

UPDATED ENVIRONMENTAL MANAGEMENT PLAN – THE CONSTRUCTION AND OPERATION OF A NEW SERVICE STATION AT OCEAN VIEW EXTENSION 29 IN SWAKOPMUND – ERONGO REGION, NAMIBIA

**UPDATED ENVIRONMENTAL MANAGEMENT PLAN FOR THE RENEWAL OF
ECC NUMBER – 00721.**

*PROJECT ACTIVITY: CONSTRUCTION AND OPERATION OF A FUEL STATION AT
OCEAN VIEW EXTENSION 29 IN SWAKOPMUND.*



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PROJECT DETAILS

TITLE UPDATED ENVIRONMENTAL MANAGEMENT PLAN FOR THE RENEWAL OF ECC NUMBER – 00721.

PROJECT ACTIVITY CONSTRUCTION AND OPERATION OF A FUEL STATION AT OCEAN VIEW EXTENSION 29 IN SWAKOPMUND – ERONGO REGION.

TERMS OF REFERENCE

CURRENT SCOPE OF THE PROJECT CONSTRUCTION AND OPERATION OF A SERVICE STATION.

AUTHORS OTRUN CONSULTANTS CC

CLIENT SWAKOPMUND CONVINIENCE CENTRE CC

REPORT STATUS FINAL UPDATED ENVIRONMENTAL MANAGEMENT PLAN

DATE 28 APRIL 2023

AUTHORISED SIGNATURE:



JOSIAH T. MUKUTIRI

EIA PRACTITIONER



Executive Summary

This Environmental Management Plan was compiled following Environmental Impact Assessment regulations as required by Outrun Consultants CC. The process was done in line with the Namibian Environmental Assessment Policy (1995) and the Environmental Management Act (2007). The EMP was triggered by the nature and scale of the project being undertaken, construction and operation of a fuel station. The Proponent is Swakopmund Convenience Centre CC, a wholly Namibian Company head quartered in Swakopmund. The desirability of this project lies on the fact that it improves fuel availability and convenience for travellers between Swakopmund and Henties Bay. This is tourist popular route and adds value to the economic activities of the area. Public consultations were done and all issues and concerns raised were addressed as required:

There project design phase has been completed and construction is underway, with foundation columns having been completed. Underground storage tanks have also been delivered onsite. In the light of the above, the updated EMP will only focus on the construction and operation of the fuel station. The proponent is also advised to adhere to all laws and policies relevant to this project. It was concluded that the project has both positive and negative impacts on the environment and should be managed through the successful implementation of the updated environmental management plan.

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Table 1: List of Abbreviations and / or Acronyms.

ACRONYM	FULL DESCRIPTION
DEA	Directorate of Environmental Affairs
ECC	Environmental Clearance Certificate
EMP	Environmental Management Plan
GPR	Glass fibre Plastic Reinforcement
MET	Ministry of Environment & Tourism
MME	Ministry of Mines and Energy
SABS	South African Bureau of Standards
SANS	South Africa National Standards
USTs	Underground Storage Tanks

1. INTRODUCTION

The applicant, Swakop Convenience Centre CC is a Namibian company wholly owned by Namibians. There is significant traffic flow along the Swakopmund – Henties Bay road and has been increasing yearly. This has motivated the Proponent to establish a service station in Ocean View Extension 29 in Swakopmund. The construction of a service station is a listed activity under the Environmental Management Act, 2007, and requires authorization by MET before implementation. An ECC was obtained by Swakopmund Service Station cc and the designs and a retail licence was obtained from the Ministry of Mines & Energy. Construction is underway and the project has been taken over by Swakop Convenience Centre CC. This motivated for the transfer of the ECC from Swakopmund Service Station CC. On the same note the ECC is due for renewal and the updated EMP will cover the construction phase and the operation.

1.1. Objectives

- to update the EMP to taking into consideration the project activities under the construction and operation phases.
- To apply for the transfer of the current ECC from the ownership of Swakopmund Service Station CC to Swakop Convenience Centre CC.
- to apply for the renewal of the current ECC which will be expiring by end of June 2023.

