Environmental Impact Assessment

for a new

Filling Service Station

On Erf 6287, Ext 6, Kuisebmund, Walvis Bay Townlands
Erongo Region

Prepared for

Kalahari Holdings (Pty) Ltd

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Project Name	**ENVIRONMENTAL MANAGEMENT PLAN (EMP)** **For a Proposed New** **Filling Service Station** On Erf 6287, Kuisebmund Ext 6, Walvis Bay Townlands Erongo Region
Report Status	**Final**
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ABBREVIATIONS AND ACRONYMS

BID	Background Information Document
BSR	Baseline Scoping Report
CBD	Central Business District
CI	Cumulative Impacts
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COVID-19	'CO' stands for corona, 'VI' for virus, and 'D' for disease. Formerly, this disease was referred to as '2019 novel coronavirus' or '2019-nCoV.'
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GRN	Government of the Republic of Namibia
HDI	Human Development Index
HES	Health Environmental and Safety
HPP	The Harambee Prosperity Plan
IAPs	Interested and Affected Parties
ISO	International Organization for Standardization
M^2	Square meters
MET	Ministry of Environment and Tourism
MME	Ministry of Mines and Energy
MOL	Ministry of Labour
MURD	Ministry of Urban and Rural Development
NAAQS	National Ambient Air Quality Standards
NAMWATER	Namibia Water Corporation Ltd
NHC	National Heritage Council
NO_2	Nitrogen Dioxide
NSI	Namibia Standards Institute
PM	Particulate Matter
PPE	Personal Protective Equipment
PPP	Public Participation Process
SABS	South African Bureau of Standards
SHE	Safety, Health & Environment
SME	Small and Medium Enterprises
SO_2	Sulphur Dioxide
TLV	Threshold Limit Value

TABLE OF CONTENTS

TABLES

1. ENVIRONMENTAL MANAGEMENT PLAN

1.1 INTRODUCTION

This Environmental Management Plan (EMP) is prepared to allow Kalahari Holdings PTY Ltd (hereinafter KHP) to apply for an Environmental Clearance Certificate (ECC) from the Ministry of Environment, Forestry & Tourism (MEFT) for the construction and operation of its planned fuel service station on Erf 6287, Sam Nujoma Avenue, in Kuisebmund, Walvis Bay.

In addition, the ECC will allow KHP to apply and obtain a fuel retail license from the Ministry of Mines & Energy (MME), once the moratorium on issuing of new retail and wholesale licenses has been lifted.

The EMP is prepared to serve as a standalone plan for managing potential impacts associated with the proposed filling station and auxiliary activities. Mitigation measures are based on the assessments and findings of the Baseline Scoping Report (BSR) and should be read in the context of what is written in that report.

As the EMP is a working document, changes may be made with regards to the future operations of the filling station.

1.2 PURPOSE

The EMP is to ensure that the **Environmental Impacts** as identified in the BSR are managed, mitigated and kept to a minimum. This also includes ensuring that the mitigation measures are implemented and complied with and adhered to.

It is the aim of this EMP to provide clearly defined actions that should be implemented during the two phases (Construction and Operation) of the proposed development.

The EMP is a dynamic document which is flexible and responsive to new and changing circumstances, hence, it should be updated as and when required. Any substantive changes to the EMP will require authorization and endorsement of MEFT.

The EMP is binding on KHP, as the proponent as well to the main contractor who will be hired to construct the filling station and any sub-contractors invited to perform related trades (electrical wiring, plumbing, landscaping, etc.). It applies to all contractors who may be hired in future to carry out renovations and/or maintenance to the filling station, to all employees (including those hired by third parties) and to those hired by KHP post-construction. The EMP must be included as part of any outsourcing, tendering and or any contractual documents between KHP and any third parties.

1.3 ACCEPTANCE

The acceptance of the EMP by MEFT will confer a legal obligation on the promoter, KHP, to comply with the specifications and provisions of the EMP. Should the applicant fail to comply with the provisions of the EMP, it is deemed to be a contravention in terms of the Environmental Management Act (Act No. 7 of 2007), and as such, is criminally prosecutable. This EMP includes all relevant documentation contained therein or referred to within it, along with any amendments, appendices or annexure to this document.

Any substantial changes, updates, modifications or revisions to the EMP must be submitted to and approved by MEFT.

1.4 ENVIRONMENTAL POLICY

Based on the criteria provided in this EMP, KHP is to establish an appropriate specific policy that defines the objectives of its filling station and will ensure sound environmental and social performances. This policy will obligate the promoter to comply with applicable laws and regulations related to the environment, social assessment and management processes.

1.5 ENVIRONMENTAL MANAGEMENT OBJECTIVES

The implementation of the EMP is a recurring process, that converts mitigation measures into actions and through monitoring, auditing, review and corrective action, ensures conformance with the overall aims and objectives of the planned development. These objectives are to:

- ensure compliance with the conditions of the ECC once granted by MEFT
- propose effective and practical measures to prevent, limit, minimize, mitigate and/or to rehabilitate any impacts made to the receiving environment;
- protect human health and ensure safety of workers and the general public including complying with the guidelines recommended for combatting and containing the spread of the prevailing deadly COVID-19 pandemic;
- propose a plan to monitor and manage the fuel service station in such a way that the business carried out by KHP is technically sound, socially acceptable and environmentally sustainable

1.6 SITE DOCUMENTATION

A copy of this EMP is to be kept on site during the Construction (construction and decommissioning) Phase. The Site Manager or Site Agent and its employees are expected to be made familiar with the contents and provisions of this EMP.

Copies of the EMP are also to be kept on the premises during the Business Phase (operational) and the Filling Station Manager as well as each prospective employee who may be hired, is expected to be made familiar with the contents and provisions of this EMP.

