prevents unauthorised entry into the site.
- The build-up of static electricity must be prevented by grounding the surface to be blasted.
- Appointment of a reputable dredging contractor with a known history of responsible and safe operations.

- All seafaring vessels used must have all the required safety and emergency equipment as per maritime standards.
- To prevent and/or mitigate the impacts of hydrogen sulphide and methane gas, the following must be in place:
  - Ensure that the dredging and support vessels are equipped with appropriate technology, and correct placement of such technology, to avoid poisonous gases from affecting crew.
  - Ensure that appropriate breathing apparatuses are available to crew to protect them from any dangerous gas that is liberated from the submerged and dredged material.
  - Continuous hydrogen sulphide monitoring must be performed in all areas identified to be at risk of being engulfed by the gas. This include real time remote monitoring or portable (handheld) monitoring devices to be carried on person. Areas to be monitored include all areas of the vessel that are at risk and on the drydocks, quays, jetties and berths, when dredging is in close proximity thereof.
  - Near the quays, jetties and berths, dredging must be done mainly while there are fewer activities.
  - Seafaring traffic may not come within 100 m of the dredger unless authorised to do so and must, if possible, pass upwind of the dredger.

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 operational, safe work and medical procedures, permits to work, emergency response plans, housekeeping rules, MSDS's and signage requirements (PPE, flammable etc.).
- Implement emergency response procedures in case of incidents.
- Emergency wash stations in case of accidental exposure to chemicals or dust.
- If sensors are triggered, dredging must stop and gas levels allowed to drop to acceptable safe levels. If required, the dredging vessel must be manoeuvred away from the area where high gas levels are detected.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Industry standards and protocols, etc.
- An up-to-date health and safety file to be maintained.
- Any incidents or complaints must be recorded with action taken to prevent future occurrences.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when training were conducted and when safety equipment and structures were inspected and maintained, incidents or complaints received, including action taken to prevent future occurrences, must be included.

9.1.8 Road Traffic

The construction of the jetty and associated support infrastructure will increase the number of trucks accessing the area for the delivery of equipment, construction materials, and machinery. This will result in higher traffic volumes, particularly of heavy motor vehicles, in nearby streets and along the shared panhandle access during the construction phase. On unsealed or partially sealed sections of the panhandle, increased traffic may generate dust that could be entrained in the wind and carried towards neighbouring properties.

During operations, a further increase in traffic is expected due to the addition of the floating dry dock and associated vessel services. Normal daily activities are not expected to have a significant impact on regional traffic conditions. However, heavy vehicle movements may contribute to road surface wear, particularly at turning points and intersections, may generate dust along the shared panhandle access if not adequately managed, and could temporarily obstruct access to neighbouring businesses or increase the risk of minor traffic incidents.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Traffic congestion and temporary road closure, road wear and tear, and accidents	1	-1	2	2	2	-6	-1	Probable
Daily Operations	Impact from increased traffic.	1	-1	1	1	2	-6	-1	Probable

Desired Outcome: Minimum impact on traffic and no transport or traffic related incidents.

Actions

Mitigation:

- Trucks collecting waste produced from maintenance dredging should not be allowed to obstruct any traffic in surrounding areas and the town.
- Adhere to The Road Traffic and Transport Regulations, 2001 and all other applicable legislation related to road transport and maximum axle loads.
- If any traffic impacts are expected, traffic management should be performed to prevent these.
- The placement of signs to warn and direct traffic will help to mitigate traffic impacts.
- Implement and enforce speed limits for vehicles on the shared panhandle access and internal roads to reduce dust generation and improve safety.
- Avoid idling and queuing of vehicles along the section of the panhandle adjacent to neighbours loading and storage areas.
- All present and future users of the shared panhandle must devise a strategy to prevent dust from traffic on the panhandle. This may entail paving or surfacing the panhandle.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- The Road Traffic and Transport Regulations, 2001.
- Any complaints received regarding traffic issues should be recorded together with action taken to prevent impacts from repeating itself.
- A bi-annual report should be compiled of all incidents reported, complaints received, and action taken

9.1.9 Maritime Traffic

Marine traffic in the area may experience temporary delays or navigational restrictions during the construction and commissioning of the jetty and floating dry dock. The presence and movement of construction vessels, barges, and equipment in the area may increase the risk of collisions or near misses, particularly if navigational warnings are not properly issued or if vessels without adequate communication systems enter the area.

The commissioning and operation of the floating dry dock may also temporarily affect vessel movement within the nearby navigation channel. All activities will therefore be coordinated with Namport's port control to ensure safe navigation and to minimise interference with other maritime operations.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Dredging Operations	Increase traffic, road wear and tear and accidents	2	-1	2	2	1	-10	-2	Probable
Commissioning Phase	Marine traffic impacts	1	-1	2	2	2	-6	-1	Probable

Desired Outcome: Minimum impact on seafaring traffic and no accidents.

Actions

Mitigation:

- Contracting a Trailing Suction Hopper Dredger, if suitable to the task, will minimize delays for seafaring vessels.
- Proper communication, management and planning will largely prevent traffic impacts.
- Timely issuing of navigational warnings (Namport).
- Planning and communication with regular provision of updates to Namport (Port Captain) on the dredging schedule.
- All communications, navigational and warning systems on the vessel in working order and regularly tested and maintained.
- Should an incident occur, it must immediately be reported to the Port Captain, followed by a detailed report within 24 hours, and corrective action should be taken to prevent any future occurrences of such events.
- All clients must adhere to all Namport regulations and follow all procedures for reporting any ship movement to Port Control who will direct marine traffic and give permissions for movement.

Data Sources and Monitoring:

- Part III of the regulations proclaimed under the Namibian Ports Authority Act; Merchant Shipping Act; Marine Traffic Act.; Convention on the International Regulations for Preventing Collisions at Sea; International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
- Ship's log to be duly maintained.
- Any complaints or incident reports received from seafaring traffic, with regard to dredger operations, should be recorded together with corrective action taken and measures implemented to prevent impacts from repeating itself.
- Close-out report or bi-annual reporting, whichever comes first, on all seafaring traffic related incidents reported, complaints received, and action taken.

9.1.10 Air Quality Related Impacts

Reduced air quality may result from pulverised blasting grit, paint particles, and other materials released during surface preparation and coating activities. These emissions can become airborne and be dispersed under strong wind conditions, potentially causing localised health impacts. The effect is expected to be temporary and dispersible due to the prevailing southwesterly winds in Walvis Bay. Under the dominant south to southwesterly winds in Walvis Bay, dust generated on site is likely to be carried predominantly northwards and northeastwards across the harbour basin and nearby industrial properties. During periods of northerly, northwesterly or westerly winds, dust may be transported towards neighbouring properties.

Windblown dust may also affect air quality and pose health risks, particularly through chronic inhalation of fine particulate matter such as $PM_{2.5}$ and PM_{10}, which may contain harmful or irritant substances from grit blasting operations. Proper containment, netting, and dust control measures must be implemented to reduce this risk.

Given the immediate proximity of the neighbouring food-labelling, storage and loading areas, even low concentrations of dust, paint overspray or fumes could be problematic. Without adequate prevention and mitigation, there is a risk of non-compliance with stringent food safety standards and potential failure of external audits. The impact significance before mitigation is therefore considered higher for this specific receptor than for the general industrial surroundings.

Repair and fabrication activities in the workshop will generate localised emissions of welding fumes, grinding dust, paint mists and solvent vapours. These are mainly occupational health hazards, however, uncontrolled release through open doors or low-level vents could contribute to off-site dust, fumes and odours.

During dredging activities, there is a risk of gaseous emissions at the onshore disposal site. Hazardous gasses are likely to be hydrogen sulphide and methane. Apart from being foul smelling, it may also pose health risks to any nearby people.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive dust generated from construction activities	2	-2	2	2	2	-24	-3	Probable
Dredging	H_2S exposure may lead to unconsciousness or death	2	4	3	3	1	56	-4	Improbable
Daily Operations	Dust generated from operational activities	2	-2	3	2	2	-28	-3	Definite

Desired Outcome: To protect workers, nearby receptors and adjacent food-handling facilities from exposure to harmful dust, fumes and odours and to minimise atmospheric emissions, including greenhouse gases, through the application of best practicable dust, fume and odour prevention, control and monitoring measures.

Actions

Mitigation:

- Due to the potential toxic nature of dust created, its dispersion in the air should be mitigated as much as operationally possible.
- Use well-maintained, fuel-efficient plant and equipment, and connect vessels to shore power where possible to reduce exhaust emissions.

- Enclose the front and rear ends of the floating dock with mesh netting or tarpaulins during blasting and spray painting and install side screening or tented work areas as required to contain dust and overspray.
- Only trained operators may conduct blasting activities. This should include minimising unnecessary dust plumes by only directing the nozzle downwards, closing the nozzle immediately when blasting is stopped or when the area of blasting is changed.
- Install and use real-time on-site anemometer. Suspend grit blasting and spray painting when wind speed exceeds 25 km/hr. Potentially then switch to alternative blasting methods.
- Care must be taken during northerly, northwesterly and westerly wind conditions, when emissions may be transported towards on land receptors; under such conditions blasting and spray painting must be properly managed and monitored.
- Prefer low-dust methods (e.g. wet/slurry, UHP or vacuum-assisted blasting) and low-VOC / high-solids coatings where technically feasible.
- Implement and enforce a housekeeping programme for operational areas, including regular cleaning of hardstandings and access areas used by Dormac.
- Install and operate real-time air quality monitoring stations on the shared boundaries with neighbours and on the top of the floating drydock to measure, as a minimum, wind direction and speed and particulate matter ($PM_{2.5}$ and PM_{10}).
- Undertake all routine repair, fabrication and manufacturing activities (welding, grinding, cutting, small-scale painting) inside the enclosed workshop, not in open yard areas, except where components are too large to be handled indoors, in which case temporary tenting / shrouding and the same air-quality controls must be applied.
- Restrict spray painting in the workshop to a dedicated booth or curtained area with extraction and appropriate filtration; use low-VOC, high-solids products where technically feasible.
- The World Health Organization - Hazard prevention and control in the work environment: Airborne dust (WHO, 1999) should be consulted.
- See section 9.1.7 for preventative and mitigation measures related to hydrogen sulphide and methane.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Any complaints received regarding air quality must be recorded, investigated and the problem rectified.
- All air quality related incidents (including exceedance of internal trigger levels, failure of shrouds or barriers, or non-compliance with the wind-speed rule) must be recorded together with the actions taken to prevent recurrence
- Contract an independent third party to devise and implement a real-time air quality monitoring program. Data must be logged and correlated with site activities, meteorological conditions and complaints received.
- As part of the air quality monitoring program, deploy dust monitoring along the property boundary, for at least the initial 12–24 months of operation to measure longer-term dust deposition rates. Where required, samples must be analysed for relevant contaminants (e.g. metals and paint-related constituents) to assess the presence of harmful particulates and help distinguish between operational and background dust sources.
- Any incidents must be recorded with action taken to prevent future occurrences.
- A bi-annual report must be compiled summarising all incidents, complaints and monitoring results. The report must include dates when dust-control structures (e.g. shrouds, barriers), air-quality monitoring equipment and safety equipment were inspected, maintained or repaired, and must be used to review the effectiveness of mitigation measures and identify any required improvements.

9.1.12 Fire

Operational activities at the facility may increase the risk of fire if proper maintenance, housekeeping, and handling procedures are not followed. Some of the chemicals and materials used on site, such as paints, solvents, and lubricants, are flammable and must be stored and handled safely.

The facility borders an existing consumer installation to the north-east as well as to the south west, which represents an additional fire and safety risk due to the presence of combustible materials. Any accidental ignition or fuel spillage from that installation could potentially affect adjacent properties, including the facility.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Uncontrolled fire resulting in property damage, burn wounds or casualties	1	-2	3	3	1	-14	-2	Improbable
Dredger Operations	A fire that may lead to an explosion occurring on the dredging vessel	1	-2	2	2	1	-10	-2	Probable
Daily Operations	Fire risk due to flammable products stored on site.	1	-2	2	2	2	-12	-2	Probable
Daily Operations	Fire risk due to flammable products in close proximity to site.	2	-3	2	2	2	-36	-4	Probable

Desired Outcome: To prevent property damage, possible injury and impacts caused by uncontrolled fires.

Actions:

Prevention:

- Prepare and regularly update the firefighting and prevention plan and equipment according to the materials stored on site, keeping in mind the activities on neighbouring properties.
- Share the requirements for firefighting on site with Namport.
- Ensure all materials are stored strictly according to MSDS instructions. This include segregation of incompatible products.
- Maintain regular site, mechanical and electrical inspections and maintenance. This should include ensuring that all grounding (earthling) structures are in place.
- Specific Firefighting and spill prevention plan for the removal of the tanker jetty should be drafted and approved before the removal of the old tanker jetty can commence.
- Inspect fuel line on premises for any residual fuel.
- Do not remove any pipes or fuel lines that still contain hydrocarbons.
- Clean all spills / leaks immediately.
- Stop operations if dust containment fails and dust becomes airborne. Operations can continue once the cause is rectified.
- Ensure sufficient firefighting and fire prevention measures are in place for the specific products being stored and handled on site. This includes specific fire suppressants compatible with the materials used/stored.
- Real-time explosimeter monitoring should be conducted on the dredging vessel or during operations where explosive conditions may be present.

Mitigation:

- A holistic fire protection and prevention plan is needed for flammable products. This plan must include an emergency response plan, firefighting plan and spill recovery plan, and

should include specific substances handled at the site. The plan should consider risks posed to and by neighbouring properties.

- Maintain firefighting equipment, implement good housekeeping and conduct personnel training (firefighting, fire prevention and responsible housekeeping practises).
- Proper communication systems between neighbors and the Proponent. Neighbors with fuel installations must prevent fuel from spreading towards the facility and must inform the Proponent as priority of any fuel spillage. Employees to abandon all work on the floating docks and evacuate all staff and visitors to a safe area.
- If fuel is observed on water the same procedure must be followed.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A register of all incidents must be maintained. This should include measures taken to ensure that such incidents do not repeat themselves.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

9.1.13 Noise and Vibration

Noise pollution will occur during both the construction and operational phases of the facility. Construction activities such as demolition, piling, and excavation may generate excessive noise and ground-borne vibrations, which could cause temporary nuisance to nearby receptors and potential hearing risks to workers if not properly managed.

During operations, noise will result from compressors, high-pressure blasting, welding, and mechanical repairs. Vibration from blasting and machinery operation may affect the hands and arms of workers. As the site is located within an industrial and port-related area, noise impacts are expected; however, the cumulative noise levels from surrounding port operations may still be a nuisance to nearby residential areas. The operation, maintenance, or upgrade phases may also generate short-term increases in noise levels.

