

APP-004532

**FUEL STORAGE AND DISTRIBUTION OPERATIONS ON ERF 1239, WALVIS
BAY, ERONGO REGION**

UPDATED ENVIRONMENTAL MANAGEMENT PLAN




Prepared by:



Prepared for:



July 2024

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Report Approval	 André Faul Conservation Ecologist	

I Emil Dörgeloh acting as a representative of Union Marine Properties (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 Walvis Bay on the 6 day of August 2024.


Union Marine Properties (Pty) Ltd

CY/1972/02007
Business Registration/ID Number

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1 INTRODUCTION

Union Marine Properties (Pty) Ltd (the Proponent) holds an environmental clearance certificate (EEC) for their proposed fuel storage and handling facility on Erf 1239, in the fishing harbour of Walvis Bay (Figure 1-1). The site currently hosts a consumer fuel installation consisting of three 80 m³ horizontal, aboveground steel diesel storage tanks used to refuel fishing vessels, one 516 m³ vertical steel HFO tank used to supply fish factory boilers as well as one 8 m³ underground steel diesel tank used for refuelling their own fleet of vehicles. The Proponent intends to add additional fuel storage facilities to the site for wholesale purposes. The fuel facilities are constructed and operated according to South African National Standards (SANS) as prescribed by Namibian legislation. The initial environmental management plan (EMP) for the facilities was prepared in 2021 (Faul et al. 2021).

Geo Pollution Technologies (Pty) Ltd (GPT) was now appointed by the Proponent to update the EMP and to apply for renewal of the ECC. An EMP is a tool used to take pro-active action in terms of environmental management by addressing potential problems before they occur. It is a stand-alone, living document, which can be used during the various phases (planning, construction, operational and decommissioning) of any proposed activity or development. The updated EMP will continue to provide management options to ensure negative impacts of the facility are prevented or minimised, while simultaneously enhancing resultant benefits and positive spinoffs. This should ultimately limit the need for corrective measures during the various stages of the project.

The updated EMP will be used to apply for an ECC renewal in compliance with Namibia's Environmental Management Act (Act No 7 of 2007).

All contractors and sub-contractors taking part in operations and related activities should be made aware of the relevant sections of the EMP, so as to plan the relevant activities accordingly and in an environmentally sound manner.

The objectives of the EMP are:

- ◆ to include all potential significant impacts of the various activities of the facility;
- ◆ to prescribe the best practicable control methods to prevent or minimize the environmental impacts associated with fuel storage;
- ◆ to monitor and audit the performance of relevant contractors and employees in applying such controls; and
- ◆ to ensure that appropriate environmental training is provided to relevant contractors and employees.