1.7 EMERGENCY NUMBERS

Emergency numbers for the following entities or stakeholders should be prominently displayed on a notice board in the office of KHP:

- Filling Station Manager
- Shift Supervisor
- Ambulance
- Fire brigade
- Police
- Health Inspector (Walvis Bay Municipality)

1.8 MONITORING, REPORTING AND AUDITING

Site inspections should be conducted by the Health & Safety Officer of the Walvis Bay Municipality or by an Environmental Health Officer appointed by KHP, before the contractor moves on site and during the construction period to provide guidance and to ensure continued compliance with the conditions of this EMP and the bylaws of the local council. Monitoring measures during the Operational Phase are as follows:

- monitoring wells (piezometers) must be installed around the USTs for early detection of leaks
- checking for the presence of hydrocarbons using a hydrocarbon interface probe and monthly visual inspections of all above-ground fuel dispensing equipment on the site to check for wear or damage
- visual checks for possible product leaks should be carried out across the site

The above should be considered as the minimum monitoring requirements

2.0 ENVIRONMENTAL AWARENESS TRAINING

On-site training must be provided for all personnel of the contractor during the Construction Phase of the development. No personnel may be allowed onto the site without having been inducted on the conditions contained in the EMP document as approved by MEFT.

The training should deal specifically with triggers that would require the implementation of mitigation measures as contained in this EMP. It is incumbent upon the contractor to convey the sentiments of the EMP to all its personnel involved in the construction (including any sub-contractors) on the specific provisions of the EMP. This should be done via regular toolbox talks as well as during formal training sessions.

3.0 THE ORGANIZATIONAL STRUCTURE

The general roles and responsibilities of the various parties are as follows:

3.1 THE DEVELOPER / PROMOTER

KHP as the promoter has the ultimate and overall responsibility for the implementation of the EMP and shall either employ someone in-house or outsource such services to a Consultant or Environmental Health Officer who has to perform the following:

- to ensure that the Contractor is duly informed of the provisions of the EMP and is provided with a copy of the EMP document
- to monitor the Contractor's activities with regard to the requirements as indicated in the EMP document
- to act as a point of contact for neighbouring residents and the general public
- to ensure that the Contractor remedies problems in a timely manner and to the satisfaction of local authority and the promoter

- to notify the local authority and the promoter should problems arise that are not remedied effectively, or of any change in the project specifications that could significantly impact negatively on the environment

3.2 THE CONTRACTOR

The Contractor shall be expected and responsible for:

- ensuring that all construction activities are undertaken in accordance with the provisions of the EMP
- ensuring that all its employees and sub-contractors for various trades (plumbers, electricians, landscaping, joineries, pavers, bricklayers, carpenters, etc.) comply with the EMP
- rehabilitation of the site on completion of the construction activities to the satisfaction of all parties, the developer, the local authority and the Principal Agent
- to pay for any damages which may result from non-compliance with the EMP, environmental regulations and applicable legislation

3.3 ENVIRONMENTAL HEALTH & SAFETY OFFICER

In addition to ensuring the implementation of the bylaws of the town council with respect to building construction guidelines and regulations, the local Environmental Health & Safety Officer is expected to:

- acquaint him/herself with the provisions of the EMP
- undertake prior site inspections in the company of the Contractor, i.e. before the Contractor moves on site
- identify a suitable site where to locate the construction camp
- monitor the activities of the Contractor with regard to the provisions of the EMP and the bylaws of the local council
- undertake monthly inspections and audits on the implementation of the EMP during the construction phase
- prepare a post-construction Final Audit Report to fulfill the requirements with respect to post-construction recommendations

4.0 EMP PROCEDURES AND FRAMEWORK

The implementation of the EMP procedure is as outlined here:

- the Environmental Health & Safety Officer, the promoter and the successful building contractor should undertake an initial site visit during which any sensitive areas are identified and all environmental concerns discussed including where to locate the contractor's camp

- the contractor shall train all its employees regarding the importance of the EMP

- monthly audits of the construction activities should be undertaken and reports submitted to all parties

Throughout the lifespan of the business, a number of individuals and entities are expected to fulfill numerous roles and responsibilities. It is therefore important for such individuals and entities to ensure that the provisions of this EMP are implemented and complied with at all times.

The framework within which this EMP has been developed includes providing mitigation measures on a number of activities that are likely to impact negatively on the biophysical and socio-economic environments. The activities have been categorized into two phases: the Construction (construction & decommissioning) and Operational Phases.

4.1 THE CONSTRUCTION PHASE

This is the first category of this EMP and deals with potential impacts associated with construction activities and mitigation measures which have to be employed during the said phase.

After the building works and all installations have been completed, the developed site has to be rehabilitated which includes the removal of the contractor's camp, plants and equipment. Activities that need to be undertaken to ensure that no environmental degradation occurs as a result of the project, are also discussed and dealt with here.

4.2 OPERATIONAL PHASE

The last category discusses the operational phase of the development and starts from the date when a completed filling service station is handed over to the promoter, i.e. KHP. It assumes that all underground storage tanks (USTs), pumps and associated equipment have been installed, tested and fully commissioned by the fuel company contracted or licensed to supply fuel and related products to KHP.

