

APP-003149
CONSTRUCTION AND OPERATIONS OF A FUEL RETAIL
FACILITY AT OSONA VILLAGE, OKAHANDJA
ENVIRONMENTAL ASSESSMENT SCOPING REPORT




Assessed by:



Assessed for:

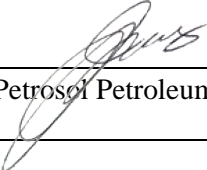


October 2021

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| Project: | CONSTRUCTION AND OPERATIONS OF A FUEL RETAIL FACILITY AT OSONA VILLAGE, OKAHANDJA: ENVIRONMENTAL ASSESSMENT SCOPING REPORT | |
| Report: Version/Date: | Final October 2021 | |
| Prepared for: (Proponent) | Petrosol Petroleum Solution CC P O Box 654 Otjiwarongo | |
| Lead Consultant | Geo Pollution Technologies (Pty) Ltd PO Box 11073 Windhoek Namibia | TEL.: (+264-61) 257411 FAX.: (+264) 88626368 |
| Main Project Team: | André Faul (B.Sc. Zoology/Biochemistry); (B.Sc. (Hons) Zoology); (M.Sc. Conservation Ecology); (Ph.D. Medical Bioscience) Wikus Coetzer (B.Sc. Environmental and Biological Sciences); (B.Sc. (Hons) Environmental Sciences) Stefan Short Health and Safety Supervisor / GIS Technician | |
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| Report Approval |  2021/10/22 Petrosol Osona Village André Faul Conservation Ecologist | |

I Johannes P Botes acting as representative of Petrosol Petroleum Solution CC hereby confirm that the project description contained in this report is a true reflection of the information which the proponent provided to Geo Pollution Technologies. All material information in the possession of the proponent that reasonably has or may have the potential of influencing any decision or the objectivity of this assessment is fairly represented in this report and the report is hereby approved.

Signed at Otjiwarongo on the 25 day of October 2021.



 Petrosol Petroleum Solution CC

CC/2008/0183

_____ Business Registration/ID Number

EXECUTIVE SUMMARY

Petrosol Petroleum Solution CC requested Geo Pollution Technologies (Pty) Ltd to undertake an environmental assessment for the construction and operations of a **new** fuel retail facility on erf 5, Osona Village, Okahandja, in the Otjozondjupa Region. The fuel retail facility will form part of a shopping complex and will also include its own on-site convenience shop. It will have two 46 m³ underground storage tanks for diesel and unleaded petrol respectively. The tanks will supply fuel to three pump islands situated under an overhead canopy. Construction activities will include the installation of the underground storage tanks, all reticulation, forecourt area with pump islands and buildings. Operations of the fuel retail facility will include filling of the underground storage tanks from road transport tankers, dispensing of fuel to customers, tank dips and fuel volume reconciliation, as well as general operational activities and maintenance procedures associated with a fuel retail facility and associated infrastructure.

The environmental assessment is conducted to determine all environmental, safety, health and socio-economic impacts associated with the construction and operations of the facility. Relevant environmental data has been compiled by making use of secondary data and from a reconnaissance site visit. Potential environmental impacts and associated social impacts were identified and are addressed in this report.

The proposed facility will be situated on an erf zoned for general business and is surrounded mainly by general business, general residential and residential erven, as well as some public open space. The area is under jurisdiction of the Okahandja Town Council. Due to the nature and location of the facility, limited impacts are expected on the surrounding environment, see summary impacts table below. It is however recommended that environmental performance be monitored regularly to ensure regulatory compliance and that corrective measures be taken if necessary. The construction of a new fuel retail facility will play a positive role in contributing to a reliable supply of fuel to mainly the local residents, the transport industry and the surrounding community.

The major concerns related to the construction and operations of the fuel retail facility are that of potential groundwater, surface water and soil contamination and the possibility of fire. This will however be limited by adherence to relevant South African National Standards and Material Safety Data Sheet instructions. Furthermore, noise levels should meet the minimum requirements of the World Health Organisation. By appointing local contractors and employees and by implementing educational programs the positive socio-economic impacts can be maximised while mitigating any negative impacts.

The environmental management plan included in Section 10 of this document should be used as an on-site reference document during all phases (planning, construction, operations and decommissioning) of the facility. All monitoring and records kept should be included in a report to ensure compliance with the environmental management plan. Parties responsible for transgression of the environmental management plan should be held responsible for any rehabilitation that may need to be undertaken. A Health, Safety, Environment and Quality policy could be used in conjunction with the environmental management plan. Operators and responsible personnel must be taught the contents of these documents. Local or national regulations and guidelines must be adhered to and monitored regularly as outlined in the environmental management plan.

Impact Summary Class Values

| Impact Category | Impact Type | Construction | | Operations | |
|---|---|--------------|----|------------|----|
| <i>Positive Rating Scale: Maximum Value</i> | | 5 | | 5 | |
| <i>Negative Rating Scale: Maximum Value</i> | | | -5 | | -5 |
| EO | Skills, Technology and Development | 2 | | 2 | |
| EO | Revenue Generation and Employment | 2 | | 2 | |
| SC | Demographic Profile and Community Health | | -1 | | -2 |
| EO | Fuel Supply | | | | 2 |
| SC | Traffic | | -1 | | -1 |
| SC | Health, Safety and Security | | -2 | | -2 |
| PC | Fire | | -3 | | -3 |
| PC | Air Quality | | -1 | | -1 |
| PC | Noise | | -2 | | -1 |
| PC | Waste Production | | -2 | | -2 |
| BE | Ecosystem and Biodiversity Impact | | -1 | | -1 |
| PC | Groundwater, Surface Water and Soil Contamination | | -2 | | -3 |
| SC | Visual Impact | | -1 | | -1 |
| PC | Impacts on Utilities and Infrastructure | | -2 | | -2 |
| | Cumulative Impact | | 2 | | 2 |

BE = Biological/Ecological EO = Economical/Operational PC = Physical/Chemical SC = Sociological/Cultural

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LIST OF ABBREVIATIONS

| | |
|---------------|---|
| AIDS | Acquired Immune Deficiency Syndrome |
| BE | Biological/Ecological |
| DWA | Department of Water Affairs |
| EA | Environmental Assessment |
| EIA | Environmental Impact Assessment |
| EMA | Environmental Management Act No 7 of 2007 |
| EMP | Environmental Management Plan |
| EMS | Environmental Management System |
| EO | Economic/Operational |
| ES | Environmental Classification |
| GPT | Geo Pollution Technologies |
| HIV | Human Immunodeficiency Virus |
| IAPs | Interested and Affected Parties |
| IUCN | International Union for Conservation of Nature |
| LNAPL | Light Non-Aqueous Phase Liquids |
| mamsl | Meters Above Mean Sea Level |
| m/s | Metre per second |
| mbs | Metres below surface |
| MEFT | Ministry of Environment, Forestry and Tourism |
| mm/a | Millimetres per annum |
| MSDS | Material Safety Data Sheet |
| PC | Physical/Chemical |
| PPE | Personal Protective Equipment |
| ppm | Parts per million |
| SANS | South African National Standards |
| SC | Sociological/Cultural |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WHO | World Health Organization |

GLOSSARY OF TERMS

Alternatives - A possible course of action, in place of another, that would meet the same purpose and need but which would avoid or minimize negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The “no-go” alternative constitutes the ‘without project’ option and provides a benchmark against which to evaluate changes; development should result in net benefit to society and should avoid undesirable negative impacts.