1.1.1. Location

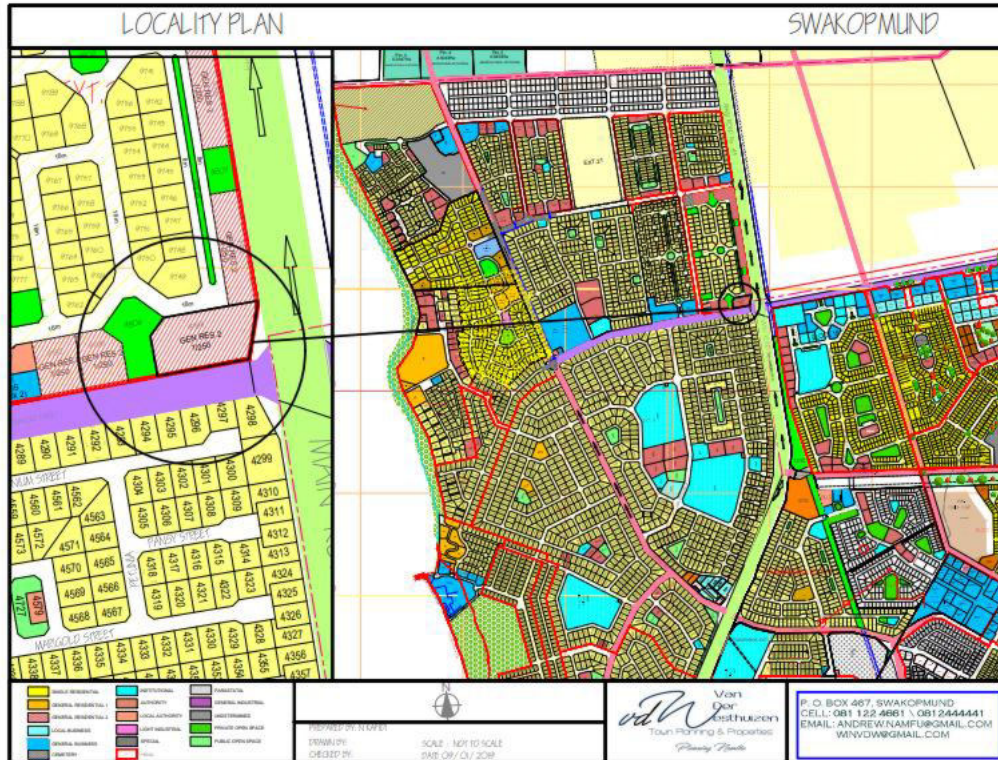


Figure 1: The location of Swakop Convenience Centre in Swakopmund, Erongo Region.

1.2. Methodology

The Consultancy Team carried out a detailed study on the possible environmental impacts of the proposed project. This was achieved by delineating the activities involved during project construction and the operation phases of the project. As a result design phase which was completed already was not considered. Site investigations were done in order to confirm the status quo onsite.

1.3. Terms of Reference for the Environmental Management Plan

Swakop Convenience Centre CC appointed Outrun Consultants cc to apply for a renewal of the current ECC which was due to expire end of June 2023 as well as to facilitate the transfer of the ECC from Swakopmund Service Station CC to Swakop Convenience Centre CC. One of the major tasks was to update the current EMP which will be used as the basis for renewal of the expired ECC.

1.4. Project Team

Table 2: Environmental Impact Assessment Experts and their Area of Responsibilities

ORGANIZATION	AREA OF RESPONSIBILITY / FIELD OF EXPERTISE	TEAM MEMBERS
OUTRUN	Project management	Josiah T. Mukutiri
Enercon (Pty) Ltd	Scope of the project	Michael Ludeke
OUTRUN	Development of Environmental Management Plan (EMP)	Josiah T. Mukutiri

N.B. CVs OF THE EIA PRACTITIONER IS ANNEXED

2. Project Description

This section describes the proposed technology and an outline of the proposed activities.

