

# UPDATED ENVIRONMENTAL MANAGEMENT PLAN FOR THE CONSTRUCTION AND OPERATION OF SOWETO SERVICE STATION IN WINDHOEK, KHOMAS REGION

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## **ACRONYMS**

<b>EAP</b>	Environmental Assessment Practitioner
<b>EMA</b>	Environmental Management Act
<b>EMP</b>	Environmental Management Plan
<b>ECC</b>	Environmental Clearance Certificate
<b>HSEO</b>	Health Safety and Environmental Officer
<b>MEFT</b>	Ministry of Environment, Forestry and Tourism
<b>MEFT</b>	Ministry of Environment, Forestry and Tourism
<b>MME</b>	Ministry of Mines and Energy
<b>NGS</b>	Nam Geo-Enviro Solution

## 1. INTRODUCTION

RD Trading Enterprises CC intends to construct and operate a service station in Soweto, Windhoek, Khomas region. According to the Environmental Management Act (2007) and its Regulations (2012), this project is under listed activities which may not be undertaken without an Environmental Clearance Certificate (ECC). The ECC for this project was previously issued in 2018 and since is only valid for a period of three years, it is therefore expired. It is on basis of above that Nam Geo-Enviro Solutions has been appointed to update the Environmental Management Plan (EMP) and apply for the renewal of the ECC for the construction and operation of Soweto Service Station on behalf of RD Trading Enterprises CC.

The Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all contractors and subcontractors, including consultants, understand the potential environmental impacts arising from the proposed project and take appropriate actions to properly manage them. An EMP also ensures that the project implementation is carried out in accordance with the design by taking appropriate mitigative actions to reduce adverse environmental impacts during its life cycle. The EMP outlines the roles and responsibilities of the key personnel and contractors involved in the project.

This EMP is developed specifically as a managing tool for the construction, operation and possible decommissioning phase of the proposed construction and operation of Soweto Service Station in Windhoek, Khomas Region.

## 2. OBJECTIVES

The environmental management plan (EMP) aims to take a pro-active route by addressing potential impacts before they occur. The objectives of the EMP are, therefore:

- To outline mitigation measures to manage environmental and socio-economic impacts associated with the project.
- Provide a framework for implementing the management actions for construction, operational and decommissioning phases.
- To promote sustainable development.
- Ensure that the project complies with the goals of the Namibian Environmental Management Act (No. 7 of 2007).

### 3. PROJECT ACTIVITIES

The project will undergo three phases which are construction, operation and perhaps decommissioning. The project phases will involve the following activities:

**Table 1:** Activities associated with the project.

Construction Phase	Operational phase	Decommissioning phase
<ul style="list-style-type: none"> <li>• Land preparation and clearing</li> <li>• Transportation of construction material</li> <li>• Excavation for reticulations (Pipelines);</li> <li>• Installation of fuel tanks, oil/water separator interception and relevant material</li> <li>• Construction of the service station</li> <li>• Electricity connection</li> <li>• Testing and commissioning</li> </ul>	<ul style="list-style-type: none"> <li>• Fuel distribution</li> <li>• Off-loading of fuel</li> <li>• Dispensing of fuel into vehicles</li> <li>• Yard cleaning</li> <li>• Corrective Maintenance (Replacing of non-functioning equipment)</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of infrastructures</li> <li>• Transportation off-site</li> <li>• Site rehabilitation</li> </ul>

### 4. LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES

Legislations are used as guiding tools during the development of an EMP. The proponent will be required to abide to different policies, laws, regulation relating to the project. The Environmental Management Act No. 7 of 2007 is the primary custodian of the environment which aims to; promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; to provide for a process of assessment and control of activities which may have significant effects on the environment and to provide for incidental matters. However, this section does not only focus on the EMA, but also looks at other relevant legislatives.

All identified crucial pieces of legislation should adhered to by the proponent and all contractors, using different provisions of compliance as indicated in their respective pieces of legislation.

**Table 2 : Regulatory framework relevant to the project.**

<b>LEGISLATION</b>	<b>RELEVANT PROVISION</b>	<b>Type of Requirement</b>
<p><b>Namibian Constitution First Amendment Act 34 of 1998</b></p>	<p>“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.</p> <p>Article 16(1) guarantees all persons the right to property, to acquire, own and dispose of property, alone or in association with others and to bequeath such property.</p> <p>It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future.” (Article 95(l)).</p>	<p>The constitution requires sustainable utilisation of natural resources basis for the benefit of all Namibians, both present and future.” (Article 95(l)).</p> <p>Through implementation of the EMP, RD Trading Enterprises CC should ensure conformity to the constitution in terms of environmental management and sustainability.</p>
<p><b>Environmental Management Act 7 of 2007</b></p>	<p>Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27).</p> <p>Requires adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions about a project (Section 2(b-c)).</p> <p>According to Section 5(4) a person may not discard waste as defined in Section 5(1)(b) in any way other than at a disposal site declared by the Minister of Environment and Tourism or in a manner prescribed by the Minister.</p>	<p>This Act and its regulations should inform and guide this environmental assessment process.</p> <p>The project proponent should ensure that all provisions of the EMP are implemented, and regular environmental monitoring and evaluations should be conducted by independent consultants.</p> <p>The public and relevant authorities were consulted during the process of the EIA public participation as per the requirement of the act.</p>
<p><b>EMA Regulations (2012)</b></p>	<p>Details projects which cannot be undertaken without an ECC.</p>	<p>This project is listed under activities which cannot be undertaken without an ECC.</p>