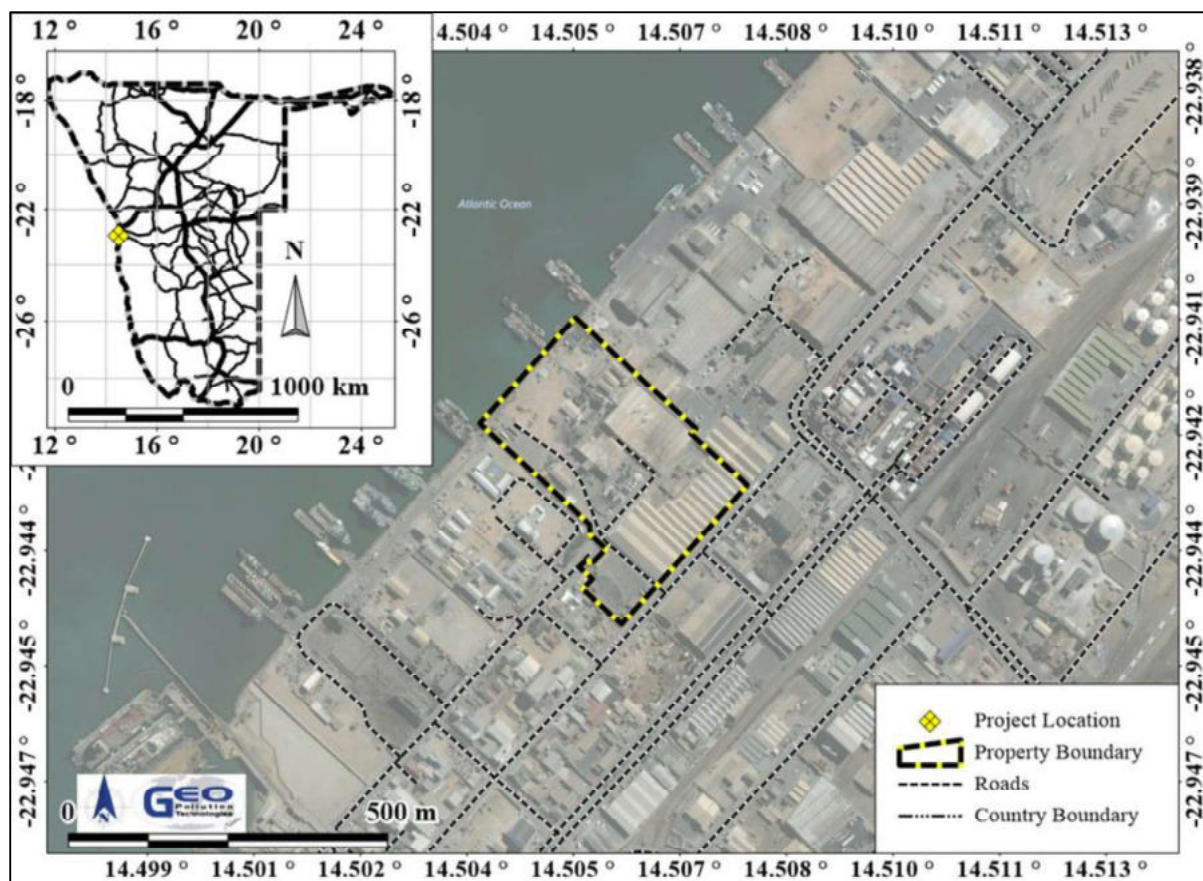


Figure 1-1 Project location

2 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 environmental assessment, as per the Namibian legislation. The legislation and standards provided in Table 2-1 to Table 2-4 govern the environmental assessment process in Namibia and/or are relevant to the facility.

Table 2-1 Namibian law applicable to the fuel storage facility

Law	Key Aspects
The Namibian Constitution	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ Commencement of the Environmental Management Act. ◆ Lists activities that requires an environmental clearance certificate. ◆ Provides Environmental Impact Assessment Regulations.

Law	Key Aspects
Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 45 of 1990	<ul style="list-style-type: none"> ◆ Regulates petroleum industry. ◆ Makes provision for impact assessment. ◆ Petroleum Products Regulations (Government Notice No. 155 of 2000). <ul style="list-style-type: none"> ○ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002).
Prevention and Combating of Pollution of the Sea by Oil Act, 1981 (Act No. 6 of 1981)	<ul style="list-style-type: none"> ◆ 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)	<ul style="list-style-type: none"> ◆ Amends the Prevention and Combating of Pollution of the Sea by Oil Act of 1981 to be more relevant to Namibia after independence.
Marine Traffic Act Act No. 2 of 1981	<ul style="list-style-type: none"> ◆ Regulates marine traffic in Namibia.
Water Resources Management Act Act No. 11 of 2013	<ul style="list-style-type: none"> ◆ Provides for management, protection, development, use and conservation of water resources. ◆ Prevention of water pollution and assignment of liability. ◆ Water Resources Management Act Regulations of 2023.
Local Authorities Act Act No. 23 of 1992, Government Notice No. 116 of 1992	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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 recycling; waste generation and storage; and sanitation.
Labour Act Act No 11 of 2007, Government Notice No. 236 of 2007	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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.

Law	Key Aspects
Pollution Control and Waste Management Bill (draft document)	<ul style="list-style-type: none"> ◆ Not in force yet. ◆ Provides for prevention and control of pollution and waste. ◆ Provides for procedures to be followed for licence applications.
National Marine Pollution Contingency Plan of 2017	<ul style="list-style-type: none"> ◆ Coordinated and integrated national system for dealing with oil spills in Namibian waters.

