Environmental Scoping Assessment

To Support an Application for an **Environmental Clearance Certificate (ECC)** to Permit a Listed Activity -the Construction and Operation of a Fuel Retail Outlet

On Portion 59 (a Portion of Portion F) of Farm Stampried No. 132, Stampriet, Hardap Region

PROPONENT

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APP005964

Final Report

July 2025

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INFORMATION SHEET	
Project Title Name	An Environmental Management Plan (EMP) Report in Support of an Application for an Environmental Clearance Certificate (ECC) to Permit the Construction and Operation (Including Renovations and Routine Maintenance) of a new Fuel Service Station and Related Amenities on Portion 59 (a Portion of Portion F) of Farm Stampried No. 132 Stampriet Village, Mariental Rural Electoral Constituency Hardap Region
MEFT Application No.	**APP-005964**
Applicant /Promotor	Amajan Investments CC Reg. No. CC/2023/07664 Box 221 Mariental Hardap Region Namibia
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Report Status	Final
Report Date	July 2025

EXECUTIVE SUMMARY

Amajan Investments CC (the '**Promotor**') is proposing to construct and to operate a fuel retail outlet (FRO) and related amenities at the village of Stampriet in the Hardap Region. Ekwao Consulting ('**Ekwao'**) was appointed by the promotor to facilitate the approval process for an Environmental Clearance Certificate (ECC) which, in terms of the Environmental Management Act and EIA Regulations, is mandatory for such kind of development.

The said FRO is one component of a major shopping complex development planned by the promotor with a capital investment estimated upwards of N$80 million. Two local retail giants - Agra and Woerman Brock are the anchor tenants who will utilise the bulk of the retail floor area footprint. The FRO is the only component of the development for which an ECC is required.

The project will be developed on Portion 59 (a Portion of Portion F) of Farm Stampried 132, purchased on a private treaty terms by the promotor from the Stampriet Village Council. The basis of sale was for the promotor to shoulder all costs related to the land formalization process. The total land portion in question measures about 29 337 m^2 (about 2.9337 ha) with the FRO occupying less 1% of the purchased land.

The proposed FRO will supply automobile diesel oil (ADO) and unleaded petrol (ULP) from underground storage tanks (USTs) delivered to vehicles via a system of pipelines and pumps on a forecourt area. Construction activities will entail some earthworks to bury the USTs, to install a reticulation system (fuel conveying pipelines and electrical cables), a forecourt area, pumps and buildings. The operational phase will include road tankers delivering fuel to the site, discharging of delivered fuel into USTs, dispensing fuel from USTs into vehicles of clients and day-to-day administration duties.

Ekwao has conducted a risk assessment to determine potential impacts (both real and perceived) which the proposed development will bring to bear on the receiving environment during its various phases (planning & designing, construction, operational and possibly decommissioning phases). The environmental assessment was undertaken to allow the proponent to apply for an ECC in terms of the Environmental Management Act (No. 7 of 2007) and related EIA Regulations as per GG No. 4878.

There were no impacts identified for the planning and design phase, but the construction phase, fifteen (15) environmental impacts/aspects were identified and assessed. Out of these, twelve (12) have negative impacts with significance rating ranging from low without mitigation and very low with mitigation. The majority of negative impacts associated with the project can be reduced and or eliminated if the recommendations proposed in the EMP are complied with.

The FRO is a component of a major shopping complex and is geared to positively complement the overall performance of the development, contributing towards a reliable fuel supplier to the local residents, neighbouring farming communities and the general public travelling on C20 and adjacent feeder roads. The socio-economic benefits that will accrue from the development include employment opportunities, skills transfer, taxes to NamRa and increased revenue to the coffers of the Village Council through payment for rates and taxes. Having Agra and Woerman Brock as key anchor tenants has the added benefit of bringing vital products and services to the residents and neighbouring farming community who would save both time and money by not having to travel long distances to procure such products at Mariental or Gobabis.

The scoping assessment has found that the environmental impacts associated with the construction and operation of the FRO and the whole development can be effectively mitigated provided the measures recommended in the EMP are adhered and complied with.

It is recommended that an ECC be granted to the applicant (Amajan Investments CC) to construct and operate a FRO on Portion 59 (a Portion of Portion F) of Farm Stampried No. 132 1 subject to the terms and conditions which the EC may wish to impose.

TABEL OF CONTENT

FIGURES

TABLES

ABBREVIATIONS AND ACRONYMS

TERM	EXPANSION
ADO	Automobile Diesel Oil
EC	Environmental Commissioner
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act (Act No. 7 of 2007)
EMP	Environmental Management Plan
EMS	Environmental Management System
FRO	Fuel Retail Outlet
HDPE	High Density Polyethylene
HRC	Hardap Regional Council
HSSEQC	Health, Safety, Security, Environment, Quality – Management System
IAPs	Interested and Affected Parties
m^2	Square meters
m^3	Cubic meter
MEFT	Ministry of Environment, Forestry and Tourism
MIME	Ministry of Industries, Mines and Energy
MSDS	Material Safety Data Sheet
NamRa	Namibia Revenue Authority
NSI	Namibia Standards Institute
OEC	Office of the Environmental Commissioner
PC	Petroleum Commissioner
PPE	Personal Protective Equipment
PPM	Parts Per Million
PV	Photovoltaic
SANS	South African National Standards
SAR	Scoping Assessment Report
SHE	Safety, Health & Environment
SME	Small and Medium Enterprises
SVC	Stampriet Village Council
SVC	Stampriet Village Council
ULP	Unleaded Petrol
USTs	Underground Storage Tank(s)
VOC	Vapour Organic Compounds
WHO	World Health Organisation

DEFINITIONS

TERM	EXPANSION
Assessment	The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making
Business waste	Means any waste generated on any premises used for non-residential purposes, but excluding agricultural properties and small holdings, and does not include general waste, household hazardous waste, garden waste, bulky waste, builder's waste, industrial waste, hazardous waste and health care risk waste
Construction Phase	The phase of a project preceding the Operation Phase, during which project facilities and infrastructure are assembled and installed on their foundations, and connected and tested, to ensure that they operate as designed.
Cumulative Impacts	In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.
Disposal	Means the discharge, depositing, dumping, spilling, leaking, placing of waste on or at any premises or place set aside by the Council for such purposes, and "dispose" shall have a similar meaning;
Emergency Plan	An emergency plan is a plan in writing that, on the basis of identified potential incidents at the installation together with their consequences, describes how such incidents and their consequences should be dealt with, both on-site and offsite.
Environment	As defined in the Environmental Assessment Policy and Environmental Management Act - "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values".
Environmental Clearance Certificate	A certificate and associated conditions issued in terms of the Environmental Management Act, authorizing a listed activity to be undertaken
Environmental Impact	A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.
Environmental Management Plan (EMP)	A working document which contains site project specific plan developed to ensure that environmental management practices to eliminate and control environmental impacts are followed during the developmental phase of that site, project and or facility and would normally consist of construction phase, operational phase and decommissioning phases.
General Waste	Means any waste generated on or at any premises used - (a) for residential purposes, and includes agricultural properties and small holdings; or (b) as public and/or private facilities and institutions, but does not include garden waste (unless specifically determined or authorised by Town Council subject to any conditions or limitations the Council may impose), bulky waste, business waste, builder's waste, industrial waste, hazardous waste and health care risk waste.
Hazardous waste	Means - (a) any waste containing, or contaminated by, poison; (b) any corrosive agent; (c) any flammable substance having an open flash-point of less than 90 degrees Celsius; (d) an explosive or radioactive material and substance; (e) any chemical or any other waste that has the potential even in low concentrations to have a significant adverse effect on public health or the environment because of its inherent toxicological, chemical, ignitable, corrosive, carcinogenic, injurious and physical characteristics; (f) any waste consisting of a liquid, sludge or solid substance, resulting from any manufacturing process, industrial treatment or the pre-treatment for disposal purposes of any industrial or mining liquid waste, which in terms of any law, order or directive relating to drainage and plumbing may not be discharged into any drain or sewer.
Industrial waste	Means any waste generated as a result of business, commerce, trade, wholesale, retail, professional, manufacturing, maintenance, repair, fabricating, processing or dismantling activities, but does not include general waste, garden or bulky waste, builder's waste, business waste, hazardous waste or health care risk waste.
Scoping Process	Scoping is that process of the EIA during which key environmental issues and impacts that have to be addressed are identified, and ultimately defining the scope and focus of the assessment.
Operational Phase	The phase of a project during which the newly constructed tanks, pipelines, gantries and associated facilities are operated.
Pollution	Means any change in the environment caused by – (a) any waste, substance or matter; or (b) noise, odour, dust or heat, emitted from or caused by any activity, including the storage or treatment of any waste, substance or matter, building and construction, and the provision of any

	service, whether engaged in by any person or an organ of state if that change has an adverse effect on public health or well-being of people.
Public Participation Process	The process of involving all affected parties in the design, planning and operation of a project. The process requires that the proponents give the parties to be consulted notice of the matter in sufficient form and detail to allow them to prepare their views on the matter. They are also given a reasonable amount of time to prepare their views and an opportunity to present their views to the proponents, who consider the views presented, fully and impartially.
Recovery	Means the process or act of reclaiming or diverting from waste any materials, products or by-products for the purposes of being reused, or collected, processed and used as a raw or other material in the manufacture of a new, recycled or any other product, but excluding the use for purposes of energy generation;
Recyclable waste	means waste which has been separated from the waste stream, and set aside for purposes of recovery, reuse or recycling;
Waste Recycling	Means the process or act of subjecting used or recovered waste materials, products or by-products to a process or treatment of making them suitable for beneficial use and for other purposes, and includes any process or treatment by which waste materials are transformed into new products or base materials in such a manner that the original waste materials, products or by-products may lose their identity, and which may be used as raw materials for the production of other goods or materials.
Waste Recycling Facility	Means a facility which receives any waste, materials, products or by-products for the purposes of recovery, reuse or recycling, and includes a buy-back centre.
Waste Reduction	Means the process or act of reducing the nature, type, quality, quantity, volume or toxicity of any waste generated, and "reduce" shall have a similar meaning
Refuse container	Means any receptacle or other container, including a skip, stipulated or approved by the Town Council from time to time, whether supplied by the Council or not, for the storage, depositing and disposal of waste.
Waste Re-use	Means the process or act of sorting and separating, at the point of origin, different materials found in any waste in order to promote and facilitate recovery, reuse and recycling of materials and resources, and "separate" shall have a similar meaning;
Storage	Means the temporary storage or containment of any waste for a period of less than 90 days after its generation and prior to its collection for recovery, reuse, recycling, treatment or disposal;
Waste	Means any substance or matter whether solid, liquid or any combination thereof, irrespective of whether it or any constituents thereof may have value or other use, and includes – (a) any undesirable, rejected, abandoned or superfluous matter, material, residue of any process or activity, product, by-product; (b) any matter which is deemed useless and unwanted; (c) any matter which has been discarded, abandoned, accumulated or stored for the purposes of discarding, abandoning, processing, recovery, reuse, recycling or extracting a usable product from such matter; or (d) products that may contain or generate a gaseous component
Sustainable Development	"Development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs and aspirations" –World Commission on Environment and Development (1987). "Improving the quality of human life while living within the carrying capacity of supporting ecosystems" - Caring for the Earth: A Strategy for Sustainable Living, by the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme and the World Wide Fund for Nature (1991).

1 INTRODUCTION

1.1 Overview

The promotor whose particulars are presented in **Table 1** below, would like to construct and to operate a new fuel retail outlet (FRO) and related amenities as described in this environmental scoping assessment report.

In terms of the Environmental Management (EMA), and Environmental Impact Assessment (EIA) Regulation as published in Government Gazette (GG) No. 4878, a fuel is listed in the category of hazardous substance for which the storage and handling thereof require the proponent to be in possession of an **Environmental Clearance Certificate (ECC).**

The Office of the Environmental Commissioner (OEC) in the Ministry of Environment, Forestry and Tourism (MEFT) is the statutory agency responsible for the implementation of EMA.

Ekwao Consulting has been appointed by the promotor as an independent EIA Consultant to facilitate the ECC application process for the project with the OEC.

1.2 The Proponent

Details of the project proponent are presented in **Table 1** below.

Table 1: Particulars of the Promotor

Details of the Promoter	
Name	Amajan Investments CC
Registration No.	CC/2023/07664
GPS Coordinates	Longitude: -24. 347154 Latitude: 18.398659
Contact Person	Duan Jensen (Mr)
Designation of Contact Person & Contact Details	Managing Member Tel: 081 225 5220 Email: duanjansen@icloud.com
Postal Address	Box 252 Mariental Namibia
Physical Address	Portion 59 (a Portion of Portion F) of Farm Stampried No. 132 C20 - Main Road Stampriet Hardap Region Namibia

1.3 The Project

The proposed project entails the construction and operation of a new fuel retail outlet (RFO) and related amenities A preliminary site plan presented by the Managing Member of the CC shows a modern FRO with underground storage tanks (USTs), and an overhead canopy and a pump islands. The tanks will allow for the storage and dispensing of both unleaded petrol (ULP) and 50 ppm diesel.