Assessment - The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making.

Competent Authority - means a body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.

Construction - means the building, erection or modification of a facility, structure or infrastructure that is necessary for the undertaking of an activity, including the modification, alteration, upgrading or decommissioning of such facility, structure or infrastructure.

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.

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, palaeontological or social values”.

Environmental Impact Assessment (EIA) - process of assessment of the effects of a development on the environment.

Environmental Management Plan (EMP) - A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.

Environmental Management System (EMS) - An Environment Management System, or EMS, is a comprehensive approach to managing environmental issues, integrating environment-oriented thinking into every aspect of business management. An EMS ensures environmental considerations are a priority, along with other concerns such as costs, product quality, investments, PR productivity and strategic planning. An EMS generally makes a positive impact on a company’s bottom line. It increases efficiency and focuses on customer needs and marketplace conditions, improving both the company’s financial and environmental performance. By using an EMS to convert environmental problems into commercial opportunities, companies usually become more competitive.

Evaluation – means the process of ascertaining the relative importance or significance of information, the light of people’s values, preference and judgements in order to make a decision.

Hazard - Anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.

Interested and Affected Party (IAP) - any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.

Mitigate - The implementation of practical measures to reduce adverse impacts.

Proponent (Applicant) - Any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act no. 7 of 2007, to undertake an

activity or activities identified as a listed activity or listed activities; or in any other notice published by the Minister or Ministry of Environment & Tourism.

Public - Citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Scoping Process - process of identifying: issues that will be relevant for consideration of the application; the potential environmental impacts of the proposed activity; and alternatives to the proposed activity that are feasible and reasonable.

Significant Effect/Impact - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Stakeholder Engagement - The process of engagement between stakeholders (the proponent, authorities and IAPs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision-making process. The term is considered to be more appropriate than the term “public participation”.

Stakeholders - A sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (IAPs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

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” – the definition of the World Commission on Environment and Development (1987). “Improving the quality of human life while living within the carrying capacity of supporting ecosystems” – the definition given in a publication called “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 BACKGROUND AND INTRODUCTION

Geo Pollution Technologies (Pty) Ltd was appointed by Petrosol Petroleum Solution CC to undertake an environmental assessment for the proposed construction and operations of a fuel retail facility on erf 5, Okahandja, in the Otjozondjupa Region (Figure 1-1). The establishment will form part of a larger shopping complex and will also host a small convenience store. Establishment of the fuel retail facility will involve:

- ◆ Site clearing, preparation and earthworks;
- ◆ Civil works required for new infrastructure;
- ◆ Construction of infrastructure for the fuel retail facility including forecourt and canopy, underground tanks, pumps, reticulation, buildings, parking bays and driveways;
- ◆ Installation of associated electrical, water and sewerage utilities;
- ◆ Installation of spill control infrastructure.

Operations of the fuel retail facility will include:

- ◆ Filling of the storage tanks with fuel from road transport tankers;
- ◆ Dispensing of fuel to customers;
- ◆ Tank dips and fuel volume reconciliation;
- ◆ General operational activities and maintenance procedures associated with the fuel retail facility.

