

**Application No: APP-001425**

**Environmental Impact Assessment For An Aboveground Fuel Tank  
With A Capacity Of 25 Cubic Meters At Karibib Town, Erongo Region**



*An above tank at Karibib Police station; Picture for illustration purposes only*

**CONSULTANT:**

**Mr. Ipeinge Mundjulu (BSc, MSc)**  
**Red-Dune Consulting CC**  
**P O Box 27623**  
**Cell: +264 81 147 7889**

**PROPONENT**

**Mr. V. Hanghome**  
**Kodo Drilling**  
**P O Box 206**  
**Karibib**



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<b>CLIENT</b>	Mr. V. Hanghome
<b>PROJECT CONSULTANT</b>	Mr. Ipeinge Mundjulu
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## **ACRONYMS**

<b>AIDS</b>	Acquired Immuno Deficiency Syndrome
<b>DEA</b>	Department of Environmental Affairs
<b>EA</b>	Environmental Assessment
<b>EAP</b>	Environmental Assessment Practitioner
<b>ECC</b>	Environmental Clearance Certificate
<b>EIA</b>	Environmental Impact Assessment
<b>EMA</b>	Environmental Management Act (No. 7 of 2007)
<b>EMP</b>	Environmental Management Plan
<b>HIV</b>	Human Immuno Virus
<b>MET</b>	Ministry of Environment and Tourism
<b>PPE</b>	Personal Protective Equipment
<b>RDC</b>	Red-Dune Consulting CC
<b>SM</b>	Site Manager

## **Executive Summary**

Kodo Drilling company owns various fleet of vehicles, trucks and machinery that use diesel for fuel. Like many businesses with fleets of vehicles, or farms, the company intends to install an above ground diesel fuel tank on its site at Karibib. The Environmental Management Act (Act No 7 of 2007) has listed the handling and storage of fuel for volumes of 30 cubic and above an activity that cannot be undertaken without an environmental clearance certificate.

The above diesel tank that Kodo Drilling is planning to install will have a capacity of 25 cubic meters. Although this capacity is below the threshold as indicated in the EIA Regulation of 30 cubic meters, an environmental management plan is still necessary to cater for the handling of dangerous good.

The aboveground tanks have huge advantages such as easily detectable leaks and quick to contain, frequent maintenance such as painting to prevent corrosion is easily possible, and they can be moved from one place to the other. Despite being safe when it comes to general pollution, they are vulnerable to physical damages such as vandalism, strong winds and lightning.

## **1. Introduction**

KODO Drilling is 100% Namibian owned company that provide drilling services to serve both Mining, Environmental and Water drilling industries. The company specializes in the following drilling types;

- Diamond Drilling
- Geotechnical Drilling
- Reverse Circulation (RC)
- DTH Drilling
- Water Drilling.

## **2. Company's operation activity**

Drilling operation requires various fleets of vehicle and equipment such as trucks, drill rigs, and off load pickups (Figure 2). Often, it is not convenient to fuel specialised trucks and drill rigs equipment at a normal service station. Normally, operators of small fleets of truck and specialized equipments has smaller fuel tank on their sites for convenience and safety on the roads when moving specialised equipments.



**Figure 1.** Kodo Drilling company fleets



### 3. Project location

The company headquarters, where it fleets and machinery are kept is situated at the industrial area of Karibib town in Erongo region (-21.95555556, 15.84500000) (Figure 2). Most of its drilling operations are at mines and various areas of Erongo region.



**Figure 2.** Location of Kodo Drilling site at the industrial areas of Karibib (White rectangle)

### 4. The proposed above fuel tank

Above-ground fuel tanks are considered to be convenient to operators that require frequent fueling of company vehicles, construction vehicles, power tools (generators), and other fleets (Figure 3). They are considered to be safe and easily monitored.