SECTION A – THE PRE-CONSTRUCTION PHASE

TABLE A.1 ESTABLISHING AND MAINTENANCE OF THE CONSTRUCTION CAMP	
Potential Environmental Impacts	• Environmental pollution • Untidy & littering
Recommended Mitigation Measures	Construction Camp Layout: 1. Site camp within the confines of Erf 6287 avoiding any sensitive area 2. Make camp big enough to provide overnight accommodation to the staff and workers as well as parking for all vehicles, machinery and equipment. 3. Adequate parking must be provided for staff and visitors. Ablutions 1. Provide adequate toilet facilities to all site staff and visitors. 2. The construction of so-called 'long drop' toilets is forbidden 3. Under no circumstances may open areas or the surrounding buildings be used as toilet facilities by the workers. Provision for Camp Waste Disposal 1. Bins should be provided at convenient intervals for disposal of waste within the construction camp. 2. Where appropriate waste bins should have liner bags for efficient control and safe disposal of waste. 3. Where feasible separate waste receptacles should be provided
Monitoring Frequency	Prior to commencing with the construction phase
Responsible Person	Site Manager

TABLE A. 2 ESTABLISHING STORAGE AREAS	
Potential Environmental Impact Description	• Storage areas for construction materials (bricks, sand, aggregates, cement, steel, door frames, brick-force, etc.) should be provided and clearly demarcated. • Storage areas can be hazardous, unsightly and can cause environmental pollution if not designed and managed carefully. • Lack of proper management of storage areas could lead to leakages, creating a negative impact on the surrounding natural ecosystems.
Recommended Mitigation Measures	**General Substances and Materials** 1. Choice of location for storage areas must take into consideration prevailing wind directions and general site topography. 2. Storage areas must be designated, demarcated and if necessary, fenced in. 3. Ensure storage areas are secured so as to minimize the risk of theft and crime. 4. All storage areas should be safe from access by the general public including children 5. Ensure adequate fire prevention facilities are present at all storage facilities. Hazardous Substances and Materials 1. Hazardous substances are those that are potentially poisonous, flammable and toxic. In the specific context of this development hazardous substances are: diesel, petroleum, oil, bitumen, cement, solvent based paints, lubricants and LPG. 2. Hazardous storage areas must be bunded with an impermeable liner to avoid soil contamination. 3. Fuel tanks and re-fuelling will not be permitted on the site. 4. Storage areas containing hazardous substance/materials must be clearly sign-posted. 5. The proximity of neighbouring properties should be taken into consideration when deciding on storage areas for hazardous substances. 6. Staff dealing with these hazardous materials/substances must be properly trained and made aware of their potential impacts and follow appropriate safety measures. 7. Access to the hazardous materials should be controlled and restricted to authorized personnel 8. The personnel handling hazardous substances should be provided with PPE.
Monitoring Frequency	Prior to starting with construction activities On-going assessment & monitoring throughout the development period
Responsible Person	Site Manager

TABLE A. 3 TRAINING OF EMPLOYEES ON ENVIRONMENTAL ISSUES	
Potential Environmental Impact Description	The development will involve the creation of employment opportunities to the locals including transfer of skills and knowledge – hence improvement of the quality of life for the families of individuals who will be employed. The impact is POSTIVE and the Significant rate is HIGH with mitigation.
Recommended Mitigation Measures	<u>Environmental Training & Awareness</u> 1. Ensure that all site personnel have a basic level of environmental awareness and attend induction training on the environment in which the following topics are thoroughly covered. o *What is meant by "environment";* o *Why the environment needs to be protected and conserved;* o *How construction activities can impact on the environment;* o *What can be done to mitigate against such impacts;* o *Awareness of emergency and spills response provisions;* o *Social responsibility during construction, e.g. being considerate to local residents.* 2. To ensure that the training is effectively understood by all personnel – translation should be used with technical issues properly explained 3. The use of pictures and real-life examples is encouraged as these tend to be more easily remembered 4. The need for a 'clean site policy' needs to be explained to all construction workers <u>Workers' Conduct On Site</u> To ensure a harmonious relationship on the camp site, a general regard for the social and ecological well-being of the site and adjacent areas is expected from the site staff. The following general rules should apply: 1. No alcohol and drugs are allowed on site. 2. No firearms are allowed on site or in the vehicles transporting workers to and from the site (unless used by the security personnel). 3. Excessive noise is not allowed. 4. Prevent unsocial behavior. 5. Use of open fire for preparing food is not allowed 6. No use of drugs 7. Driving under the influence of alcohol is prohibited. 8. Accommodating friends, relatives and girlfriends on the construction camp is forbidden.
Monitoring Frequency	Prior to starting with the construction. On-going assessments throughout the construction phase
Responsible Person	Site Manager

TABLE A. 4 DUST AND AIR POLLUTION	
Potential Environmental Impact	Source of dust & air pollution are likely to be from: • Exhaust emissions from construction vehicles • Dust emission • Smoke The impacts are NEGATIVE but the Significant rating is LOW with mitigation.
Recommended Mitigation Measures	1. Limit speed limit on site 2. All construction vehicles should adhere to the set speed limit 3. Trucks delivering building construction materials (sand, bricks, cement, aggregates, steel products, roof sheeting, etc.) should adhere to the minimum speed limit. 4. Camp construction – materials excavated for foundations and stockpiled aside should be dampened periodically to avoid excessive dust. 5. No open fire allowed - contractor must provide alternative arrangements which avoid the use of open fire, i.e. LPG gas cookers, etc. so that smoke is not released in the open air.
Monitoring Frequency	Prior to starting with the construction On-going monitoring throughout the construction
Responsible Person	Site Manager

TABLE A. 5 STORMWATER CONTROL & SITE SURFACE DRAINAGE	
Potential Environmental Impact	Excavation to establish the contractor's camp will inevitably involve some form of soil disturbances. These have the potential to cause site surface drainage (soil erosion) if proper care is not taken. The soil type on the site is of clay and clogging up should be expected in the event that it rains The nature of impact is NEGATIVE but the Significance rating is LOW with mitigation.
Recommended Mitigation Measures	1. The time that stripped areas are left open and exposed should be minimized wherever possible. Care should be taken to ensure that lead times are not excessive. 2. Wind screening should be undertaken to prevent soil loss from the site. 3. If construction work is done during the rainy season, stormwater controls should be exercised to avoid flooding of work place.
Monitoring Frequency	Check status prior to starting with construction On-going monitoring throughout the construction phase
Responsible Person	Site Manager & Site Foreman