	Details requirements for public consultation within a given environmental assessment process.	This EMP is updated for the renewal of the ECC.
<b>Pollution and Waste Management Bill (draft)</b>	<p>This bill defines pollution and the different types of pollution. It also points out how the Government intends to regulate the different types of pollution to maintain a clean and safe environment.</p> <p>The bill also describes how waste should be managed to reduce environmental pollution. Failure to comply with the requirements is considered an offense and is punishable.</p>	<p>The project should be executed in harmony with the requirements of the act to reduce negative impacts on the surrounding environment from waste.</p> <p>A waste management strategy that follows recycling, reuse and reducing should be commissioned throughout the project activities.</p> <p>All waste should be handled by qualified waste handling contractors and disposed of on approved landfill.</p>
<b>South African National Standards SANS 10089-3</b>	Part 3: The installation of underground storage tanks, pumps/dispensers and pipe work at service stations and consumer installations is stated in SANS 10089-3.	Soweto Service station should be constructed according to SANS standards.
<b>Soil Conservation Act 76 of 1969</b>	This act makes provision for combating and prevention of soil erosion, it promotes the conservation, protection and improvement of the soil, vegetation, sources, and resources of the Republic of Namibia.	Service stations are mainly associated with spillages which can end up contaminating the soil. This document aims at guiding the proponent during construction, operation and perhaps decommissioning to prevent soil erosion and contamination soil.
<b>Atmospheric Pollution Prevention Ordinance 11 of 1976</b>	This regulation sets out principles for the prevention of the pollution of the atmosphere and for matters incidental thereto. Part III of the Act sets out regulations pertaining to atmospheric pollution by smoke. While preventative	The proponent shall apply for a retail license from the Ministry of Mines and Energy.

	<p>measures for dust atmospheric pollution are outlined in Part IV and Part V outlines provisions for Atmospheric pollution by gases emitted by vehicles.</p> <p>The Act requires that there is a need to register a controlled area with certificate to operate air polluting activities. The retail license covers all elements and requirements of this Act.</p> <p>The retail license covers all elements and requirements of this Act.</p>	
<b>Water Act 54 of 1956</b>	<p>The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force:</p> <p>A permit application in terms of Sections 21(1) and 21(2) of the Water Act is required for the disposal of industrial or domestic wastewater and effluent.</p> <p>Prohibits the pollution of underground and surface water bodies (S23 (1)).</p> <p>Liability of clean-up costs after closure/ abandonment of an activity (S23 (2)).</p> <p>Protection from the surface and underground water pollution</p>	<p>Section 21(2) stipulates that purified effluent is to be returned as close as possible to the point of abstraction of the original water.</p> <p>An approved waste handling contractor should collect water in the oil and water separator pit.</p> <p>No wastewater should be disposed into the environmental.</p>
<b>Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'.</b>	<p>135 (f): "the steps to be taken by the owners of premises used or intended for use as factories or places where machinery is used, or by occupiers of such premises or by users of machinery about the structure of such buildings of otherwise to prevent or extinguish fires, and to ensure the safety in the event of a fire, of persons in such building;" (Ministry of Labour and Social Welfare).</p>	<p>As a requirement on site, a Safety and Health representative should be appointed.</p> <p>The employer shall report all incidents occurring on site to the Ministry and accordance to the regulations.</p> <p>The proponent should ensure securing a safe</p>



	<p>This act emphasizes and regulates basic terms and conditions of employment, it guarantees prospective health, safety and welfare of employees and protects employees from unfair labour practices.</p>	<p>environment and preserving the health and welfare of employees at work.</p> <p>This will include applying appropriate hazard management plans and enforcing Occupational Health and Safety (OHS) enforcement by contractors.</p>
<p><b>Public Health and Environmental Act, 2015</b></p>	<p>A person who intends to conduct on a premises activities which generate special, industrial hazardous or infectious waste must be registered for that purpose with the local authority concerned</p> <p>(3) A person or local authority engaged in activities contemplated in subsection (1) or (2) must ensure that the waste generated on the premises concerned is kept and stored (a) under conditions that causes no harm to human health or damage to the environment; and (b) In accordance with applicable laws.</p> <p>(4) All waste contemplated in this section must be stored in approved containers and for the maximum period determined by the head of health services or the chief health officer.</p>	<p>The service station shall be registered with City of Windhoek for a Certificate of Fitness.</p>
<p><b>Petroleum Products and Energy Act 13 of 1990</b></p>	<p>The Act requires that for the operation of the service station a retail license must be obtained from the relevant ministry.</p> <p>Adding on, the Act requires incident reporting of major spillages occurring on site for pollution control.</p>	<p>The proponent should apply for the retail licence from Ministry of Mine and Energy.</p>
<p><b>Hazardous Substances Ordinance 14 of 1974 Sections 3 and 27</b></p>	<p>Provisions for hazardous waste are amended in this act as it provides “for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances; to</p>	<p>The proponent shall separate waste at site.</p> <p>The proponent should ensure that all possible “hazardous” categorised substances and waste will be</p>