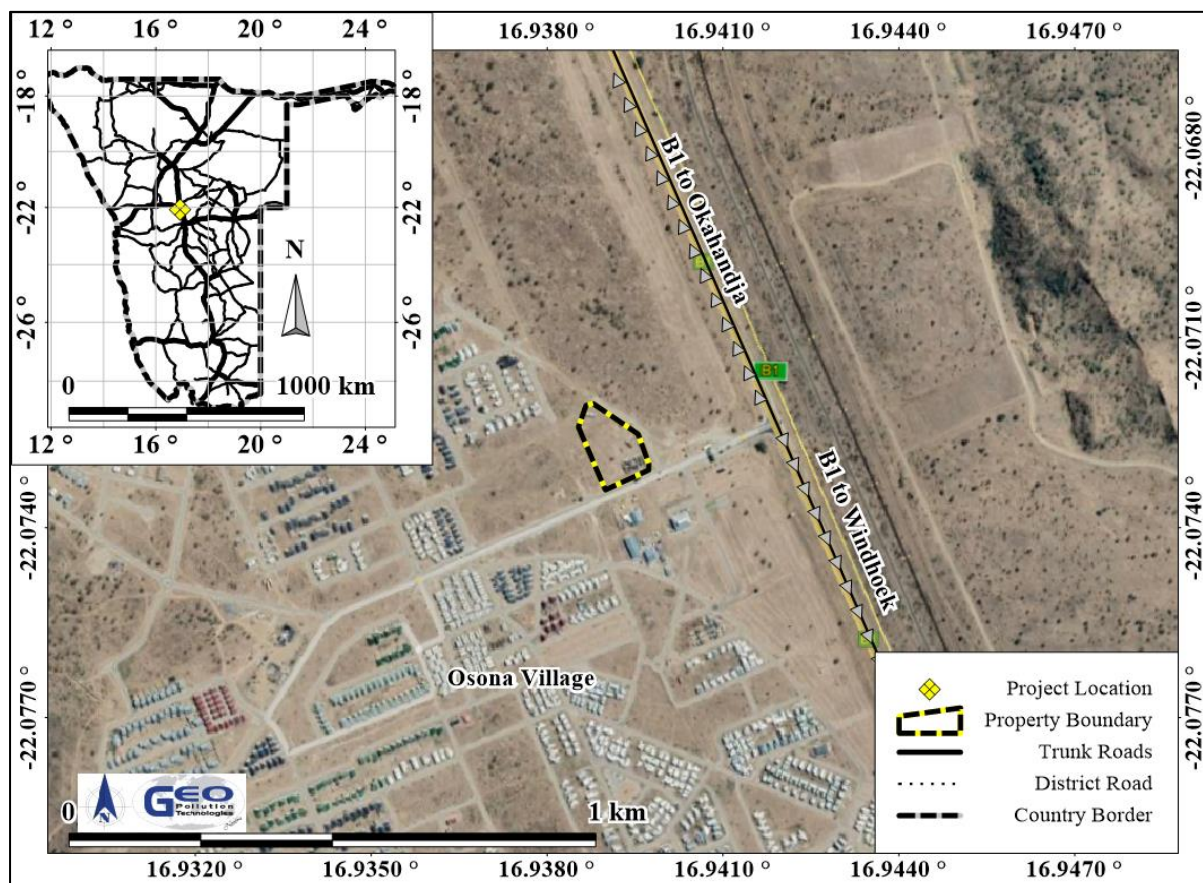


Figure 1-1. Project location

A risk assessment was undertaken to determine the potential impact of the construction, operational and possible decommissioning phases of the project on the environment. The environment being defined in the Environmental Assessment Policy and Environmental Management Act as “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”.

The environmental assessment was conducted to apply for an environmental clearance certificate in compliance with Namibia's Environmental Management Act (Act No 7 of 2007) (EMA).

Project Justification – Osona Village currently has no fuel retail facility. The nearest such facility is located some 10 km to the north. The proposed fuel facility will not only provide residents of Osona Village with fuel, but will also serve the surrounding community, transport industry and visitors to the area.

Benefits of the fuel retail facility include:

- ◆ Reliable supply of fuel to the local community, businesses, transport industry, etc.
- ◆ Employment and skills development.
- ◆ Increase in economic resilience in the area through diversification of business activities and opportunities.

2 SCOPE

The aims and objectives of this report are to:

1. Determine the potential environmental impacts emanating from the construction, operational and possible decommissioning activities of the fuel retail facility,
2. Identify a range of management actions which could mitigate the potential adverse impacts to acceptable levels,
3. Comply with the requirements of EMA,
4. Provide sufficient information to the relevant competent authority and MEFT to make an informed decision regarding the construction, operations and possible decommissioning of the facility.

Should the Directorate of Environmental Affairs (DEA) of the MEFT find that the impacts and related mitigation measures, which have been proposed in this report, are acceptable, an environmental clearance certificate may be granted to the Proponent. The environmental clearance certificate issued, based on this document, will render it a legally binding document which should be adhered to. Focus could be placed on Section 10, which includes an EMP for this project. It should be noted that the assessment process's aim is not to stop the proposed activity, or any of its components, but to rather determine its impact and guide sustainable and responsible development as per the spirit of the EMA.

3 METHODOLOGY

The following methods were used to investigate the potential impacts on the social and natural environment due to the construction and operations of the facility:

1. Baseline information about the site and its surroundings was obtained from primary information, existing secondary information as well as from a reconnaissance site visit.
2. As part of the scoping process to determine potential environmental impacts, interested and affected parties (IAPs) were consulted about their views, comments and opinions all of which are presented in this report.

4 FACILITY OPERATIONS AND RELATED ACTIVITIES

It is anticipated that the construction of the fuel retail facility will commence once an environmental clearance certificate has been issued by the MEFT and the various additional permits and licences, (such as per the Ministry of Mines and Energy), have been issued by the various regulatory bodies. A letter of intent to construct the facility was submitted to the Ministry of Mines and Energy who approved the site as viable for a service station and thus recommended its establishment (see Appendix A).

4.1 PLANNED INFRASTRUCTURE

The proposed fuel retail facility will be situated on erf 5 of Osona Village. Access to the site will be on the eastern side of the erf from the internal street network of Osona Village. The proposed location is within the townlands of Okahandja and has been previously disturbed by anthropogenic activities.

The facility will consist of a forecourt area with an overhead canopy and three pump islands (Figure 4-1). The pump islands will host one dispenser each, with hoses on both sides, which will thus allow for two vehicles to be filled simultaneously per island. Two vented, composite, underground storage tanks (UST) of 46 m³ each will be installed, of which one will be used to store unleaded petrol (ULP 95) and one for the storage of diesel (50 ppm). The tank pits will be lined with high-density polyethylene liners and have inspection holes as per industry standards. All surfaces for refuelling will be surfaced with concrete spill control slabs connected to an oil water separator with drains. The oil water separator overflow will be connected to the municipal sewer.

Safety systems will include emergency shutoff systems, channelling of storm water in order to prevent its contamination with hydrocarbons, and firefighting equipment. Fire extinguishers and emergency stops will be placed throughout the facility and within easy reach of attendants. Additional infrastructure on site will include a small retail shop and ablution facilities.

The proposed design of the fuel retail facility can be seen Figure 4-1, minor changes may however be made during finalisation of the design. The facility will conform to the typical designs of fuel retail facilities in Namibia. It will adhere to all Namibian legislation and to relevant South African National Standards (SANS), ensuring safety and environmental protection.

