ENVIRONMENTAL IMPACT ASSESSMENT FOR THE ESTABLISHMENT AND OPERATION OF A PROPOSED FUEL SERVICE STATION PROJECT AT OMUTSHONA FILLING STATION, OKATANA, OSHANA REGION

ENVIRONMENTAL SCOPING REPORT (ESR) AND ENVIRONMENTAL MANAGEMENT PLAN (EMP): ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC) APPLICATION

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MAFUTA
Environmental Consultants

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DOCUMENT VERSION

PROJECT NAME	**ENVIRONMENTAL IMPACT ASSESSMENT FOR THE ESTABLISHMENT AND OPERATION OF A PROPOSED FUEL SERVICE STATION PROJECT AT OMUTSHONA MINI MARKET, OKATANA, OSHANA REGION**
REPORT TITLE	**ENVIRONMENTAL SCOPING REPORT (ESR) AND ENVIRONMENTAL MANAGEMENT PLAN (EMP): ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC) APPLICATION: ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC)**
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DATE OF SUBMISSION	**10 April 2020**

EXECUTIVE SUMMARY

Omutshona Trading cc (CC/2013/01124), hereinafter referred to as Omutshona Trading or the Proponent proposes to construct and operate a fuel service station) in Okatana area of the Oshakati North East, Oshana Region along the Oshakati-Onhuno C45 Highway road. The proposed development will result in the establishment of two fuel storage tanks of both diesel and petrol connected to a pump for easy filling of vehicles. The proposed fuel storage tanks will have a capacity of 14 000 and 23 000 litres of Diesel and Petrol fuel, respectively. Thus, the combined capacity of fuel storage is 37 000 litres, i.e. 37 cubic meters (m^3). The total development footprint is approximately 1 000m^2 in size on a site of 1 262m^2 in extent.

The construction of Oshakati-Onhuno C45 Highway road has opened up the interior areas, hence the need for transport services and the related facilities like fuel service stations, garages, bus stops, etc. The entire area along that highway has no such facility as a proposed fuel station (service). The project Proponent therefore identified a ripe opportunity to establish a fuel service station in this remote area.

Since the fuel station is listed as one of the activities that cannot be undertaken without an environmental clearance certificate (ECC), this EIA exercise is in line with the regulations stipulated in the Environmental Management Act (EMA) No.7 of 2007 and its Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012. Subjection of the project to the EMA No. 7 of 2007 forms the basis of this EIA. The study project report is for construction and subsequent operations of a petrol and diesel fuel service station and associated activities. Therefore, in order to comply with the EMA, an EIA study needs to be conducted; an EIA report (including an Environmental Management Plan) compiled and submitted to the Department of Environmental Affairs (DEA) at the Ministry of Environment, Forestry and Tourism (MEFT) for consideration of an ECC.

Brief Project Description

The service station will offer the following services on sell on site:

- Petrol and diesel fuel;
- Small grocery shop and vehicle accessories; and
- Servicing and washing of motor vehicles.

Further service infrastructures to be established for the operation of the fuel station include:

- Service area building;

- Solid and sewer management facilities;
- Liquid petroleum fuel station;
- Surface water drainage
- Firefighting equipment
- Fill pipes and Lighting; and
- access roads

The project shall involve the setting up of 2 modern fuel dispensing pumps, 1 for petrol and 1 for diesel. A total of 2 tanks shall be buried underground at a depth of 3.5 meters with a capacity of 23 000 and 14 000litres petrol and diesel, respectively. All the pumps shall operate under a canopy (shed). A localized drainage system shall be in place to capture fugitive leak fuel which will be directed to an oil separator for sound environmental stewardship.

EIA Methodology

The EIA study for this project was done in a holistic approach observing all the protocols and regulations as governed by the Namibian Environmental Impact Assessment Regulations of 2012. The EIA process complied with Environmental Management Act 7 of 2007. The methodology followed is summarised below.

Scoping process- the scoping process was done to identify key issues to be considered in this study and also to know the stakeholders to consult.

Consultation with Stakeholders- the public was notified of the EIA activities through various platforms and the local communities have been consulted for their opinions on issues relating to the potential ecological and socio-economic impacts of the project activities. Extensive interviews were carried out in the affected community.

Impact Assessment and Evaluation- all the current and potential impacts identified during the scoping phase associated with project activities was assessed using checklist method. Impacts evaluation was carried out using ISO 14001 approach and mitigation measures were given to reduce the significance up to acceptable levels.

EMP Drafting- an EMP was developed which will address environmental management statements for all the phases of the project, this form an integral part of the EIA Report.

Public Consultation

Public Consultation was carried out as defined in the EIA Regulations (2012)'s Section 21 of the Regulations details steps to be taken during a given public consultation process and these have been used in guiding our process.

Formal public involvement has taken place via public consultations and focal meetings, newspaper announcements to inform the public about project and the EIA study.

The results of consultations with other stakeholders, community and other local people provided information relevant to a number of aspects of the EIA.

Communication with stakeholders and community people was facilitated through the following means:

- Circulation of a Background Information Document (BID) which was compiled containing the information of the project.
- Notices were placed in the newspapers (*The Namibian* and the *New Era*).
- Announcement of EIA process in the common public meeting points (small A4 poster of the EIA) were placed at the frequented public areas near the site such as along the C41 Oshakati-Onhuno highway for the local people and other users of the highway passing by the site.
- Formal public involvement was facilitated in the form of two public consultations meetings as it was announced newspaper announcements and face-to-face interactions with the locals.

Major Potential Environmental impacts identified

Environmental potential **positive** impacts cited were as follows: -

- During the construction phase, positive impacts of the project shall include an increase of casual employment and artisans in the short term;
- Long term operational phase benefits shall include increase in permanent jobs and income opportunities, better use of site, improvement of infrastructure and increased revenue for the constituency and National Governments among many others.
- In terms of **negative** impacts, the following have been identified

- Soil and water resources pollution through wastewater/effluent run-off
- health and safety risks and hazards such as fire outbreaks
- environmental degradation through pollution
- Noise
- Air pollution (dust generation during construction) and potential emissions from project delivery trucks

The potential negative impacts have been assessed and applicable mitigation measures thereof provided under the respective sections of this report.

Recommendations and Conclusion

The Environmental Impact Assessment (EIA) process for the fuel service station development has been undertaken in accordance with the EIA Regulations published in Government Notice No. 30, in terms of Section 56 of the Namibia Environmental Management Act, 2007 (Act No. 7 of 2007).

The EIA process was done based on the Environmental Consultant's experience and most importantly the inputs from the local members of the public (Interested and Affected Parties (I&APs)), i.e. comments and concerns raised during the EIA process (public consultation). The public consultation process has therefore been inclusive, and every effort has been made to include representatives of all stakeholders in the process.

Furthermore, the proposed project design has integrated mitigation measures with a view to ensuring compliance with all the applicable laws and procedures. During project implementation and occupation, Sustainable Environmental Management (SEM) will be ensured through avoiding inadequate/inappropriate use of natural resources, conserving nature sensitively and guaranteeing a respectful and fair treatment of all people working on the project, general public at the vicinity and inhabitants of the project.

In relation to the proposed mitigation measures that will be incorporated during construction phase, the development's input to the society; and cognation that the project is economically and environmentally sound, establishments are considered beneficial and important. It is our considerable opinion that the proposed development is a timely venture that will subscribe to proponent's timely investment and also the government's intention to subsidize fuel in Namibia.

Consequently, following conclusions and recommendations have been reached and made by Mafuta Environmental Consultants (MEC), respectively:

MEC are confident that the identified potential negative impacts associated with the proposed fuel service station and related activities were found to be more of medium significance rating. The project can be allowed to go ahead with the implementation provided the outlined mitigation measures are adhered to. Major concerns should nevertheless be focused towards minimizing the occurrence of impacts that would degrade the general environment. Therefore, these impacts can be mitigated by effectively implementing the recommended management action measures and continual monitoring as recommended herein.

Thus, from all the findings (specifically from the general public identified during consultation period) of this report, it is recommended that the development be authorised as the local public is really positive and looking forward to see development in their area. It is therefore, recommended that the fuel station construction and operations on the project site be granted an Environmental Clearance Certificate, and provided that the following crucial recommendations are adhered to:

- All mitigations provided in this EMP should are implemented as stipulated and **where required and improvements should be effectively made in order to achieve environmental sustainability goals**. Thus, **satisfying the requirements of and compliance with the EMA No. 7 of 2007, its 2012 EIA Regulations and the environmental clearance certificate conditions.**
- All required environmental management permits, licenses and approvals for the construction and operations are obtained as required (please refer to the Permitting and Licensing in **Table 8** of this document);
- The Proponent and all their workers complies with the legal requirements governing this type of project and its associated activities;
- Environmental monitoring requirements recommended are adhered to; and
- All the necessary environmental (water and biodiversity) and social (occupational health and safety) components are protected as recommended and respective precautions/mitigation measures provided are adhered to.

To sum up the main recommendations for the prevention and mitigation of adverse impacts, these are as follows:-

- The Proponent should follow the guidelines as set by the relevant governing departments to safeguard and envisage environmental management principles during construction and operation/occupation phases of the proposed project;
- Water resources pollution preventive measures should be included in the project designs and set up during construction in preparation for the operational phase. These measures include storm water management such as drainages; soak ways and low-liquid infiltration surfaces.
- Groundwater monitoring in the tank observation wells (TOWs) should at the fuel station should be conducted on a monthly basis;
- It is important that warning/ informative sign (bill boards) be erected at the site. These should indicate the operation hours and when works are likely to be started and completed. The signs should be positioned in a way to be easily seen by the public and mostly motorists;
- All solid waste materials and debris resulting from construction activities should be disposed off at approved dumpsites;
- All construction materials e.g. pipes, pipe fittings, sand just to mention a few should be sourced/procured from bonafide/legalized dealers;
- During construction all loose top soils should be compacted to prevent any erosion;
- Other appropriate soil erosion control measures can be adapted. Any stockpiles of earth should be enclosed, covered or sprinkled with water during dry or windy conditions to minimize generation of dust particles into the air;
- Once earthworks have been done, restoration of the worked areas should be carried out immediately by backfilling, landscaping/ levelling and planting of suitable tree species;
- Proper and regular maintenance of construction machinery and equipment will reduce emission of hazardous fumes and noise resulting from friction of metal bodies;
- Maintenance should be conducted in a designated area and in a manner not to interfere with the environment;
- A fully equipped first aid kit and other safety measures should be provided within the site;

- The contractor should have workmen's compensation cover and is required to comply with workmen's compensation Act as well as other relevant ordinances, regulations and Union Agreements; and
- The contractor should provide adequate security during the construction period.

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LIST OF ABBREVIATIONS

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
COEMP	Construction and Operations Environmental Management Plan
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&APs	Interested and Affected Parties
MEC	Mafuta Environmental Consultants
MEFT: DEA	Ministry of Environment, Forestry and Tourism's Directorate of Environmental Affairs
NHC	National Heritage Council
NEMA	Namibia Environmental Management Act
NORED	Namibia's regional Electricity Distributor
PRP	Pit Rehabilitation Plan
SANS	South African National Standard
ToR	Terms of Reference
UST	Underground Storage Tank

1. INTRODUCTION

1.1 Project Background

This report has been prepared as a presentation of the findings of them Environmental Impact Assessment (EIA) process for the proposed construction and operation of a fuel service station) in Okatana area of the Oshakati North East, Oshana Region along the Oshakati-Onhuno C45 Highway road. The Proponent for this project is Omutshona Trading cc (CC/2013/01124), hereinafter referred to as Omutshona Trading or the Proponent. The proposed development will result in the establishment of two storage tanks of both diesel and petrol connected to a pump for easy filling of vehicles. The proposed fuel storage tanks will have a capacity of 14 000 and 23 000 litres of Diesel and Petrol fuel, respectively. Thus, the combined capacity of fuel storage is 37 000 litres, i.e. 37 cubic meters (m^3). The total development footprint is approximately 1 000m^2 in size on a site of 1 262m^2 in extent.

The construction of Oshakati-Onhuno C45 Highway road has opened up the interior areas thus the need for transport services and the related facilities like fuel service stations, garages, bus stops, etc. The entire area along that highway has no such facility as a proposed fuel station (service).

The project Proponent realized a ripe opportunity to establish a fuel service station in this remote area. Since the fuel station is listed as one of the activities that cannot be undertaken without an environmental clearance certificate (ECC), this EIA exercise is in line with the regulations stipulated in the Environmental Management Act (EMA) No.7 of 2007 and its Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012. Subjection of the project to the EMA No. 7 of 2007forms the basis of this EIA. The study project report is for construction and subsequent operations of a petrol and diesel fuel service station and associated activities. Therefore, in order to comply with the EMA, an EIA study needs to be conducted; an EIA report (including an Environmental Management Plan) compiled and submitted to the Department of Environmental Affairs (DEA) at the Ministry of Environment, Forestry and Tourism (MEFT) for consideration of an ECC.

Subsequently, Omutshona Trading appointed Mafuta Environmental Consultants cc (MEC) to undertake the Environmental Impact Assessment (EIA) and prepare an environmental assessment report and develop an Environmental Management Plan (EMP) as required in terms of the EMA No.7 of 2007 and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012. The curricula vitae (CV's) of the responsible environmental assessment practitioners (EAPs) for MEC are attached as **Appendix F**.

1.2 Purpose of this EIA study

The EIA study serves to determine analyses and present the potential environmental impacts (positive and negative) of the development and associated activities. It further formulates remedial measures to mitigate the potential negative impacts and plan in such a way that enables a rational decision to be made regarding the operations and management of the project.

The EIA further contributes to the reduction or mitigation where possible of adverse impacts by generating a number of project alternatives for the proposed development and associated activities.

The purpose of this EIA is to establish the environmental sensitivities, impacts and mitigation measures with respect to the proposed establishment of the fuel service station project activities in Oshakati's Okatana area. This will effectively and adequately enable the following:

- Assessment of the state of the environment and establishment of environmental issues and factors associated with the proposed fuel service station project;
- Assessment and prediction of all possible and potential impacts of the project on components of the environment in terms of magnitude and importance; and
- Evaluation of alternatives operations and identification of the best options that are both cost effective and with least potential environmental impact.

This EIA study will further present ways to mitigate, prevent, minimize and/or manage potential significant negative impacts resulted from proposed development.

Therefore, this EIA Report has been prepared with a view to comply with Namibia's Environmental Assessment Policy of 1995, the Environmental Management Act No 7 of 2007 (Section 27(2)(a), Government Notice No 29 of 2012 for Listed Activities and EIA Regulations and the Petroleum Products and Energy Amendment Act, 1994 (Act 29 of 1994.

1.3 Terms of References

There was no formal project Terms of Reference provided by the Proponent. Therefore, the EIA process has been conducted as guided and set out by the EMA No. 7 of 2007 and its EIA Regulations to the proposed establishment of the fuel service station. The application is subjected to a scoping and environmental impact assessment process as stipulated in the 2012 EIA Regulations (GN 30 in GG 4878 of 6 February 2012) made by the Environmental Commissioner under Section 27 (3) of the

Environmental Management Act No.7 of 2007.