	provide for the prohibition and control of the importation, sale, use, operation, application, modification, disposal or dumping of such substance; and to provide for matters connected therewith". The Act requires that a license must be obtained for the storage and distribution of a classified hazardous substance with the relevant Authority	handled by a certified hazardous waste handler.
<b>Road Ordinance 1972 (Ordinance 17 Of 1972)</b>	Width of proclaimed roads and road reserve boundaries (S3.1) Control of traffic during operational activities on the 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)	The project will ensure compliance with the terms of the Road Ordinance.
<b>Nature Conservation Ordinance 4 of 1975 with amendments and special regulations</b>	This ordinance prohibits "picking of indigenous plants in private nature reserves 24. (1) No person shall without the written approval of the Minister pick any indigenous plant, or any portion of an indigenous plant, in a private nature reserve: Provided that the owner of the land concerned may at any time pick any indigenous plant, other than a protected plant, on such land"	The project should protect various species that have conservations status.
<b>National Biodiversity Strategy and Action Plan (NBSAP2)</b>	The action plan was operationalised in a bid to make aware the critical importance of biodiversity conservation in Namibia, putting together the management of matters to do with ecosystems protection, biosafety, and biosystematics protection on both terrestrial and aquatic systems.	The proponent should consider all associated impacts, both acute and long term, and mitigation measures should be implemented sustain the local biodiversity.

## **INTERNATIONAL CONVENTIONS AND PROTOCOLS RELATED TO THE PROJECT**

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There are international conventions and protocols which aim to protect the environment to which Namibia is a signatory. These various international conventions and protocols which relate to the project are listed below:

- Vienna Convention for the protection of the ozone layer, 1985.
- United nations framework convention on climate change 992.
- Convention of Biological Diversity (1992).
- African Convention on the Conservation of Nature and Natural Resources (1968).

## **SUSTAINABILITY PRINCIPLES RELEVANT TO THE PROJECT**

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Apart from the above-mentioned regulatory framework, the following sustainability principles need to be taken into consideration, particularly to achieve proper waste management and pollution control.

- **CRADLE TO GRAVE RESPONSIBILITY**

This principle states that those who manufacture potentially harmful products should be liable for their safe production, use, and disposal. Those who initiate potentially polluting activities should be legally responsible for their commissioning, operation, and decommissioning.

- **PRECAUTIONARY PRINCIPLE**

This principle states that if there is any doubt about the effects of a potentially polluting activity, a cautious approach should be adopted.

- **THE POLLUTER PAYS PRINCIPLE**

a person who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by pollution, including costs for measures as are reasonably required to be implemented to prevent further environmental damage.

## **5. ROLES AND RESPONSIBILITY**

It is particularly important to outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. The proponent should also ensure the appointment responsible personnel's such Environmental Control Officer, Project Manager and Healthy and Safety officer to ensure the successful implementation of the EMP.

This section describes the roles and responsibilities of the key stakeholders involved in the development, implementation, and review of the EMP for the project.

### **5.1 COMPETENT AUTHORITY**

The Ministry of Mines and Energy and Department of Environmental Affairs: Ministry of Environment and Forestry Tourism (MEFT) are competent authorities for this project, and they are responsible for the review of the EMP. MEFT issues the ECC.

### **5.2. PROPONENT (RD TRADING ENTERPRISES CC)**

- Responsible for all financial and manpower obligations to implement this EMP.
- RD Trading Enterprises CC should delegate suitable qualified person(s) with the responsibility to ensure implementation of the EMP.
- Protect the environment and rehabilitate the environment as prescribed in the EIA.
- Give warnings and impose fines and penalties on the Contractor if the Contractor neglects to implement the EMP satisfactorily.
- Make sure that a copy of the EMP is readily available on-site and that all site staff are aware of its content.
- Appointment of all personnel responsible for the implementation EMP.

### **5.3 FUEL SUPPLIER**

- Comply to the cradle to grave responsibility and polluter pays principle.
- Supply fuel to the site.

### **5.4 APPOINTED CONTACTOR**

- The contractor is responsible for the implementation of the EMP.
- Should be aware of any environmental matters as deemed necessary by the contractor.

- The Contractor shall take adequate steps to educate all members of the workforce as well as supervisory staff on the relevant environmental laws and protection requirements as described in the EMP.
- Acquire a basic understanding of the key environmental features on the site and its immediate environs.
- Make sure that a copy of the EMP is readily available on-site and that all site staff are aware of its content.