2.1. Overview Of The Proposed Technology

The Proponent proposes to establish a new service station at Ocean View Extension in Swakopmund. The proposed development will involve the following:

The installation of two (2) 30 000ℓ and two (2) 30 000ℓ underground storage tanks (USTs) (1 x leaded petrol, 1 x unleaded petrol and 2 x diesel); and, four dispensing islands and associated piping.

Centrifugal or submersible pump units will be used to pump the product through a metering device into a vehicle fuel tank or to a portable metal container. Remote fuel filling points will be installed as close to the USTs as possible, although the location of the filler points is dependent on delivery tanker access. The fuel station will, at a minimum, include the following:

- Monitoring wells and a leak detection system installed around the tanks;
- Installation of petroplas piping for suctions, vents and remote fillers;
- Reconstruction of a concrete forecourt, at least on disturbed areas only;

- Installation of an oil/water separator connected to the surface drainage from the concrete forecourt and filler containment areas, discharging into the waste water system;
- Construction of a suspended forecourt roof above the dispensers to protect customers and pumping facilities from environmental elements;

3. LEGAL REQUIREMENTS

This section presents the treaties, policies and legislations that were reviewed in line with this project. The various compliance requirements are also presented.

3.1. Relevant Treaties, International agreements and Protocols, policies and legislation.

<p>3.1.1. Namibian Constitution First Amendment Act 34 of 1998</p>	<p>Article 16(1) guarantees all persons the right to property. It therefore provides everyone a right to acquire, own and dispose of property, alone or in association with others and to bequeath such property. “The State shall actively promote and maintain the welfare of the people by adopting policies that are aimed at maintaining ecosystems, essential ecological processes and the biological diversity of Namibia. It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future.” (Article 95(I)).</p>
<p>3.1.2. Namibia’s Environmental Assessment Policy of 1994.</p>	<p>The policy contains a list of prescribed projects that may have significant negative impacts on the environment. Such projects require authorisation from the Ministry of Environment & Tourism (MET) - Directorate of Environmental Assessment (DEA). Construction of fuel station and bulk fuel storage facilities are listed activities that warrants an EIA. Accordingly, the project requires authorisation from MET: DEA, which will be based on the findings of the detailed EIA study.</p>
<p>3.1.3. Environmental</p>	<p>The Namibian Environmental Management Act of (2007) guided the EIA study and made reference to the</p>

Management Act (2007)	principles contained in the Act. This is the very Act that binds all the responsible parties against their respective environmental obligations against which the EIA clearance is issued. Failure to comply attracts fines and / or prosecution depending on the severity of the matter. The Proponent should meet environmental conditions upon which the Environmental Clearance Certificate will be issued.
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<p>3.1.4. Water Resources Management Act (1956)</p>	<p>Water Act 54 of 1956 and the Water Resources Management Act 24 of 2004, provides the general protection against surface and ground water pollution. It prohibits the pollution of ground and surface water bodies including liability of clean-up costs after closure / abandonment of an activity. Water will be required for the various uses at the service station including domestic use. The Proponent should apply to the Swakopmund municipality for water connection. Details on prevention of ground water contamination and leaks detection are presented under section 3.2.1.</p>
<p>3.1.5. Hazardous Substances Ordinance 14 of 1974</p>	<p>The hazardous substances ordinance 14 of 1974 controls substances with potential to cause injury or ill-health or death of human beings because of their toxic, corrosive, irritant, strongly sensitizing or flammable nature. Petroleum fuels are covered under this Act. Care should be taken throughout the product lifecycle right from receiving, storage, product use and disposal. In cases where special storage facilities are required the Proponent should provide as such as indicated under section 3.2.1.</p>
<p>3.1.6. Petroleum Act (Act 2 of 1991)</p>	<p>This Act gives control over the storage of refined petroleum products, and to provide for matters incidental thereto. Handling and discharge of oil products is also regulated under this Act. The Proponent should apply for a retail license at the Ministry of Mines & Energy (MME).</p>
<p>3.1.7. Pollution Control and Waste Management Bill</p>	<p>This bill aims to prevent and regulate the discharge of pollutants to air, water, and land. It further aims to promote the establishment of a system of waste management, and enable Namibia to meet its</p>