The use of EIA as a management tool in this project would ensure that Proponent complies with local, national, regional, and international environmental laws, standard design codes, promote consultation, and reduce future liabilities, so helping to protect the environment.). The EIA process covered the following steps, which are reported on in this document as follows:

- Provide a detailed description of the proposed activity **(Section 2);**
- Identify all legislation and guidelines that have reference to the proposed project **(Section 3);**
- A summary of the methodology followed in conducting the EIA according to the legal environmental framework of Namibia **(Section 4)**;
- Identify existing environmental (both bio-physical and socio-economic) conditions of the area in order to determine their sensitivity **(Section 5)**;
- Inform Interested and Affected Parties (I&APs) and relevant authorities of the details of the proposed project activities and provide them with a reasonable opportunity to participate during the process **(Section 6);**
- Consider the potential environmental and social impacts of the development, and assess the significance of the identified impacts **(Section 7).**
- Outline management and mitigation measures in a form of an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts **(Section 8);**

The scope of work for this assessment includes the following:

- Identification of proposed project activities' potential (negative) impacts associated with the, on the receiving environment including the local community and their assessment.
- Provide mitigation measures to avoid, reduce all these impacts identified.

The main objective of this study is to apply for an ECC as per the requirements of the Environmental Management Act (Act No 7 of 2007).

1.4 Benefits of the EIA

The benefits of the EIA will, among other things, include:

- Obtaining authorisation; this is required by regulatory authorities for any development that

pose significant impacts to the Environment;

- Providing a forward planning tool; when environmental implications are taken into account. It allows for important decisions to be built into the project while avoiding undue damage to the environment;
- Providing a designing tool that would allow a systematic evaluation of potential environmental problems from the project activities and identification of key issues which require special consideration for effective environmental management and controls;
- Involving all stakeholders through consultation so as to address common problems, impacts, and mitigating measures that might be proposed in order to obtain a social license for the project;
- Informing and assisting management with a view to establish and achieve long term management objectives in order to minimise associated financial and environmental risks.

1.5 Study Limitations

All information received from sources contributing to this project is considered as reasonably acceptable. All intended activities on the project will be assumed to bring up fruits of a sustainable development approach. However, there will be an Environmental Management Plan (EMP) to the proposed project which will be developed for the receiving environment not to be adversely affected from the initial stages of the project up to the implementation of the proposed land development and servicing project. The land (property) is being owned by the Proponent therefore no other site alternatives shall be considered in this report as part of the project scoping and as a result the study is confined to that property and land and its surrounding environment. This study focuses only at the assessment of proposed project location, its environment, associated impacts with proposed fuel service station development activities to the environment and the local community.

1.6 Assumptions, Uncertainties or Gaps in Know ledge

All assumptions, uncertainties and Gaps in knowledge described and listed below was in compliance with the requirements of the EMA Act No 7 of 2007 Section 15(2)(i). All assumptions were drawn from reasonable experience of the EAPs.

- All information provided by Omutshona Trading and their specialist consultants to Mafuta Environment was assumed as correct and valid at the time it was provided;

- Mafuta Environment does not accept any responsibility in the event that additional information comes to light at a later stage of the process;
- All data from an unpublished research is valid and accurate; and
- The scope of this investigation is limited to assessing the potential environmental impacts associated with the fuel service station development.
- The communities and stakeholders were understanding the whole project

2. DESCRIPTION OF EXISTING PROJECT ACTIVITIES

2.1 Project location

The proposed project development is located at Okatana of the Oshakati, Oshana Region along the Oshakati-Opuwo C41 Highway road. The project is under the jurisdiction of Okatana constituency under the Oukwambi Traditional Authority in the Oshana Region. The project site is located 7 km North East of Oshakati approximately 1 meter from the highway road. The proposed service station will be geographically located on the following coordinates: S -17.742047" E -15. 710177". The Google earth map below (Figure 1) gives an Arial view of the project site.

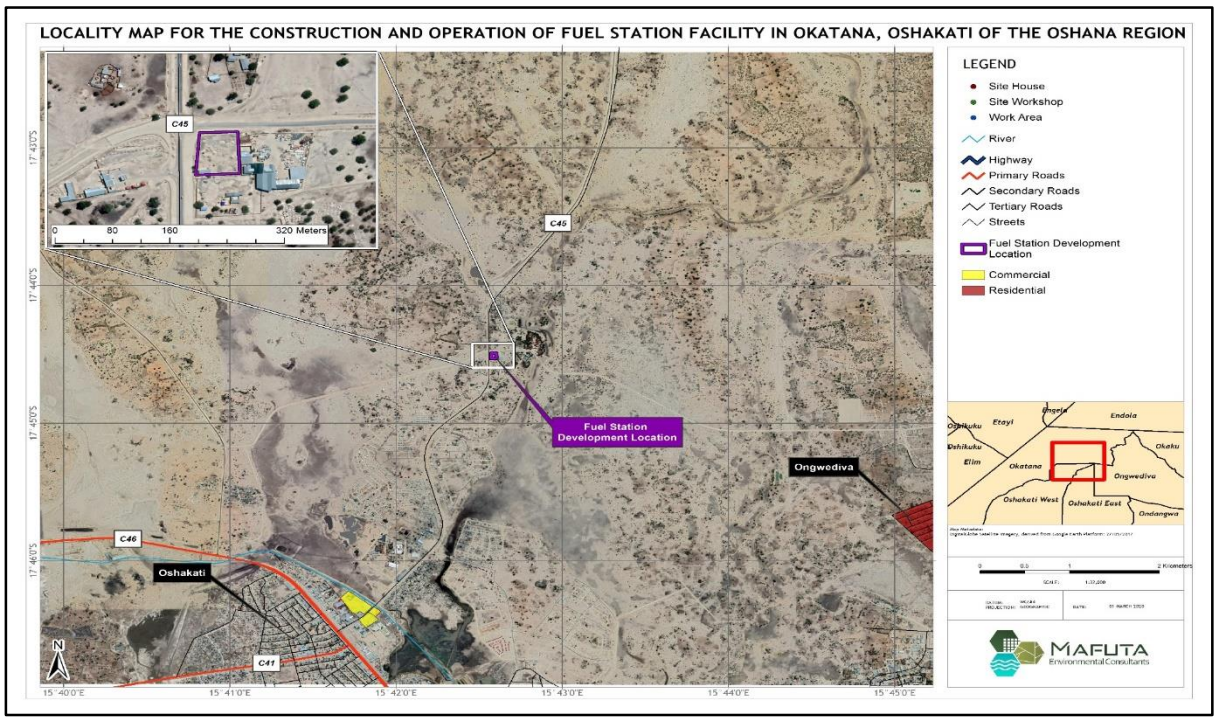

Figure 1: Locality map of the Omutshona Fuel Station project site in Okatana, Oshana Region

2.2 Project Description

2.2.1 Details of Any nearby Environmental Features

The site has been strategically chosen in such a way that the service station will not affect boreholes, waterways or wetlands that are likely to be affected by discharges from the site.

There is no any environmental sensitive feature near the project site that can be affected by discharge leaks from the service station, only small buildings/shops are nearby.

The proposed service station is earmarked to provide liquid Petroleum, Convenient Shop and ablution facilities to Okatana residents and all nearby villages as well as Oshakati – Onuno Highway users. Petrol and Diesel are the petroleum products (fuels) that will initially be sold at the commencement of the project operation. The Service Station is target to outreach a multitude of clients from different walks of life. The associated facilities that shall be provided will have an architectural design that take aboard physically challenged individuals. Public access to the service area will be restricted during construction phases. Construction area/site shall be covered with zinc sheet barriers to restrict entry to the construction and management personnel only.

The service station will offer the following services on sell on site:

- Petrol and diesel fuel;
- Small grocery shop and vehicle accessories; and
- Servicing and washing of motor vehicles.

The project shall involve the setting up of 2 modern fuel dispensing pumps, 1 for petrol and 1 for diesel. A total of 2 tanks shall be buried underground at a depth of 3.5 meters with a capacity of 23 000 and 14 000litres petrol and diesel, respectively. All the pumps shall operate under a canopy (shed). A localized drainage system shall be in place to capture fugitive leak fuel which will be directed to an oil separator for sound environmental stewardship.

All the area that has risk for receiving fuel leaks will be paved and oil-water interceptors will be dug to separate leak oils and fuel from entering storm drain or the environment. Approved safety strategies shall be put in place to reduce risks of fires, accidents, crime and social immoral activities. Firefighting equipment shall be placed at strategic positions at the facility. Water will be made available for the drinking, hygiene purposes and extinguishing fire. Sand buckets will be kept in store for firefighting as well.

2.2.2 Environmental Protection Measures

- This report serves as the Environmental impact assessment that is submitted to MEFT for approval as a document with comprehensive project description, outline Policy, Legal and other Administrative Frameworks that Proponent Petroleum Service Station need to conform or subscribe to.
- Periodic environmental audits shall be performed regularly during and after the tanks have been installed.
- Employees and public health protection measures will be assured. These will include insurance coverage for the staff and third party.
- Site plan shall also be approved before any works commence.

2.2.3 Site Layout Principles

The main elements of the service area include:

- Forecourt with fuel pumps;
- Small building with office, convenience shop, and other supporting rooms for the service station activity;
- Fuel Station and associated facilities;
- Storm and Foul Drainage;
- Water Supply; and
- Lighting.

A layout plan of the fuel storage tanks is attached as **Appendix E.**

2.2.4 Service Area Building

The building will incorporate principles of sustainable design and energy efficiency into its design and should achieve an A or B label under the Energy Performance of Buildings Directive. The facilities that will be provided in the main building structure will include:

- Convenience Shop;
- Toilet Block; and
- Additional back office facilities to service these amenities.

2.2.5 Solid Waste & Sewer Management

Waste Management

Waste bins (colour coded) will be provided for each section for temporarily holding of waste before delivery into the central solid waste collection area. Solid waste collection centre for the entire station will be located strategically and covered on top and on the sides to protect against weather and scavengers as per the Ministry of Health Standards.

Sewer Management

There is no sewer line that services the whole growth point. Therefore, the proposed site will use the conventional septic/soak pit system. This means that the Proponent will hire NEMA-approved waste management company to extract sludge from the septic tank periodically.

2.2.6 Liquid Petroleum Fuel Station Facilities

The Service Station will allow for one-way traffic flow with sufficient room to allow free flow of traffic during peak hours. The fuel storage tanks will be fitted with a leak detection system, which will measure any leak between the inner and outer shell. A visual and audible alarm will activate if any leak is detected.

Utilities

Electricity supply for the site will be provided by the Northern Regional Electricity Distributor (NORED). The daily potable water requirement will be supplied by an existing water connection system (to be connected to the existing water supply line). No further extension is required since the site is already well service with portable water.

2.2.7 Surface Water Drainage

The drainage design follows the principles of Sustainable Drainage Systems (SuDS), which will

limit the surface water runoff from the development to the existing rate of the green field site for a 1 in 100 year return period. The drainage design will provide a series of treatment systems, which combine to ensure that surface water runoff entering the receiving watercourse, is of a high (good) water quality.

Storm Water Management

This will include the installation of petrol and oil separators and any fuel/ chemical containment. The whole surface surrounding the project site shall be paved with impermeable surface to prevent leak oil, fuel or chemicals to percolate into the ground and the subsequent environmental contamination. The oil interceptor shall be constructed in a way that any liquid or fluid will by gravitation means does not flow into the storm water drain where oil/fuel will be separated prior to disposal into the natural environment. Water that collects into the oil separator shall be constantly sent for laboratory testing to ensure that there are no dissolved hazardous substances.

Storm water that is potentially contaminated shall pass through a well-maintained litter and silt trap, then an appropriately designed and regularly maintained fuel and oil trap (such as a coalescing plate separator or unit providing equivalent performance). Waste solids from the water treatment process shall be collected and disposed of outside any sensitive environment, in accordance with the requirements of EMA. However, in order to discgarge the wastewater or effluent or into the environment, a permit will need to be applied for from the relevant Division of the Department of Water Affairs and Forestry, Ministry of Agriculture, Water and Land Reform. This permit will need to be obtained prior to discharging any wastewater into the environment.

Wastewater Management

The forecourt shall be designed with drain channels to capture all wastewater from the forecourt, wash bays and service bays. All wash water shall be directed to a suitably designed oil interceptor to separate oil before the effluent is permitted to flow in public storm water system.

2.2.8 Fire Fighting Protection

Omutshona Trading shall ensure that mechanisms and plans are in place for water storage and supply in case of fire and a fire foam system shall provide protection to fire vulnerable areas (tanks loading racks, etc.). An emergency water supply system shall be installed around the Service Station to ensure safeness in case of fire outbreak. An appropriate inventory of fire extinguishers, at least two of 9 kgs of chemical powder, will be available at the site and the extinguishers shall be tested every six months. *No smoking* and *No cell phone* usage signs shall be significantly displayed in the forecourt to avoid fire triggering elements being used in or around the service station forecourt and filling points.

Calibration and Maintenance of Equipment

Omutshona Service Station equipment shall be calibrated in accordance with recommended standards and all calibration equipment must be proved and certified by competent firms/individuals within a recognized period of time, for instance meters should be inspected every 6 months

Vapour Vents

Underground storage tanks (USTs) shall be fitted with appropriately sized vapour vents which shall terminate in open air in such a position that flammable vapour will not accumulate or spread to unsafe place.

2.2.9 Fill Pipes

All direct fill pipes shall be of the same diameter as the outlet of the fuel delivery truck and each tank will have its own fill pipe and the size of the fill pipe should correspond to the size of delivery truck outlets. At the fill point the pipe shall determine with a tight fill adapter and a lockable fill cap, a spill containment device such as a stump shall be fitted at the fill point to prevent spill soaking directly into backfill and contaminate the ground.

Fill Point Seal caps will remain securely locked at all times to prevent unauthorized tampering with the products. Periodic environmental audits shall be performed as directed by MEFT.

2.2.10 Lighting

Road and area lighting will be provided along the full length of the internal road network within the service area, on the fuel filling area, on the security area and in the vicinity of the Service Station buildings. This will be done in order to ensure that vehicle routes and directions are clearly visible by day and night.

2.2.11 Scale of the Project

The Service Station is expected to have a daily sale of about 1 500 litres and 2 000 litres of diesel and petrol, respectively. Two pumps will be operated simultaneously. The Service Station will operate for 18 hours.

2.2.12 Implementation Strategy

The project shall start with the marking of the project area which shall be followed by the fencing and construction of the fuel service station on site. The construction shall involve removal of overburden and digging of the pit where the petrol tank will be placed (buried). Most of the work shall be manual.

The actual operation of the project shall involve the refueling of vehicles which will involve oil level checking and other free services for clients.