**Figure 3.** Illustration of the operation of an above fuel tank

#### **4.1. Tank design**

The proposed above tank will have a capacity of 25 cubic meters which translates to 25 000 liters of diesel. A typical drill rig truck has a diesel tank capacity of 500 liters. For safety, the industry best practise for above fuel tanks are double steel walled tanks although single wall tanks may also be used. The double walled tank exterior normally protects the inner tank from sun, rain, and punctures. Furthermore, in events where the inner tank leaks, the fuel will be contained within the outer tank, hence preventing pollution.

The tank will be mounted in a concrete slab which will have a capacity of 110 % capacity of the tank liquid (Figure 4). The 110% capacity is made to ensure containment in events of spillages.



**Figure 4.** An above fuel tank at Karibib Police Station (photo for illustration purposes only)

The above tanks specifications such as overfill protection, leak detection, standard and emergency ventilation and liquid level gauge are normally the responsibility of the tank manufactures.

The tank manufactures are licensed entities, which must abide by the industry standards such as the South African Standards (SANS). Hence it shall be a responsibility of Kodo Drilling to ensure that they acquire a certified tank from their suppliers. Furthermore, the place where tank will be installed must have sufficient lighting, an onsite oil spill skit (pads, socks, pillows etc.) and a fire response kit. The tank and the surrounding must have clearly warning signs such as NO FIRE, NO SMOKING, FLAMABLE MATERIALS etc.



## 5. Regulatory Requirements

The protection of the environment is provided for under the Namibia Constitution and the Environmental Management Act 2007 (Act No 7 of 2007) (EMA).

According to the Environmental Impact Assessment Regulation Government Gazette of 6 February 2012 No. 4878, of the Environmental Management Act, 2007 (Act No 7 of 2007), the proposed construction and operation of an aboveground fuel tank is a listed activity that may not be undertaken without an ECC.

### ***HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE***

- |   |
|---|
| <p>9.1 <i>The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.</i></p> <p>9.4 <i>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.</i></p> <p>9.5 <i>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.</i></p> |
|---|

Due to the fact that the tank capacity shall be less than 30 cubic meters as per the Environmental Impact Assessment regulation 9.4 above, the company is required to develop an environmental management plan (EMP). This was further discussed during a meeting held with the office of the Environmental Commissioner on 7<sup>th</sup> May 2020.

## 6. The Need and Desirability of the Project

As mentioned before, drilling operation require specialised equipment some of which are not compatible to be fueled at a typical service station. Hence world over, companies with vehicle fleets normally install above ground fuel tank for safety and efficiency. According to **envirosafe**, the following advantages for an above fuel tanks makes it desirable for operators with fleets of vehicle to have one on site;

**“Early Detection of Leaks** – The biggest advantage of an Above Ground Fuel Storage Tank is

that visual inspections are possible as opposed to an underground storage tank where a leak can go undetected for a long time because it cannot be visually inspected for signs of corrosion or damage

**Easy Access for Inspections & Replacement** – The installation of above ground tank at project site enable for regular inspection and maintenance. ‘Furthermore an Above Ground Fuel Storage Tank can be moved from one location to another location if a business relocates.

## **6.1. Scope of the scoping report**

The scope of this project is to develop an Environmental Management Plan for an above ground fuel tank. Because of the statutory requirement, where the tank capacity is not eligible for full Environmental Impact Assessment

# **7. Description of the Affected Environment**

## **7.1. Land use**

Kodo drilling company operation are located at the industrial area of Karibib Town Council. The industrial area consists of other industrial activities.

## **7.2. Population demography**

According to the latest Labour Survey of 2016, Namibian total population stood at 2,324,388 million people with the total labour force of 1,026,268 million people. Of the total labour force, 69.4% are employed while 34.0% are unemployed. Erongo region has a total population of 182,402 thousand people with a total labour force of 107,523. Of the total workforce in the region, 78.1% and 21.9% are employed and unemployed respectively. Karibib has a total population of 13 320 thousand people and an annual growth rate of 1.0%. About 76% of the population comprises of the labour force with 59% and 41% employed and unemployed respectively. Karibib is sparsely populated with a population density of 0.9 persons per km<sup>2</sup>.