	international obligations. Waste management should be guided by the 3R principle, Reduce, Reuse and Recycle. Only unrecyclable and unusable materials will be disposed of at a designated disposal site.
3.1.8. Atmospheric Pollution Prevention Ordinance 11 of 1976	This regulation sets the principles for the prevention of atmospheric pollution and associated matters arising thereto. Part IV and Part V prevents atmospheric pollution by dust and vehicles gaseous emissions respectively.
3.1.9. Labour Act (1992)	The Labor Act governs the employer to employee relationship including issues pertaining to occupational health and safety, remuneration, provision of appropriate protective clothing, grant of leave etc. It is important to refer to the Act and ensure compliance with fair labor practices at all project phases.
3.1.10. Road Ordinance 1972 (Ordinance 17 Of 1972)	Width of proclaimed roads and road reserve boundaries (S3.1) and control of traffic during construction activities on trunk and main roads (S27.1). Infringements and obstructions on and interference with proclaimed roads. (S37.1). Distance from proclaimed roads at which fences are erected (S38)

Table 3: Summary of legal compliance requirement and the respective regulatory authority.

Act/Regulation	Compliance	Regulatory Authority
Environmental Management Act (2007)	Renew Environmental Clearance Certificate	Ministry of Environment & Tourism
Environmental Management Act Chapter 20:27	Produce biannual reports; adhere to the EMP outline in this report and renewal of Environmental Clearance Certificate after 3 year from the date of issue.	Ministry of Environment & Tourism
Labour Act (1992)	It is important to refer to the Act and ensure compliance with fair labour practices and occupational health and safety during both the construction and operation phases.	Ministry of Labour
Water Resources Management Act (2004)	Monitor groundwater quality and comply with quality standards. Prevent both surface and groundwater contamination.	Ministry of Agriculture, Water & Forestry
	Apply for retail license to buy and resell fuels / petroleum products.	Ministry of Mines and Energy
Municipality by-laws	Apply for fitness certificate	Swakopmund Municipality

3.2. Standards and guidelines for the construction of the Fuel station

Namibia Standards Institute is in the process of developing local standards hence the need to refer to South African Standards (SANS) codes which include:

- SANS 10089-3: The installation of the underground storage tanks, pumps/dispensers and pipework at filling stations and consumer installations;
- SANS 1020: The electrical components of free-standing power dispensing devices for flammable liquids;
- SABS Code of Practice for the Wiring of Premises SABS 0142 and can only be done by a contractor registered by NAMPOWER;
- SABS 0228 Classification of dangerous goods in Namibia.
- SANS 10108: The classification of hazardous locations and the selection of apparatus for use in such locations;
- SANS 10131-2: Storage and handling of liquid fuel Part 2: Large consumer installation;
- SANS 10089 Parts 2 & 3 which requires:
 - The installation of a leak detection system including observation and monitoring well situated around the tank to facilitate early leak detection;
 - The provision of a plastic sheet below the tank that slopes towards an observation well; and
 - Installation of leak detectors on the pressure systems.
- SANS 10098-2: The lighting of certain specific areas of streets and highways.

3.3. Fuel Storage Facilities

The tank farm refers to an area where the fuel storage tanks are installed. The USTs are manufactured from mild steel and are coated with glass fiber reinforced plastic on the exterior making a composite tank. The manufacture of composite tanks is governed by SANS 1535. A self-contained manhole, which is impervious to hydrocarbons, is fitted to the tank and is sealed to prevent contamination to the surrounding environment. Monitoring wells are fitted to each end of the tank to allow for ground water sampling.

3.4. Forecourt Areas and Spillage Drainage

All surface areas on the forecourt filling area, as well as the tanker re-fueling area, will be constructed from concrete to form an impervious surface. This will prevent the contamination of any soil and/or water resources within the immediate area. The surfaces will be further sloped to allow any fuel spillage and surface washing water to drain or flow freely into a spillage containment system situated onsite. The spill material will then be able to be removed thus preventing further contamination of surrounding soil and/or water resources.