The noise and vibrations generated by the dredging vessel and its operations may impact both the crew and marine organisms, particularly marine mammals. Different areas on board the vessel will expose crew members to varying levels of noise and vibration, for example, machine rooms are expected to be much noisier than accommodation areas. Continuous exposure to loud noise can lead to hearing impairment, while vibration can cause hand–arm or whole-body fatigue and related health effects.

Under normal operational conditions, and considering the use of modern dredging equipment and technologies, noise and vibration generated by dredging activities are not expected to have a significant impact on marine mammals but may temporarily disturb or displace them. Similarly, birds feeding in the area may temporarily move away during dredging operations. Due to the limited footprint of maintenance dredging, birds on nearby islands are not expected to be affected.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	Excessive noise and vibrations generated from construction activities – nuisance and hearing loss	2	-2	2	2	1	-20	-3	Definite
Dredging Operations	Noise and vibrations generated from the vessel and dredging equipment	2	-2	2	2	1	-20	-3	Definite
Daily operation	Impact on fauna and loss of biodiversity, displacement, disturbance	1	-1	3	2	2	-7	-1	Improbable
Daily operation	Noise and vibration caused by dredging activities.	1	-2	3	2	2	-14	-2	Definite
Daily operation	Noise will exist due to compressors and high pressure blasting. Vibration may affect the operators' hands and arms.	1	-2	3	2	2	-14	-2	Definite

Desired Outcome: To prevent any nuisance and hearing loss due to noise generated.

Actions

Mitigation:

- The Health and Safety Regulations of the Labour Act and World Health Organization (WHO) guideline on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment for workers on site and not to be a nuisance to communities should be considered during the construction and operational phases.

- Confine noise generating operational activities to daytime hours as far as possible.
- Hearing protectors must be issued as part of PPE.
- Mechanisms to reduce vibration impact must be employed. This includes frequently rotating operators of grit blasting equipment and wearing of PPE such as vibration absorbing gloves.
- Hearing protectors as standard PPE for workers in situations with elevated noise levels.
- All machinery must be regularly serviced to ensure minimal noise production. To reduce vibration levels, it is recommended that all machinery and vehicles be maintained in a good condition and that a maintenance record be kept.
- Any machinery and vehicles that cause excessive vibrations should be given defect notices and taken off site immediately. Machinery and/or vehicles may only be used again on site once they have been serviced and approval has been granted by the site supervisor.
- Unnecessary vibrations can be minimised by ensuring that no machinery or vehicles are left idling when not in use.
- The appropriate and correct placement of specific work activities can ensure the reduction of handling of machinery that cause heavy vibrations.
- Ensure personnel running the equipment are trained accordingly so that machinery is used properly.
- Pre assessment to allow for mitigation measures for any elevated levels of vibrations should take place if there is any suspicion that there may be excessive vibrations levels onsite during construction. These mitigation measures should then be in accordance with local regulations and standards.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- International Maritime Organization Code on Noise Levels on Board Ships (Resolution MSC.337(91); ISO 21984:2018 Ships and marine technology — Guidelines for measurement, evaluation and reporting of vibration with regard to habitability on specific ships; International Labour Conference: Maritime Labour Convention, 2006; IMO MEPC.1/Circ.833: Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life; World Health Organisation Guidelines on Community Noise
- Health and Safety Regulations of the Labour Act and WHO Guidelines.
- Maintain a complaints register.
- Bi-annual report on complaints and actions taken to address complaints and prevent future occurrences.

9.1.14 Waste Production

Various waste streams will result from the operational phase and development of the facility. Waste may include hazardous waste associated with the handling of hazardous products and contaminated packaging material (e.g. during operations and maintenance). Hull scraping and pressurised cleaning with water produces organic waste as well as water potentially contaminated with paint containing anti-biofouling chemicals such as tributyltin (TBT). Blast material consisting of used blasting grit and dust of removed materials (i.e. paint, rust, etc.) are produced and is a potentially toxic waste that must be disposed of in an appropriate manner. Sediment in the vicinity of the drydock may become contaminated over time due to dust fallout and industrial pollution (not restricted to the Proponent). Domestic waste will be generated by the facility and related operations. Waste presents a contamination risk and when not removed regularly, may become a fire hazard. Contaminated soil and water is considered as a hazardous waste.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Impacts of waste build-up include health, fire and ecological hazards; visual impacts	1	-2	2	2	1	-10	-2	Probable
Dredging Operations	Uncontained waste entering the environment	2	-2	2	2	2	-24	-3	Probable
Daily Operations	Waste as a result of blasting material.	2	-2	2	2	2	-24	-3	Definite
Daily Operations	Waste as a result of maintenance dredging.	2	-2	2	2	2	-24	-3	Definite
Daily Operations	Waste of a domestic nature.	1	-1	1	1	1	-3	-1	Definite

Desired Outcome: To reduce the amount of waste produced, and prevent pollution and littering.

Actions

Prevention:

- Utilise blasting grit that contains the minimum concentrations of harmful substances.
- Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate.
- Ensure adequate temporary waste storage facilities are available.
- Ensure waste cannot be blown away by wind.
- Prevent scavenging (human and non-human) of waste.
- Trucks transporting waste must be covered to prevent waste from escaping during transport.

Mitigation:

- Waste should be disposed of regularly and at appropriately classified disposal facilities, this includes hazardous material (empty chemical containers, contaminated rugs, paper, water and soil).
- Due to the potential toxic nature of blast material, it should be disposed of in an appropriate way at an appropriately classified waste disposal facility. Material Safety Data Sheet instructions for disposal should be followed.
- Due to the potential toxic nature of dredged sediments, it should be sampled and analysed prior to dredging to determine disposal requirements.

- Hull wash water and contaminated runoff collected in ballast / settlement tanks must be allowed sufficient residence time for solids and sludge to settle before any discharge.
- Settled sludge from ballast / settlement tanks must be removed frequently and disposed of as hazardous waste at an appropriately classified waste disposal facility.
- Clarified supernatant water may only be discharged to the harbour if it is free of visible oil, grit and paint residues and in accordance with the Water Act discharge requirements; contaminated water that does not meet these requirements must be pumped to shore for appropriate treatment or disposal**.**
- Liaise with the municipality regarding waste and handling of hazardous waste.
- To prevent people from using potentially contaminated containers for transport or holding of drinking water, all containers that will be discarded must be crushed or punctured prior to disposal.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility.
- Any complaints received regarding waste should be recorded with notes on action taken.
- All information and reporting to be included in a bi-annual report.

9.1.15 Ecosystem and Biodiversity Impact

The nature of the operational activities is such that the probability of creating a habitat for terrestrial flora and fauna to establish is low. No significant impact on the terrestrial biodiversity of the area is predicted as the site is void of natural terrestrial fauna and flora. Further impacts will mostly be related to pollution of the marine environment.

Dredging pose risks to marine life. Potential negative impacts of dredging include habitat destruction, smothering of benthic communities due to settling of suspended particulate matter and dumping of dredged material at the disposal site, possible temporary displacement of animals (including birds) from the areas that are dredged, marine mammal strikes by the vessels or their propellers, and reduced water quality due to the suspension of particulate matter or through pollution.

Ships' ballast water may result in the possible introduction of exotic or invasive species that may have significant impacts on local community structure and functioning. This is not an impact that is unique to dredging vessels, but can result from any international seafaring traffic visiting Namibian waters.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Impact on fauna and flora. Loss of biodiversity	2	-1	2	2	2	-12	-2	Probable
Dredging Operations	Physical destruction or inundation of habitat and displacement, injury or mortality of living organisms.	2	-2	2	3	2	-28	-3	Definite
Indirect Impacts	Reduced water quality or introduction of alien species may have long term indirect effects on ecosystem structure and functioning	2	-2	2	3	2	-28	-3	Probable
Daily Operations	Impact on fauna and flora. Loss of biodiversity	2	-1	3	2	2	-14	-2	Improbable

Desired Outcome: To prevent or minimise destruction, degradation and disturbance of the ecological environment.

Actions.

Mitigation:

- Report any extraordinary ecological sightings to MEFT.
- Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- Prevent scavenging of waste by fauna.
- The establishment of habitats and nesting sites at the facility should be prevented where possible.
- Clearly define the area to be dredged and monitor the dredging contractor's adherence to dredging only this area in order to minimize the impact footprint.
- Limit dredging and disposal to within the boundaries of the areas defined by Namport.
- Make use of a marine mammal observer to identify any animals that may be within a collision course with moving vessels and take evasive action.
- If any mortalities in marine fauna are observed at or around the dredging location, all dredging activities should be ceased and the cause investigated. Dredging can continue once it is determined to be safe to do so.
- Exchange ballast water as per set IMO guidelines.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- International Convention for the Control and Management of Ships' Ballast Water and Sediments; International Convention for the Prevention of Pollution from Ships (MARPOL); Namport operational procedures and emergency response plans
- Record all ballast water exchange details and specifically location.
- During disposal of sediments, record the start and end time of disposal and submit records to Namport on a daily basis.
- Record and marine mammal sightings and/or collisions and any other significant encounters or observations of animals and birds (including sick or dead animals) and report these to the local offices of the MEFT and the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR).
- Close-out report or bi-annual reporting, whichever comes first, of all record keeping, including corrective action taken.

9.1.16 Water resources, Surface Water and Soil Contamination – Construction and Operations

Construction activities may result in spillage of chemicals or fuels and this can contaminate soil and surface water. Grit blasting activities will take place within a drydock that is closed off using mesh. Dredging activities will disrupt the sediment. Pollution of soil and surface water is thus likely. Dust that is not contained can reach sensitive receptors, like the nearby ocean, during times of strong wind. Oil, hydraulic fluid and fuel leaks from vehicles may also present a pollution risk.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Daily Operations	Waste water, blasting material, particulate matter and dust not being contained may end up in the ocean.	1	-1	3	2	2	-7	-1	Probable

Desired Outcome: To prevent the contamination of water and soil.

Actions

Prevention:

- Regularly inspect and maintain all infrastructure, to minimize the chances of infrastructure failure. Training of operators must be conducted on a regular basis to limit product containment damage due to incorrect handling.

Mitigation:

- Clean-up action must be taken immediately for all instances where chemicals or dust is not contained (e.g. spillages and torn bags) or spillages occur (e.g. trucks leaking fuel or oil, or paints and solvents during construction, maintenance and painting of vessels)
- Proper containment of blasting dust, to mitigate dust blown into the surrounding environment.
- During blasting and spray painting mesh nets must be suspended at the front and rear ends of the drydock to contain dust and spray paint.
- Grit blasting must be stopped if excessive dust plumes originate from the drydock area.
- During blasting all recesses on the dock must be adequately covered to prevent any contaminants from entering the water when the dock is submersed.
- After grit blasting and before the drydock is submerged the entire working platform must be cleaned to ensure no residue dust, grit and other contaminants enter the ocean.
- Before the start of operations, establish a monitoring program to monitor pollution. This must include determining baseline conditions prior to operations. Monitoring should be conducted on a quarterly basis. The following parameters should be investigated: Tributyltin, Cadmium (Cd), Mercury (Hg), Copper (Cu), Chrome (Cr), Lead (Pb), Zinc (Zn), Arsenic, Nickel, Barium (Ba), Beryllium (Be), Hydrocarbons and PAHs and Turbidity or suspended material.
- Updated chemicals of concern should be identified based on new antifouling paint content and grit used.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.

- A report should be compiled of the baseline conditions.
- Bi-annual reporting on the monitoring program and of any spills. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, etc.

9.1.17 Water Resources, Surface Water and Soil Contamination - Dredging

Dredging can result in the excessive suspension of particulate matter in the water column. This may negatively affect aquatic organisms and seawater intakes. Excessive suspension of particulate matter in the water column can especially occur where very fine, diatomaceous oozes are present. Agitation of the seabed by the dredger, will be the main cause of suspension of particulate matter. The use of a plain suction dredger, and the disposal of sediments via a pipeline on land, will significantly reduce the suspension of sediments if operated correctly.

Impacts of increased suspension of such particulate matter include: reduced light penetration in the water column and thus reduced photosynthesis by algae resulting in less oxygen production; clogging of fish gills, inundation of benthic organisms when suspended particles settle to the seafloor; and increasing the bioavailability of toxic elements that may occur naturally in, or may have accumulated through anthropogenic impacts in, the substrate. Increased bioavailability of heavy metals like cadmium or lead for example, may result in reproductive abnormalities and reduced fertility, which may put the local food web at risk. It may also accumulate in organisms, especially filter feeders like mussels.

Various preventative and mitigating methods can be employed to prevent excessive suspension of particulate matter. Some of these are listed below, but it is important to note that not all of the modifications or procedures mentioned should necessarily be employed. It is the responsibility of the contractor, in consultation with the Proponent, to determine which modifications or procedures would best prevent particulate matter suspension, while keeping in mind operational timeframes and financial feasibility. Also, dredging techniques that result in lower suspension of particulate matter, that, as a result of the techniques required to lower such suspension occur over longer periods of time, may have more serious adverse effects. This is because acute, high level exposure to negative impacts may have less consequences than, chronic low level exposure.

Environmental conditions that may increase the risk of elevated total suspended solids reaching the sensitive receptors include: tidal conditions; rough sea conditions (high wave/swell action); wind conditions. Total suspended solids is determined through turbidity measurements (nephelometric turbidity units (NTU)) that can be converted to total suspended solids (mg/ml) through turbidity sensor calibration techniques.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Dredging Operations	Sediment disturbed by dredging activities, contaminates the marine environment.	2	-2	3	2	2	-14	-3	Probable
Dredging Operations	Disposed dredged material contaminating soil.	1	-1	2	2	2	-6	-1	Probable
Dredging Operations	Contaminated dredged material, which when disposed, contaminate the marine environment with potentially toxic impacts on organisms.	2	-1	2	2	1	-10	-2	Probable

Desired Outcome: To prevent the contamination of water and soil.

Actions

Prevention:

- Appointment of a reputable dredging contractor with a known history of environmental responsibility.