The main potential impacts stemming from the development include the following:

- Dust during the digging, excavation and crushing
- Accidental fuel and oil spillages
- Fire outbreaks
- There is potential for soil erosion as the soil is disturbed during excavation and scrapping of overburden.
- Crimes like robbery

- Improved standard of living for employed people
- Business agglomeration
- Easy access to fuel to locals and travellers
- Infrastructural development of the growth point
- Employment

2.2.13 Project Processes

Inputs

The inputs for the project works shall include:

- Fuel tanks;
- Fuel pumps;
- Electricity;
- Construction raw materials will include sand, cement, bricks, stones, gravel/ ballast, concrete, metals, among others. All these will be obtained from licensed dealers and especially those that have complied with the environmental management guidelines and policies (for instance sand and gravel suppliers);
- Construction vehicles (heavy trucks and other vehicles) and machines will include machinery such as concrete mixers, excavators and other relevant construction equipment. These will be used for the transportation of materials, mixing of materials and clearing of the vegetation and resulting construction debris. Most of the machinery will use petroleum products to provide energy;
- Most construction materials will be sourced locally but where the contractor deems necessary will import from other authorized countries especially the finishes;
- A construction labour force of both skilled and non-skilled workers will be involved;
- The project will begin after the Ministry of Environment, Forestry and Tourism (MEFT) issues an approval (ECC) to the proposed project;

Outputs

The project's outputs will be mainly refueling services, fast food retail, rest parking services and wind screen cleaning.

2.3 Project Location Alternative

From a socio-economic perspective, the project location would mean that the continual neglect of the location as an abandoned land facet. Without the proposed development project, the area would continue to be an open space being underutilized.

Exploiting the location for business alternative is favorable. Given the size of the land, the soils, the area cannot sustain agriculture and animal life so alternative development facilities like the proposed project seem to improve the living standards of the surrounding communities.

2.3.1 Alternative 1: Without Project Scenario

If there is no development allowed to take off on the proposed project site, the area remains as marginalized with no economic benefit. The intrinsic value of the land in question is considerably low taking into cognoscente the vegetation cover and type that the land facet embraces.

2.3.2 Alternative 2: With Project Scenario - Mixed Development

"With Project" scenario converts the land facet to an economic entity with more socio-economic benefits to the local society. The proximity of the site to residential area wills save the local people getting into town for trivial groceries, fueling their vehicles and other services that will then be readily available at their door steps.

This proposed project is meant to stimulate economic and social development of our country through meeting the high demand of petroleum products in the country and also to meet the Proponent's economic desires. The project area is along Oshakati-Onhuno C41 Road and therefore suitable for such project hence there will be no land use conflict. Furthermore, it will stimulate economic and social development of Okatana and Oshana region as a whole.

2.4 Anticipated Phases of the Development

2.4.1 Planning

The planning stage is very critical in project proposals basing on the theory that things do not go wrong, but they start wrong. Once an error is made in the planning stage, the whole life cycle of the project may be compromised or affected by such an error or there will be economic and time loss in a bid to rectify the error. Therefore, planning is very important and should be done appropriately and comprehensively. Below are some of the areas that were noted during the planning phase.

Criteria for Location of Fuel Filling Station

Several issues were put into consideration to come up with the selected site for the service station project which includes the following:

- ✓ The Service Station was located at a minimum distance of 100 m from any public institution such as schools, churches, public libraries, auditoriums, hospitals, public playgrounds, etc. as stipulated in Service Station guidelines
- ✓ Distance between the service station and another is at least 23 km.
- ✓ The Filling (Fuel) Service Station is not an area where the traffic situation is such that it will cause obstructions in entering or leaving the facility or on tight curves where visibility is not adequate.
- ✓ Vehicular access/egress/crossover should be reasonably safe with adequate approach distances especially where main roads and intersections are involved.
- ✓ Environmental impact on streams, aquifer, etc. has been taken into consideration. The Proponent has thus engaged Mafuta Environmental Consultants to undertake Environmental Impact Assessment on their behalf.
- ✓ Buildings are to be located at a minimum distance of 30 m from road property boundaries to provide adequate area for manoeuvrings of vehicles in the service area.
- ✓ Canopies and supports over pumps and service equipment will be constructed from non-combustible material.
- ✓ Petrol pumps shall be located at least 30 m from any residential building.

2.4.2 Construction

Construction Activities

Construction works are currently planned to commence early 2019 and are anticipated to last on a continuous basis for approximately 4 months, although the exact programme will be determined by the Construction Contractor. Similarly, resource levels and construction traffic volumes will be dependent on the requirements of the Contractor. Suitable traffic management arrangements will be implemented for the duration of the construction works. Haulage of tanks and materials to and from the construction site will be made from South Africa to Oshakati by road.

- Underground Storage Tanks (UST) shall as a minimum requirement have double walled of rolled carbon steel plates welded together.
- All storage tanks at retail dispensing sites shall be placed underground.
- There will be a reinforced concrete chamber which is water proof. The underground tanks will be located on the forecourt and have manholes for product offloading and dipstick checks. Remote fill box will be typical incorporating spill containment to prevent accidental releases entering the environment. Single walled tank installation with excavation lined with geo-fabric will be done to prevent migration of native soil into the backfill material;
- The tanks shall have a protective coating. As a minimum requirement, the tank shall be painted with a primer, and then coated with epoxy, coal tar epoxy or similar bituminous coating. Where the water table is high, additional protective coating measures must be undertaken.
- Two pump isles will be constructed with double hose pump per isle so as to dispense two different grades on either side (Recommended or as per Engineers' specification);
- Installation of piping for the distribution of the fuel from the fuel filling points to the UPSTs and from the UST's to the fuel dispensing units. All sub-surface piping will be contained within the secondary piping and laid in reverse graded trenches on non-cohesive bedding material so should product leak out of the pipes it will be contained within the secondary piping and drain back to the USTs;
- Construction of the service station on a hard standing layer which will include canopied forecourt area above the fuel dispensing points;

- Where aggressive soils have been encouraged and where the water table is high, cathodic protection should be used for single steel walled tanks. Otherwise, secondary contained tanks, i.e., a double-walled steel tank, double walled fiberglass or jacketed steel tanks (with high density polythene or fiberglass outer wall) should be used.
- Suitable sand shall be used for both bedding and backfilling of steel tanks.
- Installed tank and pipe work shall be hydrostatically tested.
- UST to be located so that delivery trucks do not unduly block forecourt traffic.
- UST location to allow trucks to reach all fill pipes using normal hose length.
- UST location to provide a forecourt gradient that allows complete drainage of delivery truck compartments.
- UST location to allow minimum maneuvering of truck before and after delivery including ability to exit in forward direction.
- UST shall be installed to avoid traffic load and should be sufficiently protected from traffic by using barriers.
- Placement of UST under canopy should be avoided.

Design of Infrastructure

Recommended best practice measures include the connection of site washrooms and toilets to deep sewerage, the use of double-contained fuel storage tank systems established in stable compacted soils and the implementation of a waste materials recycling plan.

All pipe-work containing petroleum products shall be double-contained, with the outer annulus draining to a spill box that facilitates monitoring and spill recovery. Pipe-work that only briefly contains petroleum products such as tank fills and vent pipes may be of single walled construction.

Forecourts and Fuel Dispensary Areas

The fuel dispenser area and forecourt shall be covered, paved and graded to contain potentially polluted runoff. This runoff should drain via collection sumps and then to an appropriate contaminated storm water oil interceptor.

The infrastructure Design incorporated industry best practice measures to minimize any fuel or other contaminant access to storm water drains or soakage.

Fuel Tanks

The area around tank fill boxes shall be graded to collect spills within a containment sump area and shall be designed to prevent external surface water from entering the sump area. Pipe-work shall direct overflow from the sump to the contaminated storm water treatment system. Fuel or hazardous chemical storage requires a license from the Ministry of Mines and Energy (MME). This is due to the fact that even very small leaks from underground tank and supply lines can, over time, cause extensive contamination of soil and ground water. In many cases this contamination can cost hundreds of thousands of dollars to clean up. These risks can be reduced by effective environmental management and maintenance of underground fuel storage systems.

For the proposed project to avoid cases of contamination, fuel tanks installation shall adopt the following basic installation principles:

- Tanks should not be placed directly in clay soils, as many types of clay accelerate corrosion. Instead, tanks shall be first placed in an inert material, such as sand and tank pits should be lined with geo-fabric to prevent migration of native soil into the backfill material.
- Sacrificial cathodes shall be attached as they can prolong the life of in-ground tank.
- Tanks and fuel lines should have double skins and be installed with a leak-detection system.
- Sites with high ground water levels should be avoided. The depth of the ground water and soil types should be determined before the tank is installed. The deeper the groundwater and the less porous the overlying strata, the lower the risk of contaminating the ground water
- Tank shall not be buried within the water table (the saturated areas of soils).
- New tank and lines should be placed in areas that allow free drainage of water so they will not be permanently inundated.

Vehicle Service Bay

Vehicle Service Bay shall be located in secure weatherproof buildings with reinforced concrete flooring that is seal coated to contain spilt fluids. All discharged fluids will drain to a purpose built containment system, pending treatment, recycling or disposal to an approved facility. Batteries and tyres (new or used) shall be stored in a secure weatherproof area pending off-site disposal, recycling or re use at an approved facility. This is to ensure they are protected from hazards such as vandalism, fire and chemical spillage. Any solid wastes, such as oil filters, brake pads or motor parts, shall be placed in weatherproof bins before recycling or offsite disposal at an approved facility.

Vehicle Wash Facilities

This facility will be located on weatherproof areas and on hardstand flooring to prevent the loss of wash-water and waxes to the environment and to prevent dilution of wastewater by rainfall. The wash down area shall drain to a holding tank where solids and oils can be treated and removed prior to effluent recycle or disposal. Treatment facilities may include sedimentation, facilities to break oily emulsions (e.g. chemical coagulation or dissolved air flotation) and the recovery of petroleum hydrocarbons (e.g. oils, grease, tars and detergents) for recycle or disposal.

2.4.3 Operational and Maintenance Phase

The project is set to operate for a minimum of 30 years at the planned service provision rate. This Service Station will buy fuel from existing dealers at wholesale price which they will retail to the public. Retail fuel prices will be determined by prevailing market prices. The specific lifespan of the Service Station shall be determined by profit margin and sales realised by the business.

The Proponent shall regularly (at least monthly) inspect the operation of on-site waste holding and treatment systems including fuel and oil traps, sediment basins, and fuel leakage

detection systems. Where waste matter has accumulated, Omutshona Service Station shall remove immediately and disposed of it at approved sites. A written maintenance and servicing schedule shall be available for all wastewater installations to ensure they function both continuously and effectively.

Spill Incident Response

Equipment shall be installed on-site to use in the clean-up of any chemical spills. Such equipment could include absorbent material, such as 'kitty litter', and waste storage skips. Any spill shall be fully contained to avoid any harm to the surrounding environment.

In cases of spillage, all fuel or lubricant spills shall be immediately cleaned up using absorbent materials. Used absorbent material shall be placed in weather proof containers and disposed of by an approved waste contractor. Dispersants, such as detergents, may be needed to remove residues from a spill on paved surfaces. Effluent containing dispersants shall be treated to break hydrocarbon emulsions before being released into the contaminated water treatment system.

Omutshona Trading shall assign trained personnel and maintain a call roster to effectively handle incidents such as fuel and oil spills. If significant environmental contamination occurs, details should be provided on detection to MEFT. Incident details and the associated response will be entered in a site incident log, which will then be retained for at least two years for scrutiny by regulatory authorities.

2.4.4 Decommissioning

The project establishment stage which shall entail the construction stage shall cover a period of about 18 months after which there will be the decommissioning of construction which shall entail the removal/ clearance of all construction rubble and excess material. The project plan is to incorporate a rehabilitation plan in the implementation plan such that rehabilitation commences at the closure of each individual phase. At the closure of operation which is anticipated after a minimum of 30 years, there shall be the decommissioning of the project

which shall entail the rehabilitation and stabilisation of the Service Station site and the clearing of built structure.

When service stations are decommissioned or fuel tanks are replaced, a site contamination evaluation shall be conducted by a competent and experienced environmental consultant. This evaluation should include testing for petroleum residuals near underground tanks, pipe-work and waste treatment facilities. A technical report shall be prepared and copies retained for scrutiny by the MET.

3. LEGAL FRAMEWORK

3.1 Introduction

One of the crucial components of the EIA is identifying and reviewing the administrative, policy and legislative situation concerning the project activities. This is so to inform the Proponent about the requirements to be fulfilled in constructing and operating a fuel service station. This section reviews the legislative framework within which Proponent of the fuel service station project must operate under in order to fulfil the environmental management requirements. This includes focus on compliance with national and international legislation as far as planning, operational and decommissioning phases of the project are concerned. All applicable policy, legislative and other conditions will guide the Proponent on operating the project in accordance with best practices and environmental management requirements.

The NEMA No. 7 of 2007 is the central legislation and custodian of environmental assessment in Namibia. This act was promulgated in 2012 and provides for basic principles of environmental protection and remediation. It further lays down the duties, roles and powers assigned to authorities as far as environmental management and, in particular, environmental assessments are concerned. The Environmental Management Regulations 2012 clarify the listing and de-listing of activities by the Environmental Commissioner and specify the processes to be followed by proponents for different projects/developments. The Regulations provide clear criteria pertaining to Environmental Assessment Practitioners and Environmental Officers – also as regards the eligibility of those involved. In both the Environmental Management Act and in the above mentioned regulations such activities that may not be undertaken without an environmental clearance certificate are listed. Omutshona Trading's construction and operation of fuel service station project requiring above mentioned clearance.

Furthermore, Namibia is a signatory to and has adopted international environmental treaties such as The Convention on Biological Diversity, United Nations Convection to combat Desertification, United Nations Framework Convention on Climate Change and Agenda 21 in compliance with local environmental regulations. Therefore under the same mandatory, the

project proponent will ensure environmental compliance to resource management and sustainably use resource. The project activities will consider less emission of GHGs and prevent excessive land use which degradation and may threaten livelihood

3.2 Applicable Legislation

The pursuit of sustainability is guided by a sound legislative framework. In this section relevant legal instruments as well as their relevant provisions have been surveyed. An explanation is provided regarding how these provisions apply to this project in particular (Table 1).

Table 1: Applicable Environmental Legal Framework of the proposed project

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
NATIONAL LEGISLATION		
The Constitution of the Republic of Namibia (1990)	The articles 91(c) and 95(i) commits the state to actively promote and sustain environmental welfare of the nation by formulating and institutionalising policies to accomplish the Sustainable objectives which include: • Guarding against overutilization of biological natural resources, • Limiting over-exploitation of non-renewable resources, • Ensuring ecosystem functionality, • Maintain biological diversity.	Through implementation of the Environment Management Plan, the proponent shall be advocating for sound EMP as set out in the constitution. Ecological sustainability should guide operations of fuel service station operations.
Environmental Assessment Policy of Namibia 1994	The Environmental Assessment Policy of Namibia states Schedule 1: Screening list of policies/ plans/ programmes/ projects subject to environment must be accompanied by an EIA. "The sand/gravel mining and its related activities" is among the list. The responsible Authority enforcing the law is the Ministry of Environment, Forestry and Tourism (MEFT) Directorate of Environment. The policy provides a definition to the term "Environment" broadly interpreted to include biophysical, social, economic, cultural, historical and political components and provides reference to the inclusion of alternatives in all projects, policies, programmes and plans.	An Environmental Impact Assessment is compulsory. Consider all environmental aspects during the impact assessment and test different options of environmental impact reduction.

