

**APP-002650**

**CONSTRUCTION AND OPERATIONS OF A CONSUMER FUEL  
INSTALLATION ON ERF 4896, WALVIS BAY**

**ENVIRONMENTAL MANAGEMENT PLAN**



**Prepared by:**



**Prepared for:**

**CTI Mechanic Installation  
& Maintenance cc**

May 2021



<b>Project:</b>	<b>CONSTRUCTION AND OPERATIONS OF A CONSUMER FUEL INSTALLATION ON ERF 4896, WALVIS BAY: ENVIRONMENTAL ASSESSMENT SCOPING REPORT</b>	
<b>Report: Version/Date:</b>	Final February 2021	
<b>19Prepared for: (Proponent)</b>	CTI Mechanic Installation & Maintenance cc PO Box 90681 Klein Windhoek	
<b>Lead Consultant</b>	Geo Pollution Technologies (Pty) Ltd PO Box 11073 Windhoek Namibia	TEL.: (+264-61) 257411 FAX.: (+264) 88626368
<b>Main Project Team:</b>	<b>André Faul</b> (B.Sc. Zoology/Biochemistry); (B.Sc. (Hons) Zoology); (M.Sc. Conservation Ecology); (Ph.D. Medical Bioscience) <b>Wikus Coetzer</b> (B.Sc. Environmental and Biological Sciences); (B.Sc. (Hons) Environmental Sciences)	
<b>Cite this document as:</b>	Faul A, Coetzer W; 2021 May; Construction and Operations of a Consumer Fuel Installation on Erf 4896, Walvis Bay: Environmental Management Plan	
<b>Copyright</b>	Copyright on this document is reserved. No part of this document may be utilised without the written permission of Geo Pollution Technologies (Pty) Ltd.	



## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2</b>	<b>OBJECTIVES OF THE EMP.....</b>	<b>1</b>
<b>3</b>	<b>IMPLEMENTATION OF THE EMP.....</b>	<b>1</b>
<b>4</b>	<b>MANAGEMENT OF IMPACTS.....</b>	<b>1</b>
4.1	CONSTRUCTION AND OPERATIONS .....	1
4.1.1	<i>Planning.....</i>	<i>1</i>
4.1.2	<i>Skills, Technology and Development .....</i>	<i>3</i>
4.1.3	<i>Demographic Profile and Community Health .....</i>	<i>4</i>
4.1.4	<i>Fuel Supply .....</i>	<i>5</i>
4.1.5	<i>Traffic .....</i>	<i>6</i>
4.1.6	<i>Health, Safety and Security.....</i>	<i>7</i>
4.1.7	<i>Fire .....</i>	<i>8</i>
4.1.8	<i>Air Quality .....</i>	<i>9</i>
4.1.9	<i>Noise .....</i>	<i>10</i>
4.1.10	<i>Waste production .....</i>	<i>11</i>
4.1.11	<i>Ecosystem and Biodiversity Impact .....</i>	<i>12</i>
4.1.12	<i>Groundwater, Surface Water and Soil Contamination .....</i>	<i>13</i>
4.1.13	<i>Visual Impact.....</i>	<i>14</i>
4.1.14	<i>Impacts on Utilities and Infrastructure.....</i>	<i>15</i>
4.1.15	<i>Cumulative Impact.....</i>	<i>16</i>
4.2	DECOMMISSIONING AND REHABILITATION .....	17
<b>5</b>	<b>CONCLUSION.....</b>	<b>17</b>



## **1 INTRODUCTION**

---

CTI Mechanic Installation & Maintenance cc intends to construct and operate a consumer fuel installation on erf 4896 in the industrial area of Walvis Bay. The facility will supply diesel to construction and fleet vehicles of CTI Mechanic Installation & Maintenance cc and partner companies. The installation will consist of one 23 m<sup>3</sup> aboveground steel tank inside an adequately sized concrete bund area. Fuel will be dispensed to vehicles on a concrete spill slab with catchment pits. General operations will involve the receipt of fuel from road tankers, dispensing fuel to fleet and construction and day to day administrative tasks. In support of the environmental assessment, an environmental management plan (EMP) was developed and is represented in this report.

## **2 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.

## **3 IMPLEMENTATION OF THE EMP**

---

Section 4 outline 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 by the client where required. Delegation of mitigation 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 EIA, EMP and environmental clearance certificate must be communicated to the site managers. All monitoring results must be reported on as indicated. These are important for any future renewals of the environmental clearance certificate and must be submitted bi-annually to the Ministry of Environment, Forestry and Tourism.

## **4 MANAGEMENT OF IMPACTS**

---

### **4.1 CONSTRUCTION AND OPERATIONS**

The following section provide management measures for both the operational phase as well as construction activities related to the proposed construction and operations of the consumer fuel installation.