## 8. Project Alternatives

The provision of EMA requires an EIA to explore various project alternative which aims to ensure that a chosen project component does not have significant impact to the environment. Project alternative ranges from not implementing the project (No go alternative), when the environmental impacts are severe, or there is high degree of uncertainty. Other alternative considers the project site, technology and equipment to be used. The description of alternative is given in the table 1 below.

**Table 1.** Project alternatives

Alternative	Description	Advantages	Disadvantage	Chosen Option
<b>Above ground fuel tank</b>	For the company to install a fuel storage tank above the ground	<p><b>“Early Detection of Leaks –</b> The biggest advantage of an Above Ground Fuel Storage Tank is that visual inspections are possible as opposed to an underground storage tank where a leak can go undetected for a long time</p> <p><b>Easy Access for Inspections &amp; Replacement –</b> The installation of above ground tank at project site enable for regular inspection and maintenance. ‘Furthermore an Above Ground Fuel Storage Tank can be moved from one location to</p>	<ul style="list-style-type: none"> <li>• The tank can be vandalized if not protected</li> <li>• The tank can be prone to physical damage such as wind rain, lighting etc. if not properly installed.</li> </ul>	Yes

		another location if a business relocates.		
<b>Underground fuel tank</b>	For the company to install a fuel storage tank under ground	<ul style="list-style-type: none"> <li>• Not prone to vandalism, physical destruction such as wind, rain lighting or any other physical damages</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to monitor for leakages</li> <li>• Can cause underground pollution for a long time before leakages are detected</li> <li>• Difficult and expensive to relocate if the need arises</li> </ul>	NO

## 9. Policy and Legal Framework

**Table 4.** Regulatory framework applicable to the project

REGULATORY FRAMEWORK	SUMMARY	APPLICABILITY
<b>The Namibian Constitution</b>	The State shall actively promote and maintain the welfare of the people by adopting policies aimed at ... The maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future	Protection of the environment and biodiversity
<b>Environmental Management Act No. 7 of 2007</b>	This act aims to promote the sustainable management of the environment and the use of natural resources and to provides for a process of assessment and control of activities which may have significant effects on the environment; and to provide for incidental matters	The acts provide a list of activities that may not be undertake without an environmental clearance certificate to prevent environmental damages
<b>Atmospheric Pollution Prevention Ordinance Act No.11 of 1976)</b>	This Ordinance serves to control air pollution from point sources, but it does not consider ambient air quality. This ordinance is being repealed by the proposed Pollution Control and Waste Management Bill. Any person carrying out a ‘scheduled process’ which are processes resulting in noxious or offensive	Generation of Greenhouse Gases by the fuel



REGULATORY FRAMEWORK	SUMMARY	APPLICABILITY
	gases typically pertaining to point source emissions have to obtain a registration certificate from the Department of Health.	
<b>Water Resources Management Act (2004)</b>	This Act provides a framework for managing water resources based on the principles of integrated water resources management. It provides for the management, development, protection, conservation, and use of water resources. Furthermore, any watercourse on/or in close proximity to the site and associated ecosystems should be protected in alignment with the listed principles.	Ensure well-constructed storm water systems, ensure pollution control mechanism to avoid water pollution
<b>Petroleum Product and Energy Act No, 13 of 1990</b>	This Act provides a framework for handling and distribution of petroleum products which may include purchase, sale, supply, acquisition, possession, disposal, storage or transportation thereof.	Safe handling of the fuel
<b>Draft Pollution Control and Waste Management Bill</b>	This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management	To protect the Environment from possible hydrocarbons and oil leaks from the machinery and vehicles

