APP-001850

CONSTRUCTION AND OPERATIONS OF A FUEL FACILITY AND TRUCK PORT IN KATIMA MULILO, ZAMBEZI REGION

UPDATED ENVIRONMENTAL MANAGEMENT PLAN

Prepared by:

Prepared for:

July 2023

Project:	**CONSTRUCTION AND OPERATIONS OF A FUEL FACILITY AND TRUCK PORT IN KATIMA MULILO, ZAMBEZI REGION: UPDATED ENVIRONMENTAL MANAGEMENT PLAN**	
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Report Approval	 **André Faul**	

I S.A.D. Oberholzer acting as the representative of NKNO Fuels Namibia (Pty) Ltd, hereby confirm that we approve the environmental management plan as presented in this document. All material information in the possession of the Proponent that reasonably has or may have the potential of influencing the environmental management plan was provided to the consultant.

Signed at Windhoek on the 01 day of August 2023.

NKNO Fuels Namibia (Pty) Ltd

2015/1008
Company Registration Number

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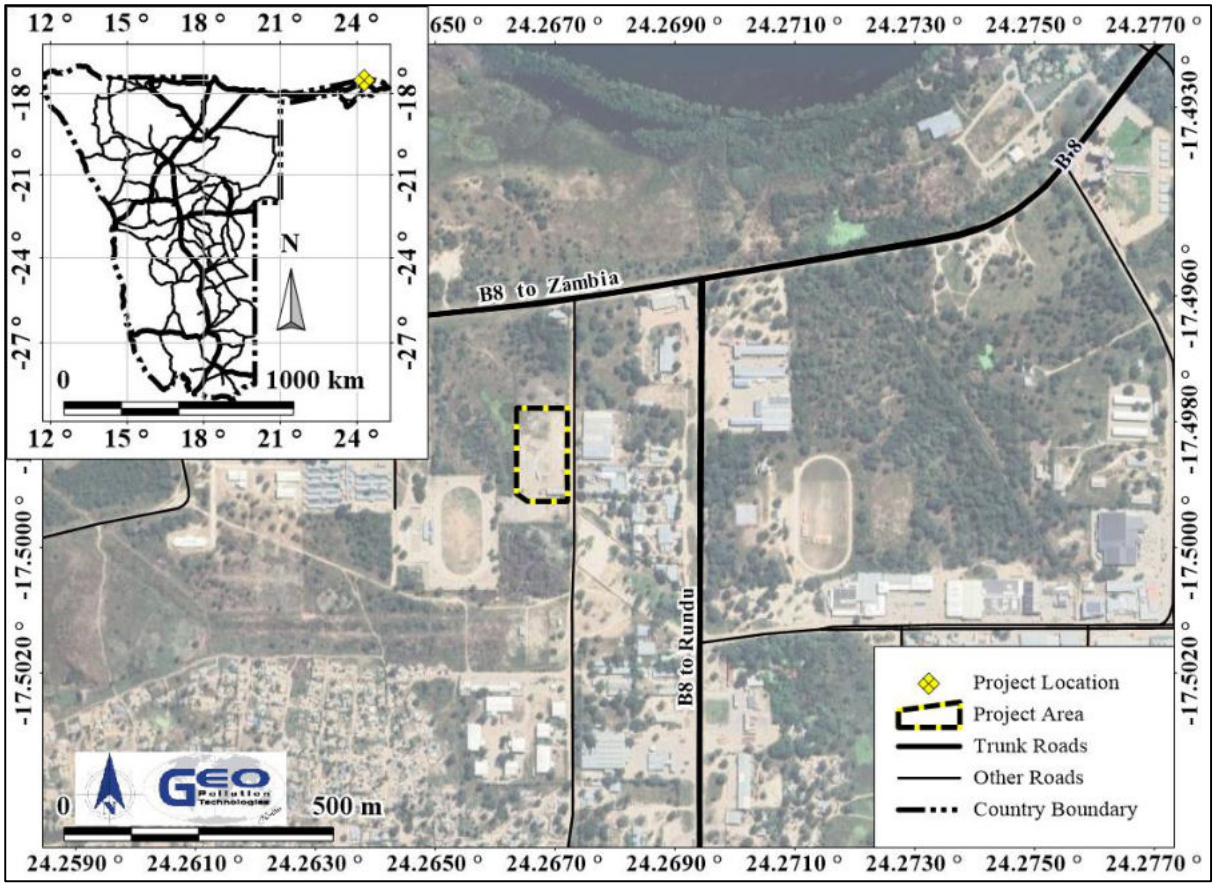
1 INTRODUCTION