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

Municipal By-laws, Guidelines or Regulations	Key Aspects
Integrated Urban Spatial Development Framework for Walvis Bay	<ul style="list-style-type: none"> ◆ 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)	<ul style="list-style-type: none"> ◆ 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.

Table 2-3 Standards or codes of practise

Standard or Code	Key Aspects
South African National Standards (SANS)	<ul style="list-style-type: none"> ◆ The Petroleum Products and Energy Act prescribes SANS standards for the construction, operations and demolition of petroleum facilities. ◆ SANS 10131:2004 aimed at above-ground storage tanks for petroleum products. SANS 10089-3:2010 is specifically aimed at storage and distribution of petroleum products at fuel retail facilities and consumer installations. <ul style="list-style-type: none"> ○ Provides requirements for spill control infrastructure

Table 2-4 Relevant multilateral environmental agreements for Namibia and the development

Agreement	Key Aspects
Stockholm Declaration on the Human Environment, Stockholm 1972.	<ul style="list-style-type: none"> ◆ 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.
1985 Vienna Convention for the Protection of the Ozone Layer	<ul style="list-style-type: none"> ◆ Aims to protect human health and the environment against adverse effects from modification of the Ozone Layer are considered. ◆ Adopted to regulate levels of greenhouse gas concentration in the atmosphere.
United Nations Framework Convention on Climate Change (UNFCCC)	<ul style="list-style-type: none"> ◆ The Convention recognises that developing countries should be accorded appropriate assistance to enable them to fulfil the terms of the Convention.
Convention on Biological Diversity, Rio de Janeiro, 1992	<ul style="list-style-type: none"> ◆ Under article 14 of The Convention, EIAs must be conducted for projects that may negatively affect biological diversity.

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.

The project is listed as an activity requiring an ECC as per the following points from Section 9 of Government Notice No. 29 of 2012:

- ◆ 9.1 “The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.”

Relevance: Fuel is stored on site for daily operations.

- ◆ 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.”

Relevance: The Proponent stores a combined total of 604 m³ of fuel on site.

- ◆ 9.4 “The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.”

Relevance: The Proponent storage more than 30 m³ on site.

- ◆ 9.5 “Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin.”

Relevance: The Proponent constructed underground and aboveground fuel storage tanks.

3 ENVIRONMENTAL MANAGEMENT PLAN

Section 3 outline the management of the environmental elements that may be affected by the storage and handling fuel. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have to be elaborated on by the Proponent, where relevant. Delegation of prevention and mitigation measures as well as reporting activities, should be determined by the Proponent and included in the EMP. The EMP is a living document that must be prepared in detail, and regularly updated, by the Proponent as the project progress and evolve.

The EMP and ECC must be communicated to site managers. A copy of the ECC and EMP should be kept on site. All monitoring results must be reported on as per the conditions of the ECC. Reporting is important for any future renewals of the ECC and must be submitted to the MEFT.

Various potential and definite impacts will emanate from the operations and decommissioning phases. The majority of these impacts can be prevented or mitigated to within acceptable limits. The following sections provide different management measures to be considered and implemented by the Proponent.

3.1.1 Planning

During the phases of planning for operations, construction and decommissioning of the facility and proposed development, 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 construction activities and operations of the project are in place and remains valid. This includes the petroleum products licences and municipal approvals.
- ◆ Ensure that design parameters, where required, is approved by relevant authorities prior to construction activities at the facility.
- ◆ 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 Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- ◆ Have the following emergency plans, equipment and personnel on site where reasonable to deal with all potential emergencies:
 - Risk management / mitigation / EMP/ Emergency Response Plan and HSE Manuals
 - Adequate protection and indemnity insurance cover for incidents;
 - Comply with the provisions of all relevant safety standards;
 - Procedures, equipment and materials required for emergencies.
- ◆ Establish and maintain a fund for future ecological restoration of the project site should project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.
- ◆ Establish and / or maintain a reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- ◆ Submit bi-annual reports to the MEFT to allow for environmental clearance certificate renewal after three years. This is a requirement by MEFT.
- ◆ Appoint a specialist environmental consultant to update the EMP and apply for renewal of the environmental clearance certificate prior to expiry.