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
Environmental Management Act **No. 07 of 2007**	Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). Requires for adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions about a project (Section 2(b-c)). Requires for adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions about a project (Section 2(b-c)). According to Section 5(4) a person may not discard waste as defined in Section 5(1)(b) in any way other than at a disposal site declared by the Minister of Environment and Tourism or in a manner prescribed by the Minister. Details principles which are to guide all EIAs	This Act and its regulations should inform and guide this EIA process. All formal requirements as per the act will be duly identified and adhered to. The Project will follow this act accordingly and consider all aspects inclusive of the assessment process and acquire environmental clearance.
EIA Regulations GN 57/2007 (GG 3812)	Details requirements for public consultation within a given environmental assessment process (GN No 30 S21). Details the requirements for what should be included in a Scoping Report (GN No 30 S8) an EIA report (GN No 30 S15).	

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
The Regional Councils Act (No. 22 of 1992)	This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 "to undertake the planning of the development of the region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment." The main objective of this Act is to initiate, supervise, manage and evaluate development.	The relevant Regional Councils are considered to be I&APs and must be consulted during the Environmental Assessment (EA) process. The Omusati Regional Council is the regional authority for the proposed project area and therefore should be consulted for this EIA.
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that "No person shall posses [sic] or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"	The Proponent should ensure that the criteria set for the construction, operation and decommissioning of fuel installations are adhered to. A Petroleum Retail License should be applied for and obtained from the Petroleum Affairs Division of the Ministry of Mines and Energy (MME). The relevant petroleum products storage licenses/permits should be applied for from the Petroleum Affairs at the Ministry of Mines and Energy

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
South African National Standard (SANS) 10089-3 (2008)	The petroleum industry Part 3: The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations.	The design and installation of underground tanks should comply with the requirements of SANS 10089-3.
Communal Land Reform Act 5 of 2002	To provide for the allocation of rights in respect of communal land; to establish Communal Land Boards; to provide for the powers of Chiefs and Traditional Authorities and boards in relation to communal land; and to make provision for incidental matters	The mine site is situated in a communal area, therefore future changes on working/mining sites within the mining claims (that may overlie communal or even private lands), the Proponent should ensure proper consultations with the relevant authorities and that the that the project activities comply with the regulations provided in the Act. If required, the relevant authorisation should be obtained.
Soil Conservation Act 76 of 1969	Provision for combating and for the prevention of soil erosion, it promotes the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic of Namibia.	The Project will have a limited spatial impact on the soils, the impacts will be locally concentrated on the area where underground tanks will be installed but necessary environmental procedures shall be followed in compliance with this legislation for the protection of soils soil as well as avoiding soil contamination.
The Water Act 54 of 1956	The Act was formulated to consolidate and amend the laws relating to the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to	Projects of this type are usually associated with activities that may directly affect water

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
	make provision for the control, in certain respects, of the use of sea water for certain purposes; for the control of certain activities on or in water in certain areas.	conservation, management and use therefore, requires the implementation of water conservation techniques. In case that Proponent may in future consider abstracting water directly from a borehole for their activities, a water abstraction and use permit (WAUP) should be applied for and obtained from the Department of Water Affairs & Forestry (DWA): Directorate of Water Resources Management: Water Policy and Water Law Administration. If issued or already in possession of the Proponent, the WAUP should be renewed as required as stipulated in therein. An effluent/wastewater discharge permit should be applied for and obtained from the same Division as the WAUP
The Water Resources Management Act No. 11 of 2013	Equitable improvement of water and sanitation services should be achieved by the combined efforts of the government and the beneficiaries, based on community involvement and participation, the acceptance of a mutual responsibility and by outsourcing services where necessary and appropriate, under the control and supervision of government.	

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
Pollution Control and Waste Management Bill	The bill aims to "prevent and regulate the discharge of pollutants to the air, water and land" Of particular reference to the Project is: Section 21 "(1) Subject to sub-section (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse." Section 55 "(1) No person may produce, collect, transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human health or the environment."	The Project should make it mandatory that all their site waste produced as a result of their activities, directly or indirectly is managed in a manner that do not cause environmental threat and risk both to the surroundings and the local communities.
National Solid Waste Management Strategy	The Strategy ensures that the future directions, regulations, funding and action plans to improve solid waste management are properly co-ordinated and consistent with national policy, and to facilitate co-operation between stakeholders	The project activities can potentially generate solid waste (stockpiles, soil remains, human waste and hydrocarbons) that might need proper management by the Proponent to avoid pollution. Waste management plans should be generated and implemented during all project phases. Proper handling of site waste is required as advised in the EMP.
Road Traffic and Transport Act, No. 22 of 1999	The Act provides for the establishment of the Transportation Commission of Namibia; for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport across Namibia's borders; and for matters incidental thereto.	Mitigation measures should be provided for, if the roads and traffic impact cannot be avoided. The Proponent will be required to obtain all the relevant permits (access road) in order to undertake activities involving road

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
		transportation or access onto existing roads. The permits are to be applied for and obtained from the Ministry of Works and Transport's Roads Authority.
Public and Environmental Health Act 1 of 2015.	To provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.	The Proponent should ensure that the public health as well as the environmental health is preserved and remain uncompromised.
Public Health Act 36 of 1919	Section 119 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."	In his capacity as an employer, proponent shall comply in particular with chapter 4 of this act, securing a safe environment and preserving the health and welfare of employees at work. He will apply proper hazard management plans and provide employees with personal protective equipment. Potential nuisances (whether dust during excavations or gas emissions associated vehicles) should be considered and avoided.
Nature Conservation Ordinance (1996)	This ordinance relates to the conservation of nature; the establishment of game, parks and nature reserves; the control of problem animals; and highlights matters incidental thereto.	Project activities lies outside demarcated conservation areas, national parks or other specially protected environments.

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
National Biodiversity Strategy and Action Plan (NBSAP2)	The action plan was operationalised in a bid to make aware the critical importance of biodiversity conservation in Namibia, putting together management of matters to do with ecosystems protection, biosafety, and biosystematics protection on both terrestrial and aquatic systems.	Forming part of the EIA of and EMP for this Project, the proponent will consider all associated impacts, both acute and long term, and will propose methods and ways to sustain the local biodiversity.
Labour Act 11 of 2007. **Health and Safety Regulations GN 156/1997 (GG 1617)**	Empowers the minister responsible for labour to publish regulations pertaining to health and safety of labourers (S135). Details requirements regarding minimum wage and working conditions (S39-47). Details various requirements regarding health and safety of labourers	All contractors involved in the installation of the UTS and transportation of the tanks are required to complying with this Act and its regulations.
National Heritage Act 27 of 2004	Section 48(1) states that "A person may apply to the (Heritage) Council for a permit to carry out works or activities in relation to a protected place or protected object" Protects and conserves cultural heritage and cultural resources with special emphasis on places and sources of National heritage including graves, artefacts and any objects older than 50 years.	Any heritage resources (e.g. human remains etc.) discovered during excavations in the UTS installation would require a permit from the NHC for relocation.
Convention on Biological Diversity	Namibia is obliged under international law to conserve its biodiversity.	Project activities should refrain from causing any damage to the country's biodiversity.

LEGISLATION/POLICY	PROVISION	PROJECT APPLICABILITY
Convention to Combat Desertification	Namibia is bound to prevent excessive land degradation that may threaten livelihoods	This is a general requirement to be considered in all projects.

4. APROACH TO THE STUDY

4.1 EIA Procedural Summary.

The EIA process has been complied under the guidance of the Environmental Management Act 7 of 2007. Figure 2, below sets out the impact assessment process that will be followed. The EIA reviewed the potential impacts and benefits associated with the project activities. The objectives of the EIA study are to:

- Identify the key environmental issues associated with the project concept of the project development activities.
- Put forward mitigation measures of key environmental issues identified that need to be considered during the operation and post operation phases.

Included in this report is a public participation process, a key process which provided opportunities for stakeholders and the public to get involved in the planning phase by sharing their opinions and views on the proposed project. This also provided an opportunity for both the stakeholders and the public at large to engage with the EAP by submitting their comments, concerns and opinions regarding the project activities that would be incorporated in the reporting documents, such as this report. This public participation process component is fundamental to the impact assessment process and is an important informant to the decision-making process done on this project. An EMP, which addressed environmental management statements for all the phases of the project, also forms an integral part of this EIA Report.

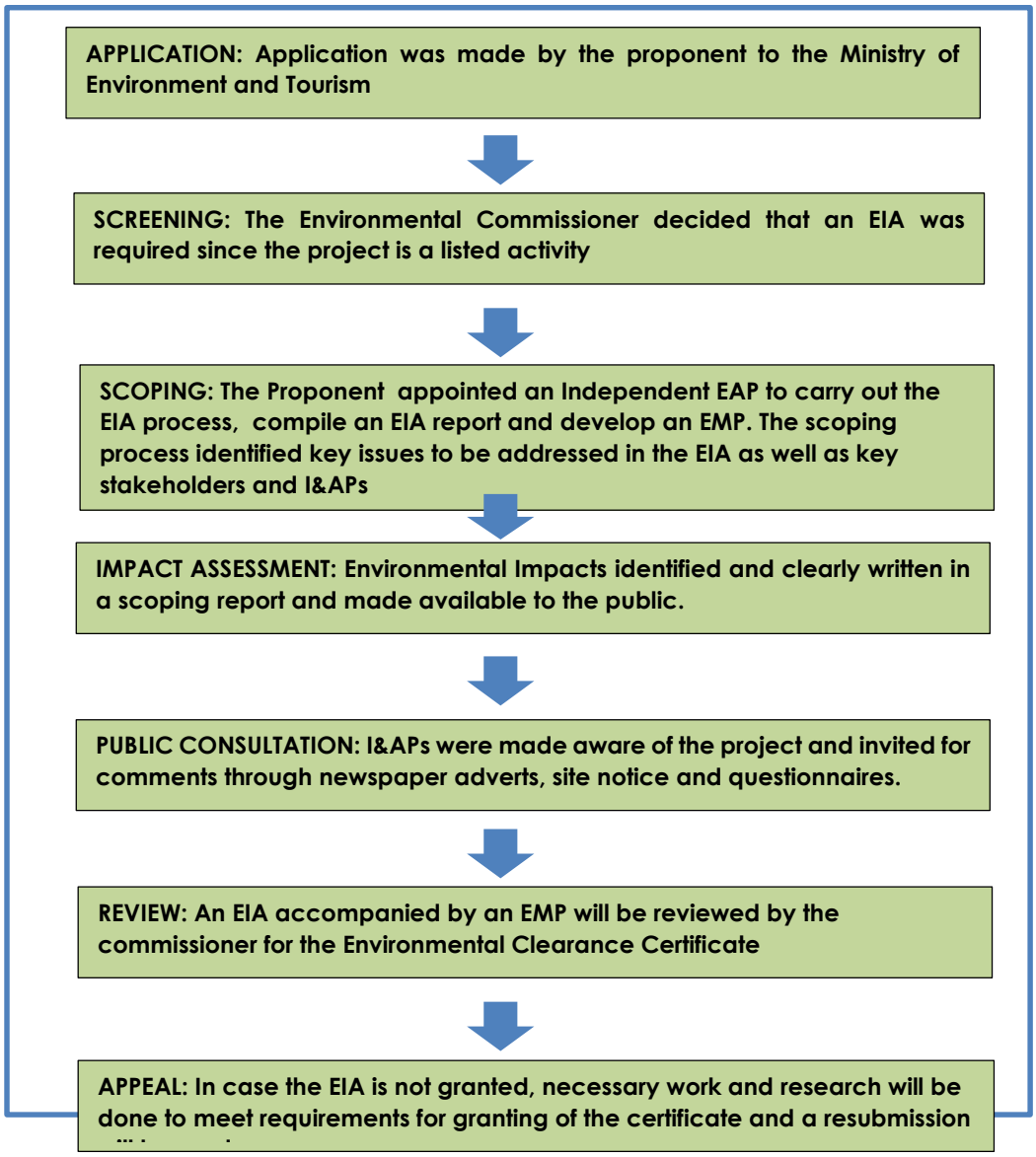

Figure 2: Environmental impact assessment process followed

4.2 EIA Methodology

The Methodology followed in this study did account for all the steps shown in the Figure 2 above. In compliance with the Environmental Management Act No.7 of 2007and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012), the Proponent will be required to carry out and prepare an EIA and EMPs to address environmental, social and economic issues and concerns. This process is going to be governed by the Namibian Environmental legislation as well as the EIA World Bank Standards (2010)

The EIA was undertaken in a holistic approach encompassing all different aspects of the EIA process. The project is at green scheme level as operations will start upon issuance of the Environmental Clearance Certificate. The process included mostly the highlighted phases below and other available processes for best practices:

4.2.1 Scoping

The main purpose of the scoping was to identify key issues to be given attention during this EIA study. Main activities done during the scoping included the following.

- Identification of key environmental studies to be done that is associated with the proposed project activities;
- Identify Interested and Affected Parties (I&APs);
- Announcing the EIA process / registration of I&APs; and
- Distribution of the Background Information Document (BID).

4.2.2 Consultation with Stakeholders

The public was notified of the EIA activities through various platforms and the local communities have been consulted for their opinions on issues relating to the potential ecological and socio-economic impacts of the project activities. Focal meetings and extensive interviews were carried out in the affected community. This provided an opportunity for the community to engage in the process and submit comments, express their concerns regarding the project activities and environmental related problems that the project may pose on the community.

4.2.3 Draft Scoping Reporting

A draft scoping report was prepared considering all the issues that have been raised by the public and issues that have been identified during the scoping period. Impact assessment and evaluation of the impacts raised formed part of the draft scoping report. The draft scoping report was made available to the public for review and comments. The assessment of all

associated and potential impacts of the project activities were carried out using checklist method. Impacts evaluation was carried out using ISO 14001 approach. The assessment reviews all environmental, social and economic aspects in relation to applicable policies and regulations.

Assessment of Impacts

- Impact Assessment matrix was used to establish the environmental risk of the overall project, its alternatives and various components; and
- Establish mitigation protocols.

4.2.4 Final Scoping Report and EMP

The final report was prepared together with EMP after incorporating of public comments, and submitted to the DEA at the MEFT. The EMP developed addresses environmental management statements for all the phases of the project, this form an integral part of the EIA Report.

The environmental baseline of the project site area is presented under the next chapter. Understanding the baseline pre-project implementation aids in identifying the sensitive components and evaluating the project impacts on these components during the project's construction and operational phases.

5. AFFECTED ENVIRONMENT

The region is relatively homogenous in terms of topography, drainage, vegetation, water resources and cultural composition. The following sections provide more detailed overview of the physical characteristics of the region and narrowing down to the specific area under discussion.