The FRO is one component of a large development underway at Stampriet that consists of a shopping complex with a footprint of about 16 000 square meters. Estimated cost for the development is upwards of N$80 million Namibia Dollars. Local household retail giants - Agra and Woerman Brock are the two anchor tenants.

It is should be mentioned here that the Environmental Clearance Certificate (ECC) is only required for the construction and operation of the FRO.

1.4 Triggered Activity

The proposed development has triggered a listed activity that, in terms of EMA may not be undertaken without an ECC having been granted.

Table 2: Triggered Listed Activities

Activity Category	Expansion
Hazardous Substance Treatment, Handling and Storage	**Paragraph 9.2** • Any process or activity which requires a permit, licence or other form of authorisation, or the modification of changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit. **Paragraph 9.3**

Activity Category	Expansion
	• The bulk transportation of dangerous goods using pipeline, funiculars or conveyors with a throughout capacity of 50 tons or 50 cubic meters or more per day. **Paragraph 9.4** • The storage and handling of dangerous goods, including diesel, petrol, liquid petroleum, gas or paraffin, in containers with a capacity of more than 30 m^3 at any one location. • Temporary storage of hazardous products during the construction phase, e.g. fuel storage for use by construction vehicles. **Paragraph 9.5** • Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.

1.5 The EIA Process

The EIA process is a systematic process through which potential impacts (both negative and positive) that a proposed project will bring to bear on the receiving environment are identified, predicted, evaluated and mitigation measures recommended to reduce, minimise or eliminate such impacts.

In the EIA report, a list of impacts identified during the scoping assessment (whether such impacts are real or perceived) is provided and suitable mitigation measures recommended to reduce potential impacts, hence ensuring that the proposed development is implemented in a manner that is technically sound, financially viable and environmentally sustainable.

1.6 Scope and Objectives

The scope and objectives of this scoping assessment are intended:

- To determine the baseline conditions and its surrounds
- To determine the potential environmental impacts arising from the construction and operation and possibly decommissioning activities of the proposed FRO;
- To identify a number of management actions/mitigation measures which could mitigate any potential adverse impacts associated with the development (construction and operation) to acceptable standards;
- To conduct a public consultation process during which stakeholders (both statutory and IAPs) particularly neighbouring residents who may be impacted by the proposed FRO;
- To comply with the provisions and or requirements of EMP, and
- To provide adequate information to OEC for the EC to make an informed decision on whether to grant the ECC with conditions or without conditions.
- To integrate, where possible mitigation measures in the design, engineering, planning and execution of the proposed facility, and
- To incorporate environmental; management plans and monitoring mechanism during implementation and operational phases of the FRO.

1.7 The Project Phases

There are at least three phases associated with this project. The first phase entails the planning, designing and securing all statutory permits and or licenses that are required for the FRO. Generally, there are no environmental impacts associated with this phase.

The construction and operational phases are those phases of the project that are associated with activities intrusive in nature, and with the potential to impact negatively on the biological, physical and social environment, i.e. site clearing, excavations, trenching, waste generation, chemical spills or leaks, etc.

Presented in **Table 3** below are some of the activities associated with the aforesaid phases.

Table 3: Project Phases and Associated Activities

Phase	Expansion
Planning/Designing	During this phase, the promotor is required to carry out the planning and to secure all statutory permits and or licenses, e.g. ECC from MEFT, Fuel Retail Licence from MIME, as well as having drawings prepared and approved by the local authority (Stampriet Village Council).
Construction (including decommissioning post construction)	• Site clearing, preparation and earthworks or civil works; • Civil works required for the FRO and associated infrastructure; • Construction of infrastructure for the fuel (petrol & diesel) retail facility; • Installation of underground storage tanks (USTs);

Phase	Expansion
	• Construction of a forecourt and refueling area; • Installation of the pipeline networks, pumping system, vent pipes, etc. electrical installations and wiring of several components; • An onsite sewerage system; • Access roads in and out of the facility as well as internal routes, etc.
Operation (including routine maintenance and renovations)	• Fuel offloading from road tankers discharging directly into USTs; • Dispersal of fuel using a system of pipes, filters and pumps into client vehicles; • Monitoring fuel stock levels in USTs or tank dips; • Fuel volume reconciliations on a daily basis; • Carrying out routine maintenance as well as renovation from time to time; • Keeping the facility clean, tidy and hazard-free; and • Complying with safety standards applicable to FROs.

1.8 Project Screening

To meet the stated objectives, and to comply with the provisions of EMA, an environmental scoping assessment for the project was conducted by Ekwao Consulting. The information on the project was largely gathered through these sources:

- Meeting and speaking with the project promotor at the project site;
- Physical inspection and observation of the project site;
- Physical inspection of the project surroundings up to a radius of 200 m;
- Desk studies;
- Placing EIA adverts in the local newspapers;
- Posting EIA Notices at the project site; and
- Receiving comments and inputs from IAPs.

Following the site inspection, a background information document (BID) was prepared and submitted to OEC, which allocated an application number (**APP-005964)** to the project:

In terms of the screening notice issued by OEC, these reports have to be prepared and submitted:

- ❖ A Scoping Assessment Report;
- ❖ An Environmental Management Plan (EMP)
- ❖ Public Participation Process (PPP), and
- ❖ A Consent letter from the relevant authority.

2 PROJECT DESCRIPTION

2.1 Locality and Layout Plan

The FRO will be constructed on Portion 59 (a Portion of Portion F) of the Farm Stampriet No. 132, within the jurisdiction of the Village of Stampriet, Registration Division 'R', in the Hardap Region. When approaching Stampriet from the direction of Mariental, the land is on the right hand side along the upper reaches of the Auob River.

The land portion measures about 29,337 square meters (about 2.9 ha) and, while it lies within the townlands of the Village of Stampriet, it has not been formalised and the proponent was asked to attend to the formalisation process. The centre GPS coordinates of the site are -24.347154 S, 18.398659 E. The locality map is presented as a Google Earth image in Figure 1. The site is set against the foot of a local hill to the south of the village giving the development an attractive appeal

2.2 The Development

As briefly mentioned in the introduction section, the entire project proposal entails the development of a shopping complex with a total footprint of approximately 16 196 m^2 or 55% of the total land as more or less tabulated in **Table 4**. The FRO is the only component of the development that requires an ECC prior to starting with the construction and operation.

Table 4: Project Components

Component	Floor Area (m^2)	Portion 59 Area (m^2)	% Coverage
Agra (Shop 1)	1 845	29 337	6.29%
Agra (Yard)	3 395	29 337	11.57%
Shop 2	1 295	29 337	4.41%
Shop 3	1 145	29 337	3.90%
Pharmacy	259	29 337	0.88%
Private Hospital	1 049	29 337	3.58%
Fuel Retail Outlet	208	29 337	0.71%
Paved Parking Area	7 000	29 337	23.86%
Future Developments	13 141	29 337	44.79%
Total	**29 337**	**29 337**	**100.00%**

The proposed is for a FRO that includes a forecourt refuelling area for light vehicles with four petrol/diesel pumps. It is estimated that four underground fuel storage tanks, each with a storage capacity of 23 m^3, resulting in a site having a total installed combined capacity of 92 m^3. Adequate parking bays will be provided to cater for the patrons with at least four parking bays specifically designated for use by disabled persons. There is no provision made for refuelling heavy vehicles. Additionally, the facility will include the following:

- A convenience store;
- Public toilets;
- ATMs;
- Refuse storage area, and
- Office for the management staff.

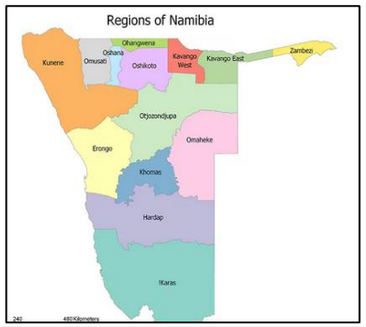
2.3 Service Description

The following bulk infrastructure is associated with the overall development of the shopping complex, and such services /infrastructure will be extended to the FRO:

- Potable Water Supply
- Electrical Supply
- Sewerage
- Stormwater Drainage, and
- Telecommunications

LOCALITY MAP

PROPOSED FUEL RETAIL OUTLET AT STAMPRIET



Legend

Project Site

Prepared by:

Ekwao Consulting

Date	June 2025
Site Coordinates	-24.347154 S 18.398659 E

Figure 1: Project Location Map (Google Earth Image)

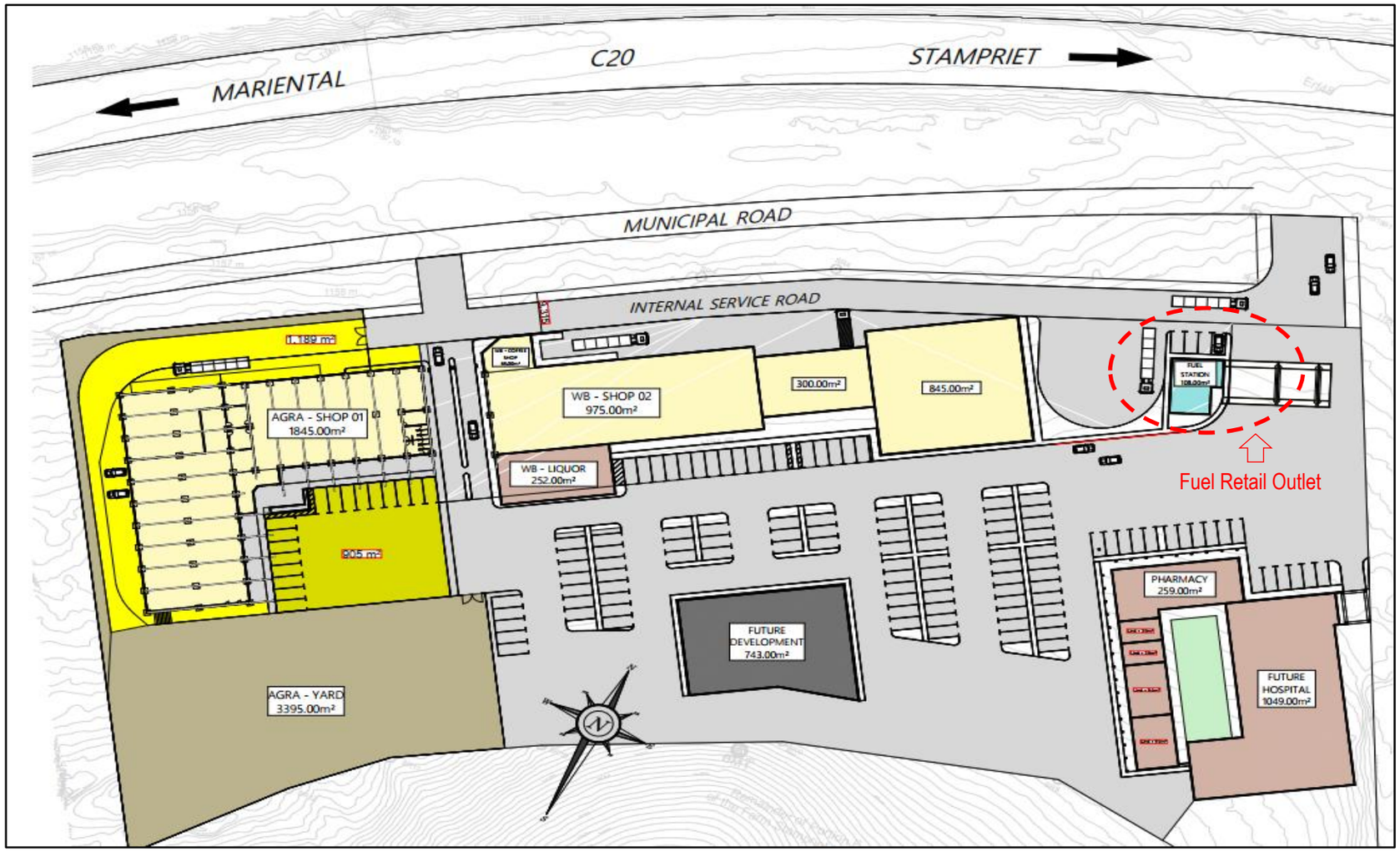


Figure 2: A Perspective Layout of the Proposed Shopping Complex Development

2.3.1 POTABLE WATER SUPPLY

The bulk water supply for the development would be obtained through a connection to an existing water pipeline running to the north of the site. The connection will be sufficiently sized for commercial use including firefighting at the FRO and the shopping complex.

2.3.2 ELECTRICAL SUPPLY

The Village of Stampriet, and other major bulk electricity end-users in the Hardap Region are supplied by Nampower. Electricity infrastructure in the form of an 11kV line is in the vicinity of the project site and, it is anticipated that the development will be connected to this line. Additionally, the development has the flexibility to consider the use of alternative energy sources, i.e. installing solar panels on the rooftops of the development.

