UPDATED ENVIRONMENTAL MANAGEMENT PLAN (EMP) FOR THE OPERATION OF THE EXISTING OMUNGWELUME SERVICE STATION IN OHANGWENA REGION

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1.INTRODUCTION

Agrippa Shilongo is currently operating Omungwelume service station located in the Ohangwena region. The project falls under the category of listed activities according to the Environmental Management Act (2007) and its Regulations (2012), necessitating the acquisition of an Environmental Clearance Certificate (ECC) before proceeding.

The ECC for this project had previously been renewed and issued on 03 September 2018, and it is therefore expired. Nam Geo-Enviro Solutions has been appointed by Agrippa Shilongo to update the Environmental Management Plan (EMP) and apply for the renewal of the ECC for the continuous operation of the existing Omungwelume service station.
The Environmental Management Plan (EMP) is a dynamic document that undergoes regular review and updates as required. It ensures that all contractors, subcontractors, and consultants involved in the project comprehend the potential environmental impacts associated with the proposed activities and implement appropriate measures to effectively manage them.

This EMP has been developed specifically to serve as a managerial tool for overseeing the operations of the Omungwelume service station. It is crucial that all contractors and subcontractors involved in this project are made aware of the EMP's details.

2. OBJECTIVES

The main goal of the environmental management plan (EMP) is to adopt a proactive approach in dealing with possible impacts before they occur. Consequently, the EMP has the following aims:

- Enforce environmental legislations of Namibia and other requirements throughout its lifespan to outline mitigation measures for managing environmental and socio-economic impacts associated with the project.
- Provide a framework for implementing the management actions for operational and possible decommissioning phases.
- To promote sustainable development.
- Ensure that the project complies with the goals of the Namibian Environmental Management Act (No. 7 of 2007).
- To ensure the project complies with relevant authorities.
- To recommend suitable environmentally friendly practices.

3. PROJECT ACTIVITIES

This EMP covers activities in the operation phase. The activities associated with this phase are listed in the table below:

Table 1: Activities associated with the project.

Operational phase
• Fuel distribution • Off-loading of fuel • Dispensing of fuel into vehicles • Housekeeping • Corrective Maintenance (Replacing of non-functioning equipment)

4. DETAILS OF CURRENT STORAGE AND INSTALLATIONS ON SITE

The service station has two storage tanks with capacities of 14000L (Diesel) and 46000l (petrol). It has three islands, three pumps and ten dispensers. A water and oil interceptor on forecourt, oil and water interceptor on filler points and an oil and water separator pit are installed on site.

5.LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES RELEVANT TO THE PROJECT

This section focuses on the regulatory frameworks which Omungwelume service station should adhere to. The table below outlines the legal frameworks relevant to the project.

Table 2: Regulatory framework relevant to the project

LEGISLATION	RELEVANT PROVISION	TYPE OF REQUIREMENT
Namibian Constitution First Amendment Act 34 of 1998	- "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. -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.	The constitution requires sustainable utilisation of natural resources basis for the benefit of all Namibians, both present and future." (Article 95(l)). Through implementation of the EMP, Agrippa Shilongo should ensure conformity to the constitution in terms of

	-It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future." (Article 95(I)).	environmental management and sustainability.
Environmental Management Act 7 of 2007	-Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). -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)). -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, Forestry and Tourism or in a manner prescribed by the Minister.	This Act and its regulations should inform and guide the environmental assessment process. 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.
EMA Regulations (2012)	-Details projects which cannot be undertaken without an ECC. -Details requirements for public consultation within a given environmental assessment process.	This project is listed under activities which cannot be undertaken without an ECC, thus this EMP is updated for the renewal of the ECC.
Pollution and Waste Management Bill (draft)	-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. -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.	The project should be executed in harmony with the requirements of the act to reduce negative impacts on the surrounding environment from waste. A waste management strategy that follows recycling, reuse and reducing should be commissioned throughout the project activities.

		All waste should be handled by qualified waste handling contractors and disposed of on approved landfill.
South African National Standards SANS 10089-3	-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.	Service stations should be constructed according to the SANS standard. Omungwelume service station is constructed according to the SANS guidelines.
Soil Conservation Act 76 of 1969	-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 operation and perhaps decommissioning to prevent soil erosion and contamination of the soil.
Atmospheric Pollution Prevention Ordinance 11 of 1976	-This regulation sets out principles for the prevention of the pollution of the atmosphere and for matters incidental there to. Part III of the Act sets out regulations pertaining to atmospheric pollution by smoke. While preventative measures for dust atmospheric pollution are outlined in Part IV and Part V outlines provisions for Atmospheric pollution by gases emitted by vehicles. -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.	A retail license from the Ministry of Mines and Energy should be Acquired.