3.5. Tank Gauging Systems

Tank gauging is a complete fuel management system (FMS) utilized by fuel retailers. The purpose of the FMS is to provide leak detection and reconciliation Fuels for fuel retailers, thus allowing for early leak detection and system monitoring of the tanks. The sophisticated system very accurately monitors all sales and deliveries relevant to the fuel station, which then in turn determines if any product / fuel losses occur. An alarm is incorporated into the system for the purpose of environmental monitoring, which is not only beneficial to the surrounding environmental elements, but helps the retailer in maintaining up-to date quantity and quality reports.

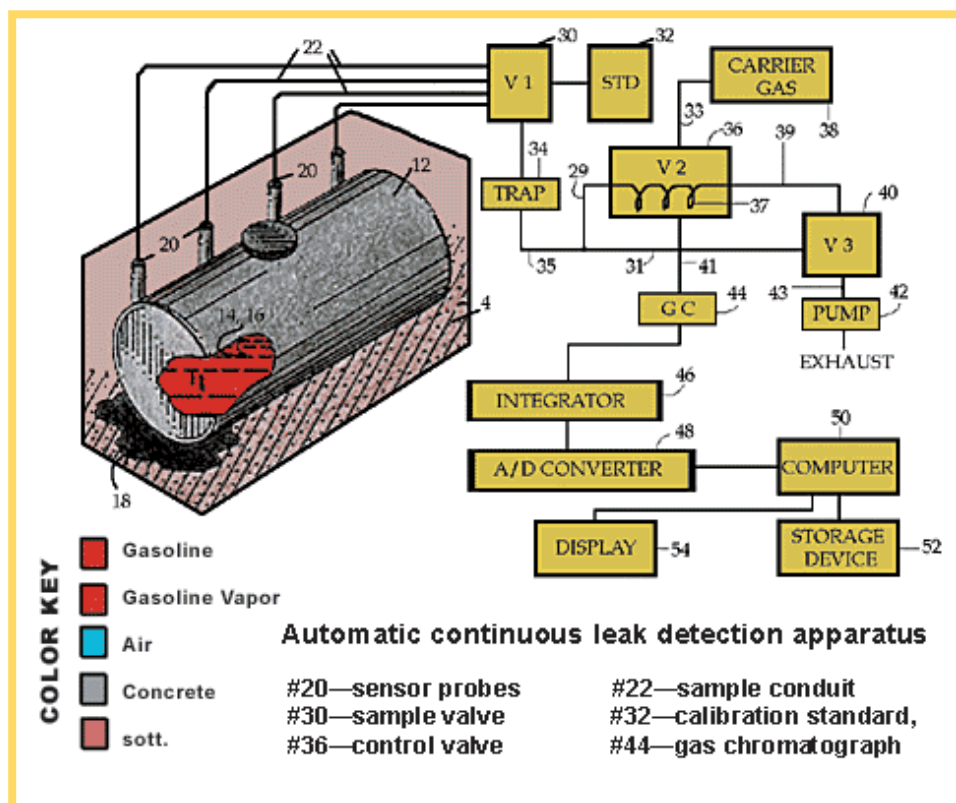


Figure 2: An automatic continuous leak detection apparatus for a fuel retail system.

Source: www.petroplaza.com

3.6. Construction

The Consultancy Team appointed to do the designs will be responsible for the appointment and supervision of the Contractor. This phase will involve the excavation works for the foundation and establishment of the tank farm, construction of the pipe network, cabling and wiring, installation of USTs and associated equipment. The Engineering Consultants should ensure all the standards and guidelines presented herein are met before commissioning and handover of the upgraded service station to the Proponent.