- Determine the baseline turbidity / TSS conditions at strategic locations throughout the harbour for at least one month prior to dredging. The results must serve as baseline for real time turbidity monitoring as indicated in the dredging contractors responsibility below.
- For any once-off dredging exercise targeting more than 5,000 m^3 of material, appoint an independent specialist to determine baseline water quality conditions by analysing for elevated levels of chemicals of concern (see list below).
- Prior to dredging, devise a turbidity monitoring and water sampling protocol, with the aim of providing information with regard to spread of suspended solids and contamination in the water column. The data generated must inform the dredging operator and Namport on the effectiveness of preventative and mitigation measures aimed at preventing the mobilisation and spread of particulate matter and contaminants. Real time turbidity monitoring can act as a warning system for situations where excessive suspension of particulate matter occur. As real-time water quality (chemicals of concern) monitoring is not possible, turbidity monitoring must act as a pro-active approach to prevent the spread of contaminants while chemical of concern monitoring, with delayed results, will serve to guide future dredging, rather than dictating current dredging.
- Continue the turbidity monitoring during dredging as per the dredging contractor's responsibility outlined below.
- Water samples must be analysed for at least: tributyltin (TBT), cadmium (Cd), mercury (Hg), copper (Cu), chromium (Cr), lead (Pb), zinc (Zn), arsenic (As), nickel (Ni), polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs)
- The analysis must be carried out by an accredited laboratory, using suitable analytical methods with a detection limit below the current BCLME maximum limit values for the given parameter.
- Compare results with BCLME guidelines (if available) and compile baseline report.
- Repeat sampling and analysis during dredging as per the dredging contractor's responsibility outlined below.
- Appoint an independent consultant to conduct real-time turbidity (TSS) monitoring specifically aimed at protecting sensitive receptors (fish factory processing water abstraction points).
- The following TSS concentrations for the upper portion (-3 m) of the water column are recommended as threshold values for determining responses to real time monitoring:
    - < 20 mg/l or 80th percentile of background levels – desirable low risk scenario.
    - 20 – 80 mg/l for continuous periods of three days or longer - lower threshold of possible adverse ecological effects.
    - 80 – 100 mg/l for more than six hours - probable adverse effects, mitigation measures must be considered.
    - 150 mg/l - proven negative impacts, cease dredge operations.
- The TSS of the water at monitoring locations must not exceed 80 mg/l or the 80th percentile of the background TSS as determined by a baseline study, whichever is the highest value.
- Preventative measures used to reduce suspension of particulate matter include:
    - Using the most appropriate dredger and the dredgers most suitable draghead to reduce particulate matter suspension
    - Shielding of the suction head
- Water sampling and analysis by an independent consultant has to be repeated as follows:
    - For less than 5,000 m^3 no water sampling required
    - Maintenance dredging: one water sample before and one water sample after dredging 10,000 m^3 dredged material, or part thereof.
- Water quality during dredging must be compared with baseline data and mitigation measures implemented if a deterioration in water quality, that is suspected to result from dredging activities, is discerned.

Mitigation:

- Mitigation measures used to prevent impacts resulting from suspended particulate matter include:
  - Slowing down the rate of dredging or ceasing dredging altogether when suspended solids reach a predetermined cut-off level (based on baseline results).
  - The use of silt curtains (not effective in strong currents)
- Coordinating dredging near sensitive receptors to coincide with tides, tidal currents and winds that will take plumes away from such receptors.

Responsible Body:
- Proponent
- Contractors

Data Sources and Monitoring:
- The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.
- A report should be compiled of all dredging sampling and monitoring results.

9.1.18 Marine Impact

Toxic blasting material, particulate matter, waste water and dust entering the ocean and impacting on marine life.

Introduction of alien species through ballast water discharge. Benthic fauna will be displaced and destroyed. Birds may be disturbed by the activities however; this is perceived to be negligible. Marine mammals (especially seals) occur occasionally in the harbour, but not in numbers that will be cause severe impacts on the populations.

Dredging pose risks to marine life. Potential negative impacts of dredging include habitat destruction, smothering of benthic communities due to settling of suspended particulate matter, possible temporary displacement of animals (including birds) from the areas that are dredged, marine mammal strikes by the vessels or their propellers, and reduced water quality due to the suspension of particulate matter or through pollution.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Dredging Operations	Contaminated dredged material, which when disposed, contaminate the marine environment with potentially toxic impacts on organisms.	2	-1	2	2	1	-10	-2	Probable
Dredging Operations	Physical destruction or inundation of habitat and displacement, injury or mortality of living organisms.	2	-2	2	3	2	-28	-3	Definite
Indirect Impacts	Reduced water quality or introduction of alien species may have long term indirect effects on ecosystem structure and functioning	2	-2	2	3	2	-28	-3	Probable
Daily Operations	Toxic blasting material, particulate matter, waste water and dust entering the ocean and impacting on marine life	4	-2	2	2	3	-56	-4	Highly Probable
Daily Operations	Dredging may displace and destroy benthic habitats. Birds may be disturbed by the activities	3	-2	2	2	3	-42	-4	Highly Probable

Desired Outcome: To mitigate adverse effects to the surrounding marine environment as much as practically possible.

Actions:

Prevention / Mitigation:

- Due to the potential toxic nature of spray paint and dust created, its dispersion in the air should be mitigated as much as practically possible.
- Mesh netting to enclose the front and rear ends of the docks must be used at all times.
- Grit blasting and spray painting must be stopped when wind speeds are high enough to disperse spray paint and dust to nearby receptors (e.g. ocean).
- Alternative blasting techniques such as wet blasting or centrifugal shot blasting should be used in areas where dispersion of dust cannot be prevented.
- The World Health Organization - Hazard prevention and control in the work environment: Airborne dust (WHO, 1999) should be consulted.

- Follow procedures of International Maritime Organization (IMO): The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention).
- On ship treatment of Ballast Water can also take place on ships already fitted with treatment plants, via two step treatment processes recommended in IMO guidelines and relevant published information on Ballast Water Treatment methods.
- It is advised that all guidelines in the IMO are followed strictly with regards to both Ballast Water Exchange and Ballast Water Treatment to ensure minimal introduction of invasive species.
- Clearly define the area to be dredged and monitor the dredging contractor's adherence to dredging only this area in order to minimise the impact footprint.
- Limit dredging and disposal to within the boundaries of the areas defined by the Proponent.
- If any mortalities in marine fauna are observed at or around the dredging location, all dredging activities should be ceased and the cause investigated. Dredging can continue once it is determined to be safe to do so.

Responsible Body:

- Proponent
- Contractor

Data Sources and Monitoring:

- The Proponent must collect and keep a 1 kg sample of spent grit blasting material from each ship being blasted for future analysis if required.
- A surface water and sediment sampling regime must be undertaken quarterly to monitor the condition of the environment.
- A once-off water analysis regime must be performed to analyse pressure cleaning water collected in ballast tanks before such water is released into the ocean. This will determine whether this practice should be allowed to continue.
- All monitoring data must be included in a Bi-annual environmental monitoring report.

9.1.19 Visual Impact

This is an impact that not only affects the aesthetic appearance, but also the integrity of the facility. The site is within an area zoned for industrial use. The development of the site is in line with the industrial character. During construction the site should be kept clean, tidy and maintained to ensure it remains aesthetically pleasing and does not add the urban decay.

During dredging, the aesthetic appeal of the area for tourists and locals may temporarily decrease. This is mostly linked to instances of suspension of particulate matter to such an extent that the water colour changes significantly, or a sheen or foam layer is created on the water that may spread and collect on the shore. This may impact on local tour operators operating sightseeing cruises in the bay.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction Phase	Low aesthetic appearance	1	-1	2	2	1	-5	-1	Probable
Dredging Operations	Excessive discoloration of water or creation of a sheen or foam layer on the water's surface that is unsightly	2	-1	2	2	1	-10	-2	Probable
Daily Operations	This is an impact that affects the aesthetic appearance.	1	-1	3	2	2	-7	-1	Probable

Desired Outcome: To minimise aesthetic impacts associated with the facility.

Actions

Mitigation:

- Regular waste disposal, good housekeeping and routine maintenance on infrastructure will ensure that the longevity of structures are maximised and a low visual impact is maintained.
- Preventative and mitigation measures related to the prevention or minimisation of particulate matter suspension will successfully mitigate the impact.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A bi-annual report should be compiled of all complaints received and actions taken.

9.1.20 Cumulative Impact

These are impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of who undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. In relation to an activity, it means the impact of an activity that in itself may not be significant, may become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertakings in the area.

Possible cumulative impacts associated with the operational phase include increase in noise and dust as a result of ship repair at the facility and other industrial properties nearby. The industrial activity and ship repair may also lead to a cumulative impact on the marine environment in terms of pollutants entering the water. The cumulative effect of lighting on birds due to industrial developments may increase the risk of collisions and interference with bird flight paths at night.

Project Activity / Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Dredging, Operations	The build-up of minor impacts, resulting from different activities of different industries or operators to become more significant	2	-1	2	2	1	-10	-2	Improbable
Daily Operations	The build-up of minor impacts to become more significant	2	-2	2	2	2	-24	-3	Probable

Desired Outcome: To minimise all cumulative impacts associated with the facility.

Actions

Mitigation:

- Addressing each of the individual impacts as discussed and recommended in the EMP would reduce the cumulative impact.
- Reviewing biannual and annual reports for any new or re-occurring impacts or problems would aid in identifying cumulative impacts and help in planning if the existing mitigations are insufficient.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Review bi-annual summary reports based on all other impacts to gain an overall assessment of the impact of the operational phase.

9.2 Decommissioning and Rehabilitation

Decommissioning is not foreseen during the validity of the environmental clearance certificate. Decommissioning was however assessed as construction activities include modification and decommissioning. Should decommissioning occur at any stage, rehabilitation of the area may be required. Decommissioning will entail the complete removal of all infrastructure including buildings and underground infrastructure not forming part of post decommissioning use. Any pollution present on the site must be remediated. The impacts associated with this phase include noise and waste production as structures are dismantled. Noise must be kept within Health and Safety Regulations of the Labour Act and WHO standards and waste should be contained and disposed of at an appropriately classified and approved waste facility and not dumped in the surrounding areas. Future land use after decommissioning should be assessed prior to decommissioning and rehabilitation initiated if the land would not be used for future purposes. The EMP for the facility will have to be reviewed at the time of decommissioning to cater for changes made to the site and implement guidelines and mitigation measures.

9.3 Environmental Management System

The Proponent could implement an Environmental Management System (EMS) for their operations. An EMS is an internationally recognized and certified management system that will ensure ongoing incorporation of environmental constraints. At the heart of an EMS is the concept of continual improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective EMS would need to include the following elements:

- A stated environmental policy which sets the desired level of environmental performance;
- An environmental legal register;
- An institutional structure which sets out the responsibility, authority, lines of communication and resources needed to implement the EMS;
- Identification of environmental, safety and health training needs;
- An environmental program(s) stipulating environmental objectives and targets to be met, and work instructions and controls to be applied in order to achieve compliance with the environmental policy;
- Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the EMS; and
- The EMP.

10 CONCLUSION

Dormac Marine and Engineering's planned development, which includes land excavation and capital dredging for the installation of a new floating dry dock, construction of a heavy-duty piled jetty, and decommissioning of the existing wooden jetty, will strengthen the company's operational capacity and enhance the Port of Walvis Bay's strategic role in the regional ship repair and maintenance sector. In addition to sustaining current employment levels, the project is expected to create temporary job opportunities during the construction phase and contribute to long-term economic growth through increased vessel servicing capacity. Skills development and training will continue to support the local workforce, particularly in specialised areas of marine engineering, construction, and dredging operations. At the same time, the design and operation of the facility must remain compatible with neighbouring land uses, including the highly sensitive food-handling and storage activities on the adjacent premises.

The EMP should be used as an on-site reference document throughout construction and operation. It must be read in conjunction with the Proponents internal Health, Safety, Security and Environmental Management System, and all operational personnel must be trained in its contents. Any party responsible for non-compliance with the EMP should be held accountable for implementing corrective measures, including environmental rehabilitation where required. Particular emphasis must be placed on staff and contractor awareness of air quality management commitments, including workshop indoor-only requirements, the use of dock shrouding and enclosures, wind-speed shut-down criteria, and the location and purpose of boundary air quality monitoring stations.

Noise generated by activities such as grit blasting, pile driving, and demolition should comply with the minimum requirements of the Health and Safety Regulations under the Labour Act and/or the World Health Organization guidelines. Appropriate PPE, including hearing protection, must be provided to workers. Dust generation should be minimised through suitable suppression measures, particularly during excavation and demolition works, and all exposed personnel must be issued with appropriate PPE such as dust masks or respirators. Dust and fume emissions from dock-based blasting and spray painting must be contained through the use of mesh netting, tarpaulins and tented work areas, and operations must be suspended or alternative blasting methods employed when wind speeds exceed 25 km/hr, unless work is fully enclosed. All routine repair, fabrication and manufacturing activities, including welding, grinding and small-scale painting, are to be undertaken inside the enclosed workshop with appropriate local exhaust ventilation and doors kept closed as far as reasonably practicable.

Measures must be implemented to prevent contaminated water, spent blasting grit, particulate matter, and dust from entering the marine environment. Dredging activities must comply with all applicable maritime laws and environmental regulations. The contractor must employ methods and equipment designed to reduce sediment resuspension and other impacts, such as optimised dredging techniques and scheduling activities under favourable weather conditions.

Health and safety protocols must be strictly adhered to in line with national legislation and international best practice. All waste generated during construction and operation must be removed from site and disposed of appropriately. Reuse and recycling opportunities should be prioritised, while hazardous waste must be handled and disposed of at an authorised hazardous waste facility.

Monitoring requirements outlined in the EMP are critical for effective environmental performance management. Should monitoring results indicate deviations from acceptable limits, alternative methods or technologies must be considered and implemented to ensure that operations remain within regulatory and environmental thresholds.

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Appendix A: Proof of Public Consultation

Notified IAPs

Name	Position	Organisation
David Uushona	Manager: Solid Waste and Environmental Management	Municipality of Walvis Bay
Nangula Amutenya	Environmental Coordinator	Municipality of Walvis Bay
Lovisa Hailaula	Environmental Officer	Municipality of Walvis Bay
Ephraim Nambahu	Town Planning Officer	Municipality of Walvis Bay
Jamie-Lee Lawrence	Town Planning Officer	Municipality of Walvis Bay
Rovan Hammerslag	Etosha No.3 site manager	Etosha Fishing
Iina-Mari Iileka	Health, Safety, Environmental Officer	Etosha Fishing
Ndeshi Paulus	Health and Safety	Merlus Management
Riette van Zyl	Logistics Manager / SHE Officer	Merlus Seafood
M. van Niekerk		Wesbank Transport
Duane vd Berg		Rennies Transport
Francios Rossouw		Tunacor
Lavinia Elifas	Receptionist	Namport
Stefanus Gariseb	Executive: Risk Management	Namport
Beverly Shilongo		Vivo Energy
Nestor Hainana	HSSE Manager	Vivo Energy

Registered IAPs

Name	Position	Organisation
Rovan Hammerslag	Etosha No.3 site manager	Etosha Fishing
Iina-Mari Iileka	Health, Safety, Environmental Officer	Etosha Fishing
Riette van Zyl	Logistics Manager / SHE Officer	Merlus Seafood
Habo Gerdes		Engling Stritter and Partners
Beverly Shilongo		Vivo Energy
Nestor Hainana	HSSE Manager	Vivo Energy

IAPs Notified by Hand Delivered Letter

Public Participation Notification: Environmental Assessment

Dormac Marine 5 Ben Amathila Street, Walvisbay

Name & Surname	Organisation/Address	Tel / Mobile	Email	Signature
Rovan Hammersslag	Etosha Fishing	Privacy Block		.com
Ndeshi Paulus	Merus Management			
Riette van Zyl	Merlus Seafood			
Marthnellie v Niekerk	Westbunt Transport			
Duane v d Berg	Rennies TPT			
F. Rossouw	Turnacos			
Lavinia Elyas	Namport			
Nangula Amutenya	Mun of W/Bay			

Geo Pollution Technologies October 2025
Environmental Scoping Assessment and Environmental Management Plan for Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay

Municipal Notification

GEO Pollution Technologies

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To: **Interested and / or Affected Party / Neighbour** **29 October 2025**

Re: **ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE CONSTRUCTION AND OPERATIONS OF A JETTY AND COMMISSIONING OF A FLOATING DRY DOCK IN WALVIS BAY**

Dear Sir/Madam

Geo Pollution Technologies (Pty) Ltd (GPT) was appointed by Dormac Marine and Engineering Namibia (Pty) Ltd (the Proponent) to undertake an environmental assessment for the proposed construction and operations of a jetty and commissioning of a floating dry dock, located at 5 Ben Amathila Street, Walvis Bay, Erongo Region (see location map on page 2).