An environmental assessment and related EMP was compiled for Hallie Investment Number 475cc and their proposed fuel retail facility and truck port in Katima Mulilo. An ECC (00995) was awarded to the site in 2020. Since then the project was not developed as a fuel retail facility. The owners of the site transferred the property with the existing rights and permits to NKNO Fuels Namibian (Pty) Ltd who now would like to establish a fuel facility in line with the initial and proposed plans. NKNO Fuels Namibia (Pty) Ltd (the Proponent) therefore requested Geo Pollution Technologies (Pty) Ltd to conduct an ECC transfer and update the initial EMP.



2 PROJECT DESCRIPTION

The project entails the construction of a fuel facility, specifically aimed at the filling of trucks, in Katima Mulilo. The proposed fuel facility will be situated on Portion 82 of Farm Katima Mulilo Townlands No. 1328 in the Zambezi Region. The infrastructure of the fuel facility will be on Portion 82 while support services, like truck parking, will be situated on Portions 80 and 81. The proposed location is within the townlands of Katima Mulilo and most of the project area has been partially disturbed by industrial activities and is currently utilised as a brickfield.

The proposed facility will consist of a truck refuelling facility and a truck port. Aboveground, steel storage tanks will be installed within a concrete bund area. The tanks will be used to store diesel (50 ppm). The aboveground tanks will be linked to dispensers at the truck filling area. All surfaces where fuel will be handled will be covered with concrete spill control surfaces, connected to an oil water separator. General operations will involve the filling of the aboveground tanks with fuel from road transport tankers, dispensing fuel into clients' vehicles, tank dips and fuel volume reconciliations, and general cleaning and maintenance activities associated with fuel facilities. The facility will be constructed according to the relevant South African National Standards (SANS) as prescribed by the Ministry of Mines and Energy of Namibia.

Safety systems will include emergency shutoff systems, channelling of storm water in order to prevent its contamination with hydrocarbons, and firefighting equipment. Fire extinguishers and emergency stops will be placed throughout the facility and within easy reach of attendants.

3 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an environmental assessment, as per the Namibian legislation. The legislation and standards provided in Table 3-1 to Table 3-3 govern the environmental assessment process in Namibia and/or are relevant to the facility.

Table 3-1 Namibian law applicable to the fuel facility

Law	Key Aspects
The Namibian Constitution	♦ Promote the welfare of people ♦ Incorporates a high level of environmental protection ♦ Incorporates international agreements as part of Namibian law
Environmental Management Act Act No. 7 of 2007, Government Notice No. 232 of 2007	♦ Defines the environment ♦ Promote sustainable management of the environment and the use of natural resources ♦ Provide a process of assessment and control of activities with possible significant effects on the environment
Environmental Management Act Regulations Government Notice No. 28-30 of 2012	♦ Commencement of the Environmental Management Act ♦ List activities that requires an environmental clearance certificate ♦ Provide Environmental Impact Assessment Regulations
Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 45 of 1990	♦ Regulates petroleum industry ♦ Makes provision for impact assessment ♦ Petroleum Products Regulations (Government Notice No. 155 of 2000) o Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002) ♦ Used Mineral Oil Regulations (Government Notice No. 48 of 1991 o Regulations relating to the purchase, sale, supply, acquisition, possession, disposal, storage, transportation, recovery and re-refinement of used mineral oil
The Water Act Act No. 54 of 1956	♦ Remains in force until the new Water Resources Management Act comes into force ♦ Defines the interests of the state in protecting water resources ♦ Controls water abstraction and the disposal of effluent ♦ Numerous amendments
Water Resources Management Act Act No. 11 of 2013	♦ Provide for management, protection, development, use and conservation of water resources ♦ Prevention of water pollution and assignment of liability ♦ Not in force yet
Local Authorities Act Act No. 23 of 1992, Government Notice No. 116 of 1992	♦ Define the powers, duties and functions of local authority councils ♦ Regulates discharges into sewers