#### **4.1.1 Planning**

During the phases of planning for construction, operations and decommissioning of the proposed facility, it is the responsibility of the 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 consumer installation certificate and municipal approvals.
- ◆ Ensure that design parameters, where required, is approved by relevant authorities prior to construction of the facility.
- ◆ 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 (HSE) 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:
  - Risk management/mitigation/EMP/ 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.
- ◆ 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 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 EA and EMP and apply for renewal of the environmental clearance certificate prior to expiry.



#### **4.1.2 Skills, Technology and Development**

Various levels of unskilled to skilled labour will be used during the construction phase. Some skills transfer to unskilled workers may result. Some employment will be provided for the operations of the fuel installation. Income through salaries and wages will increase local spending power. Employment will be sourced locally while skilled labour/contractors may be sourced from other regions.

**Desired Outcome:** Employment and development of local Namibians and increase in their spending power through receipt of wages and salaries.

#### **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:**

- ◆ Summary report based on employee records..
- ◆ Bi-annual summary reports on all training conducted.

#### **4.1.3 Demographic Profile and Community Health**

The project relies on labour for construction and operations. 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 and alcoholism/drug abuse, especially during the construction phase when an increase in foreign people in the area may potentially increase the risk of criminal and socially/culturally deviant behaviour.

**Desired Outcome:** To prevent the in-migration and growth in informal settlements, prevent the spread of communicable disease and prevent/discourage socially deviant behaviour.

##### **Actions:**

##### **Prevention:**

- ◆ Employ only local people from the area, deviations from this practice should be justified appropriately.
- ◆ Adhere to all municipal by-laws relating to environmental health which include, but is not limited to, ablution and sanitation requirements.

##### **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.

#### **4.1.4 Fuel Supply**

The operations of the installation will aid in securing fuel supply to the fleet and construction vehicles of CTI Mechanic Installation & Maintenance and partner companies. This will aid in the efficiency of the operations of the proponent.

**Desired Outcome:** Ensure a secure fuel supply remains available to the proponent and partner companies.

##### **Actions**

##### **Mitigation:**

- ◆ Ensure compliance to the petroleum regulations of Namibia.
- ◆ Proper management to ensure constant supply.
- ◆ Record supply problems and take corrective actions.

##### **Responsible Body:**

- ◆ Proponent

##### **Data Sources and Monitoring:**

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

#### **4.1.5 Traffic**

CTI Mechanic Installation and Maintenance itself may have resulted in increased traffic flow in the adjacent streets, especially Grand Avenue. As the majority of vehicles collecting fuel will already be present at the site as part of the operations of the proponent, operations of the consumer fuel installation is not expected to result in a significant increase in traffic impacts apart from infrequent fuel deliveries. The use of separate entrance and exit gates to gain access to and from the site during periods of high traffic volumes will aid in alleviating possible traffic impacts. By providing fuel to fleet and construction vehicle on site in the light industrial area, the amount of vehicles needing to refuel in town will be reduced. This will mitigate traffic impacts at the already congested fuel retail facilities in town. Construction activities may however result in minor traffic impacts.

**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.

##### **Mitigation:**

- ◆ Tanker trucks delivering fuel and trucks collecting fuel should not be allowed to obstruct any traffic of entrances/exits of facilities in surrounding streets.
- ◆ Trucks entering and exiting the facility should not be allowed to make sharp turns on Grand Avenue, as this may result in traffic issues and damage to the road infrastructure.
- ◆ If any traffic impacts are expected, traffic management should be performed to prevent these.

#### **Responsible Body:**

- ◆ Contractor
- ◆ 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.

#### **4.1.6 Health, Safety and Security**

Activities associated with the construction and operational phases are reliant on human labour and therefore exposes 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), poses the main risks to employees. Security risks are related to unauthorized entry, theft and sabotage.

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

##### **Actions**

##### **Prevention:**

- ◆ 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.
- ◆ All health and safety standards specified in the Labour Act should be complied with.
- ◆ Implementation of maintenance register for all equipment and fuel/hazardous substance storage areas.

##### **Mitigation:**

- ◆ Selected personnel should be trained in first aid and a first aid kit must be available on site. The contact details of all emergency services must be readily available.
- ◆ 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.).
- ◆ Strict security that prevents unauthorised entry during construction phases.

##### **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.

#### 4.1.7 Fire

Operational and maintenance activities may increase the risk of the occurrence of fires. The site is located developed area which may increase the difficulty of fighting fires. The facility will only store diesel which is not as flammable as more volatile fuels. Due to the fire risk associated with fuel storage, it was further recommended by the municipality that the installation should not be within 50 m from an existing fuel storage facility. The nearest existing fuel storage facility is situated approximately 65 m from the proposed location with adequate space for firefighting.