Water Act 54 of 1956	-The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: -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. -Prohibits the pollution of underground and surface water bodies (S23 (1). -Liability of clean-up costs after closure/ abandonment of an activity (S23 (2)). -Protection from the surface and underground water pollution	Section 21(2) stipulates that purified effluent is to be returned as close as possible to the point of abstraction of the original water. An approved waste handling contractor should collect water in the oil and water separator pit. No wastewater should be disposed of into the environment.
Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'.	-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). -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.	As a requirement on site, a Safety and Health representative should be appointed. The employer shall report all incidents occurring on site to the Ministry and accordance to the regulations. The proponent should ensure securing a safe environment and preserving the health and welfare of employees at work. This will include applying appropriate hazard management plans and enforcing Occupational Health and Safety (OHS) enforcement by contractors.
Public Health and Environmental Act, 2015	-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.	The service station must be registered with Omungwelume town council for a certificate of fitness.

	(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. (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.	
Petroleum Products and Energy Act 13 of 1990	-The Act requires that for the operation of the service station, a retail license must be obtained from the relevant ministry. Adding on, the Act requires incident reporting of major spillages occurring on site for pollution control.	The proponent is required to have a retail licence from Ministry of Mines and Energy.
Hazardous Substances Ordinance 14 of 1974 Sections 3 and 27	-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 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	The proponent shall separate waste at site. The proponent should ensure that all possible "hazardous" categorised substances and waste will be handled by a certified hazardous waste handler.
Road Ordinance 1972 (Ordinance 17 0f 1972)	-Width of proclaimed roads and road reserve boundaries (S3.1) -Control of traffic during operational activities on the trunk and main roads (S27.1).	The proponent should ensure compliance with the terms of the Road Ordinance.

	-Infringements and obstructions on and interference with proclaimed roads. (S37.1) -Distance from proclaimed roads at which fences are erected (S38).	
Nature Conservation Ordinance 4 of 1975 with amendments and special regulations	-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 proponent should protect various species that have conservations status.
National Biodiversity Strategy and Action Plan (NBSAP2)	-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 to sustain the local biodiversity.

INTERNATIONAL CONVENTIONS AND PROTOCOLS RELATED TO THE PROJECT

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).
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SUSTAINABILITY PRINCIPLES RELEVANT TO THE PROJECT

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.

6. ROLES AND RESPONSIBILITIES

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 as the Environmental Control Officer, Project Manager and Healthy and Safety officer to ensure the successful implementation of the EMP.

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

6.1 COMPETENT AUTHORITY

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

6.2 PROPONENT (AGRIPPA SHILONGO)

- Responsible for all financial and manpower obligations to implement this EMP.
- Agrippa Shilongo 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 of the EMP

6.3 FUEL SUPPLIER (PUMA ENERGY NAMIBIA (Pty) Ltd)

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

6.4 APPOINTED CONTRACTOR

- 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.

6.5 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.

6.6 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.

6.7 HEALTH AND SAFETY ENVIRONMENTAL OFFICER

- 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.
- Conduct Safety Health and Environmental awareness inductions at least the following topics 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).

7. MANAGEMENT OF ENVIRONMENTAL IMPACTS

This section outlines the potential impacts of the project and provides measures to reduce and or improve them. It is the responsibility of the proponent and all assigned contractors to ensure that these measures are properly implemented.

7.1 POLLUTION MANAGEMENT

Most pollutants and hazards associated with service stations are caused by hydrocarbon fuels that are stored and handled on site. Potential hydrocarbon pollution impacts and mitigation measures are highlighted below:

1. Surface soil and water contamination

Fuel spillages and leakages are the highest risks of pollution sources of soils and surface water contaminations at service stations. This type of contamination usually occurs during dispensing fuel into customers vehicles and when fuel tanker trucks offload fuel into the underground storage tanks. Over-filling of tanks, leaking and pipe bursts are the cause of most surface spillages.

Surface spillages if not contained can contaminate the surface soils. Soils contaminated by petroleum contaminants can affect soil health and harm soil microorganisms, reducing their number and activity. Surface spills can also contaminate surface water bodies as they can be washed into rivers and streams by floods and rain, thus can result in further underground water contamination.