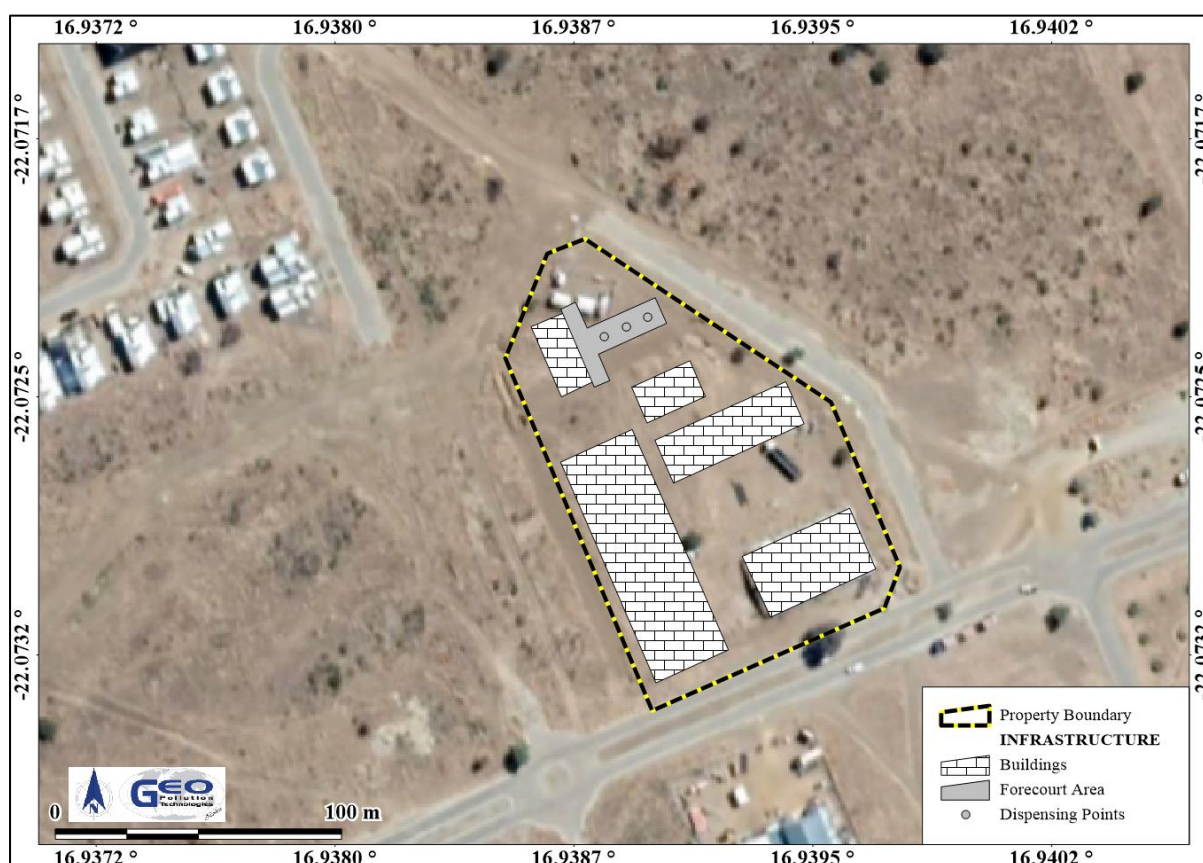


Figure 4-1. Preliminary site layout

4.2 OPERATIONAL ACTIVITIES

Unleaded petrol and 50 ppm diesel will be received from tanker trucks and stored in the underground storage tanks. Fuel will be dispensed to customers via the dispensers on the pump islands by pump attendants as required. Regular tank dips and reconciliation of fuel volumes will be performed to detect any possible leaks. The oil water separator will be inspected regularly and cleaned when needed. Any contaminated products will be disposed of at a registered waste oil recycler or approved hazardous waste disposal facility.

Additional operations of the facility includes the daily activities associated with the shop, as well as general care and maintenance of the property. Any domestic waste produced will be stored in an enclosed, temporary waste storage area. From here it will be removed regularly and transported to, and disposed at, an approved municipal waste disposal facility. The facility will provide employment to around 20 people.

5 ALTERNATIVES TO THE PROPOSED FACILITY

Since the facility must adhere to SANS standards or better no alternatives in design parameters adhering to SANS is proposed. From an environmental perspective the environmental assessment did not find any reason why the facility may not be established at this site, on condition that it complies with SANS standards or better as prescribed by Namibian legislation and gets approval from the relevant authorities on the design of the facility and its entrance / exit locations.

6 ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programmes and policies deemed to have adverse impacts on the environment require an environmental assessment, as per the Namibian legislation. The legislation and standards provided in Table 6-1 to Table 6-3 govern the environmental assessment process in Namibia and/or are relevant to the facility.

Table 6-1. Namibian law applicable to the fuel retail facility

| Law | Key Aspects |
|--|--|
| The Namibian Constitution | <ul style="list-style-type: none"> ◆ Promote the welfare of people ◆ Incorporates a high level of environmental protection ◆ Incorporates international agreements as part of Namibian law |
| Environmental Management Act Act No. 7 of 2007, Government Notice No. 232 of 2007 | <ul style="list-style-type: none"> ◆ Defines the environment ◆ Promote sustainable management of the environment and the use of natural resources ◆ Provide a process of assessment and control of activities with possible significant effects on the environment |
| Environmental Management Act Regulations Government Notice No. 28-30 of 2012 | <ul style="list-style-type: none"> ◆ Commencement of the Environmental Management Act ◆ List activities that requires an environmental clearance certificate ◆ Provide Environmental Impact Assessment Regulations |
| Petroleum Products and Energy Act Act No. 13 of 1990, Government Notice No. 45 of 1990 | <ul style="list-style-type: none"> ◆ Regulates petroleum industry ◆ Makes provision for impact assessment ◆ Petroleum Products Regulations (Government Notice No. 155 of 2000) <ul style="list-style-type: none"> ○ Prescribes South African National Standards (SANS) or equivalents for construction, operation and decommissioning of petroleum facilities (refer to Government Notice No. 21 of 2002) |
| The Water Act Act No. 54 of 1956 | <ul style="list-style-type: none"> ◆ Remains in force until the new Water Resources Management Act comes into force ◆ Defines the interests of the state in protecting water resources ◆ Controls water abstraction and the disposal of effluent ◆ Numerous amendments |

| Law | Key Aspects |
|---|---|
| Water Resources Management Act Act No. 11 of 2013 | <ul style="list-style-type: none"> ◆ Provide for management, protection, development, use and conservation of water resources ◆ Prevention of water pollution and assignment of liability ◆ Not in force yet |
| Local Authorities Act Act No. 23 of 1992, Government Notice No. 116 of 1992 | <ul style="list-style-type: none"> ◆ Define the powers, duties and functions of local authority councils ◆ Regulates discharges into sewers |
| Public Health Act Act No. 36 of 1919 | <ul style="list-style-type: none"> ◆ Provides for the protection of health of all people |
| Public and Environmental Health Act Act No. 1 of 2015, Government Notice No. 86 of 2015 | <ul style="list-style-type: none"> ◆ Provides a framework for a structured more uniform public and environmental health system, and for incidental matters ◆ Deals with Integrated Waste Management including waste collection disposal and recycling; waste generation and storage; and sanitation. |
| Labour Act Act No 11 of 2007, Government Notice No. 236 of 2007 | <ul style="list-style-type: none"> ◆ Provides for Labour Law and the protection and safety of employees ◆ Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997) |
| Atmospheric Pollution Prevention Ordinance Ordinance No. 11 of 1976 | <ul style="list-style-type: none"> ◆ Governs the control of noxious or offensive gases ◆ Prohibits scheduled process without a registration certificate in a controlled area ◆ Requires best practical means for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process |
| Hazardous Substances Ordinance Ordinance No. 14 of 1974 | <ul style="list-style-type: none"> ◆ Applies to the manufacture, sale, use, disposal and dumping of hazardous substances as well as their import and export ◆ Aims to prevent hazardous substances from causing injury, ill-health or the death of human beings |
| Pollution Control and Waste Management Bill (draft document) | <ul style="list-style-type: none"> ◆ Not in force yet ◆ Provides for prevention and control of pollution and waste ◆ Provides for procedures to be followed for licence applications |