The assessment will be conducted according to the Environmental Management Act of 2007 and its regulations as published in 2012.

Project: Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay

Proponent: Dormac Marine and Engineering Namibia (Pty) Ltd

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

The Proponent intends to construct a new jetty within the Port of Walvis Bay at 5 Ben Amathila Street, located within the existing industrial area of the town. The new jetty will replace the existing wooden jetty, which will be decommissioned and removed. Construction activities include the installation of concrete piles and decking to form the jetty structure, as well as the establishment of workshops, offices, and other supporting infrastructure onshore. Dredging will be undertaken within the designated areas to achieve the required operational depth for vessel access and safe operations. All construction activities will take place at the onshore property and the defined port area. A floating dry dock will be commissioned and moored at the northern end of the jetty.

Once construction and commissioning of the dock are completed, the proposed facility will be utilised for general vessel maintenance, supported by shore-based manufacturing and repair activities mainly related to oil and gas industry. Vessels will be manoeuvred into the submerged floating dry dock, positioned, and secured for maintenance. The dry dock will then be raised by pumping out water from its ballast tanks, allowing for repairs such as hull cleaning, grit blasting, surface preparation, spray painting, and mechanical and electrical works including the servicing or replacement of engines, generators, and propulsion systems.

Interested and affected parties or neighbours are invited to register with the environmental consultant to receive further documentation and communication regarding the project by 14 November 2025. Please register at:

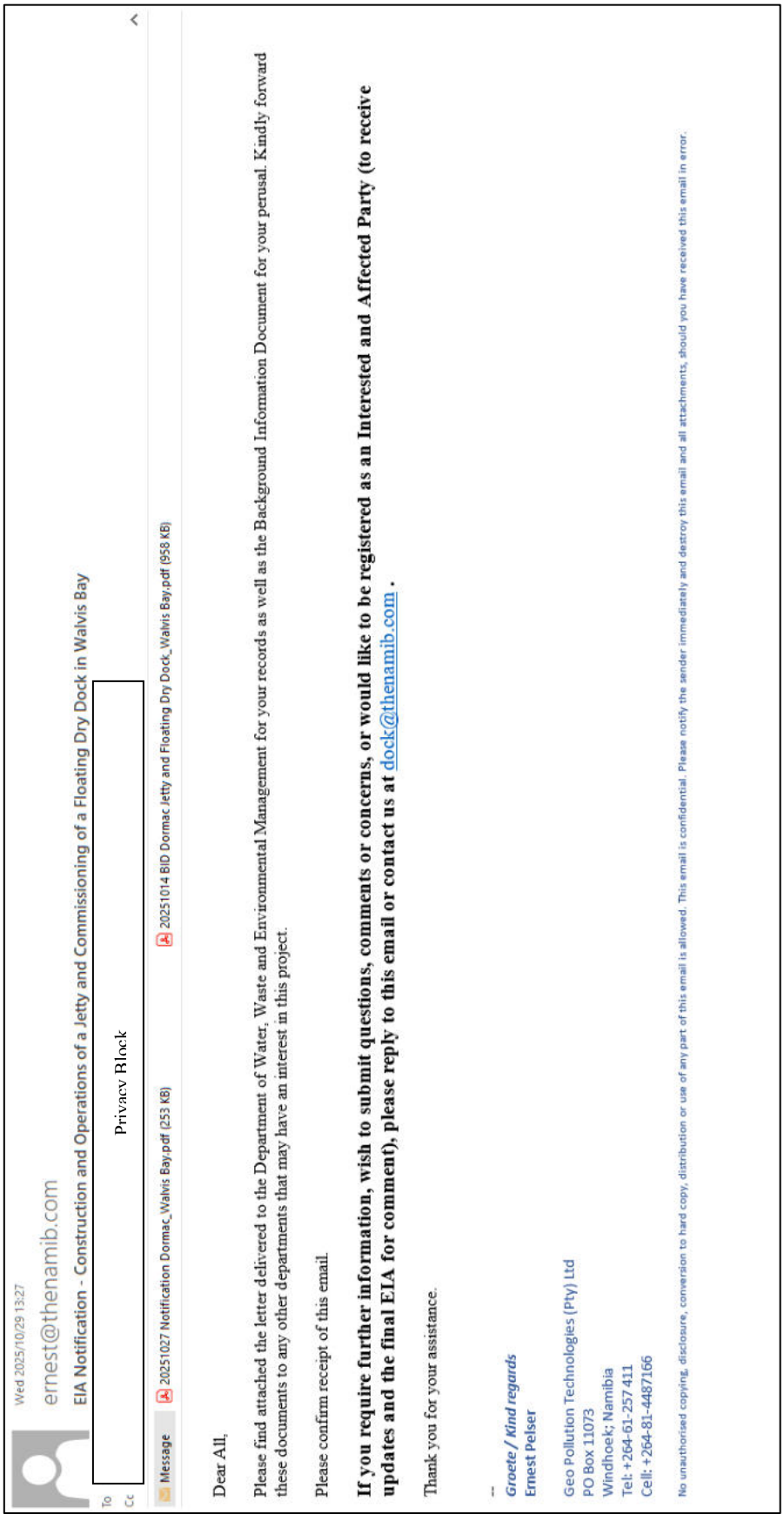
Fax: 088-62-6368 or **E-Mail:** dock@thenamib.com.

MUNICIPALITY WALVIS BAY
General Manager
29 OCT 2025
Dept. of
Water, Waste & Environ. MGMT.

Directors: P. Botha (B.Sc. Hons. Hydrogeology) (**Managing**)

Notification by email

Municipality of Walvis Bay



Wed 2025/10/29 13:27

ernest@thenamib.com

EIA Notification - Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay

To

Cc

Privacy Block

Message 20251027 Notification Dormac_Walvis Bay.pdf (253 KB) 20251014 BID Dormac Jetty and Floating Dry Dock_Walvis Bay.pdf (958 KB)

Dear All,

Please find attached the letter delivered to the Department of Water, Waste and Environmental Management for your records as well as the Background Information Document for your perusal. Kindly forward these documents to any other departments that may have an interest in this project.

Please confirm receipt of this email.

If you require further information, wish to submit questions, comments or concerns, or would like to be registered as an Interested and Affected Party (to receive updates and the final EIA for comment), please reply to this email or contact us at dock@thenamib.com .

Thank you for your assistance.

--

Groete / Kind regards

Ernest Pelser

Geo Pollution Technologies (Pty) Ltd
PO Box 11073
Windhoek; Namibia
Tel: +264-61-257 411
Cell: +264-81-4487166

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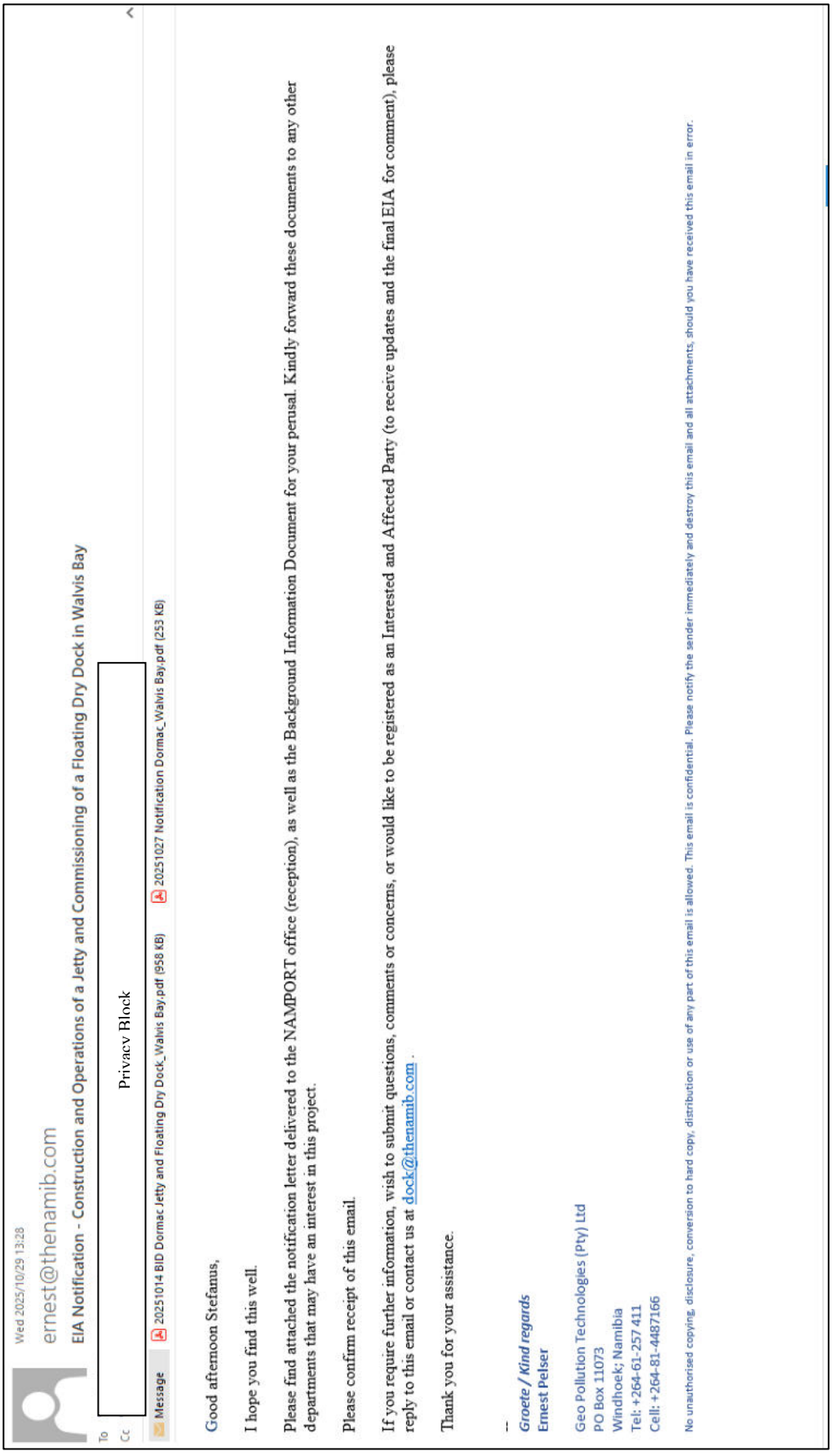
Namport



Wed 2025/10/29 13:28

ernest@thenamib.com

EIA Notification - Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay

To [Privacy Block]

Cc

Message 20251014 BID Dormac Jetty and Floating Dry Dock_Walvis Bay.pdf (958 KB) 20251027 Notification Dormac_Walvis Bay.pdf (253 KB)

Good afternoon Stefanus,

I hope you find this well.

Please find attached the notification letter delivered to the NAMPORT office (reception), as well as the Background Information Document for your perusal. Kindly forward these documents to any other departments that may have an interest in this project.

Please confirm receipt of this email.

If you require further information, wish to submit questions, comments or concerns, or would like to be registered as an Interested and Affected Party (to receive updates and the final EIA for comment), please reply to this email or contact us at dock@thenamib.com .

Thank you for your assistance.

--

Groete / Kind regards

Ernest Pelser

Geo Pollution Technologies (Pty) Ltd
PO Box 11073
Windhoek; Namibia
Tel: +264-61-257 411
Cell: +264-81-4487166

Etosha Fishing

Wed 2025/10/29 14:54

ernest@thenamib.com

EIA Notification - Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay

Privacy Block

Message 20251027 Notification Dormac_Walvis Bay.pdf (253 KB) 20251014 BID Dormac Jetty and Floating Dry Dock_Walvis Bay.pdf (958 KB)

Hi Ilna-Marie,

I hope you are well.

We are currently busy with an EIA for the Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay at 5 Ben Amathila Street (same lot as the warehouses).
I did the site visit this morning, and gave Rovan a notification letter, but I wanted to send the notification letter and BID through to you as well.

Please see attached.

If you require further information, wish to submit questions, comments or concerns, or would like to be registered as an Interested and Affected Party (to receive updates and the final EIA for comment), please reply to this email or contact us at dock@thenamib.com .