Mitigation measures

- proper training of staff on fuel storage and handling.
- There should be a spill containment slab at forecourt and filler Points, covering the surfaces where fuels are handled to prevent groundwater pollution.
- Spillage control procedures must be in place according to SANS 10089-1:2008 and SANS 100131-2 standards, or better.
- contaminated soil shall be collected in a holding tray or drum, and which will then disposed at a licensed hazardous waste site.
- 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.
- All waste must be disposed of at approved disposal sites.
- No burial of any waste or burning should be done on-site.
- Sand buckets should be available on site to clean up minor 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).

2. Underground contamination

Accidental spills during fuelling operations or leaks from storage tanks can release petroleum products into the soil, which can seep into groundwater or flow over the surface and contaminate nearby water bodies. Underground fuel storage tanks and reticulation pipelines that carry fuel to the dispensing pumps have a risk of leaking, thereby polluting underground water. Oil spills and leakages may infiltrate underground, causing underground water contamination and soil in the absence of a concrete containment slab.

Mitigation measures

- 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.
- The condition of the fuel reticulation system should be checked regularly and repaired to prevent leakages.
- Monitoring wells should be installed to monitor possible oil leakages from underground tanks.
- All waste must be disposed of on approved disposal sites.
- All operational surfaces at the fuel retail facility must be installed with spill containment areas as per the relevant SANS standards (or better).

3. Hydrocarbon vapours and odors

Hydrocarbon vapors can be released into the atmosphere when dispensing fuel into the customers vehicles and when tanker trucks are offloading fuel. Vapor contains elements such as benzene which is highly carcinogenic and may affect employees

especially the fuel attendants due to prolonged exposure. Immediate atmospheric environment may be affected by fuel odors during refilling process.

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 should be minimized by putting up educative signs.

7.2 WASTE MANAGEMENT

Waste management involves the regular collection, transportation as well as processing and disposal or recycling and monitoring of different types of waste materials.

1.General waste

Service stations often sell products such as snacks, drinks, and other consumer goods that come with packaging. If these products are not packaged using eco-friendly materials or if there is a lack of recycling options, it can result in increased paper and packaging waste. Additionally, service stations may not have sufficient waste bins or recycling facilities available to customers and staff. This can result in people disposing of waste inappropriately, leading to litter.

Mitigation measures

- Waste disposal systems should be implemented on site.
- Strictly no burning of waste on the site.
- Place whether and scavenger proof bins around the site.
- 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.

2. Hazardous waste

Hazardous wastes on site are usually minor oil spills on the surface. Spillages might occur during delivery to the tanks, overfilling of the tanks and vehicles Hazardous waste should be separated from general waste and kept in hazardous waste bins to be discarded at approved disposal sites or should be handled by certified contractors.

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.
- 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.
- The presence of an emergency response plan and suitable equipment is advised, to react to any spillage or leakages properly and efficiently.
- Sand buckets should be available on the forecourt.
- Spill containment slab must be installed.
- Hazardous waste bins should be available on site to place contaminated waste.
- Equipment and materials to deal with spill clean-up such as spill kit must be readily available on site.
- Proper drainage, storm water free from pollution must be directed to a municipality drainage and contaminated water to the oil and water separator pit.

7.3 HEALTH AND SAFETY MANAGEMENT

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.

1.Risk of fire explosion

Hydrocarbons are volatile under certain conditions and their vapours in specific concentrations are flammable. A small spark or ignition source in the vicinity can trigger an explosion. Additionally, mishandling of fuel by station personnel or customers can lead to accidents. For instance, if fuel is spilled on the ground and not cleaned up promptly, it can create a flammable atmosphere. However, inadequate training or negligence in fuel handling procedures can also contribute to fire hazards.

No fire or any source of fire ignition is to be allowed at the service station during any of the two phases (operational and decommissioning). Agrippa Shilongo shall take all

reasonable measures and active steps to avoid increasing the risk of fire during the activities on site and shall always ensure sufficient fire-fighting equipment on site.

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.

2. Occupational health and safety

Service stations can pose health hazards to workers if proper safety measures are not in place or followed. Workers may be exposed to various occupational health hazards, including chemical exposure, noise, slips and falls, vehicle accidents, fire and explosion risks, manual handling injuries, and stress-related factors.

Employers have a responsibility to prioritize the health and safety of their workers. By implementing preventive measures and regularly assessing and addressing potential hazards, service station owners and managers can significantly reduce the health risks faced by their employees.

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.

3. Risk and spread of HIV and AIDS

The spread of HIV/AIDS may occur during the project operational phase. The movement of different people to the site can promote anti-social behaviours like alcohol abuse, drug abuse and prostitution. Workers may be given little time to visit their partners, as a result they may find new partners from the local area. Condoms may also be limited or not provided at the workplace.

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.