TABLE A. 6 WASTE HANDLING AND MANAGEMENT	
Potential Environmental Impact Description	Lack of proper management of the waste on the site may lead to dumping and wind-blown litter creating negative visual impacts as well as impacting on the surrounding natural ecosystems. Waste Management procedures should be established and implemented during the pre-construction phase and should be implemented throughout the duration of the construction period. The nature of impact is NEGATIVE but the Significance rating is MEDIUM with mitigation.
Recommended Mitigation Measures	1. The excavation and use of rubbish pits on site is strictly forbidden 2. Burning of any waste materials is not allowed 3. Separate individual waste bins should be provided for separate waste products i.e. household type waste may not be mixed with building rubbles. 4. Provide separate waste sorting areas which are clearly demarcated. 5. Employees should be discouraged from willful littering 6. Keep the work site clean and tidy at all times 7. Use sign posts indicating where to put wastes 8. Employees handling wastes should be provided with suitable PPE
Monitoring Frequency	Prior to starting with construction activities
Responsible Person	Site Manager

TABLE A. 7 SOCIAL IMPACTS	
Potential Environmental Impact Description	It is important to take notice of the needs and wishes of those living adjacent to the project site. Failure to do so can cause disruption to work and increase costs in the form of delays. Ensure that a harmoniums relationship is created and maintained with residents around the project site throughout the construction period. The nature of impact is POSITIVE and the Significant rating is MEDIUM with mitigation.
Recommended Mitigation Measures	<u>Public Participation</u> 1. Interested and affected parties have been identified during the Scoping Assessment and informed about the development. 2. The successful contractor who is appointed to develop the fuel service station should be introduced to the neighbouring residents. 3. The contractor should indicate from his/her team who the contact person is in the event of a problem. 4. All complains received from the public with respect to the construction should be recorded and promptly addressed

	5. People with some form of skills who are looking for employment should preferably be recorded and a database kept on site to be contacted when suitable vacancies occur Noise Impacts 1. Carry out construction work during normal working hours of 7h00 to 17h00 2. Ensure that all construction vehicles are fitted with standard silencers prior to the beginning of the construction work. 3. Use equipment fitted with noise reduction facilities as per operating instructions. 4. Vehicles may not be left idling for longer periods of times. 5. Hooting should be kept to the minimum. Visual Impacts 1. Storage facilities, elevated tanks and other temporary structures on site should be located such that they have as little visual impacts as possible. 2. Attention should be given to the screening of highly reflective materials on site. 3. Wastes should be picked up and placed in suitable waste bins otherwise they will be blown away by the wind and become visual nuisance. Cultural Heritage Environment Prior to commencing with construction activities, site workers should be told of any possible archaeological or historical objects of value which may be unearthed during the digging and excavation activities. Items of cultural/ historical values: 1. Artifacts (historical objects such paintings, artwork, etc) 2. Stone tools 3. Pottery vessels 4. Metal objects (weapons, axes, jewelry, etc) 5. Coins 6. Bones (human bones/skulls, animal bones, etc) Any items of a cultural nature identified should be reported to the Site Manager who will in turn consult the National Heritage Council for guidance and the Namibian Police.
Monitoring Frequency	Prior to starting with construction activities
Responsible Person	Site Manager

TABLE A. 8 SAFETY & SECURITY	
Potential Environmental Impact Description	Safety is of paramount importance during construction activities of any fuel station. As such safety measures and standards have to be established and upheld right from the start when the construction camp is being established.
Recommended Mitigation Measures	<u>Fencing</u> 1. Secure the construction site in order to reduce the opportunity of criminal activities in the locality of the construction site. 2. A gated security which is manned at all times is recommended. 3. Potentially hazardous areas such as trenches are to be demarcated and clearly marked <u>Lighting</u> 1. Lighting on site is to be set out to provide maximum security and to allow ease policing of the site 2. Lighting of the site may not create a visual nuisance to the neighbouring residents <u>Risks Associated with Materials on Site</u> 1. Material stockpiles or stacked such as pipes, etc. must be stable and well secured to avoid them collapsing and possibly causing injuries to site workers. 2. Flammable materials should be stored as far away as possible with access redistricted to personnel who are qualified and allowed to handle such materials. 3. Firefighting equipment should be present on site at all times and in good working order. 4. Obstructions to driver's line of site due to stockpiles and stacked materials must be avoided especially at intersections. 5. No materials are to be stockpiled in unstable or high risk areas. 6. All interested and affected parties (IAPs) must be notified in advance of any known potential risks associated with the construction site and the nature of the risk. 7. All employees should be trained on the procedure to be followed in the case of an emergence 8. All employees should be provided with suitable PPE and wearing of such PPE should be enforced.
Monitoring Frequency	Prior to moving on site, on-going throughout the construction phase
Responsible Person	Site Manager & Site Foreman