Table 6-2. Relevant multilateral environmental agreements for Namibia and the development

| Agreement | Key Aspects |
|--|--|
| Stockholm Declaration on the Human Environment, Stockholm 1972. | <ul style="list-style-type: none"> ◆ Recognizes the need for a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment. |
| 1985 Vienna Convention for the Protection of the Ozone Layer | <ul style="list-style-type: none"> ◆ Aims to protect human health and the environment against adverse effects from modification of the Ozone Layer are considered. ◆ Adopted to regulate levels of greenhouse gas concentration in the atmosphere. |
| United Nations Framework Convention on Climate Change (UNFCCC) | <ul style="list-style-type: none"> ◆ The Convention recognises that developing countries should be accorded appropriate assistance to enable them to fulfil the terms of the Convention. |
| Convention on Biological Diversity, Rio de Janeiro, 1992 | <ul style="list-style-type: none"> ◆ Under article 14 of The Convention, EIAs must be conducted for projects that may negatively affect biological diversity. |

Table 6-3. Standards or Codes of Practise

| Standard or Code | Key Aspects |
|--|--|
| South African National Standards (SANS) | <ul style="list-style-type: none"> ◆ The Petroleum Products and Energy Act prescribes SANS standards for the construction, operations and demolition of petroleum facilities. ◆ SANS 10089-3:2010 is specifically aimed at storage and distribution of petroleum products at fuel retail facilities and consumer installations. <ul style="list-style-type: none"> ○ Provide requirements for spill control infrastructure |

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

Hazardous Substance Treatment, Handling and Storage

- ◆ 9.1 “The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.”
- ◆ 9.2 “Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.”
- ◆ 9.4 “The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres at any one location.”
- ◆ 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.”

7 ENVIRONMENTAL CHARACTERISTICS

This section lists pertinent environmental characteristics of the study area and provides a statement on the potential environmental impacts on each.

7.1 LOCALITY AND SURROUNDING LAND USE

The fuel retail facility is planned on erf 5, Osona Village, Okahandja, in the Otjozondjupa Region (22.072333 °S, 16.938842 °E) (Figure 1-1). Access to the site is planned from the eastern side of erf 5. The erf being zoned for business use is in the process of being developed as a shopping complex of which the fuel retail facility will form part. Surrounding properties are still mostly undeveloped and many remains in possession of the developer of Osona Village. Neighbouring properties constitute a mix of business, residential and open space erven.

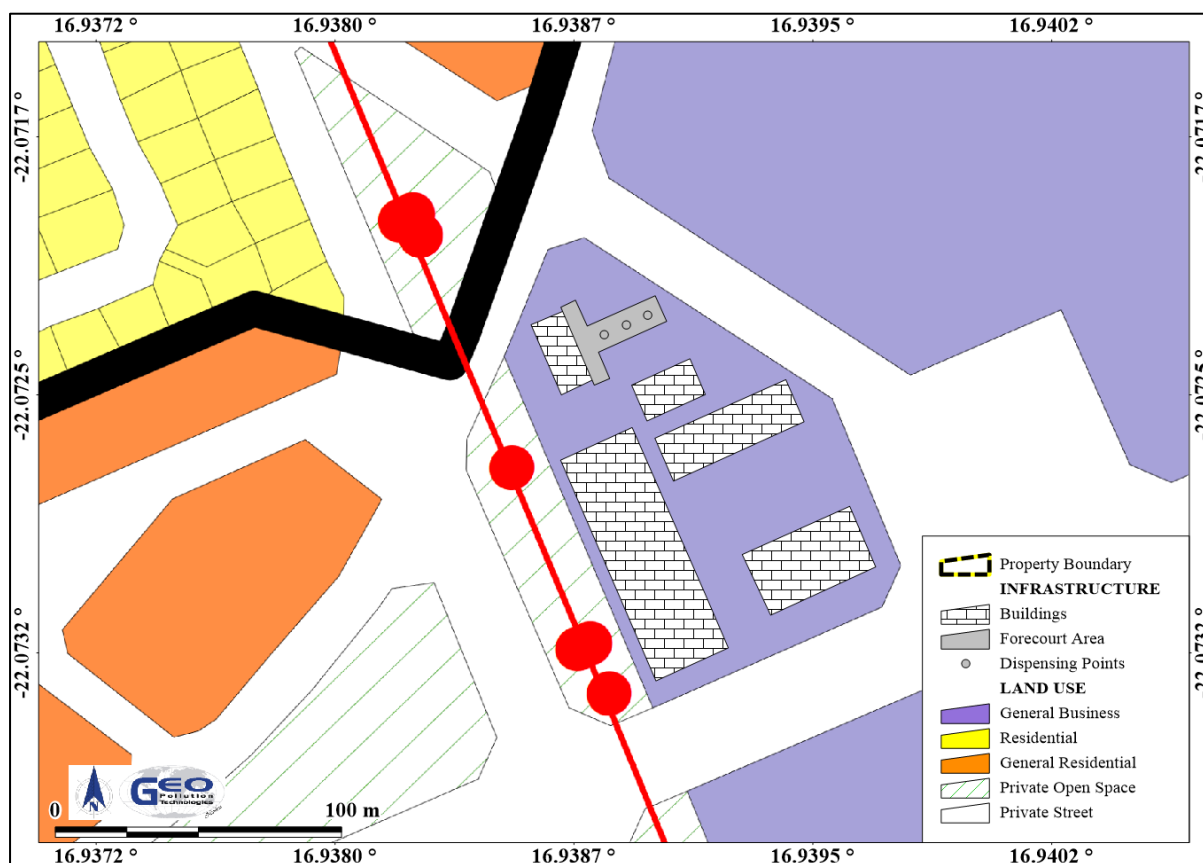


Figure 7-1. Land use



Photo 7-1. Project location

Implications and Impacts

Erf 5 is currently zoned for general business use. It is situated in an area with mixed land use. Being relatively low impact establishments, fuel retail facilities are common within mixed land use areas.

7.2 CLIMATE

The project area is situated in the savanna biome. The general lack of functioning weather stations in Namibia limits the availability of long term, true weather data. As a best possible workaround, long term climate data was obtained from the Atlas of Namibia Project (2002) and the CHIRPS-2 database (Funk et al., 2015), see Table 7-1, Table 7-2 and Figure 7-2.

Atlas of Namibia Project data was compiled from almost 300 rainfall stations across Namibia. The data was contoured in 50 mm intervals prior to 1999 for variable length data sets. The CHIRPS-2 dataset (Climate Hazards Group Infra-Red Precipitation with Station data version 2) consist of long term rainfall data (1981 to near-present) obtained from satellite imagery and in-situ station data. The resultant dataset provides a reasonably well represented overview of the climatic conditions and historic weather conditions of a general area. True values for single, site specific meteorological events may however differ to some degree.

