UPDATED ENVIRONMENTAL MANAGEMENT PLAN FOR THE OPERATIONS OF EKUKU SERVICE STATION IN OSHAKATI, OSHANA REGION

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1. INTRODUCTION

The following Environmental Management Plan (EMP) has been developed and updated for the operations of Ekuku Service in Oshakati, Oshana region.

The Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the project is implemented in an environmentally sustainable manner. It consists of a sets of mitigation measures to address potential impacts to acceptable levels during the operational phase of the project to ensure best environmental management and sustainable development. The EMP outlines the roles and responsibilities of the key personnel and contractors involved in the project.

The EMP is a dynamic document that is regularly updated as required and all contractors and subcontractors taking part in the project should be made aware of the contents of the updated EMP.

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).
- To ensure that the project will comply with relevant environmental legislations of Namibia and other requirements throughout its lifespan.

3. RELEVANT LISTED ACTIVITIES AS PER EMA REGULATIONS NO. 29 OF 2012

9. Hazardous Substance Treatment, Handling and Storage

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

- 9.2 Any process or activity which requires a permit, license or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, license, or authorisation or which requires a new permit, license, or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent, or waste.

- 9.3 The bulk transportation of dangerous goods using pipeline, funiculars, or conveyors with a throughout capacity of 50 tons or 50 cubic meters or more per day.

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

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

4. SITE DESCRIPTION

Ekuku Service Station is situated on Erf no. 4268, Extension no.5, in Oshakati town land. Geospatially, the site is in the following coordinates: S17.76456° and E015. 70330°.

The site constitutes of three (3) underground storage tanks consisting of ULP 95 (1), one 500ppm (1) and one 50ppm (1), each the capacity of 46m^3.

5. PROJECT ACTIVITIES

The construction phase of this project is completed. This EMP will cover the operation phase and possible decommissioning phase.

Table 1: Activities associated with the project.

Operational phase	Decommissioning phase
• Fuel distribution • Off-loading of fuel • Dispensing of fuel into vehicles • Yard cleaning • Corrective Maintenance (Replacing of non-functioning equipment)	• Removal of infrastructures • Transportation off-site • Site rehabilitation

6. LEGAL FRAMEWORK: LEGISLATION, POLICIES AND GUIDELINES

Legislations were used as guiding tools during the development of this EMP. The proponent is 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.

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. It further promotes the sustainable utilisation of living natural resources basis for the benefit of all Namibians, both present and future." (Article 95(l)).	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, Kuku Agri Equipment CC should ensure conformity to the constitution in terms of 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 and Tourism or in a manner prescribed by the Minister.	This Act and its regulations should inform and guide this 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. The public and relevant authorities were consulted during the process of the EIA public participation as per the requirement of the act.
EMA Regulations (2012)	Details projects which cannot be undertaken without an ECC.	This project is listed under activities which cannot be undertaken without an ECC, thus this EMP is updated for the renewal of the ECC.

	Details requirements for public consultation within a given environmental assessment process.	
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.	Ekuku Service Station should be constructed according to SANS standards.
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 construction, operation and perhaps decommissioning to prevent soil erosion and contamination soil.
Atmospheric Pollution Prevention	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	A retail license from the Ministry of Mines and Energy should be acquired.

Ordinance 11 of 1976	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. The retail license covers all elements and requirements of this Act.	
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 into the environmental.
Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of	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	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.

Employees at work'.	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.	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 (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.	The service station shall be registered with Oshakati town council for a Certificate of Fitness.
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 should acquire the retail licence from Ministry of Mine and Energy.
Hazardous Substances Ordinance 14 of 1974	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,	The proponent shall separate waste at site. The proponent should ensure that all possible

Sections 3 and 27	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	"hazardous" categorised substances and waste are 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) Infringements and obstructions on and interference with proclaimed roads. (S37.1) Distance from proclaimed roads at which fences are erected (S38)	The proponent should ensure compliance with the terms of the Road Ordinance.
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 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).

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.

7. 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 they 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.

7.1 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.

7.2. PROPONENT (KUKU AGRI EQUIPMENT CC)

- Responsible for all financial and manpower obligations to implement this EMP.
- Kuku Agri Equipment 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.

7.3 FUEL SUPPLIER

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

7.4 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.

7.5 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.

7.6 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.

7.7 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).

8. 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. Kuku Agri Equipment 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.

8.1. NEGATIVE IMPACTS

1. CONTAMINATION OF SURFACE AND GROUND WATER

Typically, human waste, dirty water and hazardous waste are the main sources of ground and surface water contamination at filling stations. 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.

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.
- 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.

- There should be 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 site.
- 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 service station must be installed with spill containment areas as per the relevant SANS standards (or better).

PROJECT PHASE: Operation and decommissioning

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Contractors and appointed HSEO

2. HYDROCARBON WASTE AND SPILLAGES

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

MITIGATION MEASURES

- Proper training of staff.
- Install 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.

PROJECT PHASE: Operation

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

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PROJECT PHASE: Operation

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

4. FIRE AND EXPLOSION HAZARD

Hydrocarbons are volatile under certain conditions and their vapours in specific concentrations are flammable. Fire and explosion may occur during the operation phase. 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 filling station must be in accordance with SANS 10089-1:2008, or better.
- Emergency evacuation point should be clearly marked.