TABLE A. 9 PROJECT DRAWINGS & DESIGNS	
Potential Environmental Impact	It is imperative that drawings for the whole development are prepared and working drawings produced for the purposes of cost estimates, tendering, submission to the local authority (Walvis Bay Municipality) and construction. Underground fuel storage tanks should be designed with capacities matched to the size and scale of the proposed development. The nature of the impact is ZERO and the Significance rating is HIGH.
Recommended Mitigation Measures	<u>Storm Water Management System</u> 1. The design for the development should make provision for the storm water drainage network system. 2. After the construction, the site should be contoured and properly paved to ensure free flow of runoff and to prevent any accumulation (standing) <u>Underground Fuel Storage Tanks</u> 1. The underground fuel storage tanks must comply with the relevant SABS Codes of practice 2. A leak detection system including observation and monitoring wells situated around the tank should be installed to facilitate early warning that a leak has arisen 3. The provision of plastic sheet below the tank that slopes towards an observation well 4. Installation of lead detectors on the pressure system 5. The tanks must be designed so as to reduce the risk of soil and groundwater contamination. 6. The underground tanks must be dipped daily and reconciled against fuel sold so as to determine any losses due to leakage 7. The conditions of the tanks, associated piping and the monitoring wells must be inspected on a regular basis 8. The tanks and product lines must be pressure tested prior to commissioning <u>Spillage Contingency Plan</u> 1. Spillages occurring at the filler point and dispensing (offloading) must be contained and cleaned up. Any water containing waste (wastewater) generated as a result of the

	spillage and associated clean up, must be disposed of safely and in accordance with environmental legislation. 2. No product must be allowed to be discharged into the surrounding environment. 3. A spill Contingency or Emergency Response Plan must be drawn up and should include the following actions that need to be taken into account in the event of a spill: • Contain the spill • Report the spill to the Site Manager • Remove the spilled product for treatment or authorized disposal • In case of a minor spillage, clean the affected area and drum all contaminated materials for temporary storage until the waste can be collected and disposed of in the manner as prescribed • The Site Manager is to determine if the there is any soil, groundwater or other environmental impacts • The incident and remedial action taken must be documented by the Site Manager and kept on file for reference purposes. • Compliance with relevant legislative in terms of health and safety must be ensured • A mass balance of product in and out must be prepared
Monitoring Frequency	Prior to starting with construction activities
Responsible Person	Project Promoter & Site Manager

SECTION B : THE CONSTRUCTION PHASE

TABLE B. 1 MAINTENANCE OF THE CONSTRUCTION CAMP	
Potential Environmental Impact	Same impacts as identified for the pre-construction phase (A.1)
Recommended Mitigation Measures	<u>Surfaces</u> 1. The areas adjacent the construction site should be kept clean and tidy and free from any material spills 2. Construction vehicles should be restricted to demarcated areas, haulage routes and turning areas within the construction site. 3. The contractor should monitor and manage the drainage of the camp site. 4. Runoff from the camp site may not discharge into neighbouring properties. <u>Ablution Facilities</u> 1. Toilets to be maintained and kept in a clean state at all times. 2. Open areas or surrounding buildings must not be used as toilet facilities by the workers. 3. If chemical toilet facilities are used during the construction phase, such toilets should not cause any pollution nor pose a health hazard to the neighbouring residents. <u>Camp Waste Disposal</u> 1. The contractor has to ensure that all litter is collected from the work and camp areas at regular intervals. 2. Bins and or skips should be emptied regularly and waste should be disposed of at proclaimed landfill site of the Walvis Bay Municipality 3. Waste from the chemical toilets should be removed by qualified and experienced companies <u>Housekeeping</u> 1. Ensure that the camp and working areas are kept clean and tidy at all times 2. Eating areas should be regularly serviced and cleaned to ensure the highest level of hygiene and cleanliness. 3. All litters throughout the site should be picked up and placed in the bins provided
Monitoring Frequency	On-going throughout the construction period
Responsible Person	Site Manager & Site Foreman

TABLE B. 2 TRAINING OF EMPLOYEES ON ENVIRONMENTAL ISSUES	
Potential Environmental Impact	Same impacts as identified for the pre-construction phase (A.3)
Recommended Mitigation Measures	1. Monitor the performances of all workers who have received training during the pre-construction phase to ensure that the points relayed have been properly understood and are being followed. 2. If necessary, a repeat of the environmental induction session should be presented with translation made to those whose comprehension of the official language is limited. 3. A general regard for the social and ecological well-being of the site and adjacent areas is expected from all workers. 4. No alcohol or drugs are allowed on the project site 5. No firearms are allowed on site or in vehicles transporting workers (unless used by a security personnel)
Monitoring Frequency	On-going throughout the construction period
Responsible Person	Site Manager & Site Foreman

TABLE B. 3 DUST AND AIR POLLUTION	
Potential Environmental Impact	Same impacts as identified for the pre-construction phase (A.4)
Recommended Mitigation Measures	1. All vehicles travelling to and from the construction site must adhere to the speed limit so as to avoid producing excessive dust. 2. Cleared surfaces must be dampened whenever possible especially in dry and windy conditions to avoid excessive dust. 3. If dust is unavoidable, screening should be used i.e. shade cloth 4. Vehicles and all construction equipment and machinery must be kept in good working order. 5. Stockpiles (building sand and aggregates) may cause dust and must therefore be managed and kept to the minimum
Monitoring Frequency	On-going throughout the construction period
Responsible Person	Site Manager & Site Foreman

TABLE B. 4 STORMWATER AND SITE SURFACE DRAINAGE	
Potential Environmental Impact	Same impacts as identified for the pre-construction phase (A.5)
Recommended Mitigation Measures	Exposed Surfaces 1. Storm water control and wind screening should be undertaken to prevent soil loss from the site. 2. Side tipping of spoil and excavated materials is not permitted – all spoil materials should be disposed of at designated areas. 3. Stockpiling of soil or any materials used during the construction phase may not be allowed near any watercourse or water body. 4. Earth, stone and building rubble is to be properly disposed of so as not to obstruct any natural water pathways over the site. 5. The site drainage water system should be checked periodically to ensure that there are no blockages to the water flow 6. Mixing and/or decanting of all chemicals and hazardous substances must take place either on a tray or on an impermeable surface. 7. Every effort should be made to ensure that any chemicals or hazardous substances do not contaminate the soil and surrounding environments 8. Care must be exercised to ensure that run-off water from vehicles or plant wash does not contaminate the soil and surroundings environments
Monitoring Frequency	On-going throughout the construction period
Responsible Person	Site Manager & Site Foreman