<b>REGULATORY FRAMEWORK</b>	<b>SUMMARY</b>	<b>APPLICABILITY</b>
<b>Environmental Policy framework (1995)</b>	This policy subjects all developments and project to environmental assessment and provides guideline for the Environmental Assessment.	Consideration of all possible impacts and incorporate them in the development stages
<b>Regulations Related to the Health and Safety of Employees at Work. Reg No. 156</b>	Promotes the Safety and Health of employees at the work place	Ensure employees and public health
<b>Public Health and Environmental Act No. 1 of 2015</b>	To Protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.	Application of proper mitigation measure to prevent aesthetic pollution and water pollution
<b>Labour Act No. 11 of 2007</b>	This Act outlines the labour laws which encompass protection and safety of employees at work.	This project will require labour during its construction and operational stage
<b>Regional Council Act, 1992 (Act No. 22 of 1992)</b>	The Regional Councils Act legislates the establishment of Regional Councils that are responsible for the planning and coordination of regional policies and development. The main	Observe the regional by laws

REGULATORY FRAMEWORK	SUMMARY	APPLICABILITY
	objective of this Act is to initiate, supervise, manage and evaluate development at regional level.	
<b>Local Authority Act No. 23 of 1992 Government Notice of No.116 of 1992.</b>	This Act underlines the duties and functions of the Local Authority	The operation of the company must abide by Karibib Town Council laws as provided for under the local authority act
<b>Hazardous Substances Ordinance No. 14 of 1974</b>	This ordinance gives provision to control the handling of hazardous substance in all circumstances, such as manufacturing, imports and exporting of these to ensure human and environmental safety.	Handling of fuel, Fire and explosion risks
<b>Water Resource Management Act No.11 of 2011</b>	The Act stipulates the prevention of both Surface and Ground water sources.	Possibility of surface and groundwater contamination.
<b>Word's Best Practices</b>	<b><i>Precautionary Approach Principle</i></b>  This principle is worldwide accepted when there is a lack of sufficient knowledge and information about the possible threats to the environment. Hence if the anticipated impacts are greater, then precautionary approach is applied. In this project, there are no	Precaution measure must be applied during project operation

REGULATORY FRAMEWORK	SUMMARY	APPLICABILITY
	<p>eminent uncertainty however in cases when they arise, this approach should be applied.</p> <p><i>Polluter Pays Principle</i></p> <p>This principle ensures that proponents takes responsibility of their actions. Hence in cases of pollution, the proponent bears the full responsibility to clean up the environment.</p>	
<p><b>National Heritage Act No.27 of 2004</b></p>	<p>The Act gives provision of the protection and conservation of places and objects with heritage significance.</p>	<p>There were no heritage features on site or within the close vicinity of the site.</p>

## **10. Stakeholder Consultation**

Karibib Town Council was consulted and presented with the proposal. The town council advised Kodo Drilling to consult the Ministry of Environmental and Tourism in accordance to the Environmental Management Act (Act No.7 of 2007). A meeting was held with the MET, department of environmental affairs in particular to discuss the way forward. DEA advised that an Environmental Management Plan is required for the installation and operation of the above tank fuel since it is below the threshold of the 30 cubic meters of which an EIA would be required. The support letter from Karibib Town Council is attached in Appendix 1.

## 11. Impact Identification and Risk Assessment

### 11.1. Impact Identification

Standard practice of impact identification using a checklist method was used to identify potential environmental impacts during construction and operational phase (Table 2 & 3). This process resulted from literature and site assessment.

**Table 2..** Impact identification during Construction

Potential Impact	Physical Environment				Biological Environment		Human Environment				
	Land Degradation	Water Quality	Air Quality	Noise	Flora	Fauna	Health	Safety	Displacement	Employment	Heritage
Digging & Excavating	X						X	X			
Oil leakages	X	X									
Accident								X			
Occupational Health Risk							X				
HIV/AIDS							X				
Employment										X	

**Table 7.** Impact identification during Operation Phase

Potential Impact	Physical Environment				Biological Environment		Human Environment				
	Land	Water Quality	Air Quality	Noise	Flora	Fauna	Health	Safety	Displacement	Employment	Heritage
Oil spill	X	X					X	X			
Fire and explosion risk								X			
Gaseous effluent			X				X				
Occupational Health Risk							X				
HIV/AIDS							X				
Employment										X	

## 11.2. Criteria for Impact Assessment

The criteria used to assess the impacts and the method of determining their significance is outlined in Table 8. This process conforms with the Environmental Impact Assessment Regulations of Environmental Management Act, 2007 (Government Gazette No. 4878) EIA regulations. The approach for determining and analyzing impacts is undertaken into two steps.