The project area is situated in a semi-arid climatic region. Days are mostly warm with very hot days during the summer months, while nights are generally cool. The rain season normally starts in October and last until between April and May, peaking in January to March. Heavier rainfall (single day events) occur between November and April, with a single event of 81.7 mm in April (last 39 years data) being the highest. This is an obvious anomaly with most of the single day maximums being less than 40 mm (Figure 7-2). The average annual evaporation rate remains high at up to 3,200 mm/a. Table 7-1 contain a summary of the climate conditions for the area.

The average annual rainfall for the last 39 years was calculated as 307 mm/a, with a coefficient of variance of 37% (Table 7-2). This coefficient of variance seem to correlate with Atlas of Namibia Project data of Table 7-1. Daily and seasonal rainfall data (Funk et al., 2015) is presented in Figure 7-2. Seasonal (July to June) total rainfall, centred on the average line for the last 39 years, is presented, with the daily total rainfall and the seasonal cumulative rainfall. From the figure it is clear that since 2010 to 2020 four seasons received above average rainfall, namely 2010-2011, 2011-2012, 2013-2014 and 2016-2017. The rest were all below average with the driest years (last 39 years data) being 2018-2019. The rain season 2018-2019 is part of a dry period stretching from July 2017 until June 2019.

Table 7-1. Summary of climate climatic conditions (Atlas of Namibia Project, 2002)

| | |
|-----------------------------------|------------|
| Variation in annual rainfall (%) | 30-40 |
| Average annual evaporation (mm/a) | 3000-3,200 |
| Water deficit (mm/a) | 1,701-1900 |
| Temperature (°C) | 20-21 |

Table 7-2. Rainfall statistics (Funk et al., 2015)

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------------------------------------|----------------|-------|-------|-------|-------|---------------------------------------|-------|-------|-------|------|---------------------------------|-------|
| Minimum (mm) | 13.5 | 12.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Maximum (mm) | 313.6 | 213.5 | 147.1 | 102.2 | 6.9 | 2.9 | 0.2 | 1.1 | 3.2 | 26.0 | 61.0 | 150.2 |
| Average (mm) | 75.7 | 81.7 | 56.8 | 21.1 | 0.5 | 0.2 | 0.0 | 0.1 | 0.8 | 7.9 | 16.8 | 37.9 |
| Variability (%) | 76.0 | 60.0 | 67.0 | 106.0 | 285.0 | 304.0 | 361.0 | 319.0 | 143.0 | 87.0 | 76.0 | 88.0 |
| Daily maximum (mm) | 36.0 | 68.7 | 36.1 | 81.7 | 6.9 | 2.9 | 0.2 | 1.1 | 2.8 | 12.8 | 18.1 | 32.8 |
| Average rain days | 8 | 10 | 6 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 5 |
| Season July - June average: 307 mm | | | | | | Season coefficient of variation: 37 % | | | | | | |
| Data range | 1981-Jul-01 to | | | | | 2020-Jun-30 | | | | | Lat: -22.0723°S Long: 16.9388°E | |

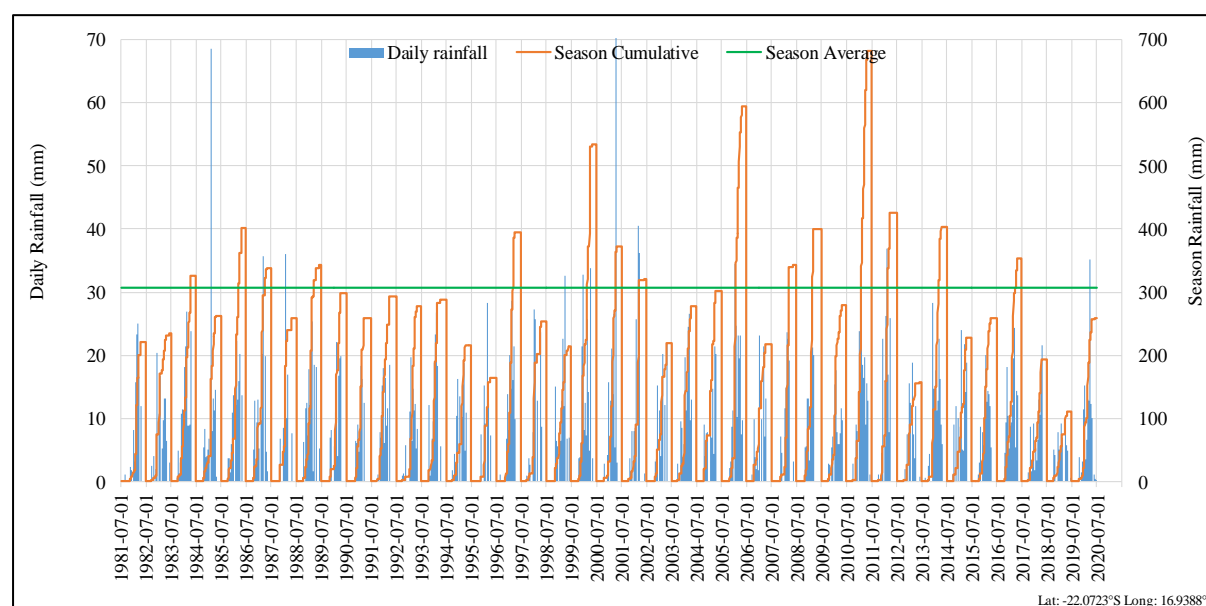


Figure 7-2. Daily and seasonal rainfall (Funk et al., 2015)

Water is a scarce and valuable resource in Namibia and the variability in seasonal rainfall makes water an extremely vulnerable resource. Rainfall events are typically thunderstorms with heavy rainfall that can occur in short periods of time (“cloud bursts”) which may lead to flooding and runoff of spilled products. The fuel retail facility must meet all prescribed SANS requirements and therefore should not pose any environmental threat due to Namibia’s climatic conditions. Water resources would thus be safe under typical conditions and expected extremes.

7.3 TOPOGRAPHY AND DRAINAGE

Regional landscape forms part of the Khomas Hochland Plateau Region with rolling hills in the west and the topography falling off to the east as the Kalahari is approached. Locally the site is located in a broad flat graben valley with a steep side to the east. The landscape is interpreted to be part of the Windhoek graben, which formed the steep valley side to the east. Locally the terrain is flat with onsite drainage to the northeast. It is located within the catchment of the Swakop River, an ephemeral river, draining in a Western direction. A map showing surface drainage directions can be seen in Figure 7-3.