5.1 Physical Environment

5.1.1 Climate

Classification of climate: Semi-arid highland savannah (0.2 0.5 p/pet). Climate is classified as subtropical stepper (low latitude dry) with a subtropical thorn woodland biozane.

Average rainfall: 400-500 mm per year

Average Evaporation: Evaporation in the area is averaged from 3000 to 3200 mm.

Precipitation: Sporadic and unpredictable, high intensity, highly localised storm events between December and March.

Temperature: During the hottest month of the year, which is mainly November, the average maximum temperature is about 30 - 35 °C. During July which is the coldest month the average minimum temperature is 8 - 10 °C.

Humidity: The relative humidity during the least humid months of the year (i.e. September and October) is around 10-20% and the most humid month is March with 70-80% humidity. Namibia has a low humidity in general, and the lack of moisture in the air has a major impact on its climate by reducing cloud cover and rain and increases the rate of evaporation.

Wind direction: Predominantly easterly wind. The area experiences strong winds during August/September with an average wind of 8-10 mph. Due to the absence of obstacles in the area, wind can travel longer distances carrying light sand/gravel and clay particles.

5.1.2 Topography

The topography of Oshana Region is predominantly flat, gradually descending from the north to south towards the Etosha Pan. The terrain of the whole study area is generally flat with a gradient of less 0.002% as the place lies within Oshana flat flood plain of the Oshanas.

5. 1.3 Geology and Soils

Oshana Region does not host rock formations which are noted for being rich in mineralization hence no mining enterprises have been established in the Region except sand extraction by small scale brick manufacturing individuals. Therefore, there is a need for improvement in the living of the region as no mining is taking place. This means the area can be improved by building infrastructures that supports many services like the one proposed by the Proponent. Okatana is part of the greater Kalahari Basin, which covers most of the northern and eastern parts of Namibia and extends across the Namibian border into Angola. The bedrock underlying the basin filled with Kalahari Sequence deposits consist of basal rocks of the Damara Sequence, followed by the Karoo Sequence sediments, overlain and intruded by volcanics of Karoo age.

Northern Kalahari Sandveld covers the region, mainly made up of an Aeolian sand mantle about 50m thick, covering tertiary calcretes and sediments. The site consists of completely weathered fine sands of the semi-arid zone that are of limited agricultural value and crop production is limited.

5.1.4 Hydrology

The region has perennial Kunene River, which also forms the boundary of Namibia and Angola, crosses the escarpment at Ruacana, forming a deep valley. Numerous interconnected ephemeral pans and shallow river courses, locally known as *Oshanas*, are remainders of the

greater proto-Kunene and Cuvelai systems. The systems discharge its water into Etosha Pan, which functioned as a massive inland lake.

The project site area forms part of the Etosha Cuvelai Drainage and the Oshana flood plain passes 200 m away the north of the project area flowing from the west to the east following the terrain of the area. The flood plain experience floods during the rainy season, the water flows from Ohangwena region area.

5.2 Ecological Studies

A location ecology system has to be understood and analysed against a proposed project development to weight the cost and benefits of introducing the project. The benefits should outweigh the costs for a project to be classified as desirable. Ecological studies are important in showing information on the intrinsic, bequest and total socio-economic value that can be derived from the site with or without the project or with an alternative project or land use.

An evaluation of the natural ecosystem was undertaken by environmental specialist team. It established that there are no established eco-webs on the proposed project site since the land facet is on the growth point where there are also many existing infrastructures. The natural ecosystem of the area has since been disturbed by the nearby communal farming and settlements (growth point) that are present at the project location.

5.2.1 Flora and Fauna

The site has no vegetation as the area is occupied by the buildings; only two Eucalyptus trees are near the site. No tree or grass cleared for the new development.

5.3 Social - Economic Environment

The project site is within the Okatana constituency of Oshana Region with a population of approximately 243 166 (Namibian Population and Housing Census of 2011) and with Okatana constituency population being 11 406. The area has predominantly Oshiwambo speaking population of the Wamboland, which is composed of mainly Kwanyamas and Kwambis.

This section of the report sets out to provide an overview of the social environment of the above mentioned region and constituency, emphasising some of the key land use activities in the project area. This will form the baseline against which potential issues and impacts will be identified and assessed. Consequently, only information relevant to this study will be highlighted. With respect to religion, there is one major religion (Christianity).

In terms of geographic size, this the region covers a total surface area of 26 604.8 km². Oshana Region has a population density of 9.1 persons per square kilometre. Over the 2001 to 2011 period, the population of the region grew by 0.59 percent per annum. Fig 5 depicts demographic distribution of Oshana Region, where the project is situated.

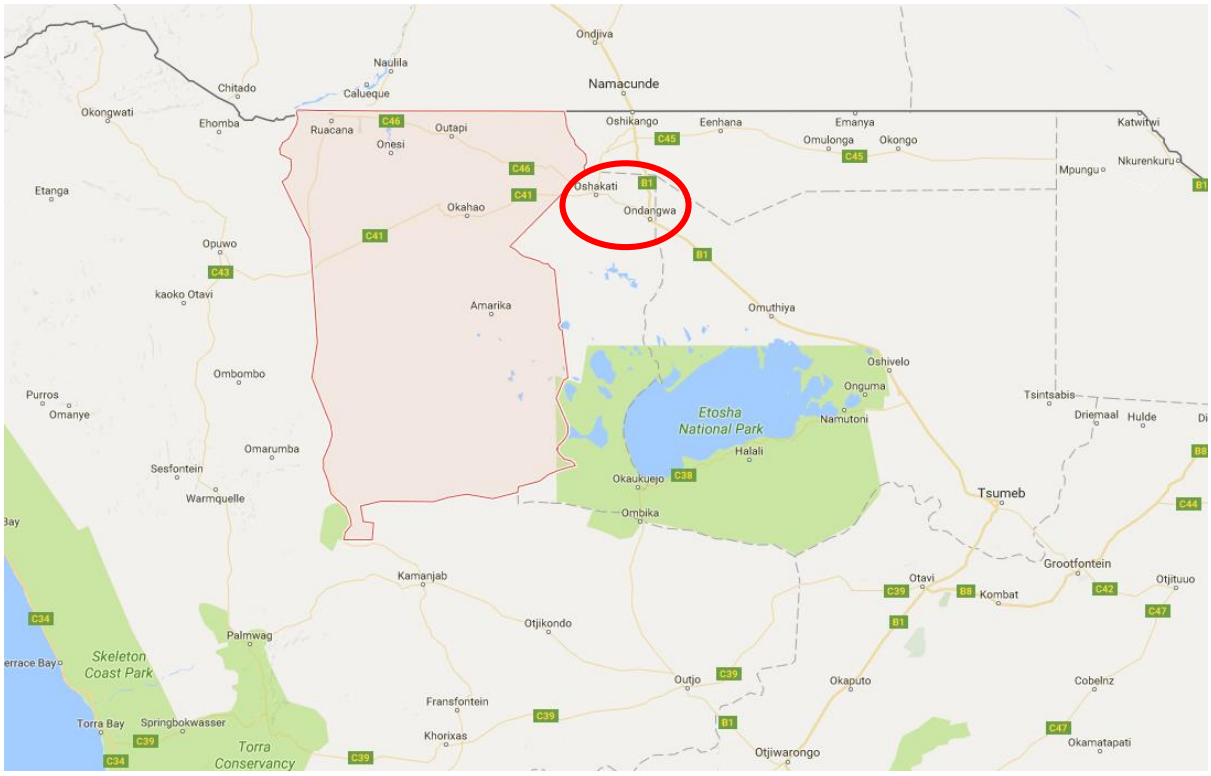

Figure 3:Map of Oshana Region and Major Towns (enclosed in the red ellipse)

5.3.1 Economic Status

The majority of the residents in Okatana rely more on pensions, followed by wages and salaries and agriculture mostly by growing crops of of mahangu (pearl millet), sorghum, maize and beans. Widely practised in the northern regions, including Oshana Region is also livestock

farming which includes; cattle, goats, sheep, donkey, pigs and in some cases horses. The following are the percentages contributions of each source of income.

- Farming 22%
- Wages & Salaries 25%
- Cash remittance 5%
- Business, non-farming 9%
- Pension 32%

The public consultation process followed for the EIA is presented under Chapter 6.

6. PUBLIC PARTICIPATION

6.1 Public and Stakeholder Consultation Programme

6.1.1 Overview

Public Consultation forms an important component of the Environmental Assessment process. It is defined in the EIA Regulations (2012), as a "*process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters*" (S1). Section 21 of the Regulations details steps to be taken during a given public consultation process and these have been used in guiding our process.

Formal public involvement has taken place via public consultations and focal meetings, newspaper announcements to inform the public about project and the EIA study. The public consultation process has been guided by the requirements of Environmental Management Act (EMA) No. 7 of 2007 and the process has been conducted as regulated in the Section 7(1) as well as in terms of the EMA Regulations of GN 30 of 6 February 2012 and the World Bank EIA standards and project ToR.

The primary aims of the public participation process are:

- To inform I&APs and key stakeholders of the proposed application and environmental studies;
- To initiate meaningful and timeous participation of I&APs;
- To identify issues and concerns of key stakeholders and I&APs with regards to the application for the development (i.e. focus on important issues);
- To promote transparency and an understanding of the project and its potential environmental (social and biophysical) impacts (both positive and negative);
- To provide information used for decision-making;
- To provide a structure for liaison and communication with I&APs and key stakeholders;
- To ensure inclusivity (the needs, interests and values of I&APs must be considered in the decision-making process);
- To focus on issues relevant to the project, and issues considered important by I&APs

and key stakeholders; and

- To provide responses to I&AP queries.

In this section of the report, the results of consultations with various classes of private and public stakeholders are summarised. The results of consultations with other stakeholders, community and other local people provided information relevant to a number of aspects of the EIA. In the interests of conciseness of presentation such information has been incorporated in other sections and is not reported here.

Communication with stakeholders and community people about this project activity and public consultation process according to the EMA Act No. 7 of 2007, section 21 (1) was facilitated through the following means:

- A Background Information Document (BID) which was compiled containing the information of the project. The BID was forwarded to all pre-identified and registered stakeholders as well as community people upon request.
- Notices were placed in the newspapers (*The Namibian* and the *New Era*), briefly explaining the project scope and its locality, inviting the public to register as stakeholders (Appendix A) as well as notifying them the date, time and place of the public consultation meeting.
- Announcement of EIA process in the common public meeting points (small A4 poster of the EIA) were placed at the following public areas;
    - Placement of site notice as an indication that there is an EIA underway for the project and along the C41 Oshakati-Onhuno highway for the local people and other users of the highway passing by the site in order to participate in the process if they wished to. The size of the site notice and placement areas were done as stipulated in the EMA Act of 2007, Section 21 (2) (a).
- Formal public involvement was facilitated in the form of two public consultations meetings, as it was announced newspaper announcements and face-to-face interactions with the locals.

- The public consultation process has been guided by the requirements of environmental management agency (EMA).

6. 2 Public consultation activities

The following tasks have been undertaken during public consultation process

6.2.1 Identification of Interested and Affected Parties (I&APs)

After the scoping process, the EIA team identified I&APs and key stakeholders of the proposed project. The public participation activities to be undertaken for this EIA process were incorporated into the overall approach of the EIA background information. I&APs were allowed to register with the EIA team and a special database capturing all their names and correspondence details was created. The registration of I&APs took a period of twenty-one (21) days.

6.2.2 Distribution of BID

A Background Information Document (BID) was distributed to pre-registered I&APs and on request to the rest of I&A Parties who were also added to the public consultation database. The BID provided a description summary of the proposed project, and the project proponent and the whole procedure of the EIA to be followed.

6.2.3 Public Announcements

Newspaper Adverts

In compliance with the EMA Act No. 7 of 2007 Section 21 (2)(c) notification of the commencement of the EIA process for the project was advertised in a Namibian nationwide newspaper through the placement of advert, The New Era (National newspaper), and The Namibian (**Appendix C**). The advertisements were basically notifying the public about the project and the EIA study and call for their participation. Furthermore, the newspaper adverts were requesting I&AP's to register.

Table 2: A summary of the public notification and participation events

Newspaper	Area of Distribution	Language	Date placed
The New Era	Country Wide	English	25 February 2020 04 March 2020
Site notice	Placed Onsite(Omutshona filling station)	Oshiwambo and English	29 January 2020

Local Public Announcement

Two public notices were installed at two the local sites areas, one along the C45 road to Onhuno and on-site. The notices served as to notify the general public of the EIA study and how to register as I&APs, submitting their comments and concerns on the proposed development activity and on how they can participate. Location of these public site notices were in compliance with the EMA EIA Regulations of 2007 section 21 (2)(a) which requires that a site notice be fixed at a place conspicuous to the public at the boundary or on the fence of the site where the activity to which the application relates is to be undertaken.

Figure 4: Omutshona Fuel Station EIA Public notice along the C45 highway (road)

6.2.4 Public Participation Meetings

Two public meetings were held, the meetings were between the project proponent, EIA Consultants, the public and other stakeholders. The first meeting was held on the 19th of September 2019 and the second meeting on the 25th of September 2019. Due to poor attendance on the first meeting, both parties agreed to have a second meeting a week after the first week. All the registers have been attached as **Appendix B**

The primary aim of the public meetings was to:

- Provide I&APs and stakeholders with information regarding the proposed project and associated infrastructure;
- Provide I&APs and stakeholders with information regarding the EIA process;
- Provide an opportunity for I&APs and stakeholders to seek clarity on the project;
- Record issues and concerns raised; and
- Provide a forum for interaction with the project team.

Both meetings were held on-site. Figure 5 below shows attendances of the meeting. A description of the project was presented and opportunity given for those present to give their comments and concerns.

Figure 5:Photos taken from the public meeting on site

6.2.5 Information Collection

Issues and concerns raised by I&AP's in Questionnaire forms (**Appendix D**) have been recorded and incorporated into the report. No comments were submitted electronically. In the interest and concerns, responses and clarification are provided where possible. Efforts were made to remain sensitive to language and ethnic in the region. Information collected through the comments and contributions by the public made on both meetings, and also from the comment forms they filled which have been attached in the appendices.

Eliciting Stakeholder Concerns

Comments have been sought from stakeholders in response to information gathered and disseminated during consultation. Discussions on alternatives and proposed mitigation measures have been encouraged throughout the public consultation process. This step has presented a need for an assessment and provided a basis from which decisions have been made and will continue to be made.

The key findings of the public meeting/participation and responses received by from I&AP's are summarised below and indicates that the project can be implemented, provided the recommendations are made and effectively implemented. The community was very happy and willing to provide any form of help if there is need as they see the development as theirs especially in terms of reduced distance they used to travel looking for fuel.

Table 3: Summary of issues, comments and suggestions made in the Public meetings

	SUMMARY OF ISSUES
THEME	**ISSUE**
Economic	• Employment of general labour must consider employing local people from Village • The company must take the social responsibility in the Village. ✓ Improve the life being of the Village. Job creation.
Health and	• Waste management concerns including both solid waste and waste water.