2.3.3 SEWERAGE

The proposed project would link into the existing sewer mains of the Stampriet Village located to the north of the project site.

2.3.4 STORMWATER DRAINAGE

The site has a natural fall towards the Auob River which runs through the town and to the north of the project site. Stormwater within the project footprint could be managed effectively in two ways – by using underground stormwater pipes that are sized to accommodate for the 1:5 year storm event or by constructing an overland stormwater escape route to the north of the development. The overland system will be cheaper to construct and would ensure an effective scape of higher return period storm event flows.

2.3.5 TELECOMMUNICATIONS

The project site is in an area with well-developed telecommunication infrastructure with networks provided by MTC and Telecom Namibia.

2.4 FRO Operating Standards

Since Namibia is still developing its own standards and specifications for FROs, the South African National Standards codes (SANS), are used in the country with these guidelines or specs:

- The tanks are manufactured according to SANS code 1535 and placed on a high density polyethylene (HDPE) liner within the excavation;
- The tanks should be installed to minimum depths of 3.2 m below surface or at depth specified by the engineer;
- The tanks will be directly filled at filler points that are located underground in sealed manholes, designed in such a manner that any accidental spills can be contained;
- Monitoring wells will be installed at the edge of the tank farm and inserted below the base of the tanks as specified by the engineer;
- The forecourt will have a storm water drainage system that discharges into an onsite purpose build water drain system via an oil/water separation pit;
- A suitable sewerage system with adequate capacity that offers efficient wastewater treatment and resource reuse to minimise environmental impact should be constructed to serve the facility, and
- Use should be made of local building materials that are readily available in the surroundings.

2.5 Project Alternatives

Only three alternatives were considered for this project, namely: design/layout, technology and the 'No-Go' options.

2.5.1 DESIGN/LAYOUT ALTERNATIVE

It is advisable to have the FRO designed in a manner that allows a smooth transition to the use of renewable energy, i.e. the building structures, layout of the roof and orientation should facilitate easier installation of solar panels ensuring maximum exposure to the sun.

2.5.2 TECHNOLOGY ALTERNATIVES

A variety of technologies are used at FRO that are regularly upgraded and updated for purpose of enhancing convenience, efficiencies and security. Such technologies include smart pumps with digital interfaces, mobile payment options, automated systems, and data analytics for fuel management and energy optimization. Things such as energy saving bulbs, dual flush toilets, etc. may be used to save consumables.

It is also important to keep in mind that the energy transition includes electrical powered vehicles. Therefore, it is wise to consider the installation of vehicle charging stations to cater for this growing number of motorists.

2.5.3 THE NO-GO ALTERNATIVE

This alternative assumes that the status quo remains unchanged in that no FRO is constructed on the premises. There will be no disturbances and the land will continue to remain in its current state. However, this alternative is not encouraged because the absence of a FRO at the specific site would mean that Stampriet residents and the general public travelling on the C20 tourist route will not have fuel for their vehicles, and may be compelled to travel long distances to refuel at either Mariental (65 km) or Aranos (85 km) .

The goals as outlined in NDP 6 will remain unfulfilled in that no employment is created and the youths in Stampriet will remain unemployed and disgruntled. The 'No-Go alternative' option is therefore not supported.

2.6 Duration for Construction

It is estimated that the construction phase for the whole shopping complex would last for about 18 months – this long period is assumed to include tender document preparation and tender appraisals. Procurement of items with long lead-times such as tanks and pumps is also expected to extend the construction period.

Given the CapEx (about N$80 million) required for the investment in the new modern shopping mall, the facility is expected to have an operational lifespan in excess of thirty years.

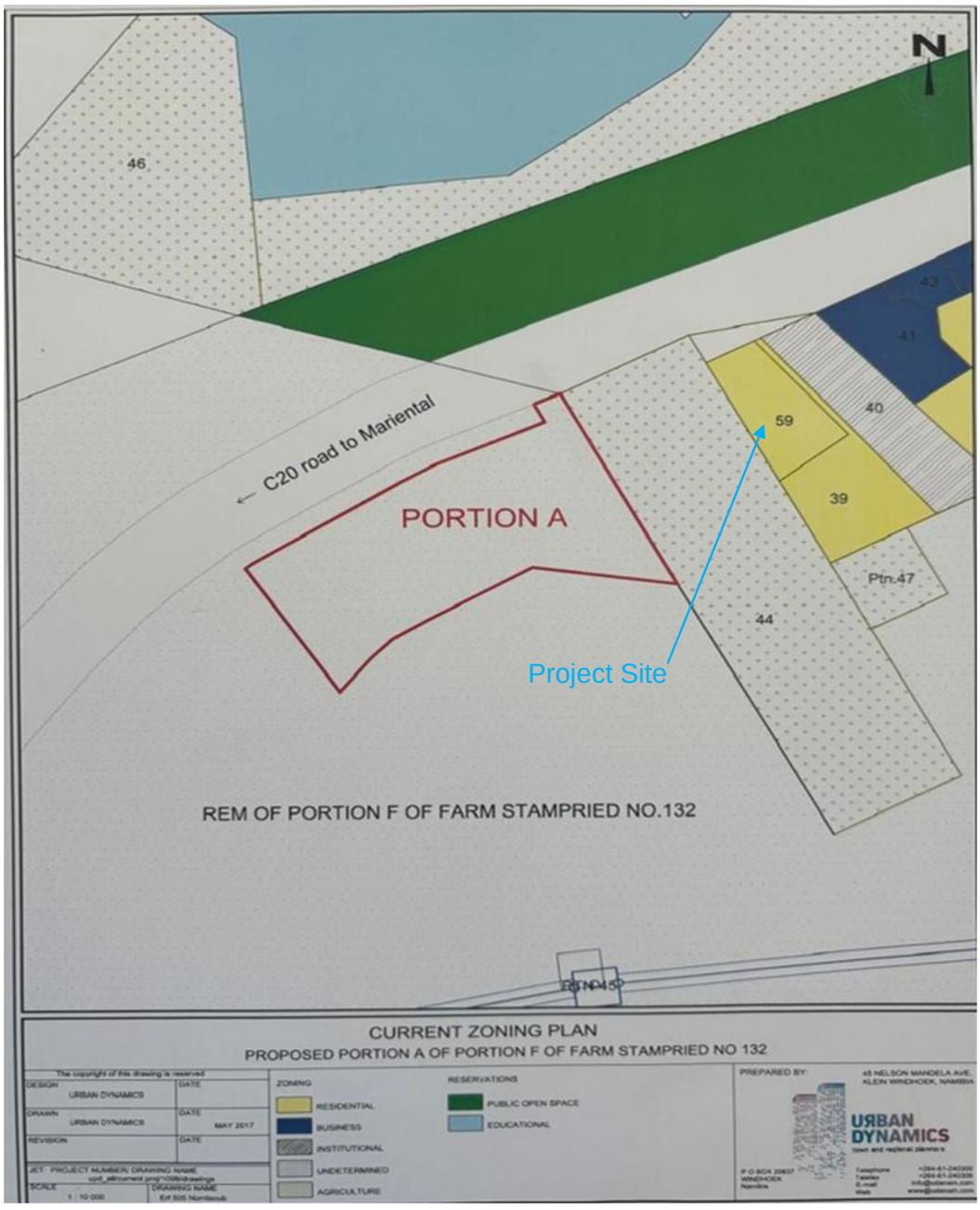


Figure 3: Portion 59 of Farm Stampriet No. 132

Figure 4: Project Site Seen from C20 with the Access Point linking to the Tar Road (C20)

Figure 5: Site Preparation for the Shopping Complex Development with Backfilling and Levelling Underway. Note Height of Filling

Figure 6: View to the North with the Auob River that Runs Through Stampriet. Note the Access Point linking to C20 Tar Road

Figure 7: View to the East along Adjacent C20 Leading towards Aranos-Gobabis

Figure 8: View to the Northwest from the Site Access Point

Figure 9: Typical Vegetation to the north along the Auob River that runs through Stampriet

2.7 Support Facilities and Requirements

2.7.1 WATER REQUIREMENTS

Underground water is the primarily source of water used at the village of Stampriet. Extraction is through boreholes. Water required for the construction and operation will be sourced from the Stampriet Village Council. The yield from the borehole is considered adequate to meet the construction and operational phases.

The development will be expected to implement water saving measures for its various activities including recycling and reusing at the car wash facility. Water saving technologies like sensor taps and or installation of low-flow fixtures like aerators should also be considered.

Potential Environmental Impacts

There are no potential environmental impacts expected to arise during the supply or water connection to the project site. Minimal excavation will be required to accommodate the pipeline bringing water to the facility. The water requirements for the project is not expected to impact negatively on the available water sources at the Stampriet.

2.7.2 ELECTRICITY REQUIREMENTS

The facility will require an uninterrupted power supply system to feed all components at the development including the FRO. In the short term electricity will be sourced from a transformer situated about 200 m from the project site. In the long term, an investment in a PV system should be considered to either supplement the electricity sourced from the grid or to go completely off grid thereby reducing the carbon footprint of the FRO. Most developments in the Hardap and //Karas regions have gone this way, benefiting from the abundant sunshine.

To save power, a mixture of LED and other lighting systems should be considered for use to minimise abuse and save costs. Adequate lighting should be provided for areas that will be accessed and operated during night operations, as well as for security purposes. The lighting should be designed in manner that ensures that sufficient light is available for the CCTV system to operate. Alternative forms of energy supply such as solar and wind should be explored during the design stage in order to reduce the carbon footprint of the facility.

Potential Environmental Impacts

There are no environmental impacts expected from the supply of electricity to the FRO, both during the construction and operational phases. Should alternative energy sources be considered in the long term, limited impacts may arise, i.e. visual intrusion in the case of solar panels installed on roof tops. In the case of a PV system, efforts should be made to conceal the system so that it does not became a visual nuisance to the public using adjacent roads.

2.7.3 ACCESS TO THE SITE

The project site is along the C20 tourist route that runs through the Stampriet village leading to Aranos to the south and Mariental to the west. Access from the C20 to the project site has been approved by Roads Authority to be at the extreme southeast corner of Portion 59 (a Portion of Portion F) of Farm Stampried. The approved access point is shown in Figure 11, while the letter confirming RA approval is attached to the Public Consultation Section of the report.

1 Figure 10: Roads Authority Approved Access to the Project Site

During the site visit, earth works were underway and the access road has been prepared and used to deliver fill materials to the construction site. According to the Project Manager, the access road has to be tarred at the cost of the developer.

Potential Environmental Impacts

The total length of the access road to be constructed is about 20m and therefore short. Minimal impacts in the form of dust, noise and emissions from construction vehicles may be expected but they are site specific and of a short duration. Since the access is linking to the project site to the main road which is relatively busy safety standard should be implemented to avoid accidents and injury.

2.7.4 SOLID WASTE HANDLING AND MANAGEMENT

Waste removal from houses and business is handled by SVC and is one of its main sources of income. The promotor is expected to temporarily store solid waste generated by the FRO in suitable waste skips/bins storage at a designated site on the premises until removed by SVC.

Potential Environmental Impacts

During the construction and operation the development will add another waste stream, viz. hazardous waste which can take the form of spill or leaks and must be handled as recommended in the EMP.

2.7.5 SEWAGE SYSTEM

The project site will be connected to the sewage system of the SVC. The sewer line is running to the north of the project site and about 15 m away.

Potential Environmental Impacts

Minimal excavation work will be required to extend the sewer pipeline from the development to the main sewer line of SVC. During the operational phase, all wastewater from the FRO section of the development should be directed to pass through an oil separator.

2.8 Ancillary Infrastructure Required for the Construction

No major infrastructure is required on site for the construction of the development. The required infrastructure to support the construction is briefly discussed below:

2.8.1 CONTRACTOR'S CAMP AND LAYDOWN AREAS

A designated areas will be established on the project premises to allow the appointed contractor to establish a temporary construction camp where to keep its plants, machines, equipment and its personnel. The area allocated should be big enough to accommodate all construction equipment and personnel.

Environmental Considerations:

When selecting an area for the campsite, choose a site that will cause minimal disruptions to existing habitats and ecosystems. Mature trees must not be chopped down.

2.8.2 SANITATION

Proper sanitation at the construction camp is crucial for the wellbeing, health and safety of personnel. Adequate facilities should be provided which include clean drinking water, toilets with running water, handwashing stations, showers, and proper waste management system to prevent disease and contamination.

Environmental Considerations:

A high standard of housekeeping must be maintained which focuses on prevention of contamination and pollution of soil, water and air from leaking sanitation facilities. Proper waste management must be maintained throughout the construction period.

2.8.3 SECURITY

To campsite must be secured and preferably fenced in with a single access point. Access to the construction camp must be restricted to construction personnel only. The Foreman must determine if a security guard is required to man the premises during working hours.

Environmental Considerations:

Poor security at the construction campsite could lead to loss of resources through theft, sabotage and or vandalism

3 PROJECT SITE BASELINE ANALYSIS

A brief baseline of the project site is presented in this chapter. Only those aspects of the environment that have a bearing on the project have been elaborated upon.