4. Identified Aspects And Potential Environmental Impacts

ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACTS
<p>Air Pollutants</p> <p>4.1. Dust</p> <p>Fugitive dust generated during the removal and construction of the Fuel station comprising total suspended particulates and PM₁₀.</p>	<p>Dust will irritate workers at the site and nearby accommodation facilities.</p> <p>May cause or contribute to respiratory illnesses.</p> <p>Dust also negatively affects flora adversely and impacts negatively on the outlook or aesthetic value of the surrounding areas.</p>
<p>4.2. Access to the site</p> <p>Some of the equipment especially USTs are bulk resulting in abnormal loads.</p>	<p>Traffic escort will be required to alert other motorists of the abnormal load and proceed with caution during the delivery and laying down of USTs.</p>

ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACTS
<p>4.3. Noise</p> <p>Noise will be generated during the construction of the Fuel station from the moving equipment.</p> <p>Noise associated with hammering during construction.</p>	<p>Irritating to site workers with the potential of impairing hearing, nuisance to established business in the vicinity.</p> <p>Increased noise is of particular concern to nearby houses.</p>
<p>4.4. Solid Waste</p> <p>Solid waste comprised of the following:</p> <ul style="list-style-type: none"> • rubble • soil from excavation. • packaging e.g. cement bags. • wood and steel scraps • food waste e.g. plastic bottles, plastic bags, food leftovers. 	<p>Improperly managed solid waste can lead to the harbouring of pests, rodents and vermin.</p>
<p>4.5. Oil/Fuel Spills</p> <p>Fuel and or Oil spills can occur at the fuel storage facilities.</p>	<p>Oil/fuel can enter the drainage system and either contaminates the land surface and ground water.</p>
<p>4.6. Employment opportunities</p> <p>New jobs will be created.</p>	<p>No new jobs will be created except temporary jobs during the construction activities.</p>

ENVIRONMENTAL ASPECT	ENVIRONMENTAL IMPACTS
<p>4.7. Positive economic benefits</p> <p>Improved convenience for locals and travellers between Henties Bay and Swakopmund.</p>	<p>The project is likely to impact positively on the local tourism.</p>
<p>4.8. Social issues</p> <p>Health, safety and security hazards posed by liquid fuel storage.</p> <p>Demonstration of social responsibility</p> <p>Increased number of visitors fuelling at this particular service station.</p>	<p>High risk due to petrol which is highly inflammable.</p> <p>The Proponent will compensate any individuals and parties that may be affected negatively by the establishment and operation of the fuel station.</p> <p>Increased revenues for the Proponent.</p>
<p>4.9. Process issues</p> <p>Lack of adequate knowledge on the risks associated with the project.</p>	<p>Educate the IAPs on the associated risks and hazards and effect on other development plans</p>

5. Environmental Management Plan

5.1. EMP Overview

The environmental management plan (EMP) should be adhered to at all levels during construction, operation stages of the project. It is important to note that there are different people responsible for the work at different phases of the project. While the people doing the work must follow the instructions laid in this EMP, it remains the responsibility of the Proponent to ensure that the EMP is made available to the people doing the work, that they understand the contents and comply. The EMP is clearly laid out indicating the identified impacts, the proposed mitigation measures, implementing agent, monitoring agent and the monitoring frequency. The Proponent is encouraged to extract the different sections and incorporate them in the contracts issued to the Design Engineers and Architects, Contractors and Employees etc. **The project will be managed by the Project Manager. The Project Manager will report to the Commissioner in the Directorate of Environmental Affairs, Ministry of Environment & Tourism.**

Table 2: Environmental Management Plan

CONSTRUCTION PHASE								
Traffic flow	Disruption of traffic flow	-ve	Interaction with heavy construction vehicles	Municipality traffic management unit must be informed at least 1 week in advance if traffic flow will be affected by the construction works. Movement of heavy construction equipment should avoid peak hours and should be directed by appropriate warning signs.	Construction Manager	Project Manager	Local Traffic Control Unit	Once off at the construction stage.
On-site accidents	Injuries and / or loss of life. Damage to property	-ve	Un-informed pedestrians, passer byes and drivers.	Persons and vehicle access during construction should be restricted so as to prevent potential accidents. Appropriate danger warning road signs should be used to control traffic along the highway. Trained construction personnel should be used to direct traffic movements during construction.	Construction Manager	Project Manager	Local traffic control unit	Weekly