3.1.2 Employment

Operations and construction activities of the facility relies on employment. Skilled and unskilled labourers are employed or contracted for various tasks of construction and operations. Unskilled labour may be sourced locally while it is expected that skilled contractors within Namibia will be used for specialised work. The presence of the facility therefore contributes to employment creation in the skilled and unskilled labour sector.

Desired Outcome: Provision of employment to local Namibians.

Actions

Mitigation:

- ◆ The Proponent must employ local Namibians where possible.
- ◆ If the skills exist locally, employees must first be sourced from the town, then the region and then nationally.
- ◆ Deviations from this practice must be justified.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Bi-annual report based on employee records.

3.1.3 Skills, Technology and Development

During various phases of the facility, training is provided to a portion of the workforce to be able to operate and maintain various features of the fuel storage facilities according to the required standards. The addition of the proposed storage facilities will further add to training requirements. Skills are transferred to an unskilled workforce for general tasks. Development of people and technology are key to economic development of the town, region and nationally.

Desired Outcome: To see an increase in skills of local Namibians, as well as development and technology advancements in the fuel industry.

Actions

Mitigation:

- ◆ If the skills exist locally, contractors must first be sourced from the town, then the region and then nationally. Deviations from this practice must be justified.
- ◆ Skills development and improvement programs to be made available as identified during performance assessments.
- ◆ Employees to be informed about parameters and requirements for references upon employment.
- ◆ The Proponent must employ Namibians where possible. Deviations from this practise should be justified appropriately.
- ◆ Personas engaged with the operations of the facility should be trained in fire-fighting as well as spill management.

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 employee training.

3.1.4 Demographic Profile and Community Health

The project relies on labour for operations and construction activities. The scale of both existing and proposed development at the site is limited and it has / will not result in significant changes in the demographic profile of the local community. Exposure to factors such as communicable disease like HIV/AIDS, often associated with the transport industry, as well as alcoholism/drug abuse may impact the local community.

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 only local people from the area, deviations from this practice should be justified appropriately.
- ◆ Adhere to all municipal by-laws relating to environmental health which includes but is not limited to sanitation requirements.

Mitigation:

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

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Facility inspection sheet for all areas which may present environmental health risks, kept on file.
- ◆ Summary report based on educational programmes and training conducted.

3.1.5 Fuel Supply

The addition of the fuel wholesale facility as well as additional consumer fuel installations will aid in securing fuel supply to both fleet and operational vehicles as well as client vessels and trucks offloading and collect fish.

Desired Outcome: Ensure a secure fuel supply remains available.

Actions

Mitigation:

- ◆ Ensure compliance to the petroleum regulations of Namibia.
- ◆ Proper management to ensure constant supply.
- ◆ Record supply problems and take corrective actions.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Record supply problems and corrective actions taken and compile a bi-annual summary report.

3.1.6 Revenue Generation

The sale of fuel contributes to revenue generation which is paid to the national treasury while also contributing to the local economy in terms of increased spending power of employees as well as through the sourcing of goods and services.

Desired Outcome: Generation of revenue for the town and Namibia as a whole.

Actions

Enhancement:

- ◆ Goods and services must be sourced locally, if available.
- ◆ Payment of salaries, taxes, levies, etc. in accordance with Namibian legislation and requirements.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Financial records on file.

3.1.7 Traffic

The facility may increase the traffic flow to the site as a result of tanker trucks delivering and collecting fuel as well as construction activities may result in temporary traffic impacts. An increase in traffic to and from the site may increase congestion and increase the risk of incidents and accidents. In turn, by providing diesel to fleet and operational vehicles at the site, where cargo is collected, the amount of trucks needing to refuel in town will be reduced, mitigating traffic impacts at the already congested fuel retail facilities in town.

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

Actions

Prevention:

- ◆ Erect clear signage regarding access and exit points at the facility.