3.1 The Socio-economic Environmental

During the 2023 national population census, the Hardap Region had a population of 106 680 people, an increase of 25.40% from the population of 79 584 recorded during the 2011 census. The village of Stampriet had 3 088 residents in 2023 compared to 1 890 residents recorded in 2011 – an increase of 44.21% which shows that there has been strong migration from the rural areas to the urban centers.

Stampriet is a small town with its economic standing tied predominantly to extraction of natural resources and to farming activities that surround the village. The proposed development will create new employment opportunities much needed in the small village founded in 1898 as a trading post in Germany South West Africa (Wikipedia).

3.2 Climatic Conditions

3.2.1 TEMPERATURE

The coldest months are June through to August when the temperature stays below 10 ºC while the hottest months are October through to April when the average temperature hovers above the 30 ºC mark. In the south eastern of the Stampriet basin, evaporation can be as high as 3 800 mm per year (Weismiller, et al. 2012). Average temperatures are presented in Fig. 13.

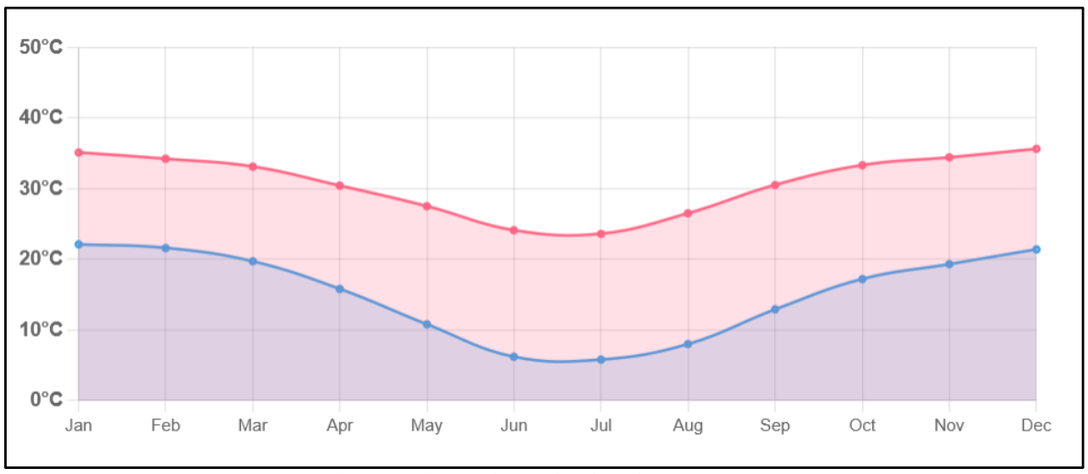


Figure 11: Temperatures in the Project Area

3.2.2 RAINFALL

Average rainfall data is presented in Fig 14 below. The village of Stampriet is one of those places in the Hardap Region that receives the lowest rainfall with precipitation hardly exceeding 140 mm per year. The rainfall season starts in November through to April with the highest precipitation occurring between December and February.

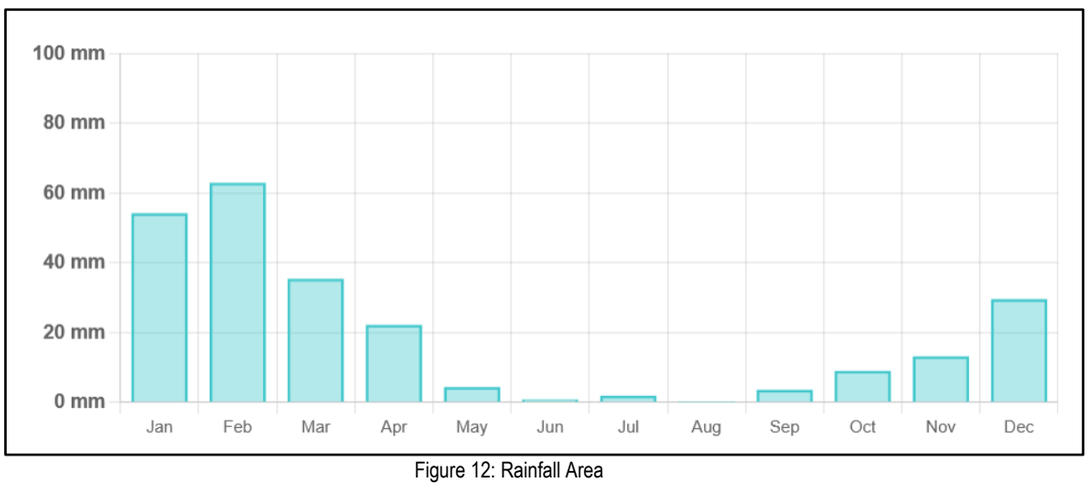


Figure 12: Rainfall Area

3.3 Geology

Extensive studies have been conducted on the Stampriet Artisan Basin (SAB) which constituted the local geology. Boreholes drilled to study the SAB have encountered rocks dating back to about 47 million years ago (the Mid-Permian period) with shale layers overlain by limestone and sandstone encountered over depths stretching up to 600 m. Layers of sediments of approximately 7 m in thickness and consisting mostly of sandstone, mudstones and siltstones were also found deposited between basalt flows within the SAB, (Weismiller, et al, 2012). Calcite cement, laths, and rosettes identified in many faces

are interpreted as eodiagenetic, sourced from geothermal groundwater. Hydrology of the landscape controls sedimentation on basalt flows (Weismiller **et al**., 2012). A cross-section through the rock formation at Stampriet is presented in Figure 15.

3.4 Hydrology

The main source of water used in the village of Stampriet and the surrounding areas is sourced from SAB – a transboundary groundwater system with its catchment areas spread over three countries – Namibia, South Africa and Botswana. About 90% of the catchment area of SAB is in Namibia. The quality of groundwater is generally good, and in most cases, water extracted is often fit for consumption, both by livestock and human. Three ephemeral watercourses – Auob River, Olifants River and Nossob Rivers are part of the larger Orange River Basin in Southern Africa.

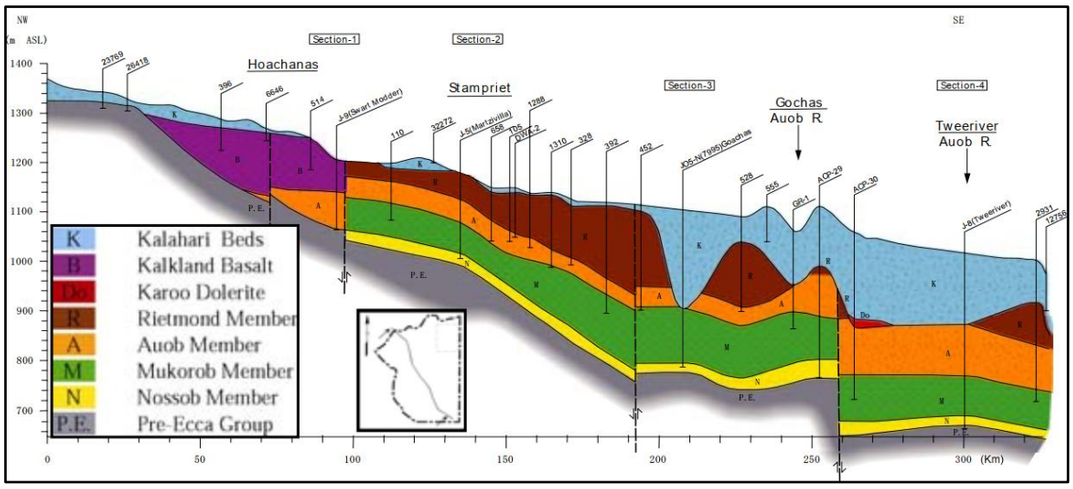


Figure 13: Geological Cross Section of SAB (Source: Dept of Water Affairs)

3.5 Flora

A mix of typical Kalahari vegetation and invasive species is found along the Auob River with dominant shrubs consisting of trumpet thorn trees (*Catophractes alexandri*), sandsuiker bos (*Monechma genistifolium*) and Kalahari soap bush (*Rhigozum*) (Fig. 11). Patched of endemic Kinkel bush (Anisostigma schenckii) occurs near the pans and drainage lines. The Auob River is impacted by invasive flowering plants, trees and bushes (Prosopis species) that are commonly found in semi-arid environments, and are threatening indigenous flora as they compete for water resources, (Goldblatt, el at, 1998).

3.6 Fauna

A variety of large to small fauna ranging from Duiker (Sylvicapra grimmia), springbok (Antidorcas marsupialis), Kudu (Tragelaphus strepsiceros), Caracal (Caracal damarensis), Steenbok (Raphicerus campestris) and black-backed jackals (Canis mesomelas) to Klipspringer (Oreotragus oreotragus) are found in the Stampriet area. Zebra are also widely scattered across the area in addition to Red Hartebeest (Alcelaphus buselaphus caam) and Gemsbuck (Oryx gazelle) are also commonly encountered (Bernard et al, 1997).

Birds endemic to the ecoregion include ferruginous lark, red lark, Sclater's lark, tractrac chat, Namaqua prinia, Karoo Scrub robin, red headed cisticola, the Karoo chat, etc. (Dean et al., 1991).

3.7 Archaeological and Cultural Heritage Resources

Sites of cultural and heritage nature are protected under the National Heritage Act (No. 27 of 2004). There are no known sites of cultural and heritage interests on the project site or its immediate surrounds. In the event such items are found during the construction phase adequate measures have been provided in the EMP section of the report.

4 THE REGULATIVE FRAMEWORK

For development to take place on a sustainable basis, government has formulated laws, rules and policies that require the implementation of all those projects that considered to have an adverse impact on the environment, to be preceded by an environmental scoping assessment. Some of the laws that are applicable to the activity envisaged by the promoter are as listed in **Table 5.**

Table 5: Legislative Framework

Legislation	Main Aspects
The Constitution of Namibia	• Supreme law of the land. • Encourages the welfare of the people. • Provides for environmental protection. • Recognises international agreements and corporations.
Environmental Management Act (Act. No. 7 of 2007)	• Provides for the definition of the environment. • Promotes and encourages sustainable management of the environment when natural resources are exploited/extracted for the benefit of the residents/citizens. • Provides for a process of assessment and control of activities that are likely to pose significant effects on the receiving environment.
Environmental Management Regulations (GG No. 4847 of February 2012)	• Heralded the implementation of the EMA almost five years after the Act was approved by the legislature; • Presents a list of activities that require an ECC prior to commencement, and • Regulates and provides guidelines on how EIAs must be conducted.
Petroleum Products Regulations and Petroleum Products and Energy Act (GG Notice 2000	The Act regulates the licensing and certification of fuel outlets including related facilities such as FROs, LGP bottling plants, etc. **Section 3 (1)** states that (1) No person shall • operate a retail outlet or conduct the business of a wholesaler, unless authorised to do so under a retail license or wholesale license; • operate a consumer installation, unless authorised to do so under a certificate, and • shall possess or store any fuel. (2) No person shall possess or store any fuel except under authority of a license or a certificate approved by the Minister of MIME. (3) The Minister of Mines and Energy has under regulation 44 of the Petroleum Products Regulations approved the use in Namibia of these specifications, standards and code of practice: • the American Standards Institute (ASI); • the British Standards Institute (BSI); • the South African Bureau of Standards (SABS, and • the South African National Standards (SANS) and • *SABS 0131-1: 1977* – The storage and handling of liquid fuel Part 1 – Small consumer installations. *SABS 0131-2 : 1979* – Storage and handling of liquid fuel Part 2 – Large consumer installations; *SABS 0131-3 : 1982* – The storage and handling of liquid fuel Part 3 – Bulk low-flash point fuel storage and allied facilities at large consumer installations, and *SABS 0108* – Classification of hazardous locations and selection of apparatus for use in such locations.
The Local Authority Act (No. 23 of 1992)	• Provides for the establishment of local authority councils to manage and handle the affairs of local government and defines the powers of the local councilors, duties and functions; • Outlines the structure of local authority councils, including membership, elections, and management, and • Addresses issues such as infrastructure, service provision, taxation, and financial management of local authorities.
Labour Act (Act 11 of 2007 as amended)	• The Act contains extensive and detailed provisions relating to the basic employment conditions, rules regarding termination of employment, dismissals and disciplinary action; • It also provides for the prevention of trade disputes, unfair labour practices, regulates and controls collective job action, employment agencies and all matters incidental thereto, and