TABLE B. 5 MATERIAL HANDLING PROCEDURES	
Potential Environmental Impact	Same impacts as identified for the pre-construction phase (A.2)
Recommended Mitigation Measures	Stockpile Management 1. Stockpiles should not be kept such that they obstruct natural water pathways 2. Stockpiles should not exceed 2 m in height 3. If stockpiles are exposed to windy conditions or heavy rains they should be covered Handling of Hazardous Materials 1. All concrete mixing must take place on a designated impermeable surface 2. No vehicle transporting, placing or compacting asphalt or any bituminous products may be washed on site. 3. Lime and other powdered products must not be mixed during excessive windy conditions. 4. All substances required for vehicle repairs and maintenance must be stored in sealed containers until they can be disposed of or removed from site. 5. Hazardous materials or products are to be transported in sealed containers or bags.

Monitoring Frequency	On-going throughout the construction period
Responsible Person	Site Manager & Site Foreman

TABLE B. 6 WASTE HANDLING AND MANAGEMENT	
Potential Environmental Impact	Waste in the context of this development refers to construction waste such as rubble, asphalt, timber, cement, cans, wires, nails, household and office waste. Same impacts as identified for the pre-construction phase (A.6)
Recommended Mitigation Measures	<u>On-Site Waste Management</u> 1. Refuse must be placed in designated skips/bins which must be regular emptied. These should remain within demarcated areas and should be of a design that prevents refuse from being blown out by the wind. 2. In addition to the waste facilities within the construction camp, provision must be made for waste receptacles to be placed along the work front. 3. Littering on site is forbidden and the site shall be cleared of litter at the end of each working day. <u>Waste Disposal</u> 1. All non-hazardous waste should be placed in skips and placed/stored in designated areas and must be removed from the site and transported to the nearest registered landfill site 2. Construction rubble shall be disposed of at the nearest approved landfill area 3. All waste generated from the project site should be disposed of in a manner which does not cause pollution to surface or underground water or health hazards.
Monitoring Frequency	On-going throughout the construction period
Responsible Person	Site Manager & Site Foreman

TABLE B. 7 SOCIAL IMPACTS	
Potential Environmental Impact	Same impacts as identified for the pre-construction phase (A.7)
Recommended Mitigation Measures	Contact with neighbouring residents 1. The contact of the construction personnel when dealing with members of the public, interested or affected parties should be in a manner which is polite and courteous at all times. 2. Keep disruptions of access by the local residents to the minimum. 3. The contractor should inform neighbouring residents of any disruption activities that may be of a longer duration Visual Impacts 1. Lighting from the construction site should be pointed downwards and away from the B1 highway and surrounding businesses. 2. The general appearance of the site must be kept clean and tidy to minimize the visual impact of the site 3. If screening is being used this must be moved and re-erected as the work front progresses Noise Impacts 1. Machinery and vehicles must be kept in good working orders for the duration of the project to minimize noise nuisance to the neighbouring residents 2. Reasonable notices should be given to the neighbouring residents of specific construction activities which generate excessive noise. 3. Noisy activities should preferably not be carried out on Sundays. COVID-19 Safety Measures Comply with the Covid-19 regulations and guidelines as listed under D3. Communication 1. A line of communication should be kept with IAPs by the contractor 2. A registry of complaints should be kept in the site office and all complaints entered in, discussed during site meetings 3. A senior officer of the contractor should be available to provide information to IAPs as and when required to do so. Cultural Heritage Environment 1. Any items of historical or archeological value unearthed during the construction period should be reported to NHC. 2. Work should be stopped immediately where any archeological items have been unearthed and should only be continued on the instruction of the officials from NHC. 3. Archaeological items unearthed during the construction may not be disturbed or moved unless permission has been granted by the NHC.
Monitoring Frequency	On-going throughout the construction period
Responsible Person	Site Manager & Site Foreman

SECTION C - POST CONSTRUCTION PHASE

(Removal of the Construction Camp)

TABLE C. 1 REHABILITATION OF THE CONSTRUCTION CAMP	
Environmental Impact	Same impacts as identified for the pre-construction phase (A.1, A.2 & A.4 & A.6)
Recommended Mitigation Measures	1. All erected structures comprising of the construction camp are to be removed from the construction site. 2. The area must be checked for any spills of substances such as oil, paint and fuel which should be cleaned up. 3. All hardened surfaces within the construction site should be ripped, all imported materials removed and the area top-soiled and re-vegetated.
Monitoring Frequency	Prior to handing over the site to the promoter
Responsible Person	Site Manager

TABLE C. 2 LAND REHABILITATION	
Environmental Impact	Same impacts as identified for the pre-construction phase (A.1, A.2, A.4 & A.6)
Recommended Mitigation Measures	1. All surfaces hardened due to construction activities are to be ripped up and imported materials thereon removed. 2. All building rubble is to be removed from the site and transported to an approved landfill. 3. Burying of any rubble on site or anywhere outside the premises is prohibited. 4. The site is to be cleared of all litters and building rubbles.
Monitoring Frequency	On completion of construction work prior to handing back the site.
Responsible Person	Site Manager

TABLE C. 3 REMOVAL OF CONSTRUCTION MATERIALS	
Environmental Impact	Same impacts as identified for the pre-construction phase (A.1, A.2 , A4 & A6)
Recommended Mitigation Measures	1. Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless agreed otherwise with the promoter. 2. All residual stockpiles are to be removed from the site and transported to an approved landfill site. 3. All leftover building materials (sand, aggregate, bricks, paving, steel, corrugated iron sheet, cement, etc.) must be removed from the site. 4. The contractor must repair any damage caused to any neighbouring properties.
Monitoring Frequency	On completion of construction work prior to handing back the site.
Responsible Person	Site Manager