## **5.5 PROJECT MANAGER**

- Required in carrying out the overall responsibility for the implementation of the EMP to ensure that all required resources and mechanisms for environmental management are in place.
- Liaising directly with the relevant authorities concerning the preparation and implementation of the EMP and meeting the conditions documented in the environmental clearance certificate.
- Bear the overall responsibility for managing the project contractors and ensuring that the environmental management requirements are met.
- Inform the contractors of the EMP and Environmental clearance certificate obligations.
- Approve all decisions regarding environmental procedures and protocols that must be followed.
- Have the authority to stop any activities in contravention with the EMP.
- In consultation with the Environmental Control Officer (ECO) has the authority to issue fines for transgressions of basic conduct rules and/or contravention of the EMP.
- Maintain open and direct lines of communication between the proponent and interested and Affected Parties (I&APs) regarding environmental matters.
- Attend regular site meetings and inspections where required.

## **5.6 ENVIRONMENTAL CONTROL OFFICER**

- Required to take independent responsibility of the implementation of this EMP.
- Conduct environmental monitoring as per EMP requirements.
- Monitor the performance of the contractors and ensure compliance with the EMP.
- Maintenance, update, and review of the EMP.
- Liaison between the contractor, authorities, and other key stakeholders on all environmental concerns.
- Conducting environmental incidents investigation as well as coming up with corrective and preventative actions.
- Communicate all amendments of the EMP to the relevant stakeholders.

- Conduct biannual audits to ensure that the system for implementing the EMP is effective.

### **5.7 HEALTH SAFETY AND ENVIRONMENTAL OFFICER (HSEO)**

- The HSEO should record and report all incidents on site.
- Ensure that safety is practiced for all activities on site.
- Prepare and implement safety procedures
- Communicate all safety-related issues.
- Carry out any incident/accident investigations at the site
- Conduct Training.
- Issuing PPE to employees
- Carry out Safety Health and Environmental awareness inductions, the following topics, at least the following topic should be covered, (the importance of complying with the relevant Namibian and International legislation, roles, and responsibilities including emergency preparedness, basic rules of conduct the Do's and Don'ts).

## 6. MANAGEMENT OF ENVIRONMENTAL IMPACTS

Before commencement of any work, all staff should be informed of the content of the EMP. The proponent, contractor and project manager have the responsibility for implementing the EMP and ensuring their staff complies with the guidelines. Daily audits must be carried out and corrective action should be implemented when needed. RD Trading Enterprises CC and its management should promote the implementation of this EMP.

An EMP is a dynamic document that is regularly updated as required and is valid for all contractors and subcontractors. It is a project-specific plan developed to ensure appropriate environmental management for the project.

### 6.1. NEGATIVE IMPACTS

#### 1. DUST

Dust might be generated during construction and decommissioning phase. Dust is expected to arise from frequenting construction vehicles and activities like grading, earthworks, foundation works, and other construction related activities. Dust might be generated during the demolition of structures.

#### MITIGATION MEASURES

- Personnel are required to wear personal protection equipment such respirator if excessive dust is created for prolonged working periods.
- Soil watering when soil works are being executed and where dust is emitted.
- Use of dust suppression method.
- Use of equipment with minimal dust generation.
- Driving speeds on-site should be only restricted to below 40km to generate minimal dust.
- Implement blast and drilling control standards.
- As per World Health Organisation (WHO), the dust particulate matter should be in the range of 150-230 µg/.

**PROJECT PHASE:** Construction / Decommissioning Phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

## **2. NOISE**

Earthmoving equipment will be utilized from time to time during the construction phase and noise might be generated. Noise generated is expected to be localized and of low significance. Noise might also be emitted from bulldozers during the possible demolition stage.

Excessive noise can be a health risk to onsite workers and surrounding. The noise is expected to be within the immediate area of the project site; hence the workers are the immediate receptor of the noise impacts. According to ISO 18001 standards, workers are not allowed to work under noise levels that are equal to or exceed 85 decibels per 8 hours.

### **MITIGATION MEASURES**

- Employees should be equipped with ear protection equipment such as earmuffs and plugs.
- Regular monitoring and review to ensure safe operation.
- Regular maintenance of machinery should maintain the acceptable noise levels for operators working with the machine.
- Machinery and vehicles should be well serviced.
- Employees should be limited to working hours only at most 8 hours per day.
- Noise pollutions should be addressed and mitigated at an early stage.
- Noise from operations vehicles and equipment on-site should be reduced to acceptable levels.
- Noise levels should be checked regularly.
- Noise levels should not be equal to or exceed 85dBA for workers working an 8-hour shift (according to ISO 18000).