	• The Act also provides the right to the employees to speak about work conditions, the right to say no to unsafe work, the right to be consulted about safety in the workplace and the right to workers compensation.
Public and Environmental Health Act (Act No. 1 of 2015)	• The Act provides for a legal framework for a structured more uniform public and environmental health system and for matters incidental thereto; • It deals and provides guidelines on noise generation and control thereof within an urban environment; • Also deals with waste management, handling or collection, waste disposal, waste recycling, sanitation, etc.;
Public Health Covid-19 General Regulations (as amended throughout 2020 to 2022)	• Provides for a framework on how to deal with the challenges occasioned by the outbreak of the Covid-19 pandemics and includes issues related to restrictions on gathering, testing, contact tracing, quarantine facilities, public transport, sanitation at the work place, and • It also provides for burial protocols to be followed for those who succumbed to the pandemic.
Social Security Act Act 34 of 1994 **Employees' Compensation Act** (as amended)	• Compels employers and employees to make equal contributions to the Social Security Fund. Contribution is based on 0.9% of an employee's basic earnings with a minimum of N$2.70 and a maximum of N$81.00 • Requires employers to contribute to an insurance fund which covers injuries and accidents on duties.
Hazardous Substances Ordinance (No. 14 of 1974)	• Provides for the control of hazardous substances with potential to cause harm, injuries and even death. • Also provides for the manufacture, handling, storage, sale, use, disposal, etc. of hazardous substances.
Atmospheric Pollution Prevention Ordinance (No. 11 of 1976)	• Provides control of noxious or offensive gases and matters incidental thereto. • Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process.
Water Resource Management Act (2004)	The following permits are required in terms of the Water Act: • Water abstraction permits; • Domestic effluent discharge permits (site offices, construction camp); industrial effluent discharge permits; • Water use for dust suppression; and water reticulation permits (pipelines), and • Will be superseded by Water Resources Management Act 2013 once the regulations are implemented in the future.
National Heritage Act No. 27 of 2004	No archaeological/heritage site or cultural remains may be removed, damaged, altered or excavated. • Section 48 sets out the procedure for application and granting of permits, such as the permit required in the event of damage to a protected site occurring as an inevitable result of development. Section 51 (3) sets out the requirements for impact assessment. • Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council
Namibia Standard Act (Act No. 18 of 2005)	Responsible for the promotion of standardization and quality assurance in the industry, commerce and the public sector in Namibia, with the aim of improving product quality, industrial efficiency and productivity and promoting trade so as to achieve optimum benefit for the people of Namibia.
National Development Plans (NDP5)	NDP5 has its goal to reduce poverty such that by 2022, marginalized communities are integrated into the mainstream economy.

5 IMPACT ASSESSMENT METHODOLOGY

5.1 Introduction

The methodology used to determine the **Significance Rating** of potential environmental impacts that may arise during the implementation of the proposed project which the proposed project is presented in this section. Environment assessment is, in essence an imprecise science, because the assessment of predicted significance of an impact for any particular project, is by its very nature inherently uncertain. To tackle the uncertainty, an empirical standardized assessment methodology has been developed. The impact assessment methodology used for this project is outlined in **Table 6**.

Table 6: Criteria for Impact Assessment

Criteria for Ranking	Rating	Expansion
NATURE of the Impact	**Positive**	The activity will have effects that are socially, economically and environmentally beneficial.
	Neutral	The activity has zero effect – no impact
	Negative	The activity will have effects that are socially, economically and environmentally harmful.
INTENSITY (SEVERITY) of the environmental Impact	**Zero to Very Low**	Negligible change, disturbance or nuisance. The impact affects the environment in such a way that natural functions and processes are not affected. People/communities are able to adapt with relative ease and maintain pre-impact livelihoods
	Low	Minor or slight change, disturbance or nuisance. The impact on the environment is not detectable or there is no perceptible change to people's lives.
	Medium	Moderate change, disturbance or discomfort. Where the affected environment is altered, but natural functions and processes continue, albeit in a modified way. People/communities are able to adapt with some difficulty and maintain pre-impact livelihoods, but only with a degree of support.
	High	Prominent change, disturbance or degradation. Where natural functions or processes are altered to the extent that they will temporarily or permanently cease. Affected people/communities will not be able to adapt to changes or continue to maintain pre-impact livelihoods.
DURATION of impacts	**Short term**	Under 5 years
	Medium term	Impact ceases between 5 and 15 years if activity is stopped.
	Long term	Beyond 15 years (Impact ceases after the operational life of the activity, either by natural processes or by human intervention).
	Permanent	Where mitigation is either by natural process or by human intervention and will occur in such a way or in such a time span that the impact can be considered transient.
EXTENT /SPATIAL SCALE of the Impact	**Local**	Impact is confined to project or study area or part thereof, e.g. limited to the area of interest and its surrounds.
	Regional	Impacts is confined to a region, in this case, Hardap region
	National	Impact is confined to a country as a whole
	International	Impact extends beyond the national scale
PROBABILITY of the impact occurring	**Improbable**	Where a possibility for the impact to occur is very low either because of design or historic experience, i.e. less 30% change of occurring.
	Possible	Where there is a distinct possibility that the impact would occur, i.e. between 30% and 60% chance of occurring.
	Probable	Where it is most likely that the impact would occur, i.e. between 60% and 80% chance of occurring.
	Definite	Where the impact would occur regardless of any prevention measures, i.e. more than 80% chance of occurring.
DEGREE OF CONFIDENCE of the assessment	**Low**	Below 35% sure of impact prediction
	Medium	Between 35% and 70% sure of impact prediction
	High	Over 70% sure of impact prediction
Degree to which Impact can be mitigated (reduced or eliminated)	**None**	No change of impact after mitigation
	Very Low	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact.
	Low	Where the significance rating drops by one level, after mitigation
	Medium	Where the significance rating drops by two to three levels, after mitigation.
	High	Where the significance rating drops by more than three levels, after mitigation.
Loss of Resources – the degree to which a resource is permanently affected by the activity.	**Low**	Where the activity results in a loss of a particular resource but where the natural, cultural and social functions and processes are unaffected.
	Medium	Where the loss of a resource occurs, but natural, cultural and social functions and processes continue, albeit in a modified manner
	High	Where the activity results in an irreplaceable loss of a resource

Criteria for Ranking	Rating	Expansion
Reversibility the degree to which an impact can be reversed.	**Irreversible**	Where Impact is permanent
	Partially Reversible	Where Impact can be partially reversed
	Fully Reversible	Where Impact is fully reversed
Determining the **Significance Rating** Consequence is a product of **Extent, Duration** and **Intensity.**	**High**	Impacts are of high magnitude and will be experienced regionally for at least the lifespan of the development or will be irreversible. The impacts could be have the no-go proposition on parts of the development in spite of mitigation measures that may be implemented.
	Medium	Natural, cultural and/or social functions and processes are altered by the activities, and management measures must be provided to reduce the significance rating.
	Low-Medium	Impacts will be experienced in the local and surrounding areas for the lifespan of the development and may result in long term changes. Management measures may be proposed to ensure that the impact remain of a low significance rating.
	Low	Neither environmental nor social and cultural receptors will be adversely affected by the impact. Management measures are usually not provided for low impacts.
	Very Low	There is no impact at all - not even a very low impact on a party or system. : Impacts will be site specific and temporary with no mitigation required

5.2 Significance Rating

Normally, the magnitude of an impact is based on specialized knowledge related to the relevant standard (threshold value specified and source referenced). For each impact, the **Extent** (spatial scale), **Magnitude** (size or degree scale) and **Duration** (time scale) are explained. These criteria are used to ascertain the **SIGNIFICANCE RATING** of an impact, initially without mitigation (WOM), and secondly when recommended mitigation measure have been applied, i.e. with mitigation (WM). The Significance of an impact is derived from temporal and spatial scale and magnitude. Such significance is informed by the context of impact.

5.3 Mitigation Measures

A mitigation hierarchy of action has been developed to respond to any proposed activity and covers aspects such as impact avoidance, impact minimization, restoration and compensation as presented in Figure 16. It is imperative to enhance the environment by ensuring that positive gains are included in the proposed development or activity. Where negative impacts occur, the hierarchy indicates the steps which have to be followed. Such steps are most effective when applied at the conceptual stages of the project.

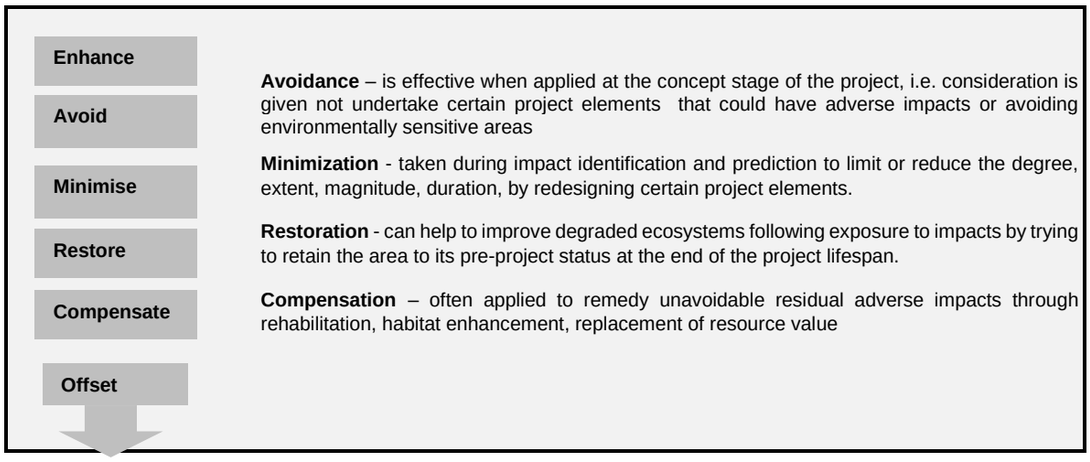


Figure 14: Mitigation Hierarchy

Once significance rating has been determined for each impact, management and mitigation measures must be determined for all impacts that have a significance ranking of medium and higher in order to attempt to reduce the level of significance that the impact may reflect. Based on the proposed mitigation measures, a mitigation efficiency, whereby the initial significance is re-evaluated and ranked again to effect a significance that incorporates the mitigation based on its effectiveness. The overall significance in then re-ranked, to determine a final significance rating.

6 ASSESSMENT OF ENVIRONMENTAL IMPACTS

In this section impacts with the potential to arise from the proposed FRO are assessed using the methodology described in the preceding chapter.

6.1 Planning and Design Phase Impact Assessments

Table 7: Assessment of Impacts Related to the Planning and Design Phase

Environmental Aspect	Environmental Objectives	Management Action/Mitigation
Compliance Requirements	Ensure that all the necessary permits and licenses are obtained in a timely manner prior to the project implementation.	Ensure that all activities pertaining to the development are compliant with applicable laws and regulations and that all the necessary licenses and permits are secured and in place before construction work commences. Copies to be kept on file at the construction site office. e.g. ❖ a valid ECC from MEFT; ❖ a Letter of Intent or Fuel Retail Licence from MIME; ❖ Working Drawings approved by Stampriet Village Council; ❖ Employment contractors signed by both parties and copies kept on file.
Design Consideration	Working Drawings (To be compliant with local authority standards and specifications – where applicable).	❖ Ensure that design for the FRO and support infrastructure are prepared by a qualified and experienced professional; ❖ The FRO, underground storage tanks, conveying pipelines and pumping system must meet local or international standards and specifications; ❖ Select and implement the design and layout which result in the least environmental disturbances, and ❖ All building infrastructure must meet Stampriet Village Council bylaws and regulations and approved or endorsed as such.
Decarbonisation Initiative	Strive to limit the carbon footprint of the facility.	❖ During the planning stage, efforts should be made that embrace decarbonisation practices aimed at reducing the carbon footprint of the FRO during its construction and operational phases; ❖ The position and orientation of roof structures covering should allow for installation of solar panels; ❖ Green technology should be adopted when selecting equipment for the facility with emphasis placed on the use of hybrid systems or those systems that can be powered by wind or solar energy; ❖ Where possible, procure and install water recycling facilities including solar geysers instead of conversional geysers, and ❖ Design the facility in a manner that provides adequate day natural lighting and uses energy saving bulbs.
Visual and Sense of Place	Minimise visual impacts	❖ The lighting layout at the FRO, its extent and intensity may not become a nuisance to the public and residents; ❖ Excavation and trenching activities should be carried out in a manner that ensures minimal dust being blown up into the atmosphere; ❖ Predominant wind direction should be taken into account when siting stockpiles of building materials. Mixing of cement must be avoided during windy conditions, and ❖ External walls and roof structures for the facility should be painted with colours that blend in well with the natural environment.
Archaeological and Cultural Resources	Protect items of cultural and heritage nature	❖ The chances of finding items of cultural or heritage nature during the construction phase are good, and ❖ The EMP should be consulted in the event such items are uncovered.
Activities associated with the planning and design phase are done mostly at desktop level. In some cases site visits maybe undertaken, but the impacts from such visits are negligible, if any. There is thus no impact with respect to this phase of the project.		

6.2 Construction Phase Impact Assessments

The construction entails the development of a modern FRO and related amenities. The main construction activities will include:

- ❖ Site clearing;
- ❖ Surveying
- ❖ Setting out various components of the facility;

- ❖ Excavation and trenching (civil works);
- ❖ Installation of 4 x underground storage tanks (USTs) each with a storage capacity of 23 m^3;
- ❖ Installation of pipelines from USTs to the Pump Island;
- ❖ Installation of Pumps, and
- ❖ Paving of parking areas around the FRO.