SECTION D - THE OPERATIONAL PHASE

(Construction successfully completed & Site is handed back to the Promoter)

TABLE D. 1 SOCIAL AND ECONOMIC IMPACTS	
Potential Environmental Impact	The resultant fuel sales and associated business activities (carwash, convenience store, etc.) to be conducted on the premises will contribute to the local economy by creating employment opportunities. This will involve the transfer of skills and the improvement of quality of life of the families of those who will be employed. The impact is POSITIVE and the Significant rating is VERY HIGH with mitigation.
Recommended Mitigation Measures	<u>Hiring of Employees:</u> 1. All recruitments should be done in line with the labour laws of Namibia. 2. Offer employment opportunities without prejudice giving preference to women, people with disabilities and those from the marginalized communities, i.e. Sun people 3. Where possible preference should be given to jobseekers from within Walvis Bay. 4. Develop a policy on employees' well-being, educating them on the dangers of social-ills such alcohol abuse, use of drugs and HIV infections as result of unsafe sex practices and COVID-19 pandemic. <u>Training of Employees</u> 1. All employees should receive basic induction training on the environmental impacts associated with the development. 2. Translation should be made for the benefit of those employees who are not fluent in the official language. 3. A general regard for the social and ecological well-being of the business and adjacent areas is expected from all workers. 4. No alcohol consumption or drugs are allowed on the premises or on duty. 5. No firearms are allowed on the premises of the company (unless used by a security personnel) 6. Fighting and foul language are not allowed. <u>Economic Benefits</u> 1. Source and procure goods and services (stationery, PPE, etc.) from local businesses. 2. Hire and use local transport companies to transport your goods as well as other professional service providers, i.e. security companies to guard the premises and collect money for banking. 3. Provide business opportunities to local companies and others so as to contribute to the socio-economic stability of the local and region. 4. Accommodate informal traders but in such a way that law and order in maintained at the service station
Monitoring Frequency	On-going throughout the Operational Phase
Responsible Person	The Promoter /Service Manager

TABLE D. 2 HEALTH & SAFETY	
Potential Environmental Impact	Fire and explosion risks exist due to the storage, handling and transportation of fuel which is potentially dangerous to humans and properties. Potential safety issues associated with the operation of a filling station are generally crime, increase in vagrants and theft mostly as a result of informal trading activities around or on the premises of a fuel service station. Since the proposed site is currently undeveloped, the proposed development with associated lighting at night should not contribute to unsafe conditions, but rather improve the level of safety. Clear guidelines should be provided for informal traders who would flock to the site in searching of trading activities. This impact is NEGATIVE and Significance rating is MEDIUM.
Recommended Mitigation Measures	1. The design and management of the fuel service station must conform to the relevant fire safety measure. 2. Ensure that all underground storage tanks (USTs) are certified to SANS/SABS standards/codes. 3. No smoking can be allowed in the vicinity of flammable substances and the relevant signage must be displayed. 4. The condition of the USTs, pipes and dispensing pumps should be checked on an annual basis using approved methodologies and the required maintenance activities undertaken. 5. A license to store petroleum or flammable liquid should be obtained annually from the relevant authority. 6. The USTs filling procedure must be monitored by an authorized employee to ensure that no procedural as well as health and safety requirements are neglected by the fuel supplier/contractor. 7. Firefighting equipment must be available at all times, in a functional state and serviced regularly. 8. Operational staff must receive training on the correct operation of storage tanks, as well as maintenance and repair procedures when leaks are detected. 9. An emergency response plan must be available on site and employees must be made familiar with the plan. 10. Employees should be provided with suitable PPE and wearing thereof enforced. 11. No cell phones may be used during the dispensing of fuel. 12. Overfill and spillage during the tanker refueling and fuel dispensing should be prevented by the installation of automatic cut off devices.
Monitoring Frequency	On-going throughout the Operational Phase
Responsible Person	Service Manager & Duty Supervisor

TABLE D .3 COVID-19 GUIDELINES AND REGULATION MEASURES	
Potential Impact	This EIA was conducted during the time when Namibia was battling to contain the spread of the deadly SARS CoV-2, the virus that causes Coronavirus Disease 2019 (Covid-19). The number of infections was rising each day with Windhoek and Walvis Bay recording the highest numbers. It is not known when an effective vaccine will be developed hence all measures are targeted at containing the spreading. COVID-19 is deadly and each establishment is expected to comply with all guidelines and control measures as recommended by Central Government through the Ministry of Health and Social Services.
Recommended Mitigation Measures	To prevent infection and to slow transmission of COVID-19, the following guidelines should be implemented by each one: employees, employers and the general public who may be visiting the filling station: 1. Wash your hands regularly with soap and water or clean them with alcohol-based hand rub 2. Maintain a distance of at least 2 meters between you and people coughing or sneezing 3. Avoid touching your mouth, nose and face 4. Wear a mask when visiting shops or places where more people are congregated 5. Cover your mouth and nose when coughing 6. Avoid hand shake. 7. Stay at home when feeling unwell 8. Refrain from smoking, drinking of alcohol and all other activities that weaken the lungs 9. Practice social distance by avoiding unnecessary travel and staying away from large groups of people such as sport, churches, weddings and funerals. 10. If you have a fever, cough and difficulty breathing, seek medical attention by visiting a public health facility closest to you. 11. Comply with the guidelines and regulations for the lockdown measures including all instructions given by the law enforcement agents.
Monitoring Frequency	On-going throughout the pandemic
Responsible Person	Service Manager & Duty Supervisor