**PROJECT PHASE:** Construction / Decommissioning Phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO



### **3. SAFETY AND SECURITY**

Generally, projects attract different people from different locations. Some people can end up stealing, practicing anti-social behaviours like prostitution, alcohol, and drug. During the construction and decommissioning phase, different equipment, machinery, and material will be used hence security measures should be implemented to safeguard against theft. During operation phase, robbers might be attracted especially during the night if that service stations operate 24 hours.

#### **MITIGATION MEASURES**

- Unauthorized people should not be allowed near or around the site.
- Equipment housed on site must be placed in a way that does not encourage criminal activities.
- For safety and security reasons it is recommended that the entire site be fenced-off and security personnel be employed to safeguard the premises and to avert criminal activities.
- Relevant safety signs should be clearly displayed.
- Ensure that adequate emergency facilities, including first aid kits, are available on site.
- Install CCTV cameras.

**PROJECT PHASE:** Construction, Operation and Decommissioning Phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

### **4. TRAFFIC**

The site is adjacent to road in Claudius Kondovanzu Street and Shipena Secondary School. Construction related activities are expected to have a slight impact on the movement of traffic along the road. If mitigation measures are put into action, the probability of traffic congestion and accidents happening will be unlikely and the significance will be low. During the operation phase, traffic impacts are expected to be of low significance because an entry and exit road will be included in the design of the service station. An entrance and exit way will prevent congestion and accidents at the service station. If mitigation measures are put into action, the probability of traffic congestion and accidents happening will be unlikely and the significance will be low.

#### **MITIGATION MEASURES**

- Place temporary signage warning road users on the B8 of construction activities ahead.
- Entry and exit way should be included at the design stage.
- During construction, the responsible contractor must ensure that all drivers employed have valid driver's licenses of vehicle types they are employed for and that they have experience in driving those vehicles.

- The contractor must ensure that there is always a supervisor on site to ensure that no driver under the influence of alcohol or narcotics is driving company vehicles.
- The drivers should adhere to all traffic rules and regulations.

**PROJECT PHASE:** Construction and Operation phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Fuel supplier and appointed Contractors.

## **5. CONTAMINATION OF SURFACE AND GROUND WATER**

Typically, human waste, dirty water and hazardous waste are the main sources of ground and surface water contamination. Spillages might occur during delivery from road transport tanker trucks and overfilling of vehicles. Leakages of underground pipelines may take place and it also might occur during removal of tanks, dispensing points, and associated reticulation pipelines in the decommissioning phase.

- proper training of staff and installation of suitable containment structures.
- Install oil interception system.
- Install isolating surface drainage system.
- There should be a spill containment slab at forecourt and filler Points, covering the surfaces where fuels are handled to prevent groundwater pollution.
- Storm water drainage system should be installed.
- Effluent testing should be done periodically to measure the quality of water from the oil and water separator to ensure that no contamination is being done to the environment.
- Spillage control procedures must be in place according to SANS 10089-1:2008 and SANS 100131-2 standards, or better.
- The condition of the fuel reticulation system should be checked regularly and repaired to prevent leakages.
- Spillages on site must be cleaned up immediately and if the spill is more than 200L it must be reported to the Ministry of Mines and Energy.
- An emergency response plan to give guidelines on spillages or leakages.
- Monitoring wells should be installed to monitor possible oil leakages from underground tanks.
- All waste must be disposed of on approved disposal sites.
- No burial of any waste or burning should be done on-site.
- There should be proper ablution facilities.
- Soil buckets should be available on site to clean up oil spills.
- Standby oil cleaners and absorbents should be available during the decommission stage.

- All operational surfaces at the fuel retail facility must be installed with spill containment areas as per the relevant SANS standards (or better).

**PROJECT PHASE:** Construction, Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

## **6. GENERATION OF GENERAL WASTE**

Litter in the form of food leftovers, papers, plastics, and human waste and papers are likely to be produced. In general, the impact of waste is expected to be localized and it will be of low significance if mitigation measures are implemented.

### **MITIGATION MEASURES**

- Waste disposal systems should be implemented on site.
- Strictly, no burning of waste on the site.
- Place bins around the site.
- Ensure that no excavated soil, refuse or building rubble generated on site are placed or dumped on surrounding properties or land.
- Contaminated wastes in the form of soil, litter, and other material must be disposed of at an appropriate disposal site at the nearest town.
- Good housekeeping should be maintained.
- Waste must be categorized by the contractor and disposed of in a suitable manner into different waste streams.
- No wastewater shall be disposed to soil.
- Waste should be disposed of at an authorized designated area
- Proper ablution facility should be constructed on site.

**PROJECT PHASE:** Construction, Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

## **7. HYDROCARBON WASTE**

Liquid waste in the form of oils, petrol and diesel are normally the potential waste generated at service stations. Spillages might occur during delivery to the tanks, overfilling of the tanks and vehicles.

### **MITIGATION MEASURES**

- Proper training of staff and the installation of suitable containment slab around the pumps and the filling points.
- Proper monitoring of the product levels in the tanks.
- Use an oil tray to contain the spillage of construction machinery.
- All spills must be cleaned up immediately and if spill is more than 200 L, it must be reported to the Ministry of Mines and Energy.