--

Groete / Kind regards
Ernest Pelser

Geo Pollution Technologies (Pty) Ltd
PO Box 11073
Windhoek; Namibia
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Cell: +264-81-4487166

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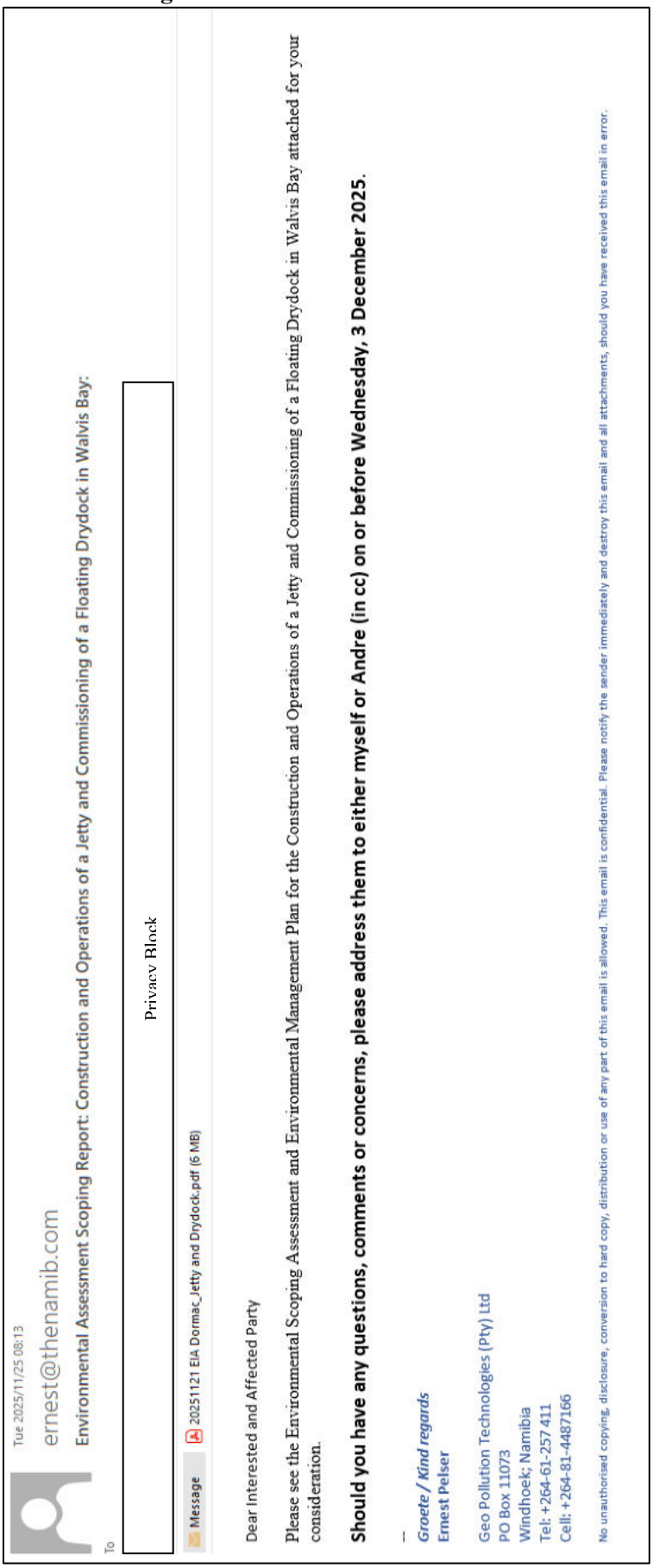
Comments and/or Concerns Received

IAP Details	Comment / Concern	Response
Iina-Marie Iileka *Email:* 05/11/2025	*Initial Query:* Good day Ernest, Thank you for notifying us . I would like to find out how these activities will impact our operations and storage at No. 3. How will you prevent dust from entering our facilities, among other possible impacts? Kind Regards. Iina-Marie Iileka	*Initial Response:* Good morning Iina-Marie, We are still in the process of assessing the different impacts of the operations, which will be addressed in the EIA report. Regarding dust, the Proponent will put measures in place to prevent it from spreading to nearby areas. These will also be included in the EMP, for example using heavy-duty mesh nets at the dry dock openings and stopping operations when the wind is too strong. It's also worth noting that the main wind direction in Walvis Bay is from the southwest, meaning that if any dust is released, it will likely be carried away from the warehouses. We will register you as an interested and affected party, and share the EIA with you for comment. Thank you Groete / Kind regards Ernest Pelser
Habo Gerdes *Email:* 06/11/2025	*Initial Query:* Good morning, In response to you call for registration by "interested and affected parties or neighbours" dated 29th October 2025, we herewith wish to register as such and look forward to receiving further documentation and communication going forward. Kindly acknowledge receipt hereof and provide us with communication and documentation as envisaged. Regards Habo Gerdes Engling Stritter and Partners	*Initial Response:* Good morning Mr Gerdes, Thank you for your email. You are hereby registered as an Interested and Affected Party for the project. Once the EIA has been completed, we will share it with you for your review and consideration. Groete / Kind regards Ernest Pelser *Response:* Good morning Mr Gerdes, Please see the Environmental Scoping Assessment and Environmental Management Plan for the Construction and Operations of a Jetty and Commissioning of a Floating Drydock in Walvis Bay attached for your consideration. Should you have any questions, comments or concerns, please address them to either myself or Andre (in cc) on or before Wednesday, 3 December 2025. *Groete / Kind regards* Ernest Pelser
	Subsequent Query: Good afternoon Mr Pelser, Document well received-the deadline of next Wednesday seems unreasonably short being less than a week and interrupted by an unplanned public holiday-why the sudden urgency?	*Subsequent Response* Dear Mr Gerdes Thank you for your mail. It is not a case of *sudden urgency*. As with most business ventures, the Proponent wants to get all authorisations as soon as practically possible. Hence, given the upcoming holidays, and the very long

IAP Details	Comment / Concern	Response
	Kindly advise soonest. Regards Habo Gerdes	time for the Ministry to review and approve ECC applications (on average 6 months and often much longer), they would like to get the submissions to the Ministry done as soon as possible. Furthermore, the Regulations of the Environmental Management Act makes provision for the following: Registered interested and affected parties 23. (1) A registered interested or affected party is entitled to comment in writing, on all written submissions made to the Environmental Commissioner by the applicant responsible for the application, and to bring to the attention of the Environmental Commissioner any issues which that party, believes may be of significance to the consideration of the application, as long as - (a) comments are submitted within 7 days of notification of an application or receiving access to a scoping report or an assessment report; or (b) the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application. We are allowing almost 9 full days for the review period which is more than the Act requires. That said, within reasonable limits, how much longer would you need to review the document and provide comments, if any? ***Groete / Kind regards*** ***Dr. André Faul***
	Subsequent Query: Good morning Dr.Faul, Regarding the belowmentioned please confirm that the report provided is final and complete as it is noted that it is unsigned and at least one attachment is not populated? Please also advise if regulation 21(2)(b) has been complied with and if so who has been notified in writing? Regards Habo Gerdes	*Subsequent Response:* Good morning Mr Gerdes The report is not the final version to be submitted. All communication received during the current public review period must still be included in the document, and any issues and concerns raised, such as your emails, must be added and addressed in an appropriate manner. Only then will the final version be signed-off, submitted to MEFT and again shared with IAPs. I believe you are referring to the blank page, page 71 of 78 in Appendix A? This was a compilation error and the page will be removed in the final version. Regulation 21(2)(b) was complied with as can be seen in Appendix A on pages 64 to 70. All parties who signed the

IAP Details	Comment / Concern	Response
		form on page 64 were hand delivered a letter of notification. All parties who thereafter registered with us are included on page 63. Further to the above, can you please confirm your specific interest in this project? This can help us better understand your concerns and possibly address your queries better. ***Groete / Kind regards*** ***Dr. André Faul***
	Subsequent Query: Good afternoon Dr.Faul, We will be providing comment on the draft Environmental Assessment Scoping Report provided by Wednesday 3rd but would also want to have sight of the EMP to gauge how impact is to be dealt with. Once the final(signed) Report is completed we would wish to have a further review. Regards Habo Gerdes	*Subsequent Response:* Dear Mr Gerdes, The EMP is incorporated into the EIA, but I will ask my colleague to split it out for you. ***Groete / Kind regards*** ***André Faul*** Good morning Mr. Gerdes, Please see attached the EMP. ***Groete / Kind regards*** **Ernest Pelser**
	Subsequent Query	*Subsequent Response*
Riëtte van Zyl *Email:* 29/10/2025	*Initial Query:* Good afternoon, I hope you are well? Thank you, we have received the communication regarding Dormac's proposed jetty. Kindly register accordingly as a neighbour/interested party. Best regards, Riëtte van Zyl	*Initial Response:* Good morning Riëtte, Thank you for your email. You are hereby registered as an Interested and Affected Party for the project. Once the EIA has been completed, we will share it with you for your review and consideration. Groete / Kind regards Ernest Pelser
Nestor Hainana *Email:* 29/10/2025	*Initial Query:* Good day We hereby registering as an Interested and Affected Party to the aforementioned project's EIA. Regards Nestor Hainana HSSE Manager	*Initial Response:* Good morning Nestor, Thank you for your email. Once the EIA has been completed, we will share it with you for your review and consideration. Groete / Kind regards Ernest Pelser

EIA sent to Registered IAP



Tue 2025/11/25 08:13

ernest@thenamib.com

Environmental Assessment Scoping Report: Construction and Operations of a Jetty and Commissioning of a Floating Drydock in Walvis Bay:

To

Privacy Block

Message 20251121 EIA Dormac_Jetty and Drydock.pdf (6 MB)

Dear Interested and Affected Party

Please see the Environmental Scoping Assessment and Environmental Management Plan for the Construction and Operations of a Jetty and Commissioning of a Floating Drydock in Walvis Bay attached for your consideration.

Should you have any questions, comments or concerns, please address them to either myself or Andre (in cc) on or before Wednesday, 3 December 2025.

--

Groete / Kind regards

Ernest Pelser

Geo Pollution Technologies (Pty) Ltd
PO Box 11073
Windhoek; Namibia
Tel: +264-61-257 411
Cell: +264-81-4487166

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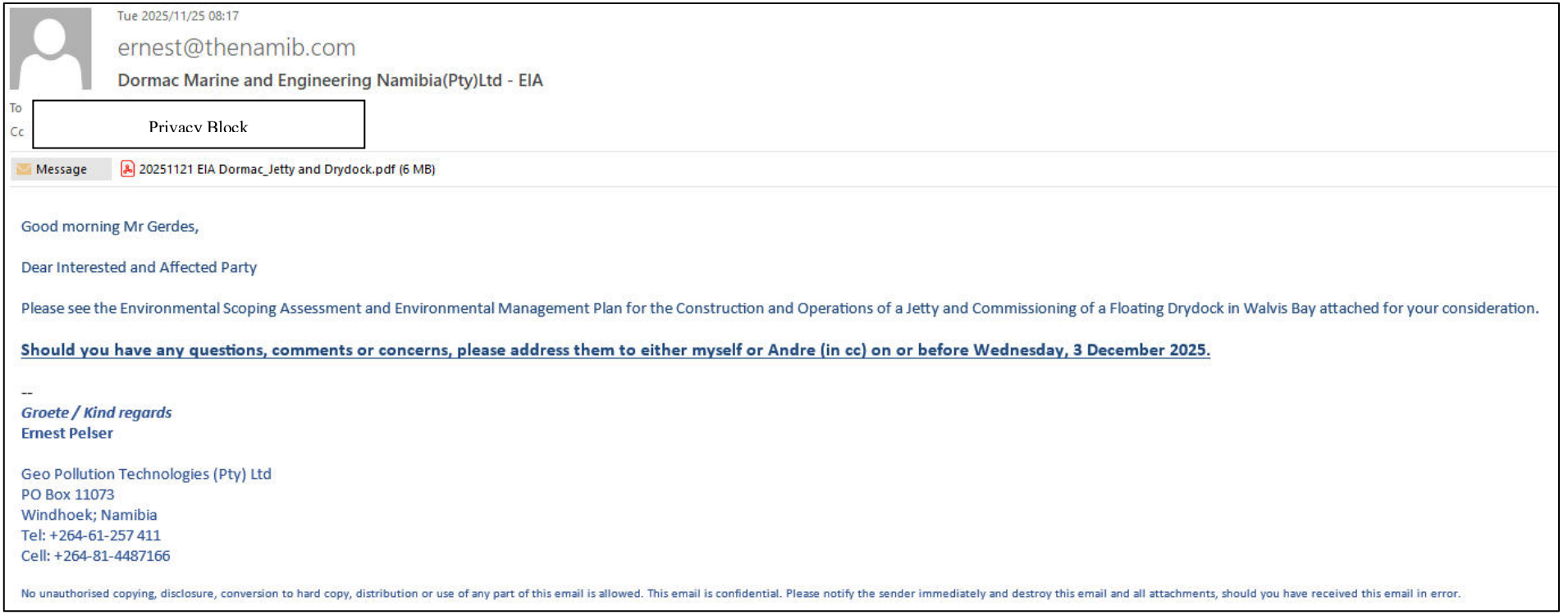

Tue 2025/11/25 08:17

ernest@thenamib.com

Dormac Marine and Engineering Namibia(Pty)Ltd - EIA

To

Cc

Privacy Block

Message 20251121 EIA Dormac_Jetty and Drydock.pdf (6 MB)

Good morning Mr Gerdes,

Dear Interested and Affected Party

Please see the Environmental Scoping Assessment and Environmental Management Plan for the Construction and Operations of a Jetty and Commissioning of a Floating Drydock in Walvis Bay attached for your consideration.

Should you have any questions, comments or concerns, please address them to either myself or Andre (in cc) on or before Wednesday, 3 December 2025.

--

Groete / Kind regards

Ernest Pelser

Geo Pollution Technologies (Pty) Ltd
PO Box 11073
Windhoek; Namibia
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Letter Received from Etosha Fishing Corporation with Regards to their Concerns

Reg. No. 7704239/07
ETOSHA FISHING
CORPORATION (PTY) LTD

PO Box 3, Walvis Bay, Namibia
1 Rikumbi Kandanga Road, Walvis Bay
Tel: (+264 64) 215 600
Fax: (+264 64) 215 653
Email: info@etoshafishing.com

03 December 2025

Geo Polution Technologies(Pty)Ltd
PO Box 11073
Windhoek

Email: ernest@thenamib.com
andre@thenamib.com

Subject: Environmental Scoping Assessment and Environmental Management Plan for the Construction and Operations of a Jetty and Commissioning of a Floating Drydock in Walvis Bay :

Dear Mr Ernest Pelser,

Your reply to our initial enquiry of 5th November 2025 gives rise to serious concern particularly dust and also fumes , odours and other forms of contaminations entering our adjoining property.

The proposed action of "using heavy duty mesh nets at the dry dock openings and stopping operation WHEN THE WIND IS TOO STRONG(our capitalization)seems superficial and leaving matters too much to chance with no specifics as to wind speeds (when too strong?)and when nets to be used and when operations are to be stopped altogether and how this process would work in practice

The proposal appears operationally impractical and uncertain and it would seem appropriate that some form of permanent and constant preventative measures ought to be put in place to protect Etosha premises(used for food labelling and storage) from dust intrusion even during periods when there is no wind or wind of low velocity as the proximity is simply too near so as to avoid dust intrusion and does not address potential fumes and odours which an industrial operation as envisaged is likely to give raise to.

It is concerning to note that the conclusion text (pages 59/60)of the EMA makes no mention of how to meaningfully protect the environment from dust generation and speaks only to personnel protection on site during demolition and construction leaving a significant and serious risk for our operations in such close proximity.
Our premises have existing openings facing the property on which the Proponent wishes to operate and ,as pointed out above, there is every likelihood of dust,fumes and odous intrusion even at times of low wind velocity.

Etosha operates the only HACCP certified and EU registered food canning facility in Namibia and dust, fumes and odours are simply not permitted in terms of the various compliance codes and there is a real possibility of Etosha failing any future audits. It is also imperative to note that when the aforesaid registration were sought there was no "food unfavorable" operation being conducted on the neighboring property and the coming into existence of such would thus have to be notified by us and could jeopardize the existing registration going forward.