Implications and Impacts

There are no topographical features which may impact, or be impacted by, the proposed construction and operations. Any pollutants that are not contained and are transported via surface water flow, will flow out of the site via storm water drainage lines and potentially pollute the natural environment and the Swakop River. Cumulative effects may be considered for the downslope areas.

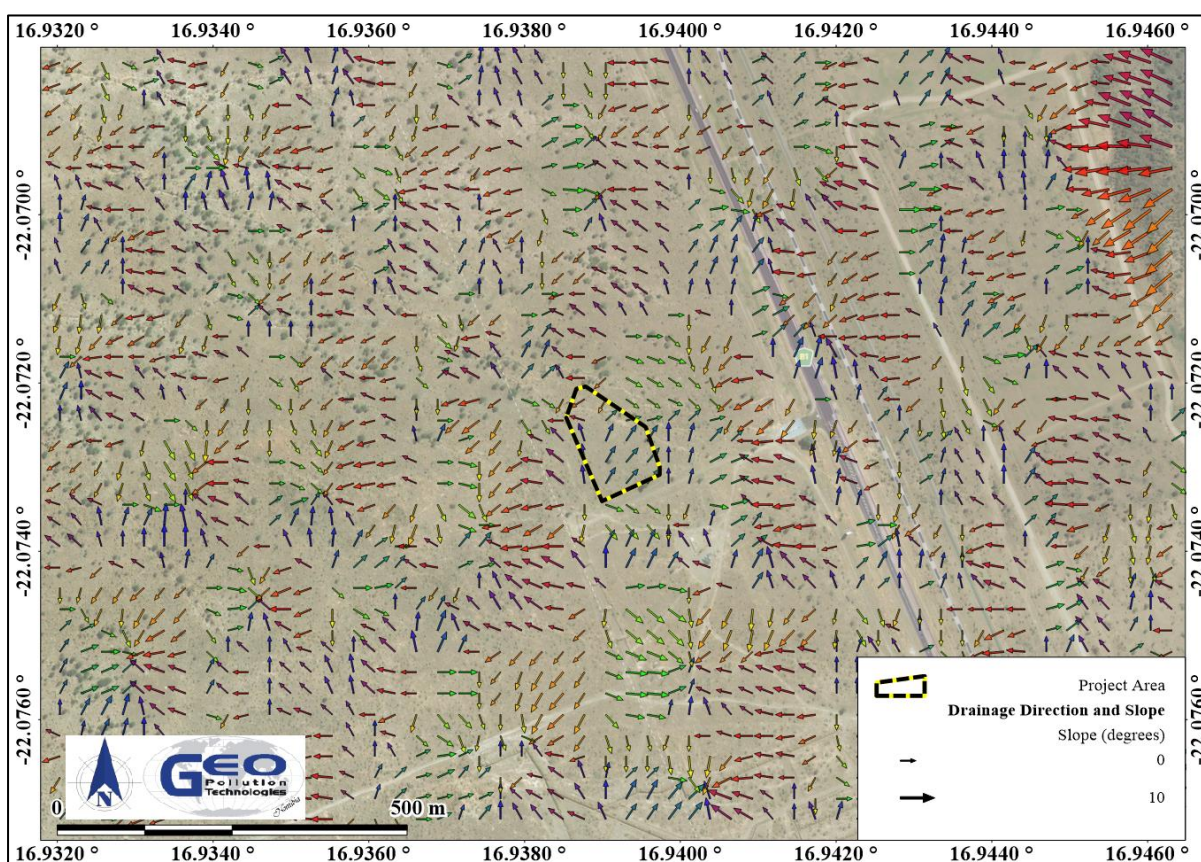


Figure 7-3. Drainage direction and slope

7.4 GEOLOGY AND HYDROGEOLOGY

Metasedimentary rocks of the Namibian Age constitute the regional geology of the study area, consisting of rocks from the Damara Sequence. The Damara Sequence is locally subdivided into the Swakop Group rocks. The Kuiseb Formation make up the Swakop Group and include mica schist, minor quartzite, graphitic schist and or marble. The project location is situated mainly on an alluvial deposits (sand) and is potentially underlain by Kuiseb Formation rocks when inferred. See Figure 5 for the hydrogeological map of the area.


The project location is situated in the Okahandja Groundwater Basin and the water level underneath the facility is expected deeper than 20 m below surface. Groundwater flow is expected to take place through primary porosity in the surface cover, while it is expected to flow along fractures, faults (secondary porosity) and other geological structures present within the

underlying formations (hard rock formations). Groundwater flow from the site can be expected in a north-westerly direction. Local flow patterns may vary due to groundwater abstraction in the area.

The project location falls outside a water control area, all groundwater however remains the property of the Government of Namibia.

Table 7-3 presents groundwater statistics of boreholes contained in the Department of Groundwater (DWA) database. Note that this database is generally outdated and more boreholes might be present.

Table 7-3. Groundwater statistics

| Query Centre: | Osona Petrosol; -22.0723°S; 16.9388°E | | | | | | | | | | | Query Box Radius: 5.0km |
|---|---------------------------------------|------------|-----------|-------------|--------------|-------------------|--------------------|-----------|----------------|---------------|----------------|-------------------------|
|  | | | | | | | | | | | | |
| | NUMBER OF KNOWN BOREHOLES | LATITUDE | LONGITUDE | DEPTH (mbs) | YIELD (m3/h) | WATER LEVEL (mbs) | WATER STRIKE (mbs) | TDS (ppm) | SULPHATE (ppm) | NITRATE (ppm) | FLUORIDE (ppm) | |
| Data points | 95 | | | 47 | 24 | 18 | 17 | 11 | 10 | 11 | 11 | |
| Minimum | | -22.027304 | 16.890246 | 2 | 0 | 3 | 3 | 86 | 2 | 0 | 0 | |
| Average | | | | 22 | 10 | 50 | 13 | 513 | 40 | 8 | 0 | |
| Maximum | | -22.117296 | 16.987354 | 92 | 41 | 500 | 53 | 1235 | 156 | 47 | 1 | |
| Group A | | | | 91.49% | 45.83% | 77.78% | 64.71% | 81.82% | 100.00% | 81.82% | 100.00% | |
| <i>Limit</i> | | | | 50 | >10 | 10 | 10 | 1000 | 200 | 10 | 1.5 | |
| Group B | | | | 8.51% | 16.67% | 5.56% | 29.41% | 18.18% | 0.00% | 0.00% | 0.00% | |
| <i>Limit</i> | | | | 100 | >5 | 50 | 50 | 1500 | 600 | 20 | 2.0 | |
| Group C | | | | 0.00% | 16.67% | 5.56% | 5.88% | 0.00% | 0.00% | 9.09% | 0.00% | |
| <i>Limit</i> | | | | 200 | >0.5 | 100 | 100 | 2000 | 1200 | 40 | 3.0 | |
| Group D | | | | 0.00% | 20.83% | 11.11% | 0.00% | 0.00% | 0.00% | 9.09% | 0.00% | |
| <i>Limit</i> | | | | >200 | <0.5 | >100 | >100 | >2000 | >1200 | >40 | >3 | |