	SUMMARY OF ISSUES
Safety	• Potential air, noise and ground water pollution due to development. • The company must provide enough health care to the people working on the service station
Infrastructure	The company must consider develop the following infrastructure in Okatana Village ✓ Roads ✓ Houses for its workers
Ecological	• Concerns regarding impacts on and conservation of natural vegetation.
Communication	• Clear communication needs to be promoted between relevant authorities and local community • Clarify nature of new property (What time the service station will be operating).

6.2.6 Public Review of the Draft Scoping Report

The draft ESR, together with the Plan of Study for EIA was made available for the public review for a period of 21 days from 07 to 24 April 2020. In addition, the report was made available at the following public locations within the study area, which are all readily accessible to I&APs:

- Mafuta Environmental Consultants (via email upon request of a soft copy)
- At the Proponent at proposed site (printed hard copy).

At this period the general public was given access to the report and to check whether their contributions have been incorporated into the document and also to further comment on the report.

6.2.7 Final Environmental Scoping Report

The final stage in the Environmental Scoping Study entailed the capturing of responses and comments from I&APs on the draft ESR in order to refine the ESR, and ensure that all issues

of significance are addressed. The final ESR represented by this document is submitted to MEFT: DEA for review and decision-making.

7. ANTICIPATED ISSUES AND IMPACTS AND THEIR ASSESSMENT

7.1 Methodology Employed

The EIA Regulations require *"a description of the significance of any significant effects, including cumulative effects that may occur as a result of the undertaking of the activity"*.
In line with the Namibian Environmental Management legislation and International best practices Omutshona Trading shall implement an Environmental Management Plan (EMP) in order to prevent, minimise and mitigate identified negative impacts and endorse the positive impacts. Based on the current environmental and social set up of the project activities on site this chapter will identify potential impacts, environmental and socio-economic impacts.

7.2 Impact Assessment Methodology

An impacts scoping process was used and it addressed all possible impacts of the project, and analysis was made to investigate its relevancy to the project as well as seeing the degree of impacts so that a management plan can be drafted at a later stage. In line with Namibia Environmental Management Act No. 7 of 2007 and the Environmental Impacts Regulations (GN 30 in GG 4878 of 6 February 2012) with the direction on impacts analysis the following impact assessment criteria was identified by the team and deemed suitable. The assessment of all potentially identified impacts for the proposed construction and operation of Omutshona Fuel Service Station were subject to the following criteria as listed in the Section 15(2) (h) (aa); (bb); (cc); (dd); (ee) and (gg) of the EMA Act No. 7 of 2007as follows:

(aa) cumulative effects;

(bb) the nature of the effects;

(cc) the extent and duration of the effects;

(dd) the probability of the effects occurring;

(ee) the degree to which the effects can be reversed;

(ff) the degree to which the effects may cause irreplaceable loss of resources; and

(gg) the degree to which the effects can be mitigated;

In order to determine significance of each of the potential impacts identified, they have been subjected to the following questions displayed graphically (steps 1 and 2 – Figure 6) and in tabular form below. These questions form the basis of the methodology for assessing the significance of the effects or impacts identified through this EIA process:

1. The first step was to screen out (set aside) all impacts which do not fall within the scope of this project and responsibility of the Omutshona Trading. Each of the potential impacts identified was screened according to the set of indicators set during the impact screening process as illustrated below. The list of impacts discussed in this Section falls under the "YES" answer, namely those which fall within the scope of the development and the responsibility of the client;

2. The next step was to determine whether sufficient information exists to assess the potential impacts of those that remain. If insufficient information is available to assess (with a high degree of confidence) and recommend mitigation measures to address a given impact further investigation will be required. However, if sufficient information is available to assess (with a high degree of confidence) and recommend mitigation measures to address a given impact no further investigation will be required and the impact will be addressed in an EMP;

3. To fully understand the significance of each of the potential impacts, each impact was subject to a range of assessment criteria. The application of these criteria, in determining the significance of potential impacts, used a balanced combination of duration, extent, and intensity/magnitude, modified by probability, cumulative effects, and confidence. The definitions of each of the criteria are contained in **Table 4**; and

4. Finally based on the answers obtained after applying steps 1-3 a decision was made

regarding the significance of the impact based on three categories – low, medium or high (**Table 5**).

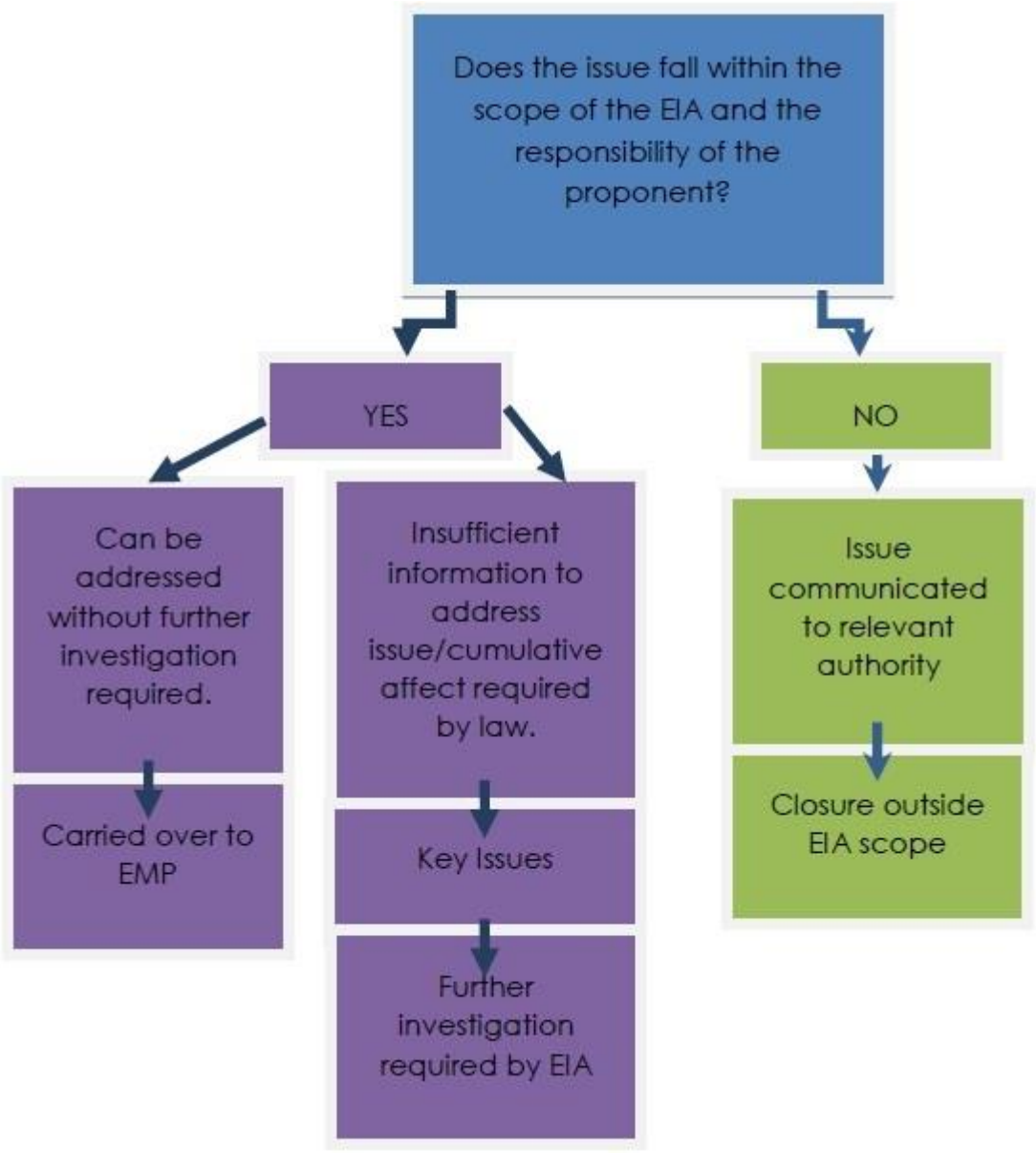

Figure 6: Impacts Scoping Process

The significance of the identified impacts of the proposed project activities of Omutshona Trading, construction of fuel service station was assessed using the criteria discussed on the Table 4 below.

Table 4: Criteria used to determine the significance of impacts and their definitions

CRITERIA	DESCRIPTION
NATURE	This criteria indicates whether the proposed activity has a positive or negative impact on the environment (environment comprise both socio-economic and biophysical aspects). Reviews the type of effect that the proposed activity will have on the relevant component of the environment and includes "what will be affected and how
EXTENT	Geographic area. This criteria measures whether the impact will be site specific; local (limited to within 15 km of the area); regional (limited to about100km radius); national (limited to within the borders of Namibia) or international (beyond Namibia's borders).
DURATION	This criteria looks at the lifetime of the impact, as being short/temporal (days, less than a year), medium (1-5 years), long (5-10 years but cease after operation), or permanent (more than 10 years).
INTENSITY	These criteria is used to determine whether the magnitude of the impact is destructive or innocuous and whether it exceeds set standards, and is described as none (no impact); low (where the natural/social environment functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceeds legal standards
PROBABILITY	Considers the likelihood of the impact occurring and is described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable(most likely) or definite (impact will happen regardless of prevention measures)
SIGNIFICANCE	Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project design or alternative mitigation (the route can be used, but with deviations or mitigation) High where it could have a "no-go" implication regardless of any possible mitigation.
STATUS OF THE IMPACT	A statement of whether the impact is positive (a benefit), negative (a cost), or neutral. Indicate in each case who is likely to benefit and who is likely to bear the costs of each impact.
DEGREE OF CONFIDENCE IN PREDICTION	This is based on the availability of information and knowledge used to assess the impacts.

The significance of the potential impacts identified for this project is determined using a combination of the criteria discussed on the above table. The significance of impacts is described in the Table 5 below.

Table 5: Definition of the impact significance rating criteria

Significance Rating	Criteria
Low	Where the impact will have a negligible influence on the Environment and no mitigations are required.
Medium	Where the impact could have an influence on the environment, which require some modifications on the project activities and/or alternative mitigation.
High	Where the impact could have a significant influence on the environment and, in the case of a negative impact, the activity causing it, should not be permitted.

7.2 Potential impacts identified and assessed

All impacts included in the Table 6 below fall within the scope of this project and responsibility of the Omutshona Trading. By subjecting each of the impacts to the criteria stipulated above, it is possible to establish the significance of each. Mafuta Environmental Consultants established the significance of each impact prior to implementing mitigation measures and then after mitigation measures have been implemented.

A brief description of the mitigation measures is mentioned in Table 6 below but detailed descriptions of management actions are contained in the **EMP (Chapter 8).**

Table 6: Assessment of potential negative impacts stemming from the proposed fuel service station and its related activities

Impact	Status/nature	Extent	Duration	Intensity	Probability	Significance		
						Before Mitigation	Mitigation applied	Post Mitigation
Construction and Operation Phases								
Physical disturbance of land/soil during excavations (UTS Installation)	-Erosion -Changes on soil properties i.e. soil structure due to compaction and soil texture.	Local	Short	Medium	Definite	Medium	-Restrict excavation activities to the area where UST are to be installed. a) limit unnecessary compaction of topsoil; and -Avoid using machines that is too heavy resulting in compaction. -Haulage trucks that transport UTS to the site should always use Onhuno C45 highway which is a tarred road. -Any spoil generated in the excavation process should only be stockpiled in approved areas, and must be shaped and trimmed.	Low

Solid waste generation construction	-These will include metal cuttings, rejected materials, surplus materials, paper bags, empty cartons, empty paint and solvent containers, broken glass among others -General Waste from construction activities can result in pollution in the environmental especially material that is not bio-degradable. -Potentially cause disease outbreaks if not handled properly due to their presence providing suitable breeding conditions for vectors of certain diseases. Outbreak of diseases such as Malaria could be exacerbated by the	local	Short term	High	Definite	High	-An effective construction waste management plan to be implemented by the construction supervisor and the contractor, separating waste before disposal. -General proper handling of this waste and management.	Medium/ low

	presence of open water ditches for breeding of anopheles mosquitoes.							
Disturbance and killing of soil rodents and rats.	-Soil rodents and rats that are underground where the tanks will installed will be affected	local	Short	low	probable	medium	-Remove special or endangered small soil rodents species encountered -Forbid indiscriminate killing of soil rodents.	low
Noise from excavating machines and through incoming vehicles to deliver materials and workers to site.	-Negative effect on neighbour shops.	Local	Short term	Medium	Highly probable	High	-All vehicles and excavating machines used for the purpose of the works shall be fitted with effective exhaust silencers. -Materials shall be delivered to the site during normal site working hours. -No machinery will be left running unnecessarily. -Only machines that are in use must be on. **"Switch off"** all machines that are not in use. -Construction works will be done during the day (0800hrs-1700hrs);	Medium

Dust Emission Particulate matter pollution is likely to occur during construction activities and transportation of the waste. There is a possibility of particulate matter suspended and settle-able particles affecting the site workers and even surrounding neighbours' health.	Dust releases can be a nuisance to the local residences as well as help contributing into local atmospheric particulate matter content Dust can negative affect the ecosystem in general and the nearby residents	Local	Short term	high	Definite	Medium	-There is need to wet the areas/sprinkling before working on them and also cover the excavated and stockpiled material -Minimize excavation activities during the windy days. -Stockpile material must be kept and later reused in the rehabilitation process of the existing gravel pits.	Low
Archaeological Landscape	Visual degradation	Local	Medium	Medium	Improbable	Medium	-Demarcate, protect and avoid abstracting or extent to near sites. If removal is inevitable, apply at Heritage Council via an archaeologist	Low
Risk of oil spills.	The machines on site during construction may contain moving parts,	local	Medium term	High	Probable	Medium	-Maintaining the machinery in specific designated areas designed for this	Low

	which may require continuous oiling to minimize the usual corrosion or wear and tear. Likewise, moving vehicles on site may require oil and other lubricants change. Possibilities of such oils spilling and contaminating the soil and water within the project site are real.						purpose can substantially contain these dangers	
Change in landscape character (Land use)		local	Long term	Medium	Probable	High	-Ensure that new structures blend in with the environment and there is rehabilitation of disturbed area to leave the area in almost the same level as it was before if not better.	Low
Generation of exhaust emissions (Exhaust emissions are likely to be generated during the construction period	Motor vehicles used to mobilize the work force and materials for construction would cause a potentially significant air quality	Local	Short term	High	Definite	High	-There is need to use noise suppression equipment of engines -Operations should only be done during the day were noise propagation	Medium

by the various construction machinery and equipment)	impact by emitting pollutants through gaseous exhaust emissions.						levels are limited as compared to during the night -Construction workers shall wear nose masks/respirators when and where necessary.	
Workers accidents and hazards during construction	- During construction of the site of the proposed project, workers may encounter occupational health hazards as a result of coming into contact and handling hazardous waste and injuries from hand tools.	local	Short term	High	Probable	Medium	-Health and safety regulations should be enforced on all the workers. -Safety regulations include life and health insurance, first aid kits; protective clothing such as uniforms and gloves, ear plugs should be given to the machine operators -Ensure proper handling of hazardous material by workers.	Low
Solid waste generation during operation Liquid wastes that will result from the operations of the	-The service will generate solid waste in the form of; pieces of off cuts and cuttings, left over materials, scrap and general office waste	local	Medium	Medium	Probable	Medium	-An appropriate waste management system will be put in place to manage the resulting waste appropriately. -There will be adequate drainage to cater for storm water. The storm water will be allowed to drain naturally.	Low

proposed facility include:- • Sanitary waste: will constitute wastewater from toilets, washing rooms and floor washing. This wastewater will be channelled to the existing sewer network. • Storm water: Most of the proposed site area will be paved or under buildings thus inhibiting infiltration of storm water into the soil hence								

increased runoff generation.								
Oil and greases	-Soil pollution killing micro –organisms. -Pollution of water collection pans through surface flow -Contamination of groundwater.	local	Medium	Low	Probable	Medium	-Regular maintenance of construction machines and vehicles to note leaking. -All repairs and servicing of machines and vehicles should be done at the recommended sites. -Proper disposal of used oils and grease	Low
Occupational Health and safety Hazard • Fire hazards		Local	Short term	Medium	Probable	Medium	-The management will put in place fire detection and fighting infrastructure to deal with the risk of fire hazards. -Keep well services and working fire hydrants -Keep dry sand buckets in place in case of outbreaks -Train the operators on ways of fighting fire.	