- **Impact Determination;** during this step, the impact is assessed based on severity, spatial scale and its duration.
- **Impact Significance;** various rating exists to determine the overall rating of the impact

Impact significance is determined under two mitigation scenarios; **without mitigation** and **with mitigation**. The confidence of impact mitigation depends on the level of certainty based on available information to assess the impact. Impacts whose level of uncertainties are high, a specialist study maybe commissioned to understand and develop the mitigation measures. If after a specialist studies there are still further uncertainties pertaining the impact, a precaution measure is applied to allow for more studies to be undertaken.

**Table 8.** Criteria for impact assessment

<b>Risk Event</b>	<b>Rating</b>	<b>Description of the risk that may lead to an Impact</b>
<b>Impact type</b>	0	No Impact
	+VE	Positive
	-VE	Negative
<b>Probability</b>	The probability that an impact may occur under the following analysis	
	1	Improbable (Low likelihood)
	2	Low probability
	3	Probable (Likely to occur)
	4	Highly Probable (Most likely)
	5	Definite (Impact will occur irrespective of the applied mitigation measure)
<b>Confidence level</b>	The confidence level of occurrence in the prediction, based on available knowledge	
	L	Low
	M	Medium
	H	High
<b>Significance (Without Mitigation)</b>	0	None (Based on the available information, the potential impact is found to not have a significant impact)
	L	Low (The presence of the impact's magnitude is expected to be temporal or localized, that may not require alteration to the operation of the project)
	M	Medium (This is when the impact is expected to be of short term moderate and normally regionally. In most cases, such impacts require that the projects is altered to mitigate the impact or alternative method of mitigation is implemented)
	H	High (The impact is definite, can be regional or national and in long term. The impact could have a no go implication unless the project is re-designed or proper mitigation can practically be applied)
<b>Mitigation</b>	The applied measure / alternative to reduce / avoid an impact	



<b>Significance (With Mitigation)</b>	0	None (Based on the available information, the potential impact is found to not have a significant impact)
	L	Low (The presence of the impact's magnitude is expected to be temporal or localised, that may not require alteration to the operation of the project)
	M	Medium (This is when the impact is expected to be of short term moderate and normally regionally. In most cases, such impacts require that the projects is altered to mitigate the impact or alternative method of mitigation is implemented)
	H	High (The impact is definite, can be regional or national and in long term. The impact could have a no go implication unless the project is re-designed or proper mitigation can practically be applied)
<b>Duration</b>	Time duration of the impacts	
	1	Immediate
	2	Short-term (0-5 years)
	3	Medium-term (5-15 years)
	4	Long-term (more than 15 years)
	5	Permanent
<b>Scale</b>	The geographical scale of the impact	
	1	Site specific
	2	Local
	3	Regional
	4	National
	5	International

## 12. Risks Assessment

### 12.1. Construction

#### 8.3.1. Impact on Bio-Physical Environment

Potential Environmental / Social Impact	Mitigation Measures	Significance of the Impact
<b>Flora</b> The area does not have vegetation except from grass	1. Make effort to plant approve trees on site and not alien species	None
<b>Fauna</b> The area is not frequented by animals	1. If an animal is found at site, do not kill it, unless such animal pose eminent danger to humans	None
<b>Land Pollution / Surface and Ground Water Pollution</b> Concrete mixers would required for the foundation of the tank.	1. Cement mixing must be done with concrete mixer and not in the open 2. Store empty cement bag for proposer disposal to avoid littering 3. Servicing of vehicles and machinery must take place at designated sites	Insignificants with mitigation
<b>Air Pollution</b> It is inevitable that the movement of heavy vehicles loosen the top soil and makes it susceptible to wind erosion thereby causing	1. Don't shake cement in the open 2. Sand must be covered or sprayed with water to suppress dust 3. Adhere to the minimum speed limit of 30	Insignificants with mitigation