Etosha is currently in compliance with the following standards:
SANS 587:2019
SANS 10330:2020
SANS 10049:2019
Namibian veterinary requirements for storage of fishmeal
EU Regulations

Etosha is in the process of implementing the following standards:
ISO 22000
ISO T/S 22002-1
FSSC 22000 Version6

To ensure continued compliance with existing registrations may cause Etosha to incur significant expenditure to maintain its current dust, odours and free environment; it however remains to be investigated if the existing dust and odours free status can be secured and/or maintained by taking appropriate technical/building measures and the anticipated cost if indeed such steps are feasible. As mentioned above, the impact of the fact that an engineering facility will now be established neighbouring Etosha's existing registered facility will have to be tested with the registering authorities.

Paragraph 2.1.10 of the EMP does not provide satisfactory proposals to eliminate and/ or reduce the real possibility of dust, fumes and odours intrusion into Etosha premises.

Access:

The access to the Proponent premises is along a panhandle alongside the entire length of the Etosha premises and the significant increase traffic creates the real risk of dust, entering the food labelling and storage facility of Etosha-this aspect too is currently non-existant and does not feature in any registration/standard granted to and with which Etosha complies and may well lead to failing audits in future.

At the very least the entire roadway ought to be sealed to eliminate the most obvious dust which will eminate from increased vehicular traffic along that route.

There is no mention of this obvious matter in neither the assessment report nor the EMP and points to a significant gap in the environmental investigation.

A further aspect on which the assessment report is silent is the open access to the sizeable outside paved(interlocked)storage area also utilized for loading and unloading of trucks; this area faces the Proponent property on its longest axis without any protection whatsoever and thus increasing the possibility of various types of contamination entering the Etosha premises along that border.

In order to protect Etosha's existing rights the aforesaid aspects require assessment and ought to be adequately addressed in the EMP or may negate the utilization of the Proponent property for industrial purposed altogether.

Yours sincerely,

.....
Volker Paulsmeier
Acting Managing Director

Response to Letter from Etosha Fishing Corporation

TEL.: (+264-61) 257411 ♦ FAX.: (+264) 88626368
CELL.: (+264-81) 1220082
PO BOX 11073 ♦ WINDHOEK ♦ NAMIBIA
E-MAIL: gpt@thenamib.com

Etosha Fishing Corporation (Pty) Ltd
1 Rikumbi Kandanga Road
Walvis Bay
Attention: Mr V. Paulsmeier

Dear Mr Paulsmeier

Subject: Response to comments on the Environmental Scoping Assessment and Environmental Management Plan – Proposed Construction and Operation of a Jetty and Commissioning of a Floating Drydock, 5 Ben Amathila Street, Walvis Bay

Thank you for your letter dated 03 December 2025, setting out Etosha Fishing's concerns about the proposed Dormac Marine & Engineering Namibia (Pty) Ltd facility and its proximity to your food-handling operations.

Dormac is committed to environmentally sound and responsible practices and has no interest in allowing spills, dust or other contaminants to escape from its operations. Such incidents would not only be contrary to the company's values and obligations, but would also expose Dormac to reputational and financial risk. In addition to the measures set out in the EIA and EMP, Dormac's management systems are aligned with Det Norske Veritas environmental standards, which reinforces this approach. Nevertheless, we take your concerns seriously and have updated the EIA and EMP to strengthen the preventative and mitigation measures.

Below we respond to your comments point by point. For each item, we briefly restate your concern and then provide our response with reference to the updated EIA and EMP.

General concern about dust, fumes, odours and contamination of Etosha's premises

Etosha comment:
Etosha is concerned that dust, fumes, odours and other contamination from the Dormac facility could reach the adjoining property and affect food-handling areas.

Response:
The updated EIA and EMP identifies Etosha's facility as a sensitive receptor within an industrial port environment. Controlling off-site dust, fumes and odours is treated as a design and operational requirement for Dormac, not only as an internal health and safety issue.

The assessment concludes that, with the proposed engineering controls, operating procedures and monitoring in place, Dormac's future activities will be able to operate alongside Etosha's facility without unacceptably compromising your regulatory obligations.

Initial proposal (mesh nets and "stopping when the wind is too strong") and need for specific, ongoing measures including fumes/odours

Etosha comment:
The initial idea of using heavy-duty mesh nets and stopping operations "when the wind is too strong" was experienced as vague and insufficient, and did not properly address fumes and odours.

Response:
We assume you reference to heavy-duty mesh nets refers to our email to Etosha Fisihing on 5 November 2025. It was sent the day after the site visit in response to Etosha Fishing's initial questions and thus at a very early stage in the EIA process. Detailed impact assessment had at that stage not been completed and we still needed to look into the impacts and potential mitigation measures.

However, the EMP now sets out a more comprehensive and concrete set of controls, including:

Localised containment where practicable
It is not feasible to fully encapsulate the entire floating drydock at all times. Instead, Dormac will use task- and area-specific containment when activities generate significant dust, for example by enclosing the front and rear ends of the dock with high-density mesh or tarpaulins during grit blasting and spray painting, and installing side screening and temporary tented work areas where higher-risk tasks are undertaken and where work faces neighbouring premises.

Confined on-shore activities
As far as reasonably practicable, routine repair, fabrication, welding, grinding and spray painting will take place inside the enclosed workshop, rather than in open external areas along the shared boundary.
Only oversized items that cannot practically be brought into the workshop will be worked on outside, and then under suitable dust and overspray protection.

Weather-based operational thresholds
An on-site weather station will be installed to monitor wind speed and direction.
Grit blasting and exposed spray-painting activities on the drydock will be suspended or alternative means of blasting will be employed when average wind speeds exceed 25 km/hr, unless the work is fully enclosed or tented.
Extra care will be taken during northerly, northwesterly and westerly winds, when emissions could be directed towards Etosha. Under these conditions, blasting and painting will be limited to fully enclosed work or postponed.

Fumes and odours
Where technically feasible, lower-VOC, high-solids coating systems will be used.
Spray painting in the workshop will be confined to a dedicated spray booth or clearly marked, well-ventilated bay, with local extraction to above roof level.
Paints, solvents and cleaning agents will be stored and handled in closed containers, with decanting and cleaning carried out in designated, ventilated areas with spill containment.
Open burning of waste and uncontrolled venting of fumes will not be permitted.

Ongoing preventive measures
Work areas will be planned so that dust- and fume-intensive activities are located as far as reasonably practicable from Etosha's boundary.
A housekeeping programme will ensure prompt removal of spent grit, paint flakes and other loose materials that can be picked up by the wind.
Together, these measures are intended to give clear, practical and auditable controls that apply under normal operating conditions, not only in extreme weather.

EIA conclusion focusing on personnel rather than off-site dust control

Etosha comment:
Etosha notes that the earlier EIA conclusion seemed to focus mainly on protecting Dormac's personnel during demolition and construction, and did not adequately address dust impacts on neighbouring properties.

Response:
The conclusion has been revised so that protection of neighbouring receptors is clearly identified as a key objective of the mitigation measures.

Openings and outside paved storage area facing the Proponent's property

Etosha comment:

Etosha points out that its buildings have multiple openings (doors, loading areas etc.) and that the outside paved storage/loading area faces the Dormac property along its longest axis, without extra protection. Given the proximity, there is concern that dust, fumes and odours could enter food-handling and storage areas, even at relatively low wind speeds.

Response:

The layout of the Etosha buildings, their openings and the external paved storage/loading areas has been considered in the EIA.

To reduce the risk of emissions entering these areas, Dormac will:

- site and orientate high-emission tasks (such as grit blasting and spray painting) away from the Etosha buildings and paved area as far as practicable, with a preference for working towards the harbour basin;
- avoid carrying out high-emission activities along the section of boundary directly opposite Etosha's outside paved storage/loading area;
- provide screening or sheeting (solid panels or high-density mesh) along relevant sections of the shared boundary where work areas would otherwise have a direct line of sight to Etosha's openings and paved storage area;
- maintain a clean working environment along the boundary, including good housekeeping and control of dust sources, to prevent dust from building up and being re-entrained by the wind;
- implement a complaints and incident procedure so that Etosha can report any dust or odour episodes and Dormac can investigate and adjust its controls where necessary.

The EIA also notes that there may be scope for joint boundary improvements (for example a more solid wall or a partial canopy along the most exposed section) if both parties, and Namport where applicable, consider this useful and feasible.

HACCP/EU registration and risk of failed audits

Etosha comment:

Etosha explains that it operates the only HACCP-certified and EU-registered food-canning facility in Namibia, and that dust, fumes and odours are not acceptable under the relevant standards. There is concern that an adjacent engineering facility could affect future audits.

Response:

We acknowledges Etosha's status and the implications of your registrations and certifications.

While certification bodies ultimately decide on compliance, Dormac will aim to ensure, as far as reasonably practicable, that emissions are controlled at source and not cause off-site contamination. This includes:

- localised containment and careful orientation of high-emission tasks;
- confining routine on-shore repairs and spray painting to the workshop as far as practically possible;
- controlled handling and storage of paints, solvents and chemicals;
- managing traffic-related dust along the shared access route (see item 8 below);
- putting in place a formal communication and complaints process between Dormac and Etosha.

Dormac will be able to provide technical information on its control measures and monitoring results to support Etosha's discussions with auditors and authorities, if required.

Potential additional expenditure for Etosha and engagement with authorities

Etosha comment:

Etosha notes that it may need to invest in further measures on its side to maintain registrations and that the impact of the engineering facility may need to be discussed with the relevant authorities.

Response:

The EIA follows the mitigation hierarchy, focusing first on controlling emissions at source on the Proponent's side, rather than assuming changes to Etosha's facility. At the same time, it recognises that in some shared boundary areas the most effective long-term solutions may involve cooperative measures that benefit both parties.

Dormac is open to engaging with Etosha and, where appropriate, with regulators to explain its proposed controls and to explore joint, proportionate solutions where these are helpful.

Adequacy of EMP paragraph on dust, fumes and odours

Etosha comment:
Etosha feels that the original EMP paragraph on dust, fumes and odours did not go far enough to prevent these from entering its premises.

Response:
In response to this and other feedback, the EMP section dealing with dust, fumes and odours has been strengthened. Key provisions now include:

- clear identification of Etosha Fishing as a sensitive receptor;
- enclosing the front and rear of the floating dock with mesh netting or tarpaulins during blasting and painting, with extra side screening or tenting where needed;
- installing and using an on-site weather station and suspending grit-blasting or employ alternative means of blasting and exposed spray painting when average wind speeds exceed 25 km/hr, unless the work is fully enclosed;
- paying particular attention to northerly, northwesterly and westerly winds, when emissions may be directed towards Etosha, with activities then restricted to fully enclosed or tented areas or suspended altogether;
- preferring low-dust methods (for example wet/slurry, ultra-high-pressure or vacuum-assisted systems) and low-VOC/high-solids coatings where technically feasible;
- implementing a housekeeping programme for operational areas, including regular cleaning of hardstandings and access areas used by Dormac;
- installing and operating air-quality monitoring by an independent consultant on shared boundaries and on the floating dock, at least for PM_{10} and $PM_{2.5}$;
- requiring that all routine repair, fabrication and manufacturing work (including welding, grinding and small-scale painting) be carried out inside the enclosed workshop, with only oversized items handled outside under suitable tenting or shrouding.

These measures are intended both to prevent and control emissions at source and to verify actual performance through monitoring.

Access along the panhandle, dust from increased traffic and suggestion that the roadway be sealed

Etosha comment:
Etosha is concerned that increased traffic along the panhandle, which runs the length of its premises, could generate dust that may enter food-labelling and storage areas. Etosha also suggests that, as a minimum, the roadway should be sealed, and notes that this was not clearly covered in the EIA or EMP.

Response:
The panhandle access road is already in regular use and currently carries traffic for Etosha and other heavy vehicles. Dormac's future operations will change traffic patterns and volumes to some extent, and this has been taken into account in the updated EIA.

Within its direct control, the EMP provides that Dormac will manage its vehicle operations to minimise dust, for example by applying suitable speed limits on the shared panhandle and internal roads, avoiding unnecessary idling or queuing next to Etosha's loading and storage areas and ensuring that trucks and equipment leaving the site do not track loose grit and debris onto the road.

Upgrading the road surface would help to reduce dust for all users. However, the panhandle is a shared access road already used daily by Etosha Fishing and its tenants. Any long-term engineering solution

(such as sealing, paving or other dust-control measures) and how responsibilities and costs are shared will need to be agreed between the affected parties.

Dormac is willing to take part in discussions with Etosha to reach a practical, mutually acceptable way forward on the standard and future management of this access road.

Protection of Etosha's existing rights and adequacy of assessment

Etosha comment:
Etosha emphasises that its concerns must be properly addressed in the EMP to safeguard its existing rights and operations.

Response:
We have considered your comments and updated the EIA and EMP to reflect that. The assessment concludes that, with the mitigation and management measures described above, residual dust, fume and odour impacts on Etosha's operations can be reduced to acceptable levels for an industrial port setting.

Dormac will:

- implement the controls in the EMP that are aimed at avoiding unacceptable off-site impacts on neighbouring food-handling facilities;
- maintain a structured communication and complaints process with Etosha;
- review and, where reasonable, strengthen its controls if monitoring results or operational experience show that additional measures are needed.

Proposed way forward

To support the commitments in the EIA and EMP, Dormac would like to arrange a meeting with Etosha Fishing (with GPT present if helpful) to clarify any remaining concerns and discuss mutually acceptable solutions for the shared access road, including possible upgrading or partial covering of the entrance route, as well as any practical boundary measures that could further reduce risk for both parties.

We trust this response shows that your comments have been taken seriously and have been addressed in the EIA and EMP.

Yours sincerely

Geo Pollution Technologies (Pty) Ltd

Press Notice: The Namibian Sun 29 October and 05 November 2025

NEWSINSHORT

Record exhibitors at 8th Rundu trade fair

A record 168 exhibitors are showcasing at this year's 8th Rundu Annual Trade Fair, up from 133 last year. This was said by Rundu Town Council's Strategic Executive for Community Services, Fransiska Kupembona, who stated that the fair has become a major regional event attracting businesses, investors, government ministries, and visitors from across the country and outside. Among the exhibitors are seven international participants - five from Tanzania, one from Kenya, and one from Cameroon.

- PHILLIPUS JOSEF

Rundu Town Council's Strategic Executive for Community Services, Fransiska Kupembona.
PHOTO: PHILLIPUS JOSEF

PM opens Indongo Training Centre

Prime Minister, Elijah Ngurare, launched the Indongo Training Centre in Windhoek yesterday. Speaking at the event, Ngurare urged Namibians not to tire of investing in young people's talent. He said he is part of the TVET industry, adding that the initiative aligns with pillar 1 of Vision30 and Namibia's sixth national development plan (NDP6). The Prime Minister also extended greetings to the founder of Indongo Toyota, Frans 'Oupa' Indongo, acknowledging his enduring contribution to national growth.