Law	Key Aspects
Public and Environmental Health Act Act No. 1 of 2015, Government Notice No. 86 of 2015	♦ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters ♦ Deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation
Labour Act Act No 11 of 2007, Government Notice No. 236 of 2007	♦ Provides for Labour Law and the protection and safety of employees ♦ Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997)
Atmospheric Pollution Prevention Ordinance Ordinance No. 11 of 1976	♦ Governs the control of noxious or offensive gases ♦ Prohibits scheduled process without a registration certificate in a controlled area ♦ Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process
Hazardous Substances Ordinance Ordinance No. 14 of 1974	♦ Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export ♦ Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings
Pollution Control and Waste Management Bill (draft document)	♦ Not in force yet ♦ Provides for prevention and control of pollution and waste ♦ Provides for procedures to be followed for licence applications

Table 3-2 Relevant multilateral environmental agreements for Namibia and the development

Agreement	Key Aspects
Stockholm Declaration on the Human Environment, Stockholm 1972.	♦ Recognizes the need for a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment
1985 Vienna Convention for the Protection of the Ozone Layer	♦ Aims to protect human health and the environment against adverse effects from modification of the Ozone Layer are considered ♦ Adopted to regulate levels of greenhouse gas concentration in the atmosphere
United Nations Framework Convention on Climate Change (UNFCCC)	♦ The Convention recognises that developing countries should be accorded appropriate assistance to enable them to fulfil the terms of the Convention
Convention on Biological Diversity, Rio de Janeiro, 1992	♦ Under article 14 of The Convention, EIAs must be conducted for projects that may negatively affect biological diversity

Table 3-3 Standards or codes of practise

Standard or Code	Key Aspects
South African National Standards (SANS)	♦ The Petroleum Products and Energy Act prescribes SANS standards for the construction, operations and demolition of petroleum facilities ♦ SANS 10131 is specifically aimed at storage and distribution of petroleum products in aboveground storage tanks. o Provide requirements for spill control infrastructure ♦ SANS 10089-3:2010 is specifically aimed at storage and distribution of petroleum products at fuel retail facilities and consumer installations o Provide requirements for spill control infrastructure

The fuel facility is listed as an activity requiring an ECC as per the following points from Section 9 of Government Notice No. 29 of 2012:

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." (The facility stores and handles hazardous substances in the form of fuel.)
- 9.2 "Any process or activity which requires a permit, licence 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, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste." (The facility stores and handles hazardous substances in the form of fuel which is permitted by the Ministry of Mines and Energy.)
- 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." (The facility will store more than 30 m^3 of fuel).
- 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." (The facility will store fuel above ground.)

4 OBJECTIVES OF THE EMP

The EMP provides management options to ensure impacts of the construction and operations are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The EMP acts as a stand-alone document, which can be used during the various phases (planning, construction, operational and decommissioning) of any proposed activity or development.

All contractors and sub-contractors taking part in both the construction and operations associated with the facility should be made aware of the contents of the EMP, so as to plan the relevant activities accordingly in an environmentally sound manner.

The objectives of the EMP are:

- to include all components of the various activities;
- to prescribe the best practicable control methods to lessen the environmental impacts associated with the both construction and operational activities;
- to monitor and audit the performance of the operational personnel in applying such controls; and
- to ensure that appropriate environmental training is provided to responsible personnel and contractors.