**Desired Outcome:** To prevent property damage, 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 design, operation and maintenance of the facility, this includes refuelling locations and distances from boundaries.
- ◆ All dispensers must be equipped with devices that cut fuel supply during fires.
- ◆ The proponent should liaise with the local Fire Brigade to ensure that all fire requirements are met. This includes, but is not limited to SANS 10400 T: 2011.

##### **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, good housekeeping and 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.

#### 4.1.8 Air Quality

Fuel vapours are released into the air during refuelling of the storage tank as well as at filling point. Prolonged exposure may have carcinogenic effects. Dust may be generated during construction.

**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.

#### **4.1.9 Noise**

Construction (including maintenance and upgrades) may generate noise. This will be a temporary impact. During operations, noise pollution will be limited and may be related to vehicles accessing the site to offload fuel and during maintenance activities. As the site is situated in a light industrial area, noise impacts is not expected to negatively impacts surrounding land users and will mostly be related to possible hearing loss of onsite personnel.

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

#### **Actions**

##### **Prevention:**

- ◆ Follow World Health Organization (WHO) guidelines on maximum noise levels (Guidelines for Community Noise, 1999) to prevent hearing impairment.
- ◆ All machinery must be regularly serviced to ensure minimal noise production.

##### **Mitigation:**

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

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ WHO Guidelines.
- ◆ Maintain a complaints register.
- ◆ Report on complaints and actions taken to address complaints and prevent future occurrences.



#### **4.1.10 Waste production**

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

**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 temporary waste storage facilities are available.
- ◆ Ensure waste cannot be blown away by wind.
- ◆ Prevent scavenging (human and non-human) of waste.
- ◆ All regulation and by-laws relating to environmental health should be adhered to.

##### **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 should be cleaned regularly and waste disposed of appropriately. Surfactants (soap) may not be allowed to enter the oil water separator (where present).
- ◆ 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 (where present) must be regularly inspected and all hydrocarbons removed once detected. Outflow water must comply with effluent quality standards.
- ◆ All information and reporting to be included in a bi-annual report.

#### **4.1.11 Ecosystem and Biodiversity Impact**

The nature of the operational activities is such that the probability of creating a habitat for flora and fauna to establish is low. No significant impact on the biodiversity of the area is predicted as the site is currently void of natural fauna and flora. Impacts are therefore mostly related to pollution of the environment as well as potential impacts of bright lights on birds flying at night.

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

**Actions.**

**Mitigation:**

- ◆ Report any extraordinary animal sightings to the Ministry of Environment and Tourism.
- ◆ Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- ◆ Avoid scavenging of waste by fauna.
- ◆ Direct all lights down to working surfaces and use minimal lighting at night.
- ◆ The establishment of habitats and nesting sites at the facility should be avoided where possible.

**Responsible Body:**

- ◆ Proponent

**Data Sources and Monitoring:**

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

#### **4.1.12 Groundwater, Surface Water and Soil Contamination**

Operations entail the storage and handling of diesel which presents a contamination risk. Contamination may either result from failing storage facilities, or spills and leaks associated with overfilling or human error. Such spills may contaminate surface water, soil and groundwater.

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

##### **Actions**

##### **Prevention:**

- ◆ Spill control structures and procedures must be in place according to SANS standards or better.
- ◆ 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 should be cleaned regularly and waste disposed of at a suitably classified hazardous waste disposal facility.
- ◆ Surfactants (soap) may not be allowed to enter an oil water separator (where present) e.g. soap usage on spill control surfaces.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ 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.

#### **4.1.13 Visual Impact**

This impact is not only associated with the aesthetics of the site, but also the structural integrity. The facility will form part of the existing site, within a fenced area and will have a minimal impact regarding aesthetics.

**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.

##### **Responsible Body:**

- ◆ Proponent
- ◆ Contractors

##### **Data Sources and Monitoring:**

- ◆ A maintenance record should be kept.
- ◆ A report should be compiled of all complaints received and actions taken.

#### **4.1.14 Impacts on Utilities and Infrastructure**

Construction activities such as excavation and heavy vehicles accessing the site may lead to accidental damage to utilities and infrastructure, which in turn may lead to interruption of services such as water and electricity supply to the area.

**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 report should be compiled every 6 months of all incidents that occurred and corrective action taken.

#### **4.1.15 Cumulative Impact**

Possible cumulative impacts associated with the operational phase include increased traffic in the area. This will have a cumulative impact on traffic flow on surrounding streets.

**Desired Outcome:** To minimise cumulative all 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:**

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

#### **4.2 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 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 if the land would not be used for future purposes. 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.

### **5 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.