PROJECT PHASE: Operation

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

5. 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 in 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

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Contractors and appointed HSEO

6. 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.
- Personnel should get 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 should 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 when dust releasing activities are carried out.
- 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 ensure provision of urgent cleaning.
- Work area should be monitored to maintain work environment free from any hazards.
- Make provisions of immediate accident/incident reporting and investigation.
- Safety posters and signages should be exhibited at conspicuous places on site.

PROJECT PHASE: Operation

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Fuel supplier, Contractors and appointed HSEO

7. 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
- Temperature check.
- All COVID -19 national and safety protocols should be adhered to.

PROJECT PHASE: Operation

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Contractors and appointed HSEO

8. RISK AND SPREAD OF HIV & AIDS

The spread of HIV/AIDS may occur during the operational phase of the project. The movement of different people to the site can promote anti-social behaviours like prostitution. Moreover, employed personnel may increase their spending power and 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: Operation

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Contractors and appointed HSEO

9. 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 operation and decommissioning phase, different equipment, machinery, and material will be used, hence security measures should be implemented to safeguard against theft. Robbers might be attracted especially during the night if the 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 activates.
- Employing security officers
- Install CCTV cameras.

PROJECT PHASE: Operation and decommissioning phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Contractors and appointed HSEO

10. TRAFFIC IMPACT

During the operation phase, traffic impacts are expected to be of low significance because an entry and exit road is included in the design of the service station. An entrance and exit on site 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

- Entry and exit signage should be clearly displayed.
- Ensure that all drivers have valid driver's licenses of the vehicle types they drive.
- No driving under the influence of alcohol.
- The drivers should adhere to all traffic rules and regulations.

PROJECT PHASE: Operation phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Fuel supplier and appointed Contractors.

11. IMPACT ON BIODIVERSITY

Biodiversity loss is likely to be experienced during operation phase and it's expected to be on a low scale. The natural movement of animals within the project area can also be disturbed.

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.
- Avoid introducing ornamental plants that are potential alien species.

PROJECT PHASE: Operation phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Fuel supplier and appointed Contractors.

12. NOISE

Noise might be generated by the frequent movement of vehicle to and from the site during operation phase. It may be also emitted from bulldozers during the possible demolition stage. Noise generated is expected to be localized and of low significance.

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: Operation and Decommissioning Phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Contractors and appointed HSE

13. DUST

Dust might be generated during decommissioning phase. Dust is expected to arise from 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: Decommissioning Phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment 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 over time. 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.
- 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 at an approved waste dumping site.

PROJECT PHASE: Operational Phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC, Project Manager, Contractors and appointed HSEO

8.2 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.
- 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: Operation

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC and appointed Contractors.

2. GENERATION OF REVENUES

According to the law of Namibia, operating companies should pay tax. It is a requirement that the proponent must 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 tax as regulated in the Namibian laws.

PROJECT PHASE: Operation phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC and appointed Contractors.

3. LOCAL DEVELOPMENT AND IMPROVEMENT OF GENERAL WELFARE

The filling 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

- Preference should be given to the locals when recruiting.
- 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.

PROJECT PHASE: Operation phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment 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 fuel to site.

PROJECT PHASE: Operation phase

IMPLEMENTATION RESPONSIBILITY: Kuku Agri Equipment CC and Fuel supplier

9. DECOMMISIONING AND SITE CLOSURE

It is the responsibility of the proponent to pay the cost of rehabilitation, for the environmental damages that might result from 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

10. ENVIRONMENTAL MONITORING PLAN FOR THE EMP IMPLEMENTATION

Environmental monitoring provides a delivery mechanism to address the adverse environmental impacts of a 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
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	Daily

	• Safety procedures evaluation. • Health and safety incident monitoring • Security inspection on site. • Safety toolbox talk • Conducting of hazard and risk assessment • Regular supply of appropriate PPE to employees.	Regularly
Risk and explosion of fire	• Regular testing and servicing of firefighting equipment.	Regularly
Risk and spread of covid-19	• Temperature check • Monitor social distancing • Monitor wearing of face masks • Testing and Immunization	Daily and when necessitated
Air quality	• Inspections(dust) • Air quality tests	Daily Annually

11. 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 of the project. Environmental monitoring should be conducted to determine environmental performance of the project and implementation of measures stipulated with the EMP. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken.

12. RECOMMENDATIONS

- Kuku Agri Equipment CC should take all the necessary actions to implement the EMP and 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, to plan their activities accordingly in an environmental sound manner.
- Regular environmental monitoring and evaluations on environmental performance should be conducted.

13. REFERENCES

Constitution of the Republic of Namibia (1990).

DEAT (2006). Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations 2006, Integrated Environmental Management Guideline Series. Pretoria: Department of Environmental Affairs and Tourism (DEAT).

Environmental Management Act (2007).

Environmental Management Act Regulations (2012).

Petroleum Products and Energy Act of Namibia (1990)

South African National Standard 10089-1. (2008). The petroleum industry part 1: Storage and distribution of petroleum products in above-ground bulk installations. South Africa: Standards South Africa publishers.

Water Resources Management Act 11 (2013).