- CHRIS KAUKEMUA

Prime Minister Elijah Ngurare.
PHOTO: CHRIS KAUKEMUA

Namibian passport fifth strongest in Africa

ELANIE SMIT
WINDHOEK

Namibia's global passport ranking has improved from 116th in mid-2024 to 62nd in 2025, reflecting a significant rise in its global mobility standing, remaining among the top five countries in Africa.

Namibia has this year again joined the ranks of Africa's top five nations advancing global mobility, with the 2025 Henley & Partners Passport Index placing the country 62nd worldwide – granting Namibian passport holders visa-free or visa-on-arrival access to 81 destinations.

This marks a notable improvement, underscoring Namibia's growing diplomatic reach and expanding tourism profile, the report noted.

It said that alongside Seychelles, Mauritius, South Africa and Botswana, Namibia is helping redefine Africa's position in global travel freedom.

According to the report, these five nations are spearheading a continental shift toward stronger passports, improved governance and increased international engagement.

Bigger reach

For Namibians, a stronger passport translates into greater opportunities for travel, business and cultural exchange.

"A nation's passport is a reflection of its international standing," the report notes, "and Namibia's steady progress signals the success of its long-term diplomatic strategy."

According to the report, Namibia's rise in the global ranking is closely tied to its robust tourism sector and strategic foreign policy.

It said that over the past decade, government has prioritised regional cooperation and expanded bilateral agreements to strengthen mobility for its citizens.

At the same time, Namibia's pristine natural landscapes and commitment to sustainable tourism have positioned it as one of Africa's most desirable travel destinations.

"This steady tourism growth not only bolsters the economy but also strengthens the country's global partnerships – a key factor in improving passport power."

Trave ecosystem

The index, which ranks passports based on the number of destinations their holders can enter without a visa, shows Africa's increasing integration into the global travel ecosystem. According to the report, Seychelles continues to lead the continent, followed by Mauritius, South Africa, Botswana and now Namibia, each benefiting from stable governance and proactive diplomacy.

The report notes that Namibia's inclusion among Africa's top five passports highlights a broader shift, one where African nations are no longer on the periphery of global mobility but active participants shaping it. Continued investment in diplomacy, tourism and infrastructure will further strengthen Namibia's international standing.

Seychelles stands out with its enviable access to 155 destinations. This places the island nation in the global ranking of 26th.

Right behind Seychelles is Mauritius, ranked 29th globally, with visa-free or visa-on-arrival access to 151 destinations. South Africa, one of the most influential nations on the African continent, holds the 48th spot in the global rankings, offering its citizens access to 106 destinations. While this is lower than the ranking of Seychelles and Mauritius, South Africa's passport is still among the top 50 globally.

Botswana is ranked 57th globally with visa-free access to 88 destinations.

Nampost reports 64% payout of social grants

Regional Review

• RESIDENTS COMPLAIN ABOUT LONG QUEUES

NamPost has acknowledged some logistical hurdles, **saying they are due to limited resources.**

PHILLIPUS JOSEF
RUNDU

Namibia Post Limited (NamPost) says it has paid out more than 190 000 social grants since its programme started on 13 October.

The agency reported that this represents 64% of all eligible grants and credited its teams for working late to ensure beneficiaries were served.

According to NamPost, all mobile teams are now fully operational, and measures have been put in place to address earlier delays.

The agency also shared the November payment schedule, urging residents to stick to their assigned days and for communities to prioritise the elderly and disabled.

Hurdles remain

Despite these assurances, residents in towns such as Rundu say they have experienced chaos this month.

An earlier report by the Namibian Sun described long, disorganised queues at the post office, with elderly and disabled beneficiaries reportedly waiting for hours. Dozens suffered while standing in line, and, according to residents, at least three were taken to hospital after feeling unwell.

NamPost communications officer Joseph Teofulus told Namibian Sun that the issues were due to limited resources.

"NamPost is operating on one leg, with only 15 vehicles countrywide," he said. "We have introduced faster systems that serve beneficiaries in under a minute, but until more vehicles are deployed, rural access and orderly payouts remain a serious challenge."

Residents have also complained about inadequate seating, lack of drinking water and poor toilet facilities, highlighting the human impact of the logistical difficulties.

The agency, however, stressed that it is committed to serving every eligible beneficiary with dignity and care. Mobile teams will continue to service pay-points across the country, and daily updates on NBC radio will guide residents on when and where payments will take place.

phillipus@smh-hsb.com.na

NEWSINSHORT

Windhoek needs N$2.6b to maintain roads

Windhoek's roads need N$2.6 billion in maintenance to reach acceptable standards, according to the City's strategic executive for infrastructure services, Rowan Adams. He said years of underfunding and rapid urban growth have left much of the 1 400-kilometre network in poor condition, with many roads now beyond routine repairs. Only limited annual funding allows for patch work fixes, while full rehabilitation remains out of reach. Adams said the City is exploring alternative funding models and partnerships to address the growing backlog threatening mobility, safety and economic activity in the capital.

- OGONE TLHAGE

City's strategic executive for infrastructure services, Rowan Adams. PHOTO: OGONE TLHAGE

Kanyetu blames foreign-owned businesses of exploiting Rundu

Action Democratic Movement (ADM) vice president Kanyetu Kanyetu has warned that businesses operating in Rundu could lose their fitness certificates if they fail to contribute to the community through corporate social responsibility. Speaking in Rundu yesterday, Kanyetu accused foreign-owned companies of exploiting the town's economy while neglecting local needs. "Those who want to do business here must do it the Rundu way," he said. Kanyetu claimed that not a single company has meaningfully supported education or youth empowerment, adding that only an ADM-led council would enforce accountability.

- PHILIPPUS JOSEF

• OVERSIGHT REPORT HIGHLIGHTS UNSAFE PRISONS

Unregistered clinics leave inmates without medicine, report warns

A government report warns that lack of essential medicines, prolonged detention due to unaffordable bail, overcrowding, gang influence and ancient infrastructure amount to human rights violations in some prisons.

ELIOT IPINGE
WINDHOEK

Almost all Namibian correctional facilities have on-site clinics, but because these clinics are not properly registered with the health ministry, they cannot receive government-supplied medication, leaving many inmates without treatment for serious illnesses such as HIV, tuberculosis and other chronic conditions.

The finding is contained in a report compiled by the National Council standing committee on security, constitutional and legal affairs, following an oversight visit conducted at Namibia Correctional Service (NCS) facilities between 20 January and 25 February as part of the committee's 2024/2025 annual plan.

Over a 21-day period, the committee visited correctional facilities across the country, including Windhoek, Hardap, Keetmanshoop, Gobabis, Swakopmund, Walvis Bay, Omaruru, Grootfontein, Divundu, Evalistus Shikongo, Elizabeth Nepemba and Oluno.

While Windhoek and Walvis Bay correctional facilities have medical doctors, most facilities rely only on registered nurses, enrolled nurses or health assistants.

Clinics screen inmates upon admission and discharge, treat mild ailments and provide healthcare education for chronic conditions, the report noted. However, without registration, inmates cannot access essential medicines, the committee warned.

Mobile outreach programmes and hospital referrals are used to fill the gap but are irregular and insufficient, the report warned.

"The clinics are essential for screening, treating and educating inmates, but without proper registration, inmates are denied access to the medicines they urgently need."

Bail crisis, overcrowding and gang influence

The committee members also found that overcrowding in prisons has reached crisis levels, while some inmates are forced to remain in detention for weeks or months simply because they cannot afford bail.

In Katima Mulilo, a 60-capacity cell held 262 detainees; Gobabis's 60-capacity cells held 234 and Windhoek's cells accommodated 145 inmates despite a 120-person capacity.

The report stressed that overcrowding has contributed to a growing threat from gangs, with organised recruitment systems for smuggling, fighting and sexual assault. Attempts to curb gang influence by transferring leaders have largely failed.

Young detainees are particularly vulnerable, the committee found.

While some facilities separate minors, many are forced to mix with adults, violating international standards under the Nelson Mandela Rules. Moreover, legal representation is often inadequate, and court delays prolong detention.

Crumbling infrastructure, inadequate nutrition

The oversight visits further highlighted that many correctional facilities are colonial-era buildings in urgent need of rehabilitation or relocation.

Staff accommodation is insufficient, forcing some married officers to share unsuitable living spaces.

"Some structures were constructed as early as 1922, which were built to serve certain purposes. However, they need to be rehabilitated or revamped to ensure they are fit for human habitation."

Facilities often have unsafe conditions, including toilets inside sleeping quarters, stagnant water and dangerous cooking arrangements using gas or wood.

"The kitchen is close to the cells and in most cases they were using a gas stove when preparing meals for [trial-awaiting] inmates. This practice is very dangerous in the event of a gas explosion. Some police stations were using wood for cooking, which is difficult during the rainy season," the report noted.

While some facilities benefit from agricultural schemes providing maize, wheat, vegetables and meat, others lack these resources, leaving some inmates with

PHOTO: CONTRIBUTED

food that falls below recommended international standards.

The report recommends urgent interventions, including clinic registration and resourcing, bail reform, expansion of remand facilities, alternative sentencing programmes and infrastructural upgrades. These recommendations were addressed to the safety and security ministry and justice ministry for consideration and implementation.

The committee also noted that it found that the NCS had implemented most of the recommendations forwarded to the ministry by the predecessor committees with only recommendations that required large funding to implement still pending, such as the large scale renovation of all key facilities and establishment of remand centres for trial awaiting inmates.

Post office heist: Bail denied for NamPost clerk and two alleged accomplices

RITA KAKELO
WINDHOEK

A NamPost counter clerk, Ronald van der Westhuizen (30), along with Bonaventure Shimunene (23) and Delron Dausab, has been denied bail in the Maltahöhe Magistrate's Court in the Hardap region following their arrest in connection with a robbery at the Maltahöhe Post Office in October this year.

According to the Hardap police, Shimunene and Dausab, who are reportedly related to van der Westhuizen, entered the post office around 08:00 on 22 October, allegedly attacked and tied up the security guard, and forced the clerk, van der Westhuizen, to hand over more than N$337 949.10.

According to the police, investigations later revealed that the three suspects, reportedly from Gibeon, had planned and executed the robbery together. After the incident was reported, police arrested all three at the residence of one of the accused.

During the arrest, officers recovered N$260 424, with some of the money allegedly found hidden in their clothing, shoes and under a bed in a room allegedly rented by the clerk.

Hardap Region acting regional commander, Deputy Commissioner John Mwatongwe, confirmed the arrests, saying about N$77 000 of the stolen money remains missing.

Press Notice: Die Republikein 29 October and 05 November 2025

2 NUUS Republikein Maandag 11 Augustus 2025

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WEER

BINNELAND: Meestal sonnig met enkele wolke. Winderige toestande sal in die namiddag voorkom.

KUS: Gedeeltelik bewolk en matig tot warm met miskolle.

GETYE BY WALVISBAAI: H: 08:30 L: 14:55 H: 21:25

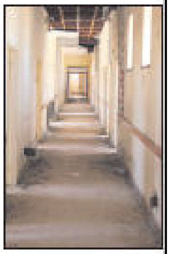
VOORUITSIGTE

WINDHOEK	19°	32°
RUNDU	22°	32°
OSHAKATI	23°	34°
GOBABIS	20°	28°
MARIENTAL	22°	34°
KEETMANSHOOP	22°	32°
WALVISBAAI	14°	18°
LUANDA	24°	27°
JOHANNESBURG	13°	18°
KAAPSTAD	15°	21°

Ou Omaruru-hospitaal vervalle

Die meeste van die struktuur bly stewig, hoewel die plafonne ineengestort het nadat vandale koperpype verwyder het. FOTO'S ADAM HARTMAN

Een van die badkamers.



VAN BL. 1

"Dit is deur die gemeenskap vir die gemeenskap gebou en as 'n geskenk aan die regering gegee. En kyk nou hierna."

Vir baie het die ongebruikte hospitaal 'n simbool geword van verlore erfenis en vermorste infrastruktuur. Sommige inwoners stel voor dat die geboue maklik gerestoureer en hergebruik kan word – vir gemeenskapsgebruik, kleinskaalse gesondheidsdienste of toerisme – as aandag gegee word aan die beveiliging en instandhouding van wat oorbly.

Soos een inwoner dit opgesom het: "Dit gaan nie oor blaam nie. Dis net hartseer dat dit toegelaat is om so ver te kom."

– adam@erongo.com.na

Maak seker jou huwelik is op rekord

Augetto Graig

Die ministerie van binnelandse sake, immigrasie, veiligheid en sekuriteit het alle egpare aangemoedig om te verseker dat hul huwelikstatus geregistreer is.

Dit volg op 'n mediaverklaring wat die ministerie se uitvoerende direkteur, Nghidinua Daniel, verlede week uitgereik het in reaksie op 'n wydverspreide stemnota op sosiale media. Daarin het Daniel die bewering van die stemnota ontken dat egpare met geel huweliksertifikate nie by die ministerie geregistreer is nie.

Ingevolge Namibië se Wet op die Registrasie van Geboortes, Huwelike en Sterftes, no. 81 van 1963, mag huweliksbeamptes, hetsy 'n landdros of 'n geregistreerde kerkleier, huwelike voltrek, het Daniel verduidelik.

Die huweliksbeampte moet dan 'n afskrif van die huweliksregister vir hul eie rekords behou en die oorspronklike binne drie dae by die ministerie indien. Alle huweliksregisters wat ingedien word, word deur die ministerie aangeteken en word veilig binne die nasionale burgerlike registrasiestelsel gestoor, het Daniel volgehou.

"Daar word egter waargeneem dat sommige huweliksbeamptes nie konsekwent huweliksregisters by die ministerie indien, soos deur die wet vereis word nie. Hierdie laat indiening, of selfs versuim om dit in te dien, lei daartoe dat huwelike nie betyds, of glad nie, op die ministerie se stelsel aangeteken word nie," lui die verklaring.

Die ministerie moedig dus alle egpare aan om hul naaste kantore te besoek om te verseker dat hul huwelik by die ministerie geregistreer is.

Dit is ter bevordering van die volledigheid en akkuraatheid van die nasionale huweliksregister, het Daniel uitgebrei. Egpare moet verseker dat hul betrokke huweliksbeampte die register by die ministerie ingedien het, en of die huwelik behoorlik op die ministerie se stelsel aangeteken is.

"Hierdie verifikasieproses is belangrik om die wettige erkenning van huwelike te bewaar en die akkuraatheid van die nasionale burgerlike rekord te handhaaf," het hy gesê.

Die jongste ontwikkeling volg te midde van die aanloop tot die tradisionele Namibiese bruilofseisoen en 'n wydverspreide beperking op die aantal troulokale wat by landdroshowe in die land beskikbaar is. Daar is in onlangse weke berig dat beide die landdroshowe in Gobabis en Ondangwa vir die res van 2025 vol bespreek sal wees.