4. 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 abuse. During operation phase, robbers might be attracted especially during the night if the service station operates for 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 activates.
- Relevant safety signs should be clearly displayed.
- Ensure that adequate emergency facilities, including first aid kits, are available on site.
- Employing security officers.
- Install CCTV cameras.

7.4 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. If hydrocarbon vapours is released in the atmosphere, it 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.
- No burial of any waste or burning should be done on-site, 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.

7.5 POSITIVE IMPACTS AND ENHANCEMENT MEASURES

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.
- Gender equality, transparency should be ensured when recruiting.
- When recruiting, the responsible contractor should ensure gender equality.

- 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.

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.

3. Local development and improvement of general welfare

The 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 project has a high probability of improving the general welfare for the local population. The locals will benefit during the life span of the project and the extent of benefiting can reach to the regional scale.

Enhancement measures

- First preference is to be given to the locals during employment.
- The proponent is to be engaged in community projects.
- The proponent should give employees market related salaries; this will improve the lives of the employees.
- The proponent should be engaged in community development programmes.

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 fuel to site.

8. DECOMMISSIONING AND SITE CLOSURE

The proponent is responsible for paying for the expenses associated with restoring any environmental damage that may occur due to the project's activities. The aim of restoration is to bring the affected areas back to their natural state or to a condition that aligns with the principles of sustainable development.

To ensure the safe decommissioning of tanks, a professional from the oil industry and an environmental officer should oversee the process. The old tanks should be properly disposed of at a suitable landfill site, and certificates should be provided as evidence of their disposal. As part of the decommissioning phase of the filling station, an assessment should be carried out to determine the level of contamination. This assessment will help identify if there is any contamination on the site and whether it poses any additional risks to human health and the environment. If contamination is found, the affected area should be remediated to meet acceptable standards.

However, visualizing the decommissioning phase of the project is currently challenging. Therefore, during the decommissioning phase, the following measures should be adhered to:

- 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.

9.ENVIRONMENTAL MONITORING AND MANAGEMENT PLAN

The purpose of environmental monitoring is to address and mitigate the adverse environmental impacts that may arise from a project during its entirety. It also seeks to establish and encourage a set of admirable practices to be adhered to. An environmental monitoring plan holds great significance as it provides valuable information and facilitates early identification of any unfavourable environmental conditions, thus enabling the implementation of appropriate measures for control.

Important parameters that are sensitive include environmental impacts such as hydrocarbon waste and general waste, contamination of surface and groundwater, occupational health and safety, risk, impact on air quality and explosion of fire.

The suggested monitoring details are outlined in the following table.

Table 3: Monitoring of sensitive environmental impacts

IMPACT	TYPE OF MONITORING	MONITORING FREQUENCY
Hydrocarbon & general waste	• Site inspections of oil spills. • Proper spill clean-up. • Site inspection of housekeeping. • Proper training of fuel attendants. • Regular collection of waste. • Monitoring of the oil/water separator • Vacuum testing on underground fuel tanks.	Daily Regularly
Contamination of surface and ground water	• Proper spill clean-up. • Fuel reconciliation • Inspect on underground tank of possible leakages. • Vacuum testing on underground fuel tanks	Daily Regularly
Occupational health and safety	• Conducting hazard and risk Assessments. • Safety procedures evaluation. • Health and safety incident monitoring. • Security inspection on site. • Safety toolbox talk • Conducting of hazard and risk assessment	Daily Regularly

	• Regular supply of appropriate PPE to employees.	
Risk and explosion of fire	• Regular testing and servicing of firefighting equipment.	Regularly
Air quality	• Inspections(dust) • Air quality tests	Daily Annually

10.CONCLUSION

Implementation of Environmental Management Plan will help reduce the negative impact on the environment. However, in cases where adverse effects occur, immediate actions must be taken to prevent the situation from worsening.

Throughout the operational phase of the project, it is crucial to use the Environmental Management Plan as a guide on-site and follow the prescribed measures. Any parties found to be in violation of the plan should be held responsible for carrying out any necessary rehabilitation efforts. The current Environmental Management Plan should be applied to both the operational and decommissioning stages of the Omungwelume service station.

This Environmental Management Plan is deemed adequate for the continuous operations of the existing Omungwelume service station.

11.RECOMMENDATIONS

- The proponent should take all the necessary actions to implement the EMP 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 environmentally sound manner.
- Environmental monitoring and evaluations on environmental performance should be conducted biannually.
- The next ECC renewal should be conducted two months prior to the expiry of the previous ECC.

12. REFERENCES

I. Constitution of the Republic of Namibia (1990).
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