**PROJECT PHASE:** Construction, Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

## **8. FIRE AND EXPLOSION HAZARD**

Hydrocarbons are volatile under certain conditions and their vapours in specific concentrations are flammable. If precautions are not taken to prevent their ignition, fire and subsequent safety risks may arise. It is essential to note that, generally the area is prone to fires especially during the dry seasons, therefore precaution measures should be taken to prevent fires.

### **MITIGATION MEASURES**

- Sufficient water should be made available on site for firefighting purposes.
- Ensure that all fire-fighting devices are in good working order.
- Regular inspections and services should be carried out to inspect and test firefighting equipment.
- All personnel must be sensitised about fire protection measures and good housekeeping such as the removal of flammable materials.
- All fire precautions and fire control at the fuel retail facility must be in accordance with SANS 10089-1:1999, or better.
- The Emergency Response Plan should be implemented.
- Signs for no smoking and mobiles, should be displayed on site.
- Fire guards must also be constructed at the site to prevent the spread of fires.
- Fuel tanks should be established away from potential neighbouring fire points. All fire precautions and fire control at the service station must be in accordance with SANS 10089-1:2008, or better.

**PROJECT PHASE:** Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

## **9. IMPACT ON AIR QUALITY**

During the operation phase fuel will be offloaded from the road tanker trucks to the underground tanks and dispensed to customers vehicles. Hydrocarbon vapours will normally be released during delivery as liquid displaces the gaseous mixture in the tanks. Hydrocarbons are a class of compounds primarily composed of carbon and hydrogen. These substances contribute to the greenhouse effect and global warming, depletion of the ozone, increase occurrences of cancer and respiratory disorders and reduce the photosynthetic ability of plants.

### **MITIGATION MEASURES**

- All venting systems and procedures should be designed according to SANS standards and placed in a sensible manner.
- Vent pipes should be placed in such a manner as to prevent impact on potential receptors.
- Vehicle idling time shall be minimized by putting up educative signs.

**PROJECT PHASE:** Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

## **10. OCCUPATIONAL HEALTH AND SAFETY**

The operations of fuel retail facility can cause serious health and safety risks to workers on site. Occupational exposures are normally related to the dermal contact with fuels and inhalation of fuel vapours during handling of such products, fire and occupational stress.

### **MITIGATION MEASURES**

- Comply with all Health and Safety standards specified in the Labour Act.
- Train workers how to use the equipment safely and effectively
- Training on occupational health and safety.
- Safety talks to be done every day before the commencement of work.
- Emergency response plans should be present.
- Safety officer to be stationed at the site.
- Formulation of a safety health and environment workers committee.
- A fully stocked first aid kit should permanently be available on site as well as an adequately trained staff member in a position to administer first aid.

- All workers should have access to the appropriate Personal Protective Equipment (helmets, gloves, respirators, work suits, earplugs, safety goggles, and safety shoes where applicable).
- Proper ablution facility should be used and clearly marked for males and females.
- Use dust suppression measures.
- Maintain good housekeeping.
- Reduce noise exposure by isolating noisy equipment and rotate tasks.
- Conduct Hazard identification and risk assessments.
- Any leakage/spillage shall be immediately attended and provision of urgent cleaning.
- Work area should be monitored to maintain work environment free from any hazards
- Provisions of immediate accident/incident reporting and investigation.
- Safety Posters and signages should be exhibited at conspicuous places

**PROJECT PHASE:** Construction, Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

## **11. RISK AND SPREAD OF COVID-19**

**COVID-19** is an infectious disease caused by a newly discovered Corona virus. This novel disease was first reported in Wuhan City, in December 2019 and it has spread worldwide. The virus that causes COVID-19 is mainly transmitted through respiratory droplets generated when an infected person coughs, sneezes, or exhales. COVID-19 can be conducted by touching the eyes, nose, or mouth after touching a contaminated surface. The symptoms of this virus are mild to moderate respiratory illness such as fever, dry cough, tiredness.

### **Mitigation measures**

- Frequent hand washing or disinfection with alcohol-based hand sanitizer.
- Respiratory hygiene such as covering coughs.
- Physical distancing of at least 1 metre or more according to the national recommendations.
- Wearing of masks.
- Regular environmental cleaning and disinfection and limiting unnecessary travel.
- Seek medical care when experiencing fever, dry cough, and difficulty breathing.
- Personnel who are unwell or develop the symptoms should stay home, self-isolate and contact medical attention.
- Avoid touching your eyes, nose, or mouth if your hands are not clean

- Avoid close contact with people who have symptoms of coronavirus
- There should be a digital thermometer for a temperature check and a record must be kept.
- All COVID -19 national and safety protocols should be adhered to.

**PROJECT PHASE:** Construction, Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

## **12. RISK AND SPREAD OF HIV & AIDS**

HIV/AIDS is normally a risk when new projects are being established. During the construction of the service station, the movement of different people to the site can promote anti-social behaviours like prostitution. Moreover, during the construction phase locals will be hired and this will increase their spending power hence this might be a perfect opportunity for sex workers to explore.