Mitigation:

- ◆ Tanker trucks delivering fuel and trucks collecting fuel should not be allowed park within Second Street East outside of designated parking areas or to obstruct any traffic of entrances / exists of facilities in surrounding streets.
- ◆ If any traffic impacts are expected, land based or marine, traffic management should be performed to prevent these.
- ◆ The placement of signs to warn and direct traffic will mitigate traffic impacts.
- ◆ Trucks entering and existing the facility should not be allowed to make sharp turns on Second Street East, as this may result in traffic issues and damage to the road infrastructure.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Any complaints received regarding traffic issues should be recorded together with action taken to prevent impacts from repeating itself.
- ◆ A bi-annual should be compiled of all incidents reported, complaints received, and action taken.

3.1.8 Health, Safety and Security

Activities associated with the construction and operational phases are reliant on human labour and therefore exposes them to health and safety risks. Activities such as the operation of machinery and handling of hazardous chemicals (inhalation and carcinogenic effect of some petroleum products), poses the main risks to employees. Security risks are related to unauthorized entry, theft and sabotage.

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

Actions

Prevention:

- ◆ Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- ◆ Equipment that will be locked away on site must be placed in a way that does not encourage criminal activities (e.g. theft).
- ◆ Provide all employees with required and adequate personal protective equipment (PPE).
- ◆ Ensure that all personnel receive adequate training on operation of equipment / handling of hazardous substances.
- ◆ All Health and Safety standards specified in the Labour Act should be complied with.
- ◆ Implementation of maintenance register for all equipment and fuel/hazardous substance storage areas.

Mitigation:

- ◆ Selected personnel should be trained in first aid and a first aid kit must be available on site. The contact details of all emergency services must be readily available.
- ◆ Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool, which includes: colour coding of pipes, operational, safe work and medical procedures, permits to work, emergency response plans, housekeeping rules, MSDS's and signage requirements (PPE, flammable etc.).
- ◆ Security procedures and proper security measures must be in place to protect workers and clients, especially during cash in transit activities.
- ◆ Strict security that prevents unauthorised entry.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ Any incidents 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.

3.1.9 Fire

Operational and maintenance activities may increase the risk of the occurrence of fires. The site is located in a developed area which may increase the difficulty of fighting fires. The facility will only store diesel and HFO, which is not as flammable as more volatile fuels however still presents a fire risk.

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

Actions:

Prevention:

- ◆ A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- ◆ Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).
- ◆ Ensure all chemicals are stored according to MSDS and SANS instructions.
- ◆ Maintain regular site, mechanical and electrical inspections and maintenance.
- ◆ Clean all spills / leaks.
- ◆ Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).
- ◆ Follow SANS standards for design, operation and maintenance of the facility, this includes refuelling locations and distances from boundaries.
- ◆ All dispensers must be equipped with devices that cut fuel supply during fires.
- ◆ The proponent should liaise with the local Fire Brigade to ensure that all fire requirements are met. This includes, but is not limited to SANS 10400 T: 2011.

Mitigation:

- ◆ Implement the fire and emergency response plans if a fire is detected and contact emergency services without delay.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ A register of all incidents must be maintained on a daily basis. This should include measures taken to ensure that such incidents do not repeat themselves.
- ◆ A bi-annual 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.

3.1.10 Air Quality

Fuel vapours are released into the air during refuelling of bulk storage tanks and tankers as well as at the proposed filling points. Prolonged exposure may have carcinogenic effects. Dust may be generated by vehicles accessing the site as well as during any construction activities.

Desired Outcome: To prevent health impacts and minimise the dust generated.

Actions

Mitigation:

- ◆ Personnel issued with appropriate masks where excessive dust or vapours are present.
- ◆ A complaints register should be kept for any dust related issues and mitigation steps taken to address complaints where necessary e.g. dust suppression.
- ◆ Employees should be coached on the dangers of fuel vapours.
- ◆ Vent pipes must be properly placed as per SANS requirements.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ Any complaints received regarding dust or fuel vapours should be recorded with notes on action taken.
- ◆ All information and reporting to be included in a bi-annual report.

3.1.11 Noise

Construction activities may generate noise. During operations, noise pollution will exist due to heavy vehicles accessing the site to offload fuel or collect fuel. The facility is however situated in an industrial area with high ambient noise levels, thus noise impacts is not expected to negatively affect neighbouring receptors and is mostly related to hearing loss.