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<p>Dust</p> <p>Fugitive dust comprising total suspended particulates and PM₁₀.</p>	<p>Dust irritates workers at the site and nearby residents.</p> <p>Causes and / or contributes to respiratory illnesses.</p> <p>Negatively affects flora.</p> <p>Reduces aesthetic value of the surrounding areas.</p>	<p>-ve</p>	<p>Excavation works, Construction vehicle movements and mixing of building materials.</p>	<p>On-site mixing and unloading operations, and ensuring adequate maintenance and repair of construction machinery.</p> <p>Wetting of ground surfaces and providing dust masks to employees.</p>	<p>Environmental Health Manager /Construction Manager</p>	<p>Project Manager</p>	<p>DEA Ministry of Health & Social Services</p>	<p>Monthly</p>
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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
Noise	Irritates site workers with the potential of impairing hearing, nuisance to nearby residents in the vicinity.	-ve	Movement of equipment Noise associated with hammering during demolition and construction works.	Limit the noise to the site and make use properly maintained equipment. Limit site construction activities to working hours (7:00 am to 4:00 pm) and noisy activities to morning hours (8:00 am to 12:00 pm).	Construction Manager	Project Manager	DEA	Monthly
Health and safety hazards	Occupational diseases and accidents	-ve	Machinery and moving equipment; dusts; contact with organic	Workers should be provided with appropriate and adequate personal protective equipment and be trained on the use and safety and health issues they are exposed to. Warning signs to be posted to indicate	Environmental Health Manager /Construction Manager	Project Manager	Ministry of Labour	Monthly

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			chemicals	dangerous areas and risks associated.				
Employment creation	Direct and / or indirect socio-economic benefits.	+ve	Employment during construction and operation	Although there are no significant numbers of jobs to be created, give first preference to the locals.	Human Resources Officer	Project Manager	Employment Council	Monthly
Carbon foot print	Increased carbon foot print and increased climate change	-ve	Construction of the Fuel station	Although this particular project may not singly have a significant impact the sum total of such projects may have a huge impact on climate change. Construction materials to be sourced preferably from green companies. Use shortest routes when disposing of waste materials that cannot be reused or recycled.	Construction Manager / Procurement Manager	Project Manager	DEA / Climate Change consultants	Monthly
Soil and water quality	Soil and water contamination / pollution.	-ve	Accidental spillages of fuel and oils as well as	Strict operation procedure to be followed as provided for by the construction and site waste management plans. Storm drains	Construction Manager	Project Manager / Proponent	DEA	Monthly

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			paints and other construction liquids.	with oil/water separators to be constructed prior to the beginning of major construction activities. Fuel storage area should be bund walled and concrete surfaced.				

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
OPERATIONAL PHASE								
Water quality	Ground and surface water contamination : Both chemical and physical contamination	-ve	Fuel / oil spillages.	The area will be concretised to avoid contamination of groundwater and machinery well-maintained. Storm water drains leading to oil/water separator will be constructed and maintained.	Design Manager / Architects / Fuel Station Manager.	Project Manager / Proponent.	DEA / NAMWATER / Swakopmund Municipality	Monthly sampling of the monitoring wells.
ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
Domestic Solid waste	Hazardous to health and reduces the aesthetic value of the area.	-ve	Generated from food left overs, packaging materials etc.	Provide adequate waste receptacles or bins should be easily accessible. Waste collection should be done at least once per week by the Municipality of Swakopmund.	Fuel Station Manager	Project Manager / Proponent	DEA	Quarterly

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
Liquid waste	Hazardous to health and reduces the aesthetic value of the area.	-ve	Waste generated from toilets, sinks etc	Use the flush to sewer system provided by the Municipality	Fuel Station Manager	Project Manager / Proponent	DEA / Municipality of Swakopmund	Quarterly
Accidents During offloading	Disruption of traffic flow.	-ve	Bulk Fuel Tankers	Tankers should drive straight in and out without reversing.	Fuel station Manager	Proponent /Project Manager	Building Inspectors / Engen Engineers / Ministry of Mines & Energy	At design and Construction stages