5 IMPLEMENTATION OF THE EMP

Section 6 below outlines the management of the environmental elements that may be affected by the different activities. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have to be elaborated on. Delegation of mitigation measures and reporting activities should be determined by the Proponent and included in the EMP. The EMP is a living document that must be prepared in detail, and regularly updated, by the Proponent as the project progress and evolve.

The EMP and ECC must be communicated to the site managers. A copy of the ECC and EMP should be kept on site. All monitoring results must be reported on as indicated. Reporting is important for any future renewals of the ECC and must be submitted to the Ministry of Environment, Forestry and Tourism (MEFT). Renewal of ECC will require six monthly reports based on the monitoring prescribed in this EMP.

Various potential and definite impacts will emanate from the operations and decommissioning phases. The majority of these impacts can be mitigated or prevented. The prevention and mitigation measures are listed below.

6 MANAGEMENT OF IMPACTS

6.1 CONSTRUCTION AND OPERATIONS

The following section provide management measures for both the proposed construction and operations of the fuel facility.

6.1.1 Planning

During the phases of planning for construction, future operations and decommissioning of the facility, it is the responsibility of Proponent to ensure they are and remain compliant with all legal requirements. The Proponent must also ensure that all required management measures are in place prior to, and during all phases, to ensure potential impacts and risks are minimised. The following actions are recommended for the planning phase and should continue during various other phases of the project:

- Ensure that all necessary permits from the various ministries, local authorities and any other bodies that governs the construction activities and operations of the project are in place and remains valid. This includes the petroleum products licence.

- Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel present or who will be present on site.
- Make provisions to have a Health, Safety and Environmental Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- Have the following emergency plans, equipment and personnel on site where reasonable to deal with all potential emergencies:
    - EMP / risk management / mitigation / emergency response plan and HSE manuals;
    - Adequate protection and indemnity insurance cover for incidents;
    - Comply with the provisions of all relevant safety standards;
    - Procedures, equipment and materials required for emergencies.
- If one has not already been established, establish and maintain a fund for future ecological restoration of the project site should project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.
- Establish and / or maintain a bi-annual reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- Submit bi-annual reports to the MEFT to allow for environmental clearance certificate renewal after three years. This is a requirement by MEFT.
- Appoint a specialist environmental consultant to update the EIA and EMP and apply for renewal of the environmental clearance certificate prior to expiry.

6.1.2 Skills, Technology and Development

During construction and operations of the facility, training will be provided to a portion of the workforce to be able to construct and operate various features of the fuel facility according to the required standards. Skills will be transferred to an unskilled workforce for general tasks. The technology required for the development of the facility may be new to the regional industry, aiding in operational efficiency. Development of people and technology are key to economic development.

Desired Outcome: To see an increase in skills of local Namibians, as well as development and technology advancements in the fuel industry.

Actions

Mitigation:

- If the skills exist locally, contractors must first be sourced from the town, region, and then nationally. Deviations from this practice must be justified.
- Skills development and improvement programs to be made available as identified during performance assessments.
- Employees to be informed about parameters and requirements for references upon employment.
- The Proponent must employ local Namibians where possible. Deviations from this practise should be justified appropriately.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Record should be kept of training provided.
- Ensure that all training is certified or managerial reference provided (proof provided to the employees) inclusive of training attendance, completion and implementation.
- Bi-annual summary reports on all training conducted.

6.1.3 Revenue Generation and Employment

Construction of the facility is hinged on employment. Skilled and unskilled labour will be required for the installation of the tanks and general earth works. Unskilled labour may be sourced locally while it is expected that skilled contractors within Namibia will be used for specialised work. The construction phase will therefore contribute to employment creation in the unskilled labour sector while contributing to sustaining employment of the skilled sector during the construction phase.