### **MITIGATION MEASURES**

- Allocate time for workers to visit their families.
- Sensitization campaign to the staff on HIV/AIDS and other STDs.
- Free distribution of condoms on site.
- Free counselling to those already affected by the virus.

**PROJECT PHASE:** Construction, Operation and Decommissioning phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

## **13. IMPACT ON BIODIVERSITY**

Biodiversity loss is likely to be experienced during construction phase the existence of animal habits (vertebrates and invertebrates) might be impacted. The natural movement of animals within the project area can be disturbed and the noise generated from construction vehicles and machinery may scare the animals.

The site is cleared already and there are no vegetation on site.

### **MITIGATION MEASURES**

- Project activities must be kept within the boundary so that no further disturbances are done on outside areas.

- Avoid the killing of species viewed as dangerous such as various snakes when encountered on site.
- Off-road driving should not be allowed, and only existing tracks should be used to avoid trampling of organisms of conservation concern.
- The drivers should stick to speed limits.
- Remove and relocate slow-moving vertebrate fauna (e.g., tortoise, chameleon, etc) to suitable habitat elsewhere on the property.
- Avoid introducing ornamental plants, especially potential alien species.

**PROJECT PHASE:** Construction and Operation Phase

**IMPLEMENTATION RESPONSIBILITY** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

#### **14. ARCHAEOLOGICAL IMPACT**

There are no known archaeological sites of concern at the project location, however the project area may have some possible potential archaeological significance, that are not discovered yet.

#### **MITIGATION MEASURES**

- If any archaeological features or objects (e.g., Pottery, bones, shells, ancient clothing or weapons, ancient cutlery, graves, etc) that possess cultural values are found, they should be barricaded off and the Namibian Heritage Council (NHC) office should be informed immediately.
- The site location where archaeological features might be found should be marked with flag tape and the GPS coordinates should be recorded.
- The proponent should adopt the Chance Finds Procedure: “a person who discovers any archaeological object must as soon as practicable report the discovery to the Council”. so that if buried archaeological remains which are not visible to surface survey may be handled in accordance with the provisions of Part V Section 46 of the National Heritage Act (27 of 2004).

**PROJECT PHASE:** Construction Phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO



## 14. CUMULATIVE IMPACTS

These are the impacts on the environment, which result from the accumulation of other impacts. During the operational phase there might be cumulative impacts. Fuel is going to be off-loaded which can result in the release of hydrocarbon vapours which have an impact of reducing the air quality and causing fires and explosions. Hydrocarbon vapours if released in the atmosphere can also cause global warming, reduction of photosynthesis of plants and cancer.

### MITIGATION MEASURES

- All possible sources of ignition in the entire area should be eliminated.
- Sufficient water should always be available in case of fire for firefighting purposes.
- Vent pipes should be placed in such a manner as to prevent impact on potential receptors.
- Regular check tests.
- Off-road driving should not be allowed, and only existing tracks should be used to avoid trampling of organisms of conservation concern.
- No burial of any waste or burning should be done on-site since all waste must be disposed of on approved disposal sites.
- Waste should be disposed of as hazardous waste at a licensed facility by an authorized hazardous waste handler.

**PROJECT PHASE:** Operational Phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC, Project Manager, Contractors and appointed HSEO

## 6.2 POSITIVE IMPACTS

### 1. EMPLOYMENT CREATION

Employment will be created during the lifespan of the project. The types of jobs will range from skilled, semi-skilled and unskilled. This will improve the wealth and livelihood of people.

### ENHANCEMENT MEASURES

- Employ locals in all casual labour in both phases.
- Gender equality, transparency should be ensured when recruiting.
- Implementation of training programs to train the unskilled workers for them to enhance their performances and to gain more knowledge that they might demonstrate at other levels in future.

**PROJECT PHASE:** Construction, Operation and Decommissioning Phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC and appointed Contractors.

## **2. GENERATION OF REVENUE**

According to the law of Namibia, operating companies are to pay taxes. It is a requirement that the proponent will pay tax to the government hence this will benefit the nation at large given that money generated from taxes is diverted to the public by the government.

### **ENHANCEMENT MEASURES**

- Continuous payment of taxes as regulated in the Namibian laws.

**PROJECT PHASE:** Operation phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC and appointed Contractors.

## **3. LOCAL DEVELOPMENT AND IMPROVEMENT OF GENERAL WELFARE**

The new service station can pave way for development of the area. Project investors are believed to bring development to communities where they are operating as a form of enhancing social responsibility. The general welfare of locals should also be improved.

### **ENHANCEMENT MEASURES**

- The proponent should be engaged in community development programmes.

**PROJECT PHASE:** Operation phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC and appointed Contractors.

## **4. ACCESSIBILITY OF FUEL**

The community people will have access to fuel and no need to travel long distance to fill up their vehicles. The probability of fuel supply is going to be definite; the severity will be greatly beneficial, and the overall significance will be very high.