Potential Environmental / Social Impact	Mitigation Measures	Significance of the Impact
<p>dust pollution. Excavation, hauling of sand and construction material all produce large amount of dust.</p>	<p>or 40km/hour;</p> <ol style="list-style-type: none"> <li>4. Do not excavate, offload sand during heavy winds;</li> <li>5. Trucks carrying sand must be covered;</li> <li>6. Sand stock piles must be covered or regularly water sprayed;</li> <li>7. On site where soil is loosen by vehicle movement, apply dust suppression method such as water spraying;</li> <li>8. Cement and concrete must be mixed with concrete mixers and not manually in the open;</li> <li>9. Workers must not be exposed to excess dust and should be provided with appropriate PPE such as dust mask and ear muff</li> </ol>	
<p><b>Visual impact</b></p> <p>Littering from construction material and untidy house keeping</p>	<ol style="list-style-type: none"> <li>1. Ensure good housekeeping of the site</li> <li>2. Sand heaps must be well covered and, excavated gullies must be well filled</li> </ol>	<p>Insignificants with mitigation</p>

Potential Environmental / Social Impact	Mitigation Measures	Significance of the Impact
	5mg/m <sup>3</sup> for respiratory dust and 15mg/m <sup>3</sup> for total dust; 10. Cement bags must be stored and disposed of properly and may not be shaken in the open	
<b>Waste Generation</b> Waste generation shall include, general house hold waste, construction waste such as replace parts, broken parts, packaging material and used empty utilities.	<ol style="list-style-type: none"> <li>1. Provide Skip bins to collect waste and be disposed of at an approved disposal site</li> <li>2. Provide mobile toilets at the site</li> </ol>	Insignificant with mitigation
<b>Noise Pollutions</b> Noise from heavy vehicles may be nuisance a nuisance to the surrounding, although the site is far from residential place.	<ol style="list-style-type: none"> <li>1. Heavy vehicles must be well serviced</li> <li>2. Switch off engine for vehicles when not in use</li> <li>3. Drive at 30/km while on site</li> </ol>	Insignificant with mitigation

### 8.3.2. Socio-Economic Impacts

<b>Potential Environmental / Social Impact</b>	<b>Mitigation Measures</b>	<b>Significance of the Impact</b>
<p><b>HIV/AIDS, Alcohol and Drug abuse</b></p> <p>Namibia has high prevalence of HIV/AIDS and it is important to ensure that employees are sensitized about the pandemic.</p>	<ol style="list-style-type: none"> <li>1. Provide awareness to the employees / recyclers on danger of alcohol and drug abuse</li> <li>2. Provide Condoms at site</li> </ol>	<p>HIV is a social problem in Namibia, this aspect must be taken seriously.</p>
<p><b>Health and Safety</b></p> <p>The Regulations Relating to the Health and Safety of Employees at Work, made under Labour Act of 1992 (Act No. 6 of 1992) place legal duty on employers to provide a health and safe working environment to the employees and any person other than the employees who might be affected by their operations.</p>	<p><b>Health;</b></p> <ol style="list-style-type: none"> <li>1. Provide appropriate Personal Protective Equipment (PPE).</li> <li>2. Abide by the Occupational Health and Safety and Labour Act of Namibia and other statutory requirement such as International Labour Practise (ILO)</li> <li>3. Ensure adequate first aid kit</li> </ol>	<p>Insignificant with mitigation</p>
<p><b>Employment</b></p> <p>To improve the socio-economic condition to of the local people,</p>	<ol style="list-style-type: none"> <li>1. Ensure that all general work is reserved for local people unless in circumstances where specialized</li> </ol>	<p>With the high unemployment in Namibia, every employment created is significant</p>