The proposed facility is located at the end of the Trans Caprivi Highway, close to the border between Namibia and Zambia. It may therefore be expected that a large percentage of trucks travelling along this route may require fuel and a safe overnight parking area. The change in land use will lead to changes in the way revenue is generated and paid to the national treasury. An increase of skilled and professional labour will take place due to the operations of the facility.

Desired Outcome: Contribution to national treasury and provision of employment to local Namibians.

Actions

Mitigation:

- The Proponent must employ local Namibians where possible.
- If the skills exist locally, employees must first be sourced from the town, then the region and then nationally.
- Deviations from this practice must be justified.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Bi-annual summary report based on employee records.

6.1.4 Demographic Profile and Community Health

The project is reliant on labour during the construction and operational phases. The scale of the project is limited and it is not foreseen that it will create a change in the demographic profile of the local community. Community health may be exposed to factors such as communicable disease like HIV/AIDS as well as alcoholism / drug abuse, associated with foreign construction teams, the trucking industry and truck ports. The presence of the truck port will not increase such activities in the area as it will not increase the number of trucks passing through Katima Mulilo. However, if no security measures are in place on site, the facility may provide opportunities for socially deviant behaviour. An increase in foreign people in the area during the construction phase may potentially increase the risk of criminal and socially / culturally deviant behaviour. However, such trends are considered unlikely. Spills and leaks may present risks to members of the public. The project may further contribute to cumulative demand for services for the region which includes electricity and water supply.

Desired Outcome: To prevent the in-migration and growth in informal settlements and to prevent the spread of diseases such as HIV/AIDS.

Actions:

Prevention:

- Employ only local people from the area, deviations from this practice should be justified appropriately.
- Adhere to all local authority by-laws relating to environmental health and sanitation requirements.
- Facility design to incorporate water and energy saving technologies such as low energy electrical appliances and lighting.
- Strict security that prevents unauthorised entry. Loiterers, beggars and other members of public that do not make use of the fuel facility and its services should not be allowed on site. This will prevent and discourage socially deviant behaviour on site.

Mitigation:

- Educational programmes for employees on HIV/AIDs and general upliftment of employees' social status.
- Appointment of reputable contractors.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Facility inspection sheet for all areas which may present environmental health risks, kept on file.
- Bi-annual summary report based on educational programmes and training conducted.
- Bi-annual report and review of employee demographics.

6.1.5 Fuel Supply and Truck Port

The construction and operation of the facility will aid in securing fuel supply to mainly the trucking industry as well as provide safe overnight parking to the trucking industry. This in turn will indirectly increase highway safety, traffic congestion and driver and cargo safety.

Desired Outcome: Ensure a reliable supply of fuel and safe overnight parking remains available to the area and the trucking industry.

Actions

Mitigation:

- Ensure compliance to the petroleum regulations of Namibia.
- Proper management to ensure constant supply.
- Record supply problems and take corrective actions.
- Ensure security and management measures are in place at the truck port.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Record supply problems and corrective actions taken and compile a bi-annual summary report.

6.1.6 Traffic

The facility may increase the traffic flow to the site through the provision of construction material (construction phase) and fuel (operational phase). Trucks will frequent the site to collect fuel and access the truck port. This may increase the risk of incidents and accidents. In turn, the truck port will result in less truck parking in the roads in town overnight, reducing traffic congestion and the possibility of related incidents.

Desired Outcome: Minimum impact on traffic and no transport or traffic related incidents.

Actions

Prevention:

- Erect clear signage regarding access and exit points at the facility.
- Consultation and approval from the relevant authorities regarding designs and access to the facility from the main road are required.

Mitigation:

- Tanker trucks delivering fuel and trucks waiting to collect fuel or access the truck port should not be allowed to obstruct any traffic.
- If any traffic impacts are expected, traffic management should be performed to prevent these.
- The placement of signs to warn and direct traffic will mitigate traffic impacts.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Any complaints received regarding traffic issues should be recorded together with action taken to prevent impacts from repeating itself.
- A bi-annual report should be compiled of all incidents reported, complaints received, and action taken.