							-Have a chart of hotlines within the facility, this include fire services, Ambulance, police et -Keep the facility dry of any fuel or oil spillage -Install warning signs on the facility e.g. DO NOT SMOKE, SWITCH ENGINE, SWITCH OFF	
Employment opportunities	The project creates employment opportunities to the locals Employment opportunities are of benefit both economically and in a social sense. In the economic sense it means abundant unskilled labour will be used in construction	Regional	Long term	High	Definite	High	-Make sure all the manual labour must employ local through the headman to ensure equal employment opportunities.	High

	hence economic production.							
-Carbon footprint from General emissions, energy usage etc.	Even though it is on a smaller scale any development has a carbon footprint that negatively affects the immediate atmospheric conditions and increasing greenhouse gasses in the atmosphere	Regional	Long term	Low	Definite	Medium	-Energy efficiency practices such As using solar energy options.	-Low
Oil fuel spillage	-Outbreak of fires -Skidding of vehicles causing accidents -Bad smell	Local	Long	Medium	Probable	Medium	-Standby Generator should be installed properly by qualified technicians to ensure they is no leaking fuel or oil which may cause fire outbreak. -The fuel channels (pipes, pumps, dispensers) should be well maintained, to note any leakage. -Only authorised operators should dispense products to customers.	Low

							-Pumps should be locked when not in use. -Any spillage of fuel should be washed with plenty of water and soap -Fire hydrants and sand buckets should be placed strategically In case of fire. -Frequent checks on piping system to note leakage	
Community development	Employment creation and business integrations	Regional	Long term	High	Definite	High	-Promote local businesses and employ locals	High

Improving growth of the economy	Through the use of locally available materials during the construction phase of the project including cement, structural steel, concrete and ceramic tiles, timber, sand, ballast electrical cables etc, the project will contribute towards growth of the economy by contributing to the gross domestic product. The consumption of these materials, fuel oil and others will attract taxes including VAT which will be payable to the government hence increasing government revenue while the cost of these raw materials	Regional	Long term	High	Definite	High	-Promote the buying of local material during construction	High

	will be payable directly to the producers.							

Decommissioning phase								
Solid waste	-The abandoned material can provide the breeding ground of mosquitoes especially during the rainy season which can cause the spread of Malaria Disease	Local	Long Term	Medium	Probable	Medium	-Collect, segregate and dispose waste responsibly; -Contract a licensed waste handler to dispose the wastes.	Low
Occupation safety	-Bruises and cuts caused during the demolition -Falling from heights -Inhaling of poisonous gases from the UFST -Fire outbreaks	Local	Short tem	Medium	Probable	Medium	-Providing workers with protective clothing and facilities like helmets, safety -The dismantling exercise should be carried out separately to avoid accidents to people who might be on the ground. -Train the site workers on basic first aid methods. -Provide first aid kit on site in case of small cuts/bruises. -Provide a public “NOTICE’’ on the ongoing works.	Low

Loss of employment	-During the decommissioning phase there might be retrenchment of employees which will affect their livelihoods and source of income.	Regional	Long term	Medium	Definite	Medium	-In the event that the proponent decides to stop operations, appropriate retrenchment procedures should be followed. -Social security for employees should be put in place in anticipation for cases like these.	Low
Dust	Pollution of air with dust particles from demolition works especially the concrete may cause respiratory diseases.	Local	Short	Medium	Definite	Medium	-Providing workers with protective gadgets like dust masks and ear muffs. -Sprinkling water on concrete surfaces to be demolished I case of excessive dust.	Low
Landform	-Change of the landform after demolitions -Accidents which may be caused by falls into the excavated pits.	Local	Long term	Medium	Definite	Medium	-Rehabilitate the land to its near original form by filling the excavations and planting trees or grass in the affected areas.	Low

8. DRAFT ENVIRONMENTAL MANAGEMENT PLAN (EMP)

8.1 Introduction

This Environmental Management Plan (EMP) has been drafted as part of the Scoping Report which was compiled in terms of the Environmental Assessment for the proposed fuel service station development facility by proponent. The content thereof has been tailored according to the Regulations of the Environmental Management Act, 2007 (Act No 7 of 2007) Regulation No 30 of 2012 listing No 8(j) (aa) (bb) (cc). The aim thereof is to provide management measures to address the effects on the environment that have been identified in the Scoping Report.

The proposed service station establishment will have environmental impacts as indicated in the previous chapter. This section is aimed at describing The Environmental Management Plan for impacts associated with proposed fuel service station establishment project. The EMP stipulates the management of environmental programs in a systematic, planned and documented manner. The EMP below includes the organizational structure, planning and monitoring for environmental protection at the proposed Okatana Village (old Omutshona mini market) area development and other areas of its influence. The aim is to ensure that the proponent maintains adequate control over the project construction and operations in order to:

- To prevent negative impacts where possible;
- Reduce or minimise the extent of impact during project life cycle;
- Prevent long term environmental degradation.

This EMP has been divided into the following parts:

- Construction and Operations Environmental Management Plan (COEMP)
- Environmental Monitoring Plan (EMP)

8.2 EMP Administration

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (project manager) to ensure the successful implementation of the EMP as highlighted below:

Table 7: Roles and Responsibilities in EMP Implementation

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Project Manager	• Enforce the EMP implementation to contractors and all project workers.
Environmental Control Officer	• Implement, review and update the EMP. • Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed • Conduct environmental site training (tool box talks) and inductions with the support of an environmental consultant. • Conducts environmental audit at work site with the support of environmental consultant. • Close out all non-conformances. • Ensure materials being used on site are environmental friendly and safe.
The Department of Environmental Affairs	• Approve the EMP and any amendments to the EMP. • Approve reports of environmental issues and non-conformances as issued. • Review and approve environmental reports submitted as part of EMP implementation.
Environmental Consultant	• Conduct and monitor actions required by the EMP if required • Conduct environmental site training (tool box talks) and inductions if assistance is required • Conducts environmental audit at work site • Ensure materials being used on site are environmental friendly and safe.

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Site/Project Engineers	• Control and monitor actions required by the EMP. • Report all environmental issues to HSE Manager. • Ensure documented procedures are followed and records kept on site. • Ensure any complaints are passed onto the management within 24 hours of receiving the complaint.
Workers	• Follow requirements as directed by site engineers. • Report any potential environmental issues to site engineer/project manager, indicating spilt oil, excess waste, excessive dust generation, dirty water running off the site and other possible non-conformances • Compliance with the environmental specifications and enforce adherence, • Communicate all environment related incidents with the EO and distribute internally to avoid repeats, • Maintain a record of activities relevant to environmental management.

8.3 Environmental Management Requirements (Legal Permits and Licenses)

The following are management actions that should be adhered to by the proponent, at all times. These management actions cover the construction, operational and decommissioning phases of the fuel service station. All activities should be carried out in line with this Environmental Management Plan (EMP), as may be applicable to the specific phase and activities carried out.

This section of the EMP details the various management processes, from where the operations are currently to its end, concerning the effective management of all operational areas. Please refer to Chapter 3 (of the Scoping Report) for detailed legislative and permit requirements considered for this EMP. The EMP is laid out as follows:

- Planning and Design;
- Construction and Operations Contract Preparation Management Requirements; and
- Operations and maintenance Mitigation Requirements

Table 8: Legal Framework in terms of permitting and licensing requirements and institutional contact persons

ASPECT	LEGISLATIVE INSTRUMENT	MANAGEMENT REQUIREMENTS	CONTACT PERSONS
Environmental	Environmental Management Act 7 of 2007 EIA Regulations (EIAR) GN 57/2007 (GG 3812)	The Amendment, transfer or renewal of the Environmental Clearance, every three years thereafter.	Mr. Timoteus Mufeti (The Environmental Commissioner) Tel: 061-284 2701 OR Environmental Assessment Unit Mr. Damian Nchindo, Tel: 0**61 284 2717**, Email: damian.nchindo@met.gov.na
Petroleum Products	Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	The relevant petroleum products (fuel) storage and distribution licenses/permits should be applied for.	**Ms. Maggy Shino (Petroleum Commissioner)** Petroleum Affairs at the Ministry of Mines and Energy Tel: +264 61 284 8209

ASPECT	LEGISLATIVE INSTRUMENT	MANAGEMENT REQUIREMENTS	CONTACT PERSONS
			Email: Maggy.Shino@mme.gov.na
Water Resources	The Water Act 54 of 1956 The Water Resources Management Act No. 11 of 2013	An effluent/wastewater discharge permit should be applied for and obtained.	Contact: **Mr. F. Witbooi (Deputy Director)**, Department of Water Affairs & Forestry (DWA): Directorate of Water Resources Management: Water Policy and Water Law Administration. Tel: 061 208 7158, Email: Franciskus.Witbooi@mawf.gov.na
Road access	Road Traffic and Transport Act, No. 22 of 1999	Application for all the relevant permits (access road) in order to undertake activities involving road transportation or access onto existing roads.	Contact: **Mr. Eugene de Paauw (Specialist Road Legislation, Advice & Compliance), Roads Authority** Tel: 061 284 7027, Email: dePaauwe@ra.org.na Ministry of Works and Transport
Archaeology	National Heritage Act 27 of 2004	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.	**Contact: Dr A. M. Nankela (Chief Archaeologist & Rock Art Specialist)** **Tel: 061 301 903, Email: archeology@nhc-nam.org**
Labour	Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN156/1997 (GG1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations.	Labour Law Advice: Tel: 061-309 957

8.4 Summary of the Potential Impacts and Mitigation Measures

Table 9: Summary of Potential Impacts and Mitigation Measures

No.	Potential Impact	Mitigation measures
CONSTRUCTION PHASE		
1	Dust and Gaseous Emission	i. Water will be sprinkled regularly to arrest dust emission; ii. Use of well-maintained vehicles and machinery; iii. Construction workers shall wear nose masks/respirators when and where necessary.
2	Noise pollution	i. Construction workers will be provided with appropriate PPEs; ii. Operations will be scheduled in such a way that noise operations are carried out at the same time; iii. Machines not in use will always be switched off (Switch off approach); iv. Equipment and machinery fitted with mufflers will be used where applicable; v. Construction works will be done during the day (0800hrs-1700hrs); vi. Regular maintenance and repair of machinery; vii. The project site will be hoarded.
3	Runoff and water logging	i. An adequate drainage system will be provided; ii. Site will be graded appropriately to avoid water logging.
4	Water Resources pollution	i. All site facilities to be connected to municipal sewage systems or up-to-standard septic system and waste water discharge systems and are in good working condition to avoid groundwater contamination in the case of leakages from sewage systems. ii. No wastewater / effluent will be allowed to leave the site premises without proper control. These should be disposed of in accordance with municipal waste water discharge standards. iii. At least three tank observation wells (TOWs) to a depth of 10 m will be drilled and installed around the fuel station. These wells will be used to detect possible pollution from the tanks in groundwater. iv. Regular maintenance and monitoring of underground storage tanks should be done to detect early spills or leakages.
5.	Vibrations	i. low vibration equipment will be used where applicable; ii. Vibration intensive operations will be carried out at times that are not sensitive vibration(day time); iii. Vibration intensive operation will not be carried out in the same time.
6	Solid Waste generation	i. Collect, segregate and dispose waste responsibly; ii. Contract a licensed waste handler to dispose the wastes.
7	Energy consumption	i. Machines shall be regularly repaired and maintained to enhance their energy efficiency.
8	Noise pollution	ii. Regular repair & maintenance of machines; iii. Noise mapping and adoption of the arising report will conducted;

No.	Potential Impact	Mitigation measures
		iv. Machines fitted with mufflers and/or quieter ones shall be used where applicable.
9	Fire hazard	i. The employees will be regularly trained; ii. Prohibition of smoking and the carrying of matches and lighters; iii. Set up a fire fighting team; iv. A fire detection and an alarm system shall be installed; v. A water tank(10,000Litres) reserved for firefighting shall be put up; vi. Fire extinguishers for the various classes of possible fire will be put in easily accessible area.
10	Safety and Health Concerns	i. All workers will be provided with the appropriate PPEs; ii. Enclose the construction site; iii. The standard operating and emergency response procedures will be posted in the processing area; iv. Clearly marked and obstruction free fire exits will be provided; v. Fire extinguishers and first aid kits will be placed in easily accessible location; vi. Only competent staff will be employed to manage the company's operation; vii. Electrical installation shall be of high quality and sound construction; viii. Very high hygiene standards will be observed; ix. There shall be a changing room for the employees; x. Good housing keeping shall be observed;
11	Solid Waste generation	i. The various waste types will be collected and segregated before being disposed by a licensed waste handler; ii. adequate waste bins for temporary disposal of the various waste types will be provided; iii. Measures to reduce, recycle and reuse where appropriate will continuously be put in place during project operation; iv. Metal cuttings will be sold off to scrap metal dealers; v. Good housekeeping will be practiced; vi. Reduce reuse and recycle where appropriate.
12	Liquid Waste generation	i. Use water sparingly; ii. Sanitary effluent will be discharged into septic tank/soak pit which will be emptied monthly by licensed waste disposal firm; iii. There shall be adequate sanitary facilities.
13	Resource over-utilisation	i. Building material will be used in a sustainable manner; ii. Energy saving programs will be adopted; iii. Water shall be used sparingly.
14	Soil contamination: Oil and chemical spills	i. Avoid oil and chemical leakages; ii. Machine and equipment to be used will be in good condition to avoid leakages; iii. Oil and chemicals e.g. solvents will be properly and responsibly handled stored and disposed.
15	Runoff and water logging	i. An adequate drainage system will be provided;