Potential Environmental / Social Impact	Mitigation Measures	Significance of the Impact
	<p>skills are required.</p> <ol style="list-style-type: none"> <li>2. Fair compensation and labour practise as per Namibian Labour Laws must be followed</li> <li>3. Ensure skill transfer to the locals</li> <li>4. Use local supplier for good and service where possible</li> <li>5. Ensure all workers goes through an induction course</li> </ol>	
<p><b>Archaeology</b> There are no known of possible heritage or archaeology materials on site</p>	<ol style="list-style-type: none"> <li>1. Employee must be trained on the possible find of archaeological material in the area;</li> <li>2. Implement a chance find and steps to be taken when archaeological material finding (Heritage (rock painting and drawings), human remains or artefacts) are unearthed Stopping the activity immediately               <ol style="list-style-type: none"> <li>i. Informing the operational manager or supervisor</li> <li>ii. Cordoned of the area with a</li> </ol> </li> </ol>	<p>Not significant with mitigation</p>

Potential Environmental / Social Impact	Mitigation Measures	Significance of the Impact
	<p data-bbox="919 269 1310 354">danger tape and manager to take appropriated pictures.</p> <p data-bbox="835 378 1310 683">iii. Manager/supervisor must report the finding to the National Museum (+264 61 276800) or the National Forensic Laboratory (+264 61240461).</p>	

## 12.2. Operational Phase

### 8.4.1. Impacts on Physical Environment

Environmental / Social Impact	Proposed Mitigation Measures	Impact significance
<b>Vandalism</b>	<ol style="list-style-type: none"> <li>1. The premises must be fenced</li> <li>2. Hire security to guard the premises</li> </ol>	<ul style="list-style-type: none"> <li>• Physical inspection</li> </ul>
<b>Wind risk</b>	<ol style="list-style-type: none"> <li>1. Ensure proper tank installation with good quality materials</li> </ol>	<ul style="list-style-type: none"> <li>• Physical inspection</li> </ul>
<b>Lightning risk</b>	<ol style="list-style-type: none"> <li>1. Ensure a competent electrician install an anti-lighting material</li> </ol>	<ul style="list-style-type: none"> <li>• Physical inspection</li> </ul>
<b>Oil spills</b>	<ol style="list-style-type: none"> <li>1. Staff must be properly trained to fuel vehicles and handle fuel</li> <li>2. The fueling pipes nozzle must be fitted with a spill detector</li> <li>3. The fueling tanks must be installed on concrete or metal bund</li> <li>4. The concrete / metal containment must be designed to hold 110 percent of the tank liquid volume</li> <li>5. Waste water from the cleaning the surface must be disposed of at appropriated site,</li> <li>6. Provide an oil spill kit on site and train employees on oil spill emergency response such as, oil spill absorbent booms and pads.</li> </ol>	<ul style="list-style-type: none"> <li>• Physical inspections</li> </ul>
<b>Fuel tanks oil leakage</b>	<ol style="list-style-type: none"> <li>1. It is recommended to acquire a double walled tank</li> <li>2. Tanks must have leak detection system</li> <li>3. Ensure the acquired tank has a lead detection</li> </ol>	<ul style="list-style-type: none"> <li>• Physical inspection</li> </ul>



<b>Environmental / Social Impact</b>	<b>Proposed Mitigation Measures</b>	<b>Impact significance</b>
<b>Storm water contamination</b>	<ol style="list-style-type: none"> <li>1. The 110 % concrete / metal containment shall collect water during rain.</li> <li>2. The water must be disposed off at an appropriate place</li> </ol>	Visible concrete containment
<b>Waste Generation</b>	<ol style="list-style-type: none"> <li>1. Provide waste bins for general waste</li> <li>2. General waste must be separated from hazardous waste;</li> <li>3. Hazardous waste must be disposed of at an approved site;</li> </ol>	<ul style="list-style-type: none"> <li>• Waste bins on site</li> <li>• Physical inspection</li> </ul>

### **13. Closure / Decommissioning Plan**

Closure of an above fuel tank is simple and straight forward as it requires the removal of the tanks from the steel where it is mounted. The following procedures are critical during tank removal.