6.1.7 Health, Safety and Security

Activities associated with the construction and operational phases will be reliant on human labour and therefore will expose them to health and safety risks. Activities such as the operation of machinery and handling of hazardous chemicals (inhalation and carcinogenic effect of some petroleum products), will pose the main risks to employees. Security risks will be related to unauthorized entry, theft and sabotage. Social ills and the spread of disease are often associated with the trucking industry.

Desired Outcome: To prevent injury, health impacts and theft.

Actions

Prevention:

- All health and safety standards specified in the Labour Act should be complied with.
- Clearly label dangerous and restricted areas as well as dangerous equipment and products.
- Equipment that will be locked away on site must be placed in a way that does not encourage criminal activities (e.g. theft).
- Provide all employees with required and adequate personal protective equipment (PPE).
- Ensure that all personnel receive adequate training on operation of equipment / handling of hazardous substances.
- Implementation of maintenance register for all equipment and fuel / hazardous substance storage areas.

Mitigation:

- The contact details of all emergency services must be readily available on site.
- Selected personnel should be trained in first aid and a first aid kit must be available on site.
- Implement and maintain an integrated health and safety management system, to act as a monitoring and mitigating tool, which includes: colour coding of pipes, operational, safe work and medical procedures, permits to work, emergency response plans, housekeeping rules, MSDS's and signage requirements (PPE, flammable etc.).
- Security procedures and proper security measures must be in place to protect workers and clients, especially during cash in transit activities.
- Reduce the amount of cash kept on site to reduce the risk of robberies.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Any incidents must be recorded with action taken to prevent future occurrences.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when training were conducted and when safety equipment and structures were inspected and maintained.

6.1.8 Fire

Construction and operational activities may increase the risk of the occurrence of fires. Hydrocarbons are flammable and therefore presents a fire and explosion risk.

Desired Outcome: To prevent property damage, veld fires, possible injury and impacts caused by uncontrolled fires.

Actions:

Prevention:

- Ensure all chemicals are stored according to MSDS and SANS instructions.
- Maintain regular site, mechanical and electrical inspections and maintenance.
- Clean all spills / leaks.
- Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).
- Follow SANS standards for construction, operations and maintenance of the facility.
- All dispensers must be equipped with devices that cut fuel supply during fires.

Mitigation:

- A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- Maintain firefighting equipment and promote good housekeeping.
- Personnel training (firefighting, fire prevention and responsible housekeeping practices).

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A register of all incidents must be maintained on a daily basis. This should include measures taken to ensure that such incidents do not repeat themselves.
- A bi-annual report should be compiled of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested and training given.

6.1.9 Air Quality

During construction, earth works and general construction may increase ambient dust levels. The operational phase will release fuel vapours into the air during refuelling of bulk storage tanks as well as at filling points. Prolonged exposure may have carcinogenic effects.

Desired Outcome: To prevent health impacts and minimise the dust generated.

Actions

Mitigation:

- Personnel issued with appropriate masks where excessive dust or vapours are present.
- A complaints register should be kept for any dust related issues and mitigation steps taken to address complaints where necessary e.g. dust suppression.
- Employees should be coached on the dangers of fuel vapours.
- Vent pipes must be properly placed as per SANS requirements.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Any complaints received regarding dust or fuel vapours should be recorded with notes on action taken.
- All information and reporting to be included in a bi-annual report.

6.1.10 Noise

Noise pollution may be generated due to heavy motor vehicles accessing the site to offload construction material, fuel or refuel and night-time activities at the truck port. Construction operations are noisy by nature. A fuel facility and truck port is a 24 hour operation which means that vehicle noise is generated throughout the day and night.

Desired Outcome: To prevent any nuisance and hearing loss due to noise generated.

Actions

Prevention:

- Follow the Health and Safety Regulations of the Labour Act and World Health Organization (WHO) guidelines on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment and nuisances at nearby receptors.
- All machinery must be regularly serviced to ensure minimal noise production.
- Keep volume of public address systems on a level where neighbours are not impacted on.
- Manage noise caused by clients – loud music etc.