Table 8: Construction Phase Impact Assessments

Summary of Impact	Impact Assessment	Proposed Mitigation Measures
(a) **Impacts on the Ecosystem and Biodiversity**		
The proposed site is on urban land which has been subjected to human activities resulting in alteration of the ecosystem and biodiversity. The nature of impact is expected to be minimal and confined within the project footprint. The cumulative impact will be site specific, definitive, of low intensity and of low impact	**Nature** - Negative **Extent** - Site Specific **Duration** - Short term **Intensity** - Very Low **Probability** - Improbable **Significance Rating** **Low** - WOM **Very Low** - WM	❖ Care should be taken to confine all excavations and trenching to areas that are clearly demarcated; ❖ Have construction employees inducted on the EMP and maintain a high standard of housekeeping throughout the construction period; ❖ Develop and maintain an effective waste (solid and hazardous) handling and disposal plan for the site; ❖ Keep onsite ablution facilities tidy and clean at all times; ❖ Use lights during the construction phase for security purposes and ensure that lights is directed downwards to working surfaces and not outwards; ❖ Waste such as food items with the potential to attract scavengers to the construction site must be kept in bins with lockable lids.
(b) **Soil Compaction and Erosion**		
The construction activities will include excavation and trenching which involve some disturbances to the soil profile. The rocky topographic nature of the site implies that substantially digging will be required hence increased soil exposure and disturbances. The underground tanks will require pits that are excavated and the remaining materials that are not used in backfilling of the pits could be used for levelling and landscaping. There is a possibility that soil may be compacted which results in reduced ability of vegetation growth and water absorption. Exposed soil is also susceptible to erosion by wind and water during high wind and rainfall conditions.	**Nature** - Negative **Extent** - Site Specific **Duration** - Temporary **Intensity** - Very Low **Probability** - Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Limit excavation activities to areas that are clearly demarcated and visible to the workers executing such activities; ❖ Newly cleared and exposed areas must be promptly rehabilitated in order to avoid soil erosion; ❖ Where necessary, temporarily stabilization measures must be used; ❖ Implement appropriate erosion control measures during the construction phase, and at the first sign of erosion remedial action must be taken; ❖ Care must be taken to ensure that runoff is well dispersed so as to limit erosion; ❖ An Emergence Response Plan (ERP) to deal with any spills or a major leak which may occur must be developed, and ❖ Comply with the EMP.
(c) **Surface and Groundwater Contamination**		
Erosion of soil, sand or poor storage and handling building materials may contaminate and or block existing surface water courses. Pollutants, i.e. fuel, oil, construction waste and general waste generated during construction activities may enter surface water sources if not managed correctly. Pit excavations for fuel storage tanks has the potential to disturb the surface profile. Incorrect installation of such USTs could lead to leakage of contents with the potential to contaminate groundwater. Incorrect handling of hazardous chemicals used during construction activities could result in spills or leaks with the potential to contaminate both surface and groundwater.	**Nature** - Negative **Extent** - Medium **Duration** - Short term **Intensity** - Low **Probability** - Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Hazardous products required for construction activities should be stored in a secure place with an impervious floor, correctly bunded with access limited to key personnel. ❖ Spill control measures must be in place and personnel trained on how to respond in the event of a spill occurring. ❖ Correct procedures as recommended by the manufacturer of hazardous products must be followed when using such products. ❖ Toilets are to be secured to the ground and must have a closing mechanism. Toilet papers must be provided at these facilities. ❖ The contractor must ensure that spillage does not occur when toilets are cleaned/serviced, and contents must be properly stored and disposed of properly; ❖ Discharge of waste into the environment and/or burial of waste is strictly prohibited; ❖ Maintenance of equipment and construction vehicles is not allowed at the construction site. Faulty equipment must be removed from site and repaired at a designated area or workshop; ❖ A designated wash bay area must be provided where construction vehicles and equipment are cleaned. Drip trays and

Summary of Impact	Impact Assessment	Proposed Mitigation Measures
		emergency spill kit must be provided at the repair/maintenance workshop; ❖ No washing of plants outside of designated wash bay is allowed; ❖ Leaking equipment to be repaired immediately or removed from the site. **Concrete Mixing:** ❖ Cement mixing must take place on an impervious surface (e.g. plastic or cement mixing pit), and ❖ Unused cement bags are to be stored in an area not exposed to the weather and packed neatly to prevent hardening or leakage of cement. **Spill Prevention and Management:** ❖ Vehicles suspected of leaking must be fixed as soon as possible. ❖ Drip trays must be checked and replaced for vehicles standing (parked) for prolonged periods. ❖ Drip trays must be of a sufficient size and volume to collect any hydrocarbon leakages from a stationary vehicle. ❖ Spill kits (absorbent material) must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site. ❖ Spilled substances must be contained in impermeable containers.
(d) **Air Pollution**		
Dust will be generated, especially where there is exposure of soil stockpiled from excavation work. Other activities that may contribute to the release of dust include offloading and stockpiles of building materials (sand, stones, exposed excavated materials, handling of cement, etc.) and movement of heavy vehicles. Dust generation could be exacerbated during windy conditions and dry periods. In addition to dust, air pollution may result from exhaust fumes emitted by construction vehicles, especially if the vehicles are poorly serviced and maintained.	**Nature** - Negative **Extent** - Small **Duration** - Temporary **Intensity** - Very Low **Probability** - Improbable **Significance Rating** **Low** - WOM **Very Low** - WM	❖ A speed limit of 20km/h should be maintained on all internal routes on construction premises; ❖ Dust suppression measures such as wetting of the project area should be employed during windy periods or east wind storms. Recycled water to be used, instead of potable water, to save water; ❖ Where practical, large cleared areas may not be left exposed for longer periods than necessary; ❖ The area of disturbance must be kept as small as possible at all times; ❖ No unnecessary clearing of vegetation, digging or scraping should occur; ❖ All construction vehicles and machinery should be well maintained to allow such equipment to operate efficiently. Idling times of vehicles and machinery to be minimised; ❖ All vehicles used during the project development should be properly maintained and kept in good working order, and ❖ All vehicles and other machinery should comply with road worthy requirements and comply with legislation in terms of allowable emissions.
(e) **Noise Pollution**		
Construction activities are associated with an increase in noise levels as a result of construction vehicles, plant generators, concrete mixers and various other equipment being used on site. While these activities will produce noise, it is unlikely to have a significant impact on the surrounding area.	**Nature** - Negative **Extent** - Small **Duration** - Temporary **Intensity** - Very Low **Probability** – Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ No construction activities must take place between sunset and sunrise. ❖ Equipment and/or machinery which will be used must comply with the manufacturer's specifications on acceptable noise levels; ❖ Construction vehicles must be well maintained and regularly serviced with defective silencers replaced; ❖ Employ noise reduction methods, i.e. no idling of construction vehicles, no unnecessary hooting, no loud music equipment on the premises, etc. and ❖ Employees working in areas where noise levels are elevated should be provided with suitable PP
(f) **Solid Waste Generation**		
Various waste types are generated during the construction period, i.e. Building rubble, excavated soil,	**Nature** - Negative **Extent** - Medium	❖ A waste management plan for the construction phase must be developed and implemented.

Summary of Impact	Impact Assessment	Proposed Mitigation Measures
excess concrete and general waste such as litter, etc. Poor waste management during construction has the potential to lead to contamination of surface water, groundwater, visual nuisance, etc.	**Duration** - Medium Term **Intensity** - Low **Probability** - Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Building rubble and other construction waste produced must be re-used if possible and, where unfeasible, it must be disposed of at the nearest registered waste disposal facility. ❖ Rubble, which cannot be reused, must be removed from site on a regular basis; ❖ If rubble is stored on site, it should be stored on a designated area which is enclosed and impermeable; ❖ Domestic waste must be stored in containers with lockable lids that must be emptied on a weekly basis or frequently before reaching safe holding capacity; ❖ No waste shall be buried or burned anywhere on the construction site; ❖ Waste may not cause any nuisance to employees or guests visiting the construction site, (e.g. odour); ❖ Construction waste stored on site must be collected and put into suitable closed bins on a daily basis; ❖ Provide suitable waste skips on site. These skips should be sufficient in number, skips should be emptied and replaced before overflowing or spillage occurs. Skips should be covered to prevent waste blowing away; ❖ The construction site must remain litter free and regular inspections for litter must be carried out. The activity must not contribute to any surrounding windblown litter; and ❖ Cement bags must be kept in sealed containers.
(g) **Traffic Impacts**		
During the construction period, there will be construction vehicles around the project site delivering building materials, i.e. sand, concrete stones, cement, etc. Traffic flow at the C20 intersection may increase causing some congestion.	**Nature** - Negative **Extent** - Small **Duration** - Temporary **Intensity** - Very Low **Probability** - Probable **Significance Rating** **Low** - WOM **Very Low** - WM	❖ Large construction vehicles used on the construction site must comply with road regulations; ❖ Any complainants received from any stakeholder with respect to traffic infringement on public road around the construction site, must be recorded, investigated and corrective measures taken; ❖ All construction machinery and vehicles operated on public roads must have their headlights switched on at all times; ❖ Clear signage with respect to access point and exit point to the construction site should be clearly displayed; ❖ All vehicles of the contractor used in construction activities and operated on public roads must be licensed, roadworthy and driven by operators with valid drivers and third party public license permits; ❖ Give truck drivers an induction training workshop on the EMP.
(h) **Health and Safety Risks**		
Use will be made of construction equipment and machinery (excavators, graders, tippers, concrete mixers, compactors, welding, etc.) which poses potential risks to the health and safety of people working at the construction site as well as members of the public who may be visiting the construction site. A limited amount of hazardous products (fuel, LPG, thinners, paint, etc.) will be kept and stored for use during the construction. Poor storage and handling of such chemicals has the potential to cause environmental harm.	**Nature** - Negative **Extent** - Medium **Duration** - Medium Term **Intensity** - Low **Probability** - Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Control access to the construction site with access allowed to workers who have been inducted on the EMP; ❖ Store and handle all chemicals for use at the construction site in accordance with MSDS instructions; ❖ Take the predominant wind direction into account when selecting areas where to store bulky construction materials that are prone to wind dispersal, i.e. building sand, aggregate, cement mixing areas, etc.; ❖ Provide employees with suitable PPEs and enforce wearing thereof; ❖ Train selected employees on how to provide First Aid in the event of an accident/incident occurring. First Aid kits should be available and adequately stocked; ❖ Develop and implement a proper emergency response plan for the construction site; ❖ Ensure that the necessary materials and equipment to deal with any spills and leaks of hazardous products that may occur during the execution of the project, are available; ❖ Make available contact details of persons to be notified in case of a major spillage or accidents on site - nearest police, ambulance, hospital, etc., and ❖ Apply and adhere to all industry specific health and safety procedures and regulations applicable to the fuel sector.

Summary of Impact	Impact Assessment	Proposed Mitigation Measures
(i) **Fire Risks**		
Activities such as welding and handling LPG and other flammable products on a construction site can make them sources of very high-risk areas for fire outbreaks. Not only can fire cause major damages to materials and structures, it can also cause undue delays in the execution of project deadline, but it can also pose serious threats to life. Any electrical installations must be thoroughly inspected and undergo PAT testing in accordance with relevant regulations. When it comes to general housekeeping, employees must make sure that all power tools and sockets are switched off when not in use, and any faulty equipment must be removed from the site immediately.	**Nature -** Negative **Extent** - Site specific but can spread to impact wider areas if not quickly contained **Duration** – Depends on response **Intensity** – Depends on size of fire **Probability** – Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Compliance to industry standards and effective training of personnel are key requirements to ensuring that all fire safety measures, guidelines and standards are adhered to; ❖ Ensure that a comprehensive fire risk assessment is carried out at the site to lower the risk of fire outbreak; ❖ It is advisable to take out a short term fire risk protection insurance for the duration of the construction; ❖ All electrical installations must be carried out by qualified persons. Employees must ensure that all power tools and sockets are switched off when not in use, and that any faulty equipment is removed from the site immediately; ❖ A designated area must be dedicated for food preparation (cooking) and eating meals at the construction site; ❖ Fire control mechanisms (firefighting equipment) must be routinely inspected to ensure that they are in good functional status at all times; ❖ All staff on site to be made aware of general fire prevention and control methods, and the name of the responsible person to alert in the event of fire occurring; ❖ Burning of waste on the construction is not permitted; and ❖ Designated smoking areas should be provided, with special bins for discarding of cigarette butts.
(j) **Site Security Risks**		
During the construction phase, building materials, construction vehicles and equipment at the project site are exposed to the general public which presents opportunities for theft and or vandalism unless proper security is maintained.	**Nature -** Negative **Extent** - Site specific if EMP is implemented **Duration** – Temporary (during construction period only) **Intensity** – Low **Probability** – Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Strictly control access to the construction site and no unauthorised persons may be allowed onto the site; ❖ Unsocial activities such as excessive consumption of alcohol, or illegal selling of alcohol, drug utilization or selling of any items on site, are prohibited; ❖ Any person found engaged in such activities shall face disciplinary action, and in severe cases dismissed; ❖ All visitors/guests are to report at the site office on arrival, then undergo a brief safety induction, sign an indemnity form unless in possession of a correct PPE clothing to wear on site; ❖ The induction briefing must communicate the safety rules and regulations to be adhered to by all persons entering the construction site. No person may remain on site without having first completed an induction training; ❖ No hunting of wildlife (game) is allowed, as well as trading and selling of items of any kind is allowed at the construction site. Employees found engaging in such activities will be disciplined or have their employment terminated; ❖ The construction site must be secured so as to reduce the opportunity of criminal activities occurring including theft and or vandalism; ❖ No drugs, alcohol, fire arms or dangerous weapons of any kind (pangas, machete, cutlass, butcher's knives, cutlass, traditional spears, etc.) are allowed on the construction. Only security personnel is allowed to carry fire arms; ❖ Intoxication while on site is not allowed, and if deemed necessary, breathalysing may be instigated for all construction personnel.
(k) **Visual Intrusions and Sense of Place**		
Construction sites are often a hive of activities with movements of construction vehicles, machinery, equipment and overhead cranes. The site can therefore be a source of visual annoyance with scaffolding and cranes lifting construction materials often visible from a distance.	**Nature** - Negative **Extent** - Site Specific **Duration** - Temporary (during construction phase) **Intensity -** Very Low **Probability -** Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Position construction machinery and equipment and associated facilities in such a way that it is out of sight of human receptors using public road – C20; ❖ Employ techniques to suppress dust especially during strong east wind as well as smoke generation during the construction; ❖ Where possible, use suitable screening during the construction to minimise visual impacts; ❖ Specific activities that are prone to generating excessive dust should be suspended during high windy conditions or avoided altogether;