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

Actions

Prevention:

- ◆ Follow Health and Safety Regulations of the Labour Act and/or World Health Organization (WHO) guidelines on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment.
- ◆ All machinery must be regularly serviced to ensure minimal noise production.

Mitigation:

- ◆ Hearing protectors as standard PPE for workers in situations with elevated noise levels.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ Health and Safety Regulations of the Labour Act / WHO Guidelines.
- ◆ Maintain a complaints register.
- ◆ Bi-annual reporting on complaints and actions taken to address complaints and prevent future occurrences.

3.1.12 Waste production

Waste is produced during the operational phase. Waste may include hazardous waste associated with the handling of hydrocarbon products and used products (such as old oil, chemicals etc.). Domestic waste may be generated by the facility and related operations. Waste presents a contamination risk and when not removed regularly may become a fire hazard. Construction waste, if any, may include building rubble and discarded equipment contaminated by hydrocarbon products. Contaminated soil and water is considered as a hazardous waste.

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

Actions

Prevention:

- ◆ Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate.
- ◆ Ensure adequate disposal storage facilities are available.
- ◆ Ensure waste cannot be blown away by wind.
- ◆ Prevent scavenging (human and non-human) of waste.
- ◆ All regulation and by-laws relating to environmental health should be adhered to.
- ◆ Provide drip trays around the spill control structures of the discharge pumps.
- ◆ Store old oil on impermeable surfaces until collection.

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).
- ◆ Spill catchment areas / drip trays should be cleaned regularly and contaminated waste disposed of as hazardous waste.
- ◆ See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers.
- ◆ Liaise with the municipality regarding waste and handling of hazardous waste.

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.
- ◆ The spill catchment areas and equipment must be regularly inspected and all hydrocarbons removed once detected.
- ◆ All information and reporting to be included in a bi-annual report.

3.1.13 Ecosystem and Biodiversity Impact

The nature of the operational activities is such that the probability of creating a habitat for flora and fauna to establish is low. No significant impact on the biodiversity of the site is predicted as the site is currently void of natural fauna and flora. Pollution of the marine environment may however negatively impact on marine animals. Impacts are therefore mostly related to pollution of the marine environment. Bright lighting used at night may disorientate birds flying at night and cause collisions of birds with man-made structures.

Desired Outcome: To avoid pollution of and impacts on the ecological environment.

Actions.

Mitigation:

- ◆ Report any extraordinary sightings to the Ministry of Environment, Forestry and Tourism.
- ◆ 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.
- ◆ Direct all lights down to working surfaces and use minimal lighting at night.
- ◆ The establishment of habitats and nesting sites at the facility should be prevented where possible.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ All information and reporting to be included in a bi-annual report.

3.1.14 Groundwater, Surface Water and Soil Contamination

Operations entail the storage and handling of hydrocarbons (illuminating paraffin and diesel) which present a contamination risk. Contamination may either result from failing storage facilities, or spills and leaks associated with fuel handling. The facility is situated adjacent to the Atlantic Ocean, any uncontained pollution may contaminate the marine environment. The proposed development at the facility will provide fuel to vessels which may further present contamination risks through overfills.

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

Actions

Prevention:

- ◆ Spill control structures and procedures must be in place according to SANS standards or better on all areas where fuel is handled.
- ◆ All fuelling should be conducted on surfaces provided for this purpose. E.g. The use of drip trays / concrete slabs with regularly maintained seals between slabs.
- ◆ The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.
- ◆ Proper training of operators must be conducted on a regular basis (Fuel handling, spill detection, spill control).
- ◆ All equipment must be serviced regularly and free from any leaks. This include regular leak detection test on all hoses used for bunkering purposes.