Op navraag, het Daniel bevestig dat daar tans meer as 150 kerkleiers geregistreer is om as troubeamptes te dien.

PUBLIC PARTICIPATION NOTICE

ENVIRONMENTAL ASSESSMENT: CONSTRUCTION AND OPERATIONS OF A JETTY AND FLOATING DRY DOCK IN WALVIS BAY, ERONGO REGION

Geo Pollution Technologies (Pty) Ltd was appointed by Dormac Marine and Engineering Namibia (Pty) Ltd (the Proponent) to undertake an environmental assessment (EA) for the construction of a new jetty and the commissioning of a floating dry dock at 5 Ben Amathila Street, Walvis Bay. The facility will be used for vessel maintenance, repairs, and associated shore-based fabrication and engineering activities, mainly related to the oil and gas and marine industry. Additional and location information pertaining to the property and proposed operations can be obtained at:

http://www.thenamib.com/projects/projects.html

The environmental assessment will be conducted according to the Environmental Management Act of 2007 and its regulations as published in 2012.

Interested and affected parties are invited to register with the environmental consultant to be provided with the opportunity to share comments, issues or concerns related to the project, for consideration in the EA. Requests for additional information and comments and concerns should be submitted to Geo Pollution Technologies by 14 November 2025.

André Faul
Geo Pollution Technologies
Tel: +264-61-257411
Fax: +264-88626368
E-Mail: dock@thenamib.com

» Kiesersonderrig tot 25 November

Meer as 2,7 m. stembriewe teen N$4,9 m. afgelewer

Alle deelnemende politieke partye, verenigings en onafhanklike kandidate is genooi om die drukproses in Johannesburg waar te neem, terwyl diegene wat nie kon reis nie, voorbeelde van die stembriewe by die ECN se hoofkantoor in Windhoek kon verifieer.

› Rita Kakale

Meer as 2,7 miljoen stembriewe ter waarde van N$4,9 miljoen, is gedruk en aan Namibië afgelewer vir die verkiesings op 26 November.

Die uitvoerende hoof en hoofverkiesingsbeampte van die Verkiesingskommissie van Namibië (ECN), Peter Shaama, het Maandag in Windhoek aangekondig dat die stembriewe – 1 815 100 vir streeksrade en 920 400 vir plaaslike owerhede – deur Uniprint Global van Suid-Afrika gedruk en afgelewer is ná 'n oop internasionale tenderproses.

"Die kontrak vir die produksie, drukwerk en aflewering van die plaaslike owerhede- en streekverkiesings is aan Uniprint Global teen 'n koste van N$4 899 530 toegeken om die stembriewe wat vandag ontvang is, te druk en af te lewer," het Shaama gesê.

Van links is die ECN-kommissaris Pius Iikwambi, die uitvoerende hoof en hoofverkiesingsbeampte, Peter Shaama, en kommissaris Gerson Tjihenuna. FOTO/RITA KAKELE

DRUKWERK, VERIFIKASIE

Die ontwerp en produksie van die stembriewe het tussen 21 tot 22 Oktober plaasgevind, gevolg deur verifikasie en goedkeuring deur gemagtigde verteenwoordigers van 21 politieke partye, 23 organisasies of verenigings en 68 onafhanklike kandidate tussen 22 en 23 Oktober 2025.

Die drukwerk het van 24 Oktober tot 2 November 2025, onder toesig van ECN-beamptes, twee politieke partye en die Namibiese polisie plaasgevind, voordat die stembriewe veilig verpak en Maandag na Namibië ingevlieg is.

"Die kommissie het streng kriteria vasgestel om die gehalte en sekuriteit van die stembriewe te verseker, insluitend spesifikasies vir papiergehalte en gevorderde sekuriteitskenmerke om die integriteit van die verkiesings te beskerm," het Shaama gesê.

Die ECN het deurlopende skakeling met verkiesingsbelanghebbendes gehandhaaf deur die Politieke Party-skakelkomitee (PLC).

Opdaterings is volgens Shaama met verskillende tussenposes gedeel: Die aanvang van die tenderproses in April 2025, die vordering daarvan in Julie, kontraktoekenning in September en die toekenning van stembriewe per kiesafdeling in Oktober.

Alle deelnemende politieke partye, verenigings en onafhanklike kandidate is genooi om die drukproses in Johannesburg waar te neem, terwyl diegene wat nie kon reis nie, voorbeelde by die ECN se hoofkantoor in Windhoek kon verifieer. Shaama het gesê dat waarnemers, anders as vorige jare, hul eie reis- en verblyfkoste vir die Suid-Afrika-verifikasiesending moes dek.

Skandeer die QR-kode

Met die stembriewe wat nou afgelewer is, het die ECN die oorblywende stappe tot verkiesingsdag uiteengesit. Die verspreiding van materiaal is geskeduleer vir 4 tot 17 November. Opleiding van stembeamptes sal tussen 7 en 15 November plaasvind, gevolg deur die uitreiking van duplikaatkieserskaarte van 17 tot 23 November. Die ontplooiing van stemspanne is geskeduleer vir 23 tot 25 November, met die spesiale stemproses vir beamptes en die polisie op 24 November en amptelike stemdag op 26 November.

KIESERSONDERRIG

Landswye kiesersonderrigveldtogte sal tot 25 November voortduur om te verseker dat alle geregistreerde kiesers ingelig word oor die stemproses.

"Ons doen 'n beroep op alle belanghebbendes in die verkiesing, insluitend die media, om pogings tot kiesersonderrig te verbeter soos ons stemdag nader. Dit is om te verseker dat elke geregistreerde kiesers voorbereid is om hul fundamentele reg om te stem uit te oefen," het Shaama gesê.

Hy het die kommissie se verbintenis tot vrye, regverdige, deursigtige en geloofwaardige verkiesings herbevestig en alle belanghebbendes versoek om demokratiese beginsels te handhaaf.

"Die kommissie bly vasberade en verbind tot die versekering van vrye, regverdige, deursigtige en geloofwaardige verkiesings. Ons doen 'n beroep op alle belanghebbendes in die verkiesing om 'n samewerkende rol in die bevordering van 'n demokratiese verkiesingsproses te speel."

AGTERGROND VAN TENDERPROSES

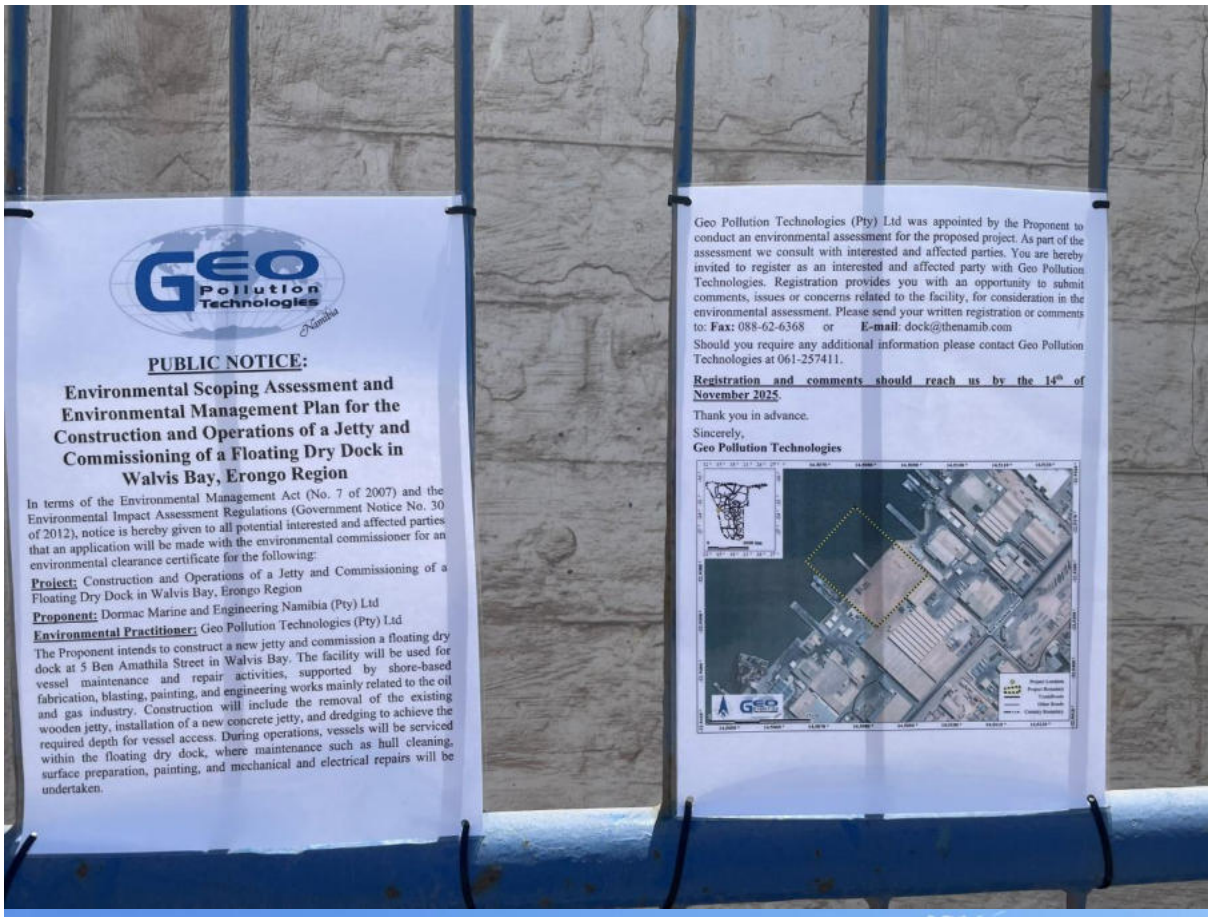
Die verkryging van stembriewe is uitgevoer ingevolge die Wet op Openbare Verkryging no. 15 van 2015 en het deel gevorm van die ECN se jaarlikse verkrygingsplan.

Die oop internasionale tenderproses is op 16 Junie van stapel gestuur en het op 28 Julie gesluit. Volgens Shaama het sewe plaaslike en vyf internasionale ondernemings tenderdokumente gekoop, maar slegs vier internasionale bieërs het finale tenders ingedien. Hulle was E7 Group United Printing teen N$8,38 miljoen, Shave & Gibson teen N$6,07 miljoen, Ren-Form CC teen N$6,53 miljoen en Uniprint Global teen N$4,9 miljoen.

Volgens die ECN was Uniprint se tender, wat produksie- en hugaflewerингskoste ingesluit het, die mededingendste en het aan alle gebalte- en sekuriteitskriteria voldoen.

– rita@nnh-hub.com.na

Site Notice


GEO
Pollution
Technologies
Namibia
PUBLIC NOTICE:
Environmental Scoping Assessment and Environmental Management Plan for the Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay, Erongo Region
In terms of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012), notice is hereby given to all potential interested and affected parties that an application will be made with the environmental commissioner for an environmental clearance certificate for the following:
Project: Construction and Operations of a Jetty and Commissioning of a Floating Dry Dock in Walvis Bay, Erongo Region
Proponent: Dormac Marine and Engineering Namibia (Pty) Ltd
Environmental Practitioner: Geo Pollution Technologies (Pty) Ltd
The Proponent intends to construct a new jetty and commission a floating dry dock at 5 Ben Amathila Street in Walvis Bay. The facility will be used for vessel maintenance and repair activities, supported by shore-based fabrication, blasting, painting, and engineering works mainly related to the oil and gas industry. Construction will include the removal of the existing wooden jetty, installation of a new concrete jetty, and dredging to achieve the required depth for vessel access. During operations, vessels will be serviced within the floating dry dock, where maintenance such as hull cleaning, surface preparation, painting, and mechanical and electrical repairs will be undertaken.
Geo Pollution Technologies (Pty) Ltd was appointed by the Proponent to conduct an environmental assessment for the proposed project. As part of the assessment we consult with interested and affected parties. You are hereby invited to register as an interested and affected party with Geo Pollution Technologies. Registration provides you with an opportunity to submit comments, issues or concerns related to the facility, for consideration in the environmental assessment. Please send your written registration or comments to: Fax: 088-62-6368 or E-mail: dock@thenamib.com
Should you require any additional information please contact Geo Pollution Technologies at 061-257411.
Registration and comments should reach us by the 14th of November 2025.
Thank you in advance.
Sincerely,
Geo Pollution Technologies

Appendix B: Consultant's Curriculum Vitae

ENVIRONMENTAL SCIENTIST **André Faul**

André entered the environmental assessment profession at the beginning of 2013 and since then has worked on more than 250 Environmental Impact Assessments including assessments of the petroleum industry, harbour expansions, irrigation schemes, township establishment and power generation and transmission. André's post graduate studies focussed on zoological and ecological sciences and he holds a M.Sc. in Conservation Ecology and a Ph.D. in Medical Bioscience. His expertise is in ecotoxicological related studies focussing specifically on endocrine disrupting chemicals. His Ph.D. thesis title was The Assessment of Namibian Water Resources for Endocrine Disruptors. Before joining the environmental assessment profession he worked for 12 years in the Environmental Section of the Department of Biological Sciences at the University of Namibia, first as laboratory technician and then as lecturer in biological and ecological sciences.

CURRICULUM VITAE ANDRÉ FAUL

Name of Firm	:	Geo Pollution Technologies CC.
Name of Staff	:	ANDRÉ FAUL
Profession	:	Environmental Scientist
Years' Experience	:	24
Nationality	:	Namibian
Position	:	Environmental Scientist
Specialisation	:	Environmental Toxicology
Languages	:	Afrikaans – speaking, reading, writing – excellent
		English – speaking, reading, writing – excellent

EDUCATION AND PROFESSIONAL STATUS:

B.Sc. Zoology/Biochemistry	:	University of Stellenbosch, 1999
B.Sc. (Hons.) Zoology	:	University of Stellenbosch, 2000
M.Sc. (Conservation Ecology)	:	University of Stellenbosch, 2005
Ph.D. (Medical Bioscience)	:	University of the Western Cape, 2018

First Aid Class A	EMTSS, 2017, OSH-Med 2022
Basic Fire Fighting	EMTSS, 2017, OSH-Med 2022

PROFESSIONAL SOCIETY AFFILIATION:
Environmental Assessment Professionals of Namibia (Practitioner)

AREAS OF EXPERTISE:
Knowledge and expertise in:
- Water Sampling, Extractions and Analysis
- Biomonitoring and Bioassays
- Biodiversity Assessment
- Toxicology
- Restoration Ecology

EMPLOYMENT:

2013-Date	:	Geo Pollution Technologies – Environmental Scientist
2005-2012	:	Lecturer, University of Namibia
2001-2004	:	Laboratory Technician, University of Namibia

PUBLICATIONS:

Publications:	5
Contract Reports	+250
Research Reports & Manuals:	5
Conference Presentations:	1