Summary of Impact	Impact Assessment	Proposed Mitigation Measures
		❖ Direct security light at night inwards where it is required and where feasible make use of LED bulbs, and ❖ Maintain a high standard of housekeeping with zero tolerance on littering and waste.
(l) **Heritage and Cultural Resources**		
Items of cultural or heritage nature should always be expected to be unearthed in activities that involve some form of excavation and trenching. In the event of items of cultural or heritage nature are found 'the chance find procedure' must be followed as per the EMP	**Nature** - Negative **Extent** - Site Specific **Duration** - Temporary **Intensity** - Very Low **Probability** - Probable **Significance Rating** **Low** - WOM **Very Low** - WM	❖ Protect items of cultural and heritage nature if found during earth excavation works; ❖ Should any archaeological or cultural sites or objects be located during the construction of the proposed project, the measures proposed in the EMP should be followed; ❖ Brief all construction site personnel to immediately report any sites or objects of cultural or heritage nature; ❖ In the event of finding what appears to be an archaeological site or a cultural and/or historic site or object, work should be terminated until a qualified archaeologist or historian can examine the item; and ❖ Comply with the measures provided in the EMP.
(m) **Socio-economic Environment**		
(i) **Investment in the local economy:** The project CapEx for the FRO is in the order of N$20 million while the average OpEx for modern FROs is about N$3.5 million per month.	**Nature** - Positive **Extent** - Medium **Duration** - Short term (construction work is temporary) **Intensity** - Medium **Significance Rating** **Low** - WOM **Low Medium** - WM	❖ The investment is a major boost to the village of Stampriet specifically, and to the Hardap Region in general. During the construction phase, the bulk of the funds invested in the project is spent in the local economy for the procurement of building materials (cement, building sand, building stones, etc.), and ❖ The national economy will also is also benefit from import duties, PAYE taxes and VAT paid to NamRa – the collector of state revenue.
(ii) **Support to Local Community** Where applicable strive to source and to procure construction materials and services required for the project from the local and neighbouring communities	**Nature** - Positive **Extent** - Medium **Duration** - Short term **Intensity** - Medium **Probability** - Probable **Significance Rating** **Low Medium** - WOM **Medium** - WM	❖ Provide and offer building trade opportunities to local or SME companies from the neighbouring communities, e.g. trenching, plumbing, tiling, paving, bricklaying, joinery, etc.; ❖ Ensure that employment is offered in a transparent manner without discrimination on the basis of colour, race, tribe, religion, gender or political affiliation, and ❖ Employment of non-Namibians must be justified to the line ministry.

6.3 Operational Phase Impact Assessments

The operation phase will entail these activities:

- delivery of bulk fuel by road tankers;
- discharging into onsite USTs;
- refueling of patrons vehicles;
- day-to-day management of the facility (tank dipping, record keeping, cleaning, etc.)
- maintenance of the facility, etc.

Table 9: Operational Phase Impact Assessments

Impact Description (Summary)	Impact Assessment	Mitigation Measures
(a) **Contamination of Surface and Groundwater Sources**		
Contamination of stormwater may occur during the operational phase when vehicles are refuelled at the filling station. Spilled fuel, oil or other contaminants may be washed into the stormwater system unless mitigated. The underground fuel tanks that will be used for the storage of fuel products have the	**Nature** - Negative **Extent** - Medium **Duration -** Short term **Intensity** - Low **Probability** - Probable **Significance Rating** **Low Medium** - WOM	❖ Develop and implement a site specific spill contingency plan for the operation; ❖ Monitor fuel volumes in the USTs on a daily basis to detect unexplained losses due to leakages; ❖ Inspect the condition of the tanks, piping and pumping systems on a regular basis; ❖ Test tanks integrity at least 5 years after installation, with repetition on a 5-year cycle thereafter; ❖ Extract the tanks at the end of their lifespan and replace as governed by the supplier specifications;

Impact Description (Summary)	Impact Assessment	Mitigation Measures
potential to leak and result in the spillage of fuel into groundwater sources. This is a potentially cumulative impact which can have far reaching negative impacts.	**Low** - WM	❖ All waste oil, greases, fuels, chemicals, etc. should be collected and disposed of in an appropriate manner at a licensed offsite facility; ❖ The contents of grease traps and other waste oil, grease, etc. should not be emptied and dumped to the surrounding area; ❖ Clean water (e.g. surface runoff) and dirty water (e.g. contaminated water from the forecourt and filling points) must be separated to prevent contaminated run-off from entering stormwater, groundwater and soil; ❖ The forecourt area and the filling points have to be concreted and graded so that any effluent run-off will not enter the natural environment, but pass through an oil water separator sump/s before discharging into a collection ditch; ❖ The oil/water separator sump/s must be checked regularly and kept clean to prevent blockage and overflow. In addition, regular monitoring and clearing of oil/water separator sump/s will prevent hydrocarbon liquids from discharging onto sewer/stormwater system; and ❖ Waste from the separator must be disposed of at a suitable waste handling site where a Safe Disposal Certificate is issued.
(b) **Hazardous Waste Generation and Handling**		
Hazardous waste is likely to occur as a result of a large number of vehicles entering and exiting the FRO on a daily basis. The filling station management will have limited control as regards to vehicles entering the facility with oil or fuel leaks. Additionally, hazardous waste will be generated during the cleaning of oil separators and may occur as a result of split fuel or oil during refueling or servicing of vehicles.	**Nature** - Negative **Extent** - Site Specific **Duration** - Short term **Intensity -** Low **Probability** - Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Paved surfacing coming in contact with vehicles must be bunded such that stormwater flows into an oil/water separator, to allow for treatment of hydrocarbons and other hazardous wastes; ❖ A designated vehicle wash bay must be put in place and must have an impermeable surface, with a drainage system directing wastewater to an appropriate classified waste site; ❖ Maintain silt traps, sumps and oil separators as part of the stormwater management system; ❖ Hazardous substances should be disposed of an appropriate classified waste site; ❖ Sludge from the oil separator must be disposed of to a suitable waste handling waste handling contractor or to an offsite licensed facility; ❖ All product spills within the bunded area must be effectively cleaned up; ❖ All contaminated spill material such as fibres soil, sandbags, etc. must be disposed of in appropriate hazardous waste landfill site; ❖ Ensure safe disposal of Methanol/water mixture used for removal of any residual water from the fuel tanks; ❖ Any split material must be disposed of in a suitable licensed waste disposal facility; ❖ Transport, handling and storage of hazardous and flammable substances must comply with all provisions of the Hazardous Substance Act and related regulations.
(c) **Solid Waste Generation and Handling**		
Once operational, the FRO is expected to generate solid waste in the form litter primarily from the convenience store, take-away and minor solid waste from the fuelling activities. Unless well managed, solid waste has the potential to pollute the surrounding area including the Aoub River dry river streams as well as the onsite sewerage system. Solid waste can also be considered a cumulative impact as it will contribute to the overall waste produced within the rural district of Stampriet if not managed well.	**Nature** - Negative **Extent** - Site Specific **Duration** - Short term **Intensity** - Low **Probability** - Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ A Waste Management Plan must be developed for the FRO and implemented by Management; ❖ Handle waste and waste management plan as per the EMP; ❖ Encourage and put waste recycling practice in place at the facility; ❖ Domestic waste must be stored in containers that are labelled or colour coded. The waste bins must be properly secured and covered to prevent scavengers from tipping them over; ❖ Vermin / weatherproof bins to be provided in sufficient numbers and capacity to store domestic waste. ❖ Solid waste shall be stored in a designated general waste storage area which is enclosed and impermeable; ❖ Adequate refuse collection must occur to ensure no build-up of refuse occurs at the filling service station. Waste may not cause any nuisance, e.g. odour; and ❖ No waste shall be buried or burned anywhere on the site.
(d) **Sewerage and Wastewater Generation**		
The new FRO will generate effluent and wastewater during its operational activities. Sewerage and wastewater has the potential to leak and contaminate the soils,	**Nature -** Negative **Extent** - Small **Duration -** Temporary	❖ Wastewater and effluent management must be implemented at the FRO;

Impact Description (Summary)	Impact Assessment	Mitigation Measures
stormwater and groundwater in the surrounding area.	**Intensity -** Low **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Ablution facilities and associated piping system must be adequately lined and checked for leaks on a regular basis; ❖ All waste generated from the site must be discharged into the onsite sewage system onsite.
(e) **Air Pollution**		
Vapour emissions may result from exhaust fumes emitted by vehicles passing through the FRO, particularly from those vehicles that have not been serviced correctly. Vapour emissions are likely to be produced during the refueling when hydrocarbon vapours are displaced by the liquid petrol and diesel Point source emissions from the facility including SO2; PM10; NO2 and CO may alter air quality Area source emissions including Volatile Organic Compounds (VOCs) from the whole site during operation may alter air quality and impact on surrounding properties.	**Nature -** Negative **Extent** - Small **Duration -** Short term **Intensity -** Low **Probability -** Probable **Significance Rating** **Low** - WOM **Very Low** - WM	❖ Volatile Organic Compound (VOC) Vapour Recovery System, should be installed onto fuel dispensing nozzles at the refuelling and forecourt areas; ❖ Operators must ensure that every effort is made to limit gaseous emissions; ❖ All equipment used must manufactured to limit VOC vapour emissions; ❖ Operational refuelling procedures must be put in place to limit vapour emissions during refuelling of vehicles and storage tanks; ❖ Develop and maintain environmental management system for emission control; ❖ Monitor gaseous emissions on a yearly basis measuring these parameters: o Particulate Matter (PM_{10}), o Sulphur dioxide (SO_2), o Nitrogen dioxide (NO_2), and o Carbon monoxide (CO)
(f) **Noise Pollution**		
The FRO is expected to be operated 24-hours each day. The movements of vehicles on adjacent roads are also expected to generate some noise. Overall the noise generated at the facility is expected to be negligible.	**Nature -** Negative **Extent** - Small **Duration -** Short term **Intensity -** Low **Probability -** Probable **Significance Rating** **Low** - WOM **Very Low** - WM	❖ Establish noise level threshold consistent with WHO guidelines and comply accordingly; ❖ The facility is located in a remote rural area of the country in which ambient noise levels are quite low and this should be maintained; ❖ Equipment such as pumps to be used at the FRO must comply with the manufacture's specifications on acceptable noise levels; ❖ Air conditioners at the FROs must be well maintained and regularly serviced to ensure minimal noise generation; ❖ Workers must not produce any unnecessary noise, e.g. no loud music to be played, no whistles to be used, etc; ❖ No hooting signs must be displayed to inform patrons not blow their horns.
(g) **Visual Intrusions**		
The proposed FRO is situated along the tourist route C20 – the main road cutting through Stampriet and therefore visible to many travellers using such roads on a daily basis. The bulk of such road users are tourists.	**Nature -** Negative **Extent** - Small **Duration -** Medium **Intensity -** Low **Probability -** Probable	❖ Buildings finishes of the FRO should be of appropriate design and quality and must be regularly maintained to prevent visual decay; ❖ Buildings should also be designed in such a way that they fit into the surrounding natural environment of the location; ❖ Waste must be removed from the filling service station and disposed of at an approved designated landfill site in order to avoid unnecessary litter being viewed as visual nuisance on site; ❖ Lights at the FRO must be used for security purposes only and must point inwards and not outwards; ❖ Maintain a high standard of housekeeping at the facility
(h) **Health and Safety Risks**		
During the operational phase – flammable liquids on site poses a potential fire and explosion risk throughout the lifespan of the proposed FRO. In addition to this, health and safety risks occur with regards to onsite vehicle movement, as well as cooking within the convenience shop and take-away outlet.	**Nature -** Negative **Extent** - Small **Duration -** Medium **Intensity -** Low **Probability -** Probable **Significance Rating** **Low** - WOM **Very Low** - WM	❖ Management must develop a health and safety management plan for the FRO; ❖ It is a specific requirement to comply with all health and safety standards as specified in the Labour Act and related Legislations; ❖ Smoking should be prohibited in the vicinity of all flammable substances; ❖ Adequate firewater tie-in points must be installed at the facility and functioning; ❖ Adequate fire extinguishers must be installed and regularly checked for proper functioning;