1. Prior to decommissioning, the proponent must inform the office of the Environmental Commissioner;
2. Ensure that the tank is completely empty of fuel
3. If the tank is being relocated, ensure its proper transportation
4. If the tank is not going to be used, contact authorized scrap yard to collect it for dismantling
5. All work must be supervised by qualified personnel.
6. Workers must be provided with all necessary PPE;
7. All wasted generated must be disposed of approved sites;

### **14. Conclusion and Recommendations**

#### **14.1. Conclusions**

An aboveground fuel tanks are common for business and farm operation. They are the most safest when it comes to handling of fuel. The proposed tank capacity is relatively small at 25 cubic meters. The aspect of oil spill, fire risk, tank leakage and land /water pollution are well addressed in the EMP. Henceforth, with the adequate implementation of this EMP, the operation of the proposed fuel tank will not pose any environmental threat.

#### **14.2. Recommendations**

This study recommends to the approving authority for the project to be approved and be issued with an environmental clearance certificate.

## 15. References

1. South African National Standards (SANS)
2. Purdue University, Above ground petroleum tanks (A pictorial guide)
3. Environmental Impact Assessment Study Report For The Proposed Installation Of 1100 Cubic Metres Of Liquidified Petroleum Gas Storage And Filling Plant On Lr Mombasa/Block Xlvii/173, Comarco Supply Base, Ganjoni Mombasa County
4. Namibian Statistically Agency: Namibia 2011 population and housing census main Report
- 5.

## **13. Appendices**

### **Appendix 1: Letter support from Karibib Town Council**



**KARIBIB TOWN COUNCIL**  
*Office of the Chief Executive Officer*

*Kalk Street*

*P.o. Box 19  
Karibib, Namibia*

**Tel: +264 (0)64 550016**

**Fax: +264(0)64 550032**

13<sup>th</sup> May 2020

Enquiries: Office of the CEO  
Email: [goreseb@karibibtown.org](mailto:goreseb@karibibtown.org)

**The Environmental Commissioner**  
Ministry of Environment and Tourism  
Private Bag 13306  
**WINDHOEK**

Dear Sir,

**SUBJECT: SUPPORT LETTER FOR PROPOSED AN ABOVE FUEL TANK FOR KODO DRILLING IN KARIBIB TOWN**

Kodo Drilling operates drilling operation in the industrial area of Karibib town in Erongo Region. Their vehicle fleets consist of drill rigs, trucks and pickups cars. It is more convenient to have a fuel tank at their premises to reduce frequent travelling to service station for fuelling.

The Karibib Town Council have no objection on the proposed installation of fuel tank at Kodo Drilling premises for as long as the Environmental Management Plan is in place. Owing to the Environmental Management Act (Act No 7. of 2007), handling and storage of fuel is a listed activity that should not be undertaken without an Environmental Clearance Certificate. The Environmental Impact Regulation of 2012, further states that, the storage of fuel of 30 cubic meters and more at one place requires an ECC.

Kodo Drilling has indicated that, they are planning to install an above tank with the capacity of 25 cubic meters. We have reviewed their Environmental Management Plan which addressed critical environmental concern that comes with handling and operation of an above fuel tank.

In light of the above, it is our wish that this project is granted an Environmental Clearance Certificate of which strict implementation of the management plan is enforced.

Please accept assurance of my highest considerations.

Yours Truly,

  
Lesly Grand Goreseb (Mr.)  
Chief Executive Officer



*All official correspondences must be addressed to the Chief Executive Officer*