Mitigation:

- ◆ Any spillage of more than 200 litre must be reported to the Ministry of Mines and Energy.
- ◆ Spill clean-up means must be readily available on site as per the relevant MSDS, this should include spill containment equipment such as booms and absorbents for any marine contamination. Training in the use of these are paramount.
- ◆ During bulk fuel offloading, temporary booms must be installed around the offloading area to prevent the spread of fuel, should a spill or leak occur.
- ◆ Any spill must be cleaned up immediately.
- ◆ The spill catchment traps and drip trays should be cleaned regularly and waste disposed of at a suitably classified hazardous waste disposal facility.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ Namport Operating and System Procedures for bulk fuel offloading.
- ◆ Petroleum Products Act regulations, SANS, MARPOL, National Marine Pollution Contingency Plan, MSDS and related legislation.
- ◆ A bi-annual report should be compiled bi-annually of all spills or leakages reported. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, comparison of pre-exposure baseline data (previous pollution conditions survey results) with post remediation data (e.g. soil/groundwater hydrocarbon concentrations) and a copy of documentation in which spill was reported to Ministry of Mines and Energy.

3.1.15 Visual Impact

This impact is not only associated with the aesthetics of the site, but also the structural integrity. The existing facility as well as proposed diesel installations forms part of the industrial landscape associated with the area. The site should be kept clean, tidy and maintained to ensure it remains aesthetically pleasing and does not add the urban decay.

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.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

3.1.16 Cumulative Impact

Possible cumulative impacts associated with the operational phase include a reliable fuel supply to the fishing and transport industry operating from the facility. Cumulative impacts further relate to the revenue generated to the local and national economy through not only fuel provision (retailing), but also in contributing to the continued operation of the various fuel utilising vessels and vehicles and their related industries. Should these not operate due to fuel shortages, a knock-on effect will be experienced in the value-addition sectors related to the vessel operations. Cumulative impacts on the negative scale relate to the pollution and contamination risk due to fuel spills and leaks on site and within the harbour properties in general as well as increased traffic in the area. The facility will have a negative cumulative impact on traffic flow on surrounding streets, it will however have a positive impact on traffic in other areas of town.

Desired Outcome: To minimise cumulative all 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:

- ◆ Annual summary report based on all other impacts must be created to give an overall assessment of the impact of the operational phase.

3.2 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. 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 or 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 Environmental Management Plan 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.

3.3 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; and
- ◆ Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the EMS.
- ◆ The EMP.

4 CONCLUSION

The EMP should continue to be used as an on-site reference document during construction and operations of the facility. Parties responsible for transgressing of the EMP should be held responsible for any rehabilitation that may need to be undertaken. The Proponent could use an in-house Health, Safety, Security and Environment Management System in conjunction with the EMP. All operational personnel must be taught the contents of these documents. Monitoring reports must be submitted to the Ministry of Environment, Forestry and Tourism every six months (bi-annually) to allow for the future renewal of the ECC.

Negative impacts can successfully be mitigated. SANS standards relating to the petroleum industry and prescribed by Namibian law must be followed during all operations of the fuel storage and handling facilities. Noise pollution should at all times meet the prescribed Health and Safety Regulations of the Labour Act and WHO requirements to prevent hearing loss and not to cause a nuisance. Fire prevention should be adequate, and health and safety regulations should be adhered to in accordance with the regulations pertaining to relevant laws and internationally accepted standards of operation. Any waste produced must be removed from site and disposed of at an appropriate facility or re-used or recycled where possible. Hazardous waste must be disposed of at an approved hazardous waste disposal site.

5 REFERENCES

Faul A, Coetzer W, 2021 May; Fuel Storage and Handling Facility on Erf 1239 Walvis Bay
Environmental Management Plan

Appendix A: Consultants' 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 230 environmental impact assessments and related environmental reports including assessments for 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 (Pty) Ltd.
Name of Staff	:	ANDRÉ FAUL
Profession	:	Environmental Scientist
Years' Experience	:	23
Nationality	:	Namibian
Position	:	Environmental Scientist
Specialisation	:	Environmental Toxicology
Languages	:	Afrikaans – speaking, reading, writing – excellent English – speaking, reading, writing – excellent

First Aid Class A	OSH-Med 2022
Basic Fire Fighting	OSH-Med 2022

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

PROFESSIONAL SOCIETY AFFILIATION:

Environmental Assessment Professionals of Namibia (Environmental Practitioner)

AREAS OF EXPERTISE:

Knowledge and expertise in:

- ◆ Environmental Impact Assessment
- ◆ 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	+230
Research Reports & Manuals:	5
Conference Presentations:	1