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ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
Occupational Hazards / Work place accidents	Potential accidents and illnesses.	-ve	Operating of the Fuel station resulting in contact with organic fuels and oils etc.	<p>Health and safety regulations should be enforced on all the workers. Safety regulations include life and health insurance, first aid kits; protective clothing such as uniforms and gloves.</p> <p>Proper storage of highly flammable products on sale such as gas, petrol, diesel etc. and installation of fire extinguishers. No smoking, No cell phone use /naked flame signs should be posted visibly and enforced.</p> <p>Workers should not be allowed to exceed working hours.</p>	Fuel Station Manager	Environmental Health Manager	Labour Inspectors	Quarterly

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– ERONGO REGION, NAMIBIA

ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	MONITORING FREQUENCY
Public hazards	Negligent management impacts dissatisfied customers, accidents etc.	-ve	Daily running of Fuel station not properly managed.	The Fuel station Manager should manage the daily operations and ensure good customer care.	Fuel station Manager.	Project Manager / Proponent.	DEA	Monthly
ENVIRONMENTAL ASPECT	IMPACT	POSITIVE \ NEGATIVE	SOURCE	MITIGATION	IMPLEMENTING AGENT	RESPONSIBLE AGENT	MONITORING AGENT	
DECOMMISSIONING PHASE								
Soil and Water quality	Soil and water contamination or pollution	-ve	Spillages during decommissioning and subsequent dismantling of tanks and pipe-works.	All fuels should be drained before dismantling of tanks and pipes. Rubble from concrete works should be disposed of at designated sites. Reusable or recyclable materials should be separated and treated as such.	Construction Manager	Project Manager / Proponent	DEA	

5.2. Guiding Notes Supporting the EMP

5.2.1. Tanks

Installation of USTs and pipe work shall be undertaken in compliance with AS/NZ 1418.3-1997 Cranes, hoists and winches and AS/NZ 2550.1

5.2.2. General safety of public and employees

The proposed works should be carried out during the tourism off season when Swakopmund is less congested. In addition, the work area should be cordoned off as a no-go area.

5.2.3. Managing fuel and oil spills

The soil texture analysis shows a predominantly sandy soil with high porosity. It is highly recommended to use leak proof concrete lining on all surfaces including the base supporting the USTs.

5.2.4. Monitoring wells

Each fuel station should be fitted with monitoring wells as we have seen the ground water is the main source of portable water. Protection of ground water from contamination or possible pollution is key for the sustainable management of the ground water resources as a whole. In that respect permits for drilling monitoring wells should be obtained from Ministry of Agriculture, Water & Forestry.

6. Conclusions And Recommendations

6.1. Conclusion

This report was compiled from information obtained from technical experts, professionals, technical designs and observations from the site. It has presented the context, and the process followed in the development of this EMP. The Fuel station will be a retail facility selling highly inflammable fuels with high risk for fires and explosions. The proponent is advised to adhere to SANS and SABS standards during construction of USTs. It is also recommended that a fuel management system be installed for continuous leak detection during the operation phase. The signage and lighting should be flashy and bright enough in order to reduce accident risk since its located adjacent to the highway. The updated EMP developed clearly indicates how each of the identified environmental impacts can be mitigated or eliminated, the implementing agent, responsible agent, the monitoring agent and the monitoring frequency during construction and operation phases.

6.2. Recommendations

The following recommendations are made as they relate to the updated EMP formulated during the study:

The Proponent should adhere to the laws, policies, standards and regulations as presented earlier in the report. Where permits are required, licence to operate a Fuel station.

The overall EMP should be implemented so as to avoid predicted environmental impacts as presented in the report during construction and operation.

6.3. *Way Forward*

The updated EMP will be submitted to the Competent Authority – Ministry of Mines & Energy and the MET: DEA for issuing of the clearance certificate. The decision made by MET: DEA will be made known to the Proponent.

END