No.	Potential Impact	Mitigation measures
		ii. Site will be graded appropriately to avoid water logging.
16	Vibrations	i. Low vibration equipment will be used where applicable; ii. Vibration intensive operations will be carried out at times that are not sensitive vibration (day time); iii. Vibration intensive operation will not be carried out in the same time.
OPERATION PHASE		
1	Solid Waste generation	i. The various waste types will be collected and segregated before being disposed by a licensed waste handler; ii. adequate waste bins for temporary disposal of the various waste types will be provided; iii. Measures to reduce, recycle and reuse where appropriate will continuously be put in place during project operation; iv. Metal cuttings will be sold off to scrap metal dealers.
2	Liquid Waste generation	i. Use water sparingly; ii. Sanitary effluent will be discharged into a sewer line network; iii. There shall be adequate sanitary facilities.
3	Health and Safety Concerns observed;	i. All worker will be provided with the appropriate PPEs; ii. The standard operating and emergency response procedures will be posted in the processing area; iii. Clearly marked and obstruction free fire exits will be provided; iv. Fire extinguishers and first aid kits will be placed in easily accessible location; v. Only competent staff will be employed to manage the company's operation; vi. Electrical installation shall be of high quality and sound construction; vii. Very high hygiene standards will be9. There shall be a changing room for the employees;
4	Fire hazard	i. The employees will be regularly trained on ways of fighting fire; ii. Prohibition of smoking and the carrying of matches and lighters; iii. Install warning signs on the facility e.g. DO NOT SMOKE, SWITCH ENGINE, SWITCH OFF iv. Set up a fire fighting team; v. A fire detection and an alarm system shall be installed; vi. A water tank(10,000Litres) reserved for firefighting shall be put up vii. Fire extinguishers for the various classes of possible fire will be put in easily accessible area. iii. Keep well services and working fire hydrants ix. Keep dry sand buckets in place in case of outbreaks x. Keep the facility dry of any fuel or oil spillage
5	Noise pollution	i. Regular repair & maintenance of machines;

No.	Potential Impact	Mitigation measures
		ii. Noise mapping and adoption of the arising report will conducted; iii. Machines fitted with mufflers and/or quieter ones shall be used where applicable.
6	Socio economic Impacts	i. Consultation over issues of concern with all stakeholders.
DECOMMISSIONING PHASE		
1	Solid Waste generation	i. Collect, segregate and dispose waste responsibly
2	General	ii. Inform stakeholders iii. Inform the relevant authorities. iv. Rehabilitate/restore the site to its original state as much as is practical v. Provide a public "NOTICE'' on the ongoing works.
3	loss of employment	i. Social security for employees should be put in place in anticipation for cases like these. ii. In the event that the proponent decides to stop operations, appropriate retrenchment procedures should be followed.
4	Occupation safety	i. Providing workers with appropriate protective clothing and facilities like helmets, safety masks, overalls and respirators, gloves, heavy duty shoes, fire-resistant clothing, etc. ii. The dismantling exercise should be carried out separately to avoid accidents to people who might be on the ground. ii. Train the site workers on basic first aid methods. v. Provide first aid kit on site in case of small cuts/bruises.
5	Dust	i. Providing workers with protective gadgets like dust masks and ear muffs. ii. Sprinkling water on concrete surfaces to be demolished in case of excessive dust.
6	Landform	i. Rehabilitate the land to its original form by filling the excavations and planting trees or grass in the affected areas.

Direct unfavourable effects on the natural environment were considered to be manageable through the prudent implementation of the proposed mitigation measures given above. Considering the above potential negative impacts of the project, this Environmental Management Plan (EMP) was designed with appropriate mitigation measures as stated above and presented in the monitoring section (8.2) under Table 10). These plans considered the potential negative impacts, mitigation measures, and responsible parties, monitoring

indicators and frequency of monitoring of such measures.

8.5 Monitoring Plan

Monitoring will be required for the lifetime of the proposed Fuel Service Station project and should include the Site Preparation and Construction Phases as well as the Operation Phase, as outlined in the table below: Monitoring is vital to ensure that effective implementation of recommended measures yield the desired results and improved where necessary for the protection of the environment.

Table 10: **Matrix Summary of Environmental Impacts of each phase, impact type and mitigation, responsibility and the monitoring plan**

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
CONSTRUCTION PHASE				
Dust and Gaseous emission	Water will be sprinkled regularly to arrest dust emission	Contractor	Inspection	Daily
	Construction wear nose masks/respirators when and where necessary	Contractor	Inspection	Daily
	Use of well-maintained vehicles and machinery workers shall wear nose masks/respirators when and where necessary	Contractor & Proponent	Inspection/ maintenance	Daily

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
Noise Pollution	Construction workers will be provided with appropriate PPEs	Contractor	Inspection	Daily
	"Switch off" approach (machines not in use will always be switched off.	Contractor	Inspection	Daily
	Operations will be scheduled in such a way that noisy operations are carried out at the same time	Contractor	Inspection/Daily Work Plans	Daily
	Equipment and machinery fitted with mufflers will be used where applicable	Contractor	Inspection	Daily
	Regular maintenance and repair of machinery	Contractor	Inspection and service	Once
	Construction works will be done during the day	Contractor	Inspection and service	Daily (except Sunday &Public holidays)

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
Vibration	Low vibration equipment will be used where applicable	Contractor	Inspection	Daily
	Vibration intensive operations will be carried out at times that are not sensitive vibration(day time)	Contractor	Inspection	Daily
	Vibration intensive operation will not be carried out in the same time	Contractor	Inspection	Daily
Runoff & water logging	An adequate drainage system will be provided	Contractor	Inspection	Once
	Site will be graded appropriately to avoid water logging	Contractor	Inspection	Once
Soil contamination: Oil and chemical spills	Avoid oil and chemical leakages	Contractor	Inspection	Daily
	Machine and equipment to be used will be in good condition to avoid leakages.	Contractor	Maintenance Reports	Monthly
	Will be properly and responsibly handled, stored and disposed	Contractor	Inspection	Daily

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
Water resources contamination	At least three tank observation wells (TOWs) to a depth of 10 m should be drilled and installed around the fuel station. These wells will be used to detect possible pollution from the tanks in groundwater. Regular maintenance and monitoring of underground storage tanks should be done to detect early spills or leakages before they reach to groundwater resources	Proponent	Inspection (using a photo ionization (PID) detector)	Monthly
Resource consumption	Building material will be used in a sustainable manner	Contractor	Observation	Daily
	Energy saving programs will be adopted	Contractor	Observation/ Reports	Daily
	Water shall be used sparingly	Contractor	Observation	Daily
Solid Waste Generation	Waste would be segregated then collected by a designate waste handler	Contractor	Contract Agreements	Once

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
	Metal cuttings would be collected and sold to scrap metal dealers.	Contractor	Receipts	Monthly
	Reduce reuse and recycle where appropriate	Contractor	Observations	Daily
Safety & Health Concerns	Enclose the construction site.	Contractor	Observations	Once
	Construction workers will be provided with appropriate PPEs for related work.	Contractor	Inspection	Daily
	Well-equipped first Aid kits will be provided.	Contractor	Inspection	Monthly
	Fire-fighting infrastructure	Contractor	Inspection	Weekly
OPERATIONAL PHASE				
Liquid Waste Generation	Water will be used sparingly	Proponent/Management	Observation	Daily
	Sanitary effluent will be discharged into a Septic tank/Soak-pit. The latter will be emptied monthly by a licensed waste disposal firm.	Proponent.	Inspection.	Monthly
	There shall be adequate sanitary facilities	Management	Inspection	Weekly

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
Safety and Health Concerns	All workers will be provided with the appropriate PPEs.	Proponent	Observation	Daily
	The standard operating and emergency response procedures will be posted in the processing area.	Proponent	Observation	Daily
	Clearly marked and obstruction free fire exits will be provided.	Proponent	Inspection	Once
	Fire extinguishers and first aid kits will be placed at easily accessible locations on site.	Proponent	Inspection	Once
	Only competent staff will be employed to manage the company's operations	Management	Inspection	Periodically as and when necessary
Fire Hazard	The employees will be regularly trained	Proponent	Certificates	Annually
	Prohibition of smoking and the carrying of matches and lighters	Proponent	Warning signs/Notices	Once
	Set up a fire fighting team.	Proponent	List of team members	Once

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
	Fire detection and an alarm system shall be installed.	Proponent	Inspection	Once
	A water tank(10,000Litres) reserved for firefighting shall be put up	Proponent	Inspection	Once
	Fire extinguishers for the various classes of possible fire will be put in easily accessible areas	Proponent	Inspection	Once
Noise pollution	Regular repair & maintenance of machines	Proponent	Repair reports	Monthly
	Noise mapping and adoption of the arising report will conducted	Proponent	Noise survey report	Annually
	Machines fitted with mufflers and/or quieter ones shall be used where applicable	Proponent	Observation	Quarterly
Socio-economic Impacts	Consultation over issues of concern with all stakeholders	Proponent	Minutes of meeting	Quarterly
Energy consumption	Machines shall be regularly repaired and maintained to enhance their energy efficiency	Proponent	Maintenance reports	Monthly

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
DECOMMISSIONING PHASE				
Solid Waste generation	Collect, segregate and dispose waste responsibly	Proponent	Observation	Daily
General	Inform stakeholders	Proponent	Communication/memos	Once
	Inform the relevant authorities.	Proponent	Approval letters.	Regularly
	Rehabilitate/restore the site to its original state as much as is practical	Proponent	Site observation	Periodically
loss of employment	Social security for employees should be put in place in anticipation for cases like these.	Proponent	NASA Records	Once
	In the event that the proponent decides to stop operations, appropriate retrenchment procedures should be followed.	Proponent	Reports	Once
Occupation safety	Providing workers with protective clothing and facilities like helmets, safety (heavy duty) boots, overalls, gloves, safety masks, respirators, etc.	Proponent	Inspection	
	The dismantling exercise should be carried out separately to avoid accidents to people who might be on the ground.	Proponent	Inspection	

TYPE	RECOMMENDED MITIGATION MEASURE	RESPONSIBILITY	MONITORING TOOL	FREQUENCY
	Train the site workers on basic first aid methods.	Proponent	Inspection	
	Provide first aid kit on site in case of small cuts/bruises.	Proponent	Inspection	
Dust	Providing workers with protective gadgets like dust masks and ear muffs.	Proponent	Inspection	Daily
	Sprinkling water on concrete surfaces to be demolished in case of excessive dust.	Proponent	Inspection	Daily
Landform	Rehabilitate the land to its original form by filling the excavations and planting trees or grass in the affected areas.	Proponent	Site Observation	Periodically

9. CONCLUSION AND RECOMMENDATIONS

The Environmental Impact Assessment (EIA) process for the fuel service station development has been undertaken in accordance with the EIA Regulations published in Government Notice No. 30, in terms of Section 56 of the Namibia Environmental Management Act, 2007 (Act No. 7 of 2007).

The EIA process was also conducted based on the Environmental Consultant's experience and most importantly the inputs from the local members of the public (Interested and Affected Parties (I&APs)), i.e. comments and concerns raised during the EIA process (public consultation).

The public consultation process has therefore been inclusive, and every effort has been made to include representatives of all stakeholders in the process.

Furthermore, the proposed project design has integrated mitigation measures with a view to ensuring compliance with all the applicable laws and procedures. During project implementation and occupation, Sustainable Environmental Management (SEM) will be ensured through avoiding inadequate/inappropriate use of natural resources, conserving nature sensitively and guaranteeing a respectful and fair treatment of all people working on the project, general public at the vicinity and inhabitants of the project.

In relation to the proposed mitigation measures that will be incorporated during construction phase, the development's input to the society; and cognation that the project is economically and environmentally sound, establishments are considered beneficial and important. It is our considerable opinion that the proposed development is a timely venture that will subscribe to proponent's timely investment and also the government's intention to subsidize fuel in Namibia.

Consequently, following conclusions and recommendations have been reached and made by Mafuta Environmental Consultants (MEC), respectively:

MEC are confident that the identified potential negative impacts associated with the proposed fuel service station and related activities were found to be more of medium significance rating. The project can be allowed to go ahead with the implementation provided the outlined mitigation measures are adhered to. Major concerns should nevertheless be focused towards minimizing the occurrence of impacts that would degrade the general environment. Therefore, these impacts can be mitigated by effectively implementing the

recommended management action measures and continual monitoring as recommended herein.

Thus, from all the findings (specifically from the general public identified during consultation period) of this report, it is recommended that the development be authorised as the local public is really positive and looking forward to see development in their area.

It is therefore, recommended that the fuel station construction and operations on the project site be granted an Environmental Clearance Certificate, and provided that the following crucial recommendations are adhered to:

- All mitigations provided in this EMP should are implemented as stipulated and **where required and improvements should be effectively made in order to achieve environmental sustainability goals**. Thus, **satisfying the requirements of and compliance with the EMA No. 7 of 2007, its 2012 EIA Regulations and the environmental clearance certificate conditions.**
- All required environmental management permits, licenses and approvals for the construction and operations are obtained as required (please refer to the Permitting and Licensing in **Table 8** of this document);
- The Proponent and all their workers complies with the legal requirements governing this type of project and its associated activities;
- Environmental monitoring requirements recommended are adhered to; and
- All the necessary environmental (water and biodiversity) and social (occupational health and safety) components are protected as recommended and respective precautions/mitigation measures provided are adhered to.

To sum up the main recommendations for the prevention and mitigation of adverse impacts, these are as follows:-

- The Proponent should follow the guidelines as set by the relevant governing departments to safeguard and envisage environmental management principles during construction and operation/occupation phases of the proposed project;
- Water resources pollution preventive measures should be included in the project designs and set up during construction in preparation for the operational phase. These

measures include storm water management such as drainages; soak ways and low-liquid infiltration surfaces.

- Groundwater monitoring in the tank observation wells (TOWs) should at the fuel station should be conducted on a monthly basis;
- It is important that warning/ informative sign (bill boards) be erected at the site. These should indicate the operation hours and when works are likely to be started and completed. The signs should be positioned in a way to be easily seen by the public and mostly motorists;
- All solid waste materials and debris resulting from construction activities should be disposed off at approved dumpsites;
- All construction materials e.g. pipes, pipe fittings, sand just to mention a few should be sourced/procured from bonafide/legalized dealers;
- During construction all loose top soils should be compacted to prevent any erosion;
- Other appropriate soil erosion control measures can be adapted. Any stockpiles of earth should be enclosed, covered or sprinkled with water during dry or windy conditions to minimize generation of dust particles into the air;
- Once earthworks have been done, restoration of the worked areas should be carried out immediately by backfilling, landscaping/ levelling and planting of suitable tree species;
- Proper and regular maintenance of construction machinery and equipment will reduce emission of hazardous fumes and noise resulting from friction of metal bodies;
- Maintenance should be conducted in a designated area and in a manner not to interfere with the environment;
- A fully equipped first aid kit and other safety measures should be provided within the site;
- The contractor should have workmen's compensation cover and is required to comply with workmen's compensation Act as well as other relevant ordinances, regulations and Union Agreements; and
- The contractor should provide adequate security during the construction period.

10. LIST OF REFERENCES

APPENDIX A: LIST OF STAKEHOLDERS (INTERESTED AND AFFECTED PARTIES (I&APS))