TABLE D.4 NOISE IMPACT	
Potential Environmental Impact	Increased activities on the site such as customers visiting the service station, vehicles and trucks idling and revving, staff shouting and music and radio broadcasts over the shop and forecourt speakers will most likely result in an increased amount of noise in the immediate vicinity of the fuel service station. However, due to the location of the site, adjacent to a network of access roads and the neighbouring Light Industrial Section, the proposed activity will not contribute to the noise nuisance in the location.
Recommended Mitigation Measures	1. Noise levels at the site should be kept to the minimum and in compliance of local authority directives. 2. Compressors, standby generators and air conditioner motors should be placed in protected/enclosed areas and maintenance should be carried out on a regular basis. 3. A noise control policy can be introduced and enforced to control the level of noise at the fuel station, paying particular attention to the nearest residential properties. 4. Noise, especially at night should be kept to the minimum.
Monitoring Frequency	On-going throughout the Operational Phase
Responsible Person	Service Manager & Duty Supervisor

TABLE D. 5 VISUAL IMPACT	
Potential Environmental Impact	The proposed fuel service station is an area which has man-made structures impacting on the virtual sense of the place. These are the MTC and Telecom towers, advertisement Billboards and overhead powerlines situated all cross the town. If littering and illegal dumping on the site are not controlled, this could result in visual decay.
Recommended Mitigation Measures	1. Lighting on site should be sufficient for safety and security purposes, and should not be disturbing to the general public. 2. Outside lights are to be inward and downward shining and preferably of low voltage. 3. Sufficient refuse bins must be provided on site and littering and illegal dumping discouraged. 4. Litter and waste should be effectively managed to avoid visual problems in the area. 5. Buildings and all structures on the premises should receive on-going maintenance to avoid visual decay. 6. Signs must conform to the national standards for outdoor advertising.
Monitoring Frequency	On-going throughout the Operational Phase
Responsible Person	Service Manager & Duty Supervisor

TABLE D. 6 AIR QUALITY	
Potential Environmental Impact	The filling station is located in a busy area with a network of access roads (Sam Nujoma, New Western Avenue and B2 Highway. In fact, Walvis Bay being the economic capital of Namibia has many fish factories and heavy industries all contributing to the ambient air quality which is already compromised. The fuel facility is therefore not expected to contribute to the ambient air quality in the area. Over 80% of the surface coverage is expected to be paved and therefore the proposed activity is unlikely to generate additional dust during its operational phase. The impact is NEGATIVE and Significance rating is LOW with mitigation.
Recommended Mitigation Measures	1. All USTs ventilation points must be position away from any building inlet of the service station. 2. Vent pipes must be fitted such that they face away from any neighbouring residential areas or business premises 3. All delivery vehicles will be adequately maintained to reduce exhaust emissions. 4. All tank breather pipes must be fitted with standard vents to minimize the loss of vapour.
Monitoring Frequency	On-going throughout the Operational Phase
Responsible Person	Service Manager & Duty Supervisor

TABLE D. 7 SOIL AND UNDERGROUND WATER CONTAMINATION	
Potential Environmental Impact	If a spillage or leakage occurs or losses are experienced over time, the product could reach the water table. However, the water table is several meters deep. But, in the event that the leak goes undetected (and without remediated) for a longer period, the potential exists for the leaked fuel to reach the groundwater. The nature of this impact is NEGATIVE and the Significance rating for this impact is MEDIUM with mitigation.
Recommended Mitigation Measures	1. The forecourt should be concrete paved to prevent infiltration of fuel into the subsurface soils with surface runoff designed to flow towards a centralized collection point which is connected to an on-site oil/water separator (trap). 2. Underground storage tanks shall be fitted with an overfill protection system or device. The critical level shall be such that a space remains in the tank to accommodate the delivery hose volume. 3. Monitoring wells (piezometers) must be installed around the USTs for early detection of leaks. These should be checked on a regular (quarterly) basis for the presence of hydrocarbons using a hydrocarbon interface probe. 4. The installation of USTs must follow SANS and SABS specifications. 5. A HDPE sheet must be installed in the excavation under the tank to direct any flow from a leak towards the monitoring wells 6. Monthly visual inspections must be conducted of all above-ground fuel dispensing equipment on the site to check for wear and damage. Visual and olfactory checks for possible product leaks should also be carried out across the site. 7. Conduct regular inspections of all pipes, tanks and other associated infrastructures. 8. Accidental spills that occur outside of the bunded area must be contained and

	prevented from entering the stormwater system 9. Where necessary, spills absorbent must be removed by a certified hazardous waste removal company 10. Any significant spills or leak incidents must be reported 11. USTs must be fitted with automatic leak detectors that alert management to a leak 12. Fuel dispenser pumps must be located on a hardened surface to contain spillages 13. The accumulated contents of the oil/waste separator must be removed by an accredited company 14. The oil/water separator must be inspected regularly to ensure that it is functional at all times 15. Water discharged from the oil/water separator must be monitored to ensure it meets the required standard. 16. Overfill and spillages during taker refueling and fuel dispensing should be prevented by the installation of automatic cut-off devices. 17. Tanker delivery drivers must be present during the delivery of fuel with the emergency cut off switch. 18. In the event of a pump dispenser or the hoses being knocked or ripped off, the fuel supply must be cut off by shear-off valves 19. All forecourt staff must undergo appropriate training which must include training to prevent spillages during fuel dispensing. 20. The USTs, pipelines and other associated infrastructure must be inspected regularly for leaks and ensure structural integrity 21. A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the USTs. 22. An Emergency response plan must be in place for the site, and this must clearly describe emergency procedures and include emergency contact numbers 23. If contamination of leaks is detected, the fuel supplier's Emergency response Plan must be followed. 24. Following a leak or accident spill, a remediation plan must be compiled and executed.
Monitoring Frequency	On-going throughout the Operational Phase
Responsible Person	Service Manager & Duty Supervisor