Mitigation:

- Hearing protectors as standard PPE for workers in situations with elevated noise levels.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Health and Safety Regulations of the Labour Act and WHO Guidelines.
- Maintain a complaints register.
- Bi-annual report on complaints and actions taken to address complaints and prevent future occurrences.

6.1.11 Waste production

Various types of waste will be produced during the construction and operational phase. Waste may include hazardous waste associated with the handling of hydrocarbon products etc. Construction waste may include building rubble and discarded equipment contaminated by hydrocarbon products. Contaminated soil and water is considered as a hazardous waste. Domestic waste will be generated by the facility and related operations. Waste presents a contamination risk and when not removed regularly may become a fire hazard.

Desired Outcome: To reduce the amount of waste produced, and prevent pollution and littering.

Actions

Prevention:

- Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate.
- Ensure adequate waste disposal facilities area available to reduce littering.
- Ensure adequate waste storage facilities are available.
- Ensure waste cannot be blown away by wind.
- Prevent scavenging (human and non-human) of stored waste.

Mitigation:

- Waste should be disposed of regularly and at appropriately classified disposal facilities, this includes hazardous material (empty chemical containers, contaminated rugs, paper water and soil).
- The spill catchment traps and oil water separator should be cleaned regularly and waste disposed of appropriately. Surfactants (soap) may not be allowed to enter the oil water separator.
- See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers.
- Liaise with the municipality regarding waste and handling of hazardous waste.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method / facility.
- Any complaints received regarding waste should be recorded with notes on action taken.
- The oil water separator must be regularly inspected and all hydrocarbons removed once detected. Outflow water must comply with effluent quality standards as per town council requirements.
- All information and reporting to be included in a bi-annual report.

6.1.12 Ecosystem and Biodiversity Impact

The site is cleared of naturally occurring vegetation due to previous and current activities on and around the site. Construction and operations may present a pollution risk to the surrounding environment and biophysical features.

Desired Outcome: To avoid pollution of, and impacts on, the ecological environment.

Actions.

Prevention:

- Educate all contracted and permanent employees on the value of biodiversity.
- Inspection should be done of the area to ensure there are no animal nesting sites prior to construction. MEFT should be consulted on the relocation of these nesting sites, if any.

Mitigation:

- Report any extraordinary animal sightings to the MEFT.
- Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- Prevent scavenging of waste by fauna.
- The establishment of habitats and nesting sites at the facility should be discouraged where possible.

Responsible Body:

- Contractor
- Proponent

Data Sources and Monitoring:

- All information and reporting to be included in a bi-annual report.

6.1.13 Groundwater, Surface Water and Soil Contamination

During construction, heavy machinery may present a contamination risk to the soil, surface and groundwater through breakdowns. Operations will entail the storage and handling of various hydrocarbons (such as fuels and lubricants) which present a contamination risk. Such material may contaminate surface water, soil and groundwater. Contamination may either result from failing storage facilities, or spills and leaks associated with fuel handling. The facility will provide fuel to public vehicles which may further present contamination risks through overfills, spills and leakages. Modern fuel facilities are well designed to reduce leakages and spillages from contaminating soil and water.

Desired Outcome: To prevent the contamination of water and soil.

Actions

Prevention:

- All construction machines should be maintained to be in a good working condition during operations.
- Employ drip trays and spill kits during construction when onsite servicing / repairs of equipment is needed.
- Spill control structures and procedures must be in place according to SANS standards or better and connection of all surfaces where fuel is handled, with an oil water separator.
- All fuelling should be conducted on surfaces provided for this purpose. E.g. Concrete slabs with regularly maintained seals between slabs.
- The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, must be audited and corrections made where necessary.
- Proper training of operators must be conducted on a regular basis (Fuel handling, spill detection, spill control).