### **ENHANCEMENT MEASURES**

- Maintain a consistent supply of the stated products

**PROJECT PHASE:** Operation phase

**IMPLEMENTATION RESPONSIBILITY:** RD Trading Enterprises CC and Fuel supplier.

## 7. DECOMMISSIONING AND SITE CLOSURE

It is the responsibility of the proponent to pay the cost of rehabilitation for the environmental damages that might result by the undertaking of their activities to its natural or predetermined state or to the land use which conform to the generally accepted principle of sustainable development.

The decommissioning of tanks should be overseen by a professional from the oil industry and the Environmental Officer. The old tanks should be disposed of at a suitable landfill site and disposal certificates provided. During the decommissioning phase of the filling station o, a contamination assessment should be carried out. This assessment will be used to determine whether any contamination of the site has occurred and if so whether it presents any additional risk to human health and the environment. The contaminated area should be remediated to acceptable levels.

The decommission phase of this project is difficult to visualize at this point, however during the decommissioning phase, the proponent shall follow the following measures:

- Trained professionals should be contracted to remove the storage tanks and pipelines
- A contamination assessment should be carried out to assess and determine whether any pollution has occurred during the operation phase.
- If any contamination has occurred, it should be remediated at acceptable level.
- Demolition of building structures
- Removing of equipment off site
- Removal of associated infrastructures such as storage tanks
- Rehabilitation of the site

## 8. ENVIRONMENTAL MONITORING PLAN FOR THE EMP IMPLEMENTATION

Environmental monitoring provides a delivery mechanism to address the adverse environmental impacts of a project during its lifespan of the project. It is also done to introduce standards of good practice to be adopted. An environmental monitoring plan is important as it provides useful information and helps to assist in detecting the development of any unwanted environmental situation, and thus, provides opportunities for adopting appropriate control measures.

Important parameters that are sensitive include the impact on Risk and spread of Covid 19, risk and explosion of fire, hydrocarbon waste, contamination of surface and groundwater, air quality and occupational health, and safety. The suggested monitoring details are outlined in the following table.

**Table 3.** Monitoring of sensitive environmental impacts.

IMPACT	TYPE OF MONITORING	MONITORING FREQUENCY
<b>Hydrocarbon &amp; general waste</b>	<ul style="list-style-type: none"> <li>• Site inspections of oil spills.</li> <li>• Proper spill clean-up.</li> <li>• Site inspection of housekeeping.</li> <li>• Proper training of fuel attendants.</li> <li>• Regular collection of waste.</li> <li>• Monitoring of the oil/water separator</li> <li>• Vacuum testing on underground fuel tanks.</li> </ul>	Daily  Regularly
<b>Contamination of surface and ground water</b>	<ul style="list-style-type: none"> <li>• Proper spill clean-up.</li> <li>• Fuel reconciliation</li> <li>• Inspect on underground tank of possible leakages.</li> <li>• Vacuum testing on underground fuel tanks</li> </ul>	Daily  Regularly
<b>Occupational health and safety</b>	<ul style="list-style-type: none"> <li>• Conducting Hazard and Risk Assessments</li> </ul>	Daily

	<ul style="list-style-type: none"> <li>• Safety procedures evaluation.</li> <li>• Health and safety incident monitoring</li> <li>• Security inspection on site.</li> <li>• Safety toolbox talk</li> <li>• Conducting of hazard and risk assessment</li> <li>• Regular supply of appropriate PPE to employees.</li> </ul>	Regularly
<b>Risk and explosion of fire</b>	<ul style="list-style-type: none"> <li>• Regular testing and servicing of firefighting equipment.</li> </ul>	Regularly
<b>Risk and spread of covid-19</b>	<ul style="list-style-type: none"> <li>• Temperature testing</li> <li>• Monitor social distancing</li> <li>• Monitor wearing of face masks</li> <li>• Testing and Immunization</li> </ul>	Daily and when necessitated
<b>Air quality</b>	<ul style="list-style-type: none"> <li>• Inspections(dust)</li> <li>• Air quality tests</li> </ul>	Daily Annually

## 9. CONCLUSION

The above Environmental Management Plan, if properly implemented, will help to minimise adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts.

The Environmental Management Plan should be used as an on-site reference document during all phases of the proposed project, and auditing should take place to determine compliance with the EMP for the proposed site. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken.

## 10. RECOMMENDATIONS

- RD Trading Enterprises CC should take all the necessary actions to implement the EMP in all phases of the project to minimise adverse impacts on the environment.
- All Contractors and sub-Contractors taking part in any of the phases should be made aware of the contents of the EMP and of the Environmental Impact Assessment (EIA), to plan their activities accordingly in an environmental sound manner.
- Regular environmental monitoring and evaluations on environmental performance should be conducted.

**Updated: AUGUST 2021**

## 11. REFERENCES

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