Impact Description (Summary)	Impact Assessment	Mitigation Measures
		❖ All employees must be made aware of emergency /contingency plans and the procedure to be followed in the event of an emergency situation; ❖ Records of all environmental and/or health and safety related incidents must be maintained and reported to the relevant authority; ❖ All personnel working at FRO must be adequately trained in relevant health and safety aspects; ❖ A selected employees should be trained on First Aid. A trained First Aider must be present on site at all times. First Aid Kits that are adequately stocked must be available; ❖ A maintenance registry of all equipment whose malfunction can lead to injury or exposure to hazardous substances should be kept; ❖ Apply and adhere to all industry specific health and safety procedures and regulations applicable to the fuel sector.
(i) **Stormwater Runoff and Potential for Erosion**		
While below average rainfall is generally received in the projects area, the development will consist of impervious surfaces (paved surfaces) and this will result in increased runoff and potentially increased erosion	**Nature -** Negative **Extent** – Small **Duration –** Medium **Intensity –** Low **Probability –** Probable **Significance Rating** **Low Medium** - WOM **Low** - WM	❖ A site-specific stormwater management plan must be developed and implemented by Management aimed at handling any increased stormwater runoff that may occur from time to time; ❖ All stormwater runoff from hard paved areas on the site must be diverted into a stormwater treatment system or device capable of removing litter, sediment or oil products; ❖ The stormwater treatment system should include a high flow by-pass system to maintain the quality of the discharged water during periods of high rainfall or first rains; and ❖ At the first sign of erosion, the correct procedure must be undertaken to manage, resolve and prevent it from occurring.
(j) **Management of Resources**		
Resource at the FRO should be managed and use therefore measured and managed.	**Nature -** Negative **Extent** – Small **Duration –** Medium **Intensity -** Very Low **Probability –** Probable **Significance Rating** **Medium** - WOM **Low** - WM	The measures recommended are: ❖ **Electricity:** o Use electricity sparingly, o Measure electricity consumption monthly, and o Consider the use of alternative energy such as solar power or wind in order to reduce the carbon footprint of the facility. ❖ **Water:** o Use electricity wisely; o Enforce water saving strategies which include recycling and reuse; o Measure water consumption and ensure that leaking taps are repaired. ❖ **Sanitation:** o Monitor consumption; o Guard against misuse; o Maintain a high standard of housekeeping.
(k) **The Socio-economic Environments**		
(a) **Employment Creation** The FRO will help to combat unemployment as new jobs will be created – both temporarily and permanent.	**Nature** - Positive **Extent** - Medium **Duration** – Medium to long term **Intensity** - Medium	❖ Offer employment opportunities in a transparent manner without discrimination on the basis of gender, religion, race, origin or political affiliation ❖ People from marginalized communities should also be considered for employment; ❖ Employing of non-Namibians must be justified to the line ministry.
(b) **Working Conditions** Provide a safe and hazardous-free working environment.	**Nature -** Positive **Extent** – Medium **Duration –** Medium **Intensity – Medium**	❖ Provide good working conditions to employees with clear defined roles and responsibilities. ❖ Provide adequate ablution facilities with clean drinking water and sanitation facilities (soap, toilets, etc.) and suitable PPE.
(c) **Technology and skills transfer** Provide opportunities for training and skills transfer	**Nature** - Positive **Extent** - Small **Duration** - Medium **Intensity** - Medium	❖ Ensure that training opportunities are offered to all employees which ultimately benefits the business; ❖ New technologies are continuously being developed and implemented in the fuel retail subsector – employees should benefit from such technology through training

Impact Description (Summary)	Impact Assessment	Mitigation Measures
(d) **Communication** Keep and maintain good communication with stakeholders	**Nature** - Positive **Extent** - Small **Duration** - Medium **Intensity** - Medium	❖ Ensure that a project Information Board is procured and installed where it is clearly visible to the general public, prior to starting with construction activities. ❖ Maintain good communication with stakeholders such that at all times.

6.4 Decommissioning Phase Impact Assessments

Considering the CapEx to be invested, it is not projected for decommissioned to happen within the three years which is the validity period of an ECC. The management measures provided under the EMP for decommissioning, are only provided in the event of the project ceasing operation in a premature manner for factors beyond the control of the promotor.

If such a stage is reached, the proponent needs to remove all materials resulting from the demolition from the site. For this specific project, decommissioning will cover aspects such as:

- ❖ Removal of USTs from the site;
- ❖ Rehabilitation of the site to pre-construction conditions;
- ❖ Landscaping by flattening the mounds of soil and planting indigenous trees;
- ❖ Dismantling of all equipment (pipes, pumps, electrical cables, etc.);
- ❖ Removal of all dismantled equipment and disposing off in a responsible manner;
- ❖ Fencing and signposting unsaved areas until natural stabilisation occurs, and
- ❖ Retrenching employees, etc.

Table 10: Decommissioning Phase Impact Assessments

Environmental Aspect (Summary)	Impact Assessment	Mitigation Measures
(a) **Communication**		
Provide information on decommissioning to relevant statutory stakeholders	**Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Inform the relevant GRN Ministries and agencies (MIME, MEFT, Labour, NamRa, SSC, etc.) of the planned decommissioning; ❖ Inform affected employees and their trade union representative giving notices as provided for in the Labour Act; and ❖ Hire a reputable company to carry out the decommissioning.
(b) **Underground Fuel Storage Tanks**		
Fuel vapour escaping into the atmosphere; Explosion Health issues Contamination of soils from residual fuel	**Significance Rating** **Medium** - WOM **Low** - WM	❖ Ensure there is no spillage of any residual fuel during the emptying and removal of underground tanks. Pumps and associated equipment must be removed by qualified personnel to ensure their safety; ❖ Any fuel removed from the tanks and surrounding soil that maybe contaminated must be removed and disposed of at a licensed landfill site.
(c) **Noise and Air Pollution**		
Dust released from breaking structures, walls, etc.	**Significance Rating** **Low Medium** - WOM **Low** - WM	❖ Maintain plant and equipment well during the decommissioning phase; ❖ Demolition works to be carried out during daytime only; ❖ Provide workers working in noisy areas with suitable PPEs ❖ Spray dust areas, and ❖ Install dust trappers around the site;
(d) **Solid Waste**		
Solid waste can have significantly environmental and societal impacts, building debris, scrap metals, etc.	**Significance Rating** **Low** - WOM **Very Low** - WM	❖ Demolished debris should be stored in a secure place and disposed of in a responsible manner; ❖ Demolished waste should be re-used or backfilled; ❖ All waste generated should be collected by a waste collection company, and ❖ Adequate waste receptacles with bulk storage facilities should be provided at convenient points to prevent possible littering during the dismantling process.
(e) **Occupational Health and Safety**		
Exposure to harm; Exposure to chemicals; Fire risks; Incidences of accidents, injuries, long term health issues, etc.	**Significance Rating** **Low** - WOM **Very Low** - WM	❖ Provide suitable PPEs to employees; ❖ Train the workers on personal safety and on how to handle equipment and machines;

Environmental Aspect (Summary)	Impact Assessment	Mitigation Measures
		❖ Ensure that a well-stocked First Aid Kit is on site and maintained by a qualified personnel; ❖ Report any accidents/incidents and treat and compensate any affected workers, and ❖ Provide suitable sanitary conveniences which should be kept tidy and clean.
(f) **Socio-economic environments**		
Closure can lead to layoff of employees, Financial hardships, Poverty, Emotional stress, etc.	**Significance Rating** **Low** - WOM **Very Low** - WM	❖ The safety of the workers should surpass all other objectives during the decommissioning process; ❖ Adapt a project completion policy – identifying key issues to be considered; ❖ Compensate the retrenched workers and assist them in seeking opportunities elsewhere

6.5 Summary of Impact Assessment

A summary of those impacts that have been assessed is presented in **Table 11.**

Table 11: Summary of Impact Assessments

TABLE 5 : SUMMARY OF IMPACT ASSESSMENTS – CONSTRUCTION AND OPERATIONAL PHASES				
POTENTIAL IMPACTS		NATURE OF IMPACT	IMPACT SIGNIFICANCE	
			Unmitigated	Mitigated
Construction	❖ Impacts on Ecosystem and Biodiversity	Negative	Medium	Low
	❖ Soil Compaction and Erosion	Negative	Medium	Low
	❖ Surface and Groundwater Contamination	Negative	Low	Very Low
	❖ Air Pollution	Negative	High	Medium to Low
	❖ Noise Pollution	Negative	Low	Very Low
	❖ Solid Waste Generation	Negative	Low	Very Low
	❖ Traffic Impacts	Negative	Low	Very Low
	❖ Health and Safety Risks	Negative	Low	Very Low
	❖ Fire Risks	Negative	Low	Low
	❖ Site Security Risks	Negative	Low	Very Low
	❖ Visual Intrusion	Negative	Low	Low
	❖ Heritage & Cultural Heritage	Negative	Low	Very Low
	❖ Socio-economic Impacts	**Positive**	Medium	Medium
	○ Investments in the Local Economy	**Positive**	Medium	Medium
	○ Support to Local Economy	**Positive**	High	High
Operational	❖ Contamination of Surface and Groundwater	Negative	Medium	High
	❖ Hazardous Waste Generation and Handling	Negative	Low	Very Low
	❖ Solid Waste Generation and Handling	Negative	Low	Very Low
	❖ Sewage and Wastewater Generation	Negative	Low	Very Low
	❖ Air Pollution	Negative	Low	Very Low
	❖ Noise Pollution	Negative	Low	Very Low
	❖ Noise Intrusion	Negative	Low	Very Low
	❖ Health and Safety Risks	Negative	Medium	Low
	❖ Stormwater Runoff and Potential for Erosion	Negative	Low	Very Low
	❖ Management of Resources	Negative	Medium	Low
	❖ Socio-economic Environment	**Positive**	High	High
	○ Employment Creation	**Positive**	Medium	Low
	○ Working Conditions	**Positive**	Medium	High
	○ Transfer of Skills and Knowledge	**Positive**		
	○ Communication	**Positive**		

For the construction phase fifteen (15) environmental aspects were identified and assessed. Out of the fifteen (15) twelve (12) have **negative impacts** while three (3) have positive impacts. Without mitigation measures; the **Significance Ratings** of the negative impacts range from **Low** (9), **Medium** (2) and **High (1).** The **Significance Rating** for the positive impacts were High (1) and Medium (2). With mitigation measures, the significant rating for impacts assessed for the construction ranged from **Very Low** (7), **Low** (4) and **Medium** (1).

Construction activities would result in a localised increase in dust, noise levels and visual impacts. These impacts may be nuisance to the public travelling on C20, but the duration will be short (construction period only). During the operation, some noise may be generated from general operational activities and air quality may be impacted by emissions released from vehicles refueling at FRO and those visits the shopping complex. The nuisance impacts (air quality, noise and visual) during the construction and operation phases are expected to be of a **Very Low** to **Low** significant after mitigation for the construction and operation phases respectively.

During the construction period, handling and storage of hazardous substances, batching of concrete may increase the potential occurrence of spillages, which could impact groundwater resources. For the operation, potential leakages from underground storage tanks may contaminate groundwater resources. With the implementation of appropriate mitigation measures, the impact on groundwater resources are deemed to be **Very Low.**

The proposed FRO has the potential fire risk associated with fuel (flammable liquids) and electrical equipment used on site. A fire could impact on the health and safety of the employees as well as patrons of the FRO. With effective measures put in place, the significance of the impact is deemed **Low** after mitigation.

7 CONCLUSIONS AND RECOMMENDATION

The development of the FRO combined with proposed shopping mall at Stampriet has positive impacts on the socio-economic environment (creation of employment, transfer of skills, boost to the district economy, etc.). and to the general physical environment (reduced traffic on gravel roads, reduced maintenance of gravel roads, reduced dust and gaseous emissions, etc.). Once developed and fully operational, the project as a whole will be vital to the local and regional economy with the potential to improve overall efficiencies in the tourism sector.

Provided mitigation measures recommended in the EMP are implemented and complied with, all potential negative impacts associated with the project can be effectively mitigated.

It is recommended that an ECC be granted to the promoter for the implementation of the project subject to the terms and conditions which the EC may wish to impose.

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