Mitigation:

- Any spillage of more than 200 litre must be reported to the Ministry of Mines and Energy.
- Spill clean-up means must be readily available on site as per the relevant MSDS.
- Any spill must be cleaned up immediately.
- The spill catchment traps and oil water separator should be cleaned regularly and waste disposed of at a suitably classified hazardous waste disposal facility.
- Surfactants (soap) may not be allowed to enter the oil water separator e.g. no soap usage on spill control surfaces.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- Inspection holes at the ends of the tanks must as a minimum be inspected every 14 days and measurements must be recorded for future reference. Inspection must include the evaluation of LNAPL on the water surface, if liquid is present.
- A report should be compiled bi-annually of all spills or leakages reported. The report should contain the following information: date and duration of spill, product spilled, volume of spill, remedial action taken, comparison of pre-exposure baseline data (previous pollution conditions survey results) with post remediation data (e.g. soil / groundwater hydrocarbon concentrations) and a copy of documentation in which spill was reported to Ministry of Mines and Energy.

6.1.14 Visual Impact

This is an impact that not only affects the aesthetic appearance, but also the integrity of the facility.

Desired Outcome: To minimise aesthetic impacts associated with the facility.

Actions

Mitigation:

- Regular waste disposal, good housekeeping and routine maintenance on infrastructure will ensure that the longevity of structures are maximised and a low visual impact is maintained.
- Lights should be directed downwards and away from residents where possible.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A bi-annual report should be compiled of all complaints received and actions taken.

6.1.15 Impacts on Utilities and Infrastructure

Any damage caused to existing infrastructure and services supply like roads, water and electricity where present.

Desired Outcome: No impact on utilities and infrastructure.

Actions

Prevention:

- Appointing qualified and reputable contractors is essential.
- The contractor must determine exactly where amenities and pipelines are situated before construction commences (utility clearance e.g. ground penetrating radar surveys).
- Liaison with the suppliers of services is essential.

Mitigation:

- Emergency procedures for corrective action available on file.

Responsible Body:

- Proponent
- Contractors

Data Sources and Monitoring:

- A bi-annual report should be compiled of all incidents that occurred and corrective action taken.

6.1.16 Cumulative Impact

Possible cumulative impacts associated with the construction and operational phase include increased traffic, dust and noise in the area.

Desired Outcome: To minimise all cumulative impacts associated with the facility.

Actions

Mitigation:

- Addressing each of the individual impacts as discussed and recommended in the EMP would reduce the cumulative impact.
- Reviewing biannual and annual reports for any new or re-occurring impacts or problems would aid in identifying cumulative impacts and help in planning if the existing mitigations are insufficient.

Responsible Body:

- Proponent

Data Sources and Monitoring:

- Annual summary report based on all other impacts must be created to give an overall assessment of the impact of the operational phase.

6.2 DECOMMISSIONING AND REHABILITATION

Decommissioning is not foreseen during the validity of the environmental clearance certificate. Decommissioning was however assessed as construction activities include modification and decommissioning. Should decommissioning occur at any stage, rehabilitation of the area may be required. Decommissioning will entail the complete removal of all infrastructure including buildings and underground infrastructure. Any pollution present on the site must be remediated. The impacts associated with this phase include noise and waste production as structures are dismantled. Noise must be kept within Health and Safety Regulations of the Labour Act or WHO standards and waste should be contained and disposed of at an appropriately classified and approved waste facility and not dumped in the surrounding areas. Future land use after decommissioning should be assessed prior to decommissioning and rehabilitation initiated appropriately. The EMP for the facility will have to be reviewed at the time of decommissioning to cater for changes made to the site and implement guidelines and mitigation measures.

7 CONCLUSION

The EMP should be used as an on-site reference document for all the operational activities. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken. The Proponent should use/develop their own in-house safety, health and environmental policies and standards in conjunction with the EMP. It is imperative that all construction and operational personnel are taught the contents of these documents to ensure better environmental practises all round.