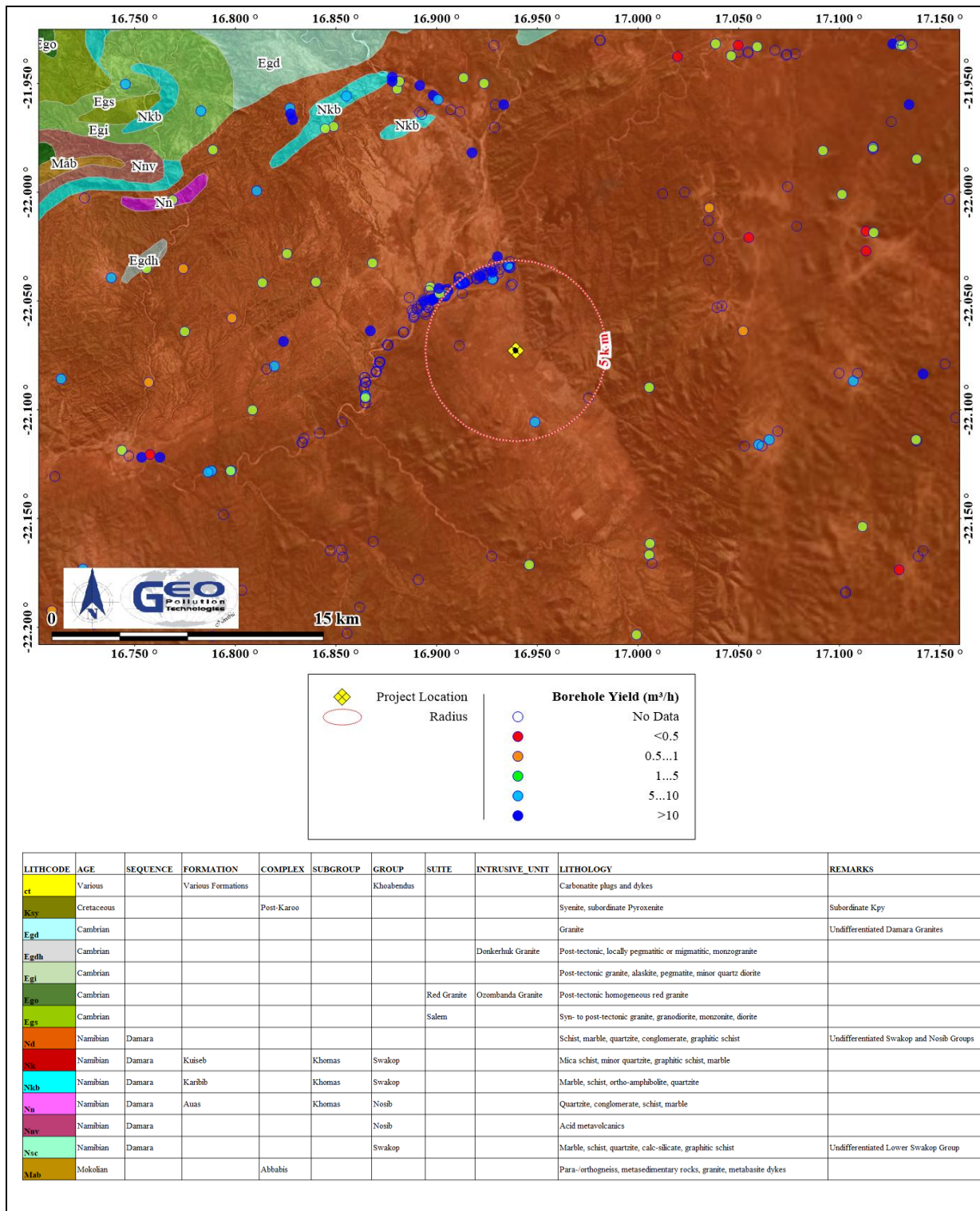


Figure 7-4. Hydrogeology map

Implications and Impacts

A risk to groundwater pollution exists due to the geological sensitivity of the area. This is mainly due to the nature of the alluvial deposits (alluvial aquifer), which is sensitive to contamination as well as the relatively shallow groundwater. Groundwater remains an important resource and would be at risk if fuel spills are not contained, cleaned and disposed of properly.

7.5 PUBLIC WATER SUPPLY

Groundwater is one of the main water supplies to the area, along with water sourced from the Von Bach Dam. Groundwater is mainly sourced from a wellfield situated in the Osona aquifer, a riverbed alluvial aquifer of the Okahanja and the Swakop Rivers (Pazvakawambwa, 2018).

Implications and Impacts

Groundwater remains an important resource and would be at risk if fuel spills are not contained, cleaned and disposed of properly. Water usage of the facility, specifically the car wash may contribute to a cumulative impact on the water availability during periods of drought.

7.6 FAUNA AND FLORA

The project location lies in the centre of the Tree and Shrub Savanna Biome with a thornbush shrubland vegetation type. Trees such as *Acacia mellifera*, *Acacia tortilis*, *Acacia erioloba*, *Acacia erubescens* and *Catophractes alexandri* and a variety of other acacia trees are characteristic of this area. Table 7-4 and Table 7-5 present a summary of the general fauna and flora of the broader area. Endemism for the area is high with a cumulative number of 39 species of birds, reptiles, mammals, frogs, plant and scorpions being endemic.

The proposed area for the fuel retail facility has previously been impacted by anthropogenic activities and no significant vegetation is present on site. No animals of particular significance are expected on site and mostly include birds, small mammals and arthropods. No significant impact on the fauna and flora is thus expected from the construction and future operations of the fuel retail facility.

Table 7-4. General flora data (Atlas of Namibia, 2002)

| | |
|-------------------------------------|---|
| Biome | Savanna |
| Vegetation type | Highland shrubland |
| Vegetation structure type | Dense shrubland |
| Diversity of higher plants | Highest (Diversity rank = 1 [1 to 7 representing highest to lowest diversity]) |
| Number of plant species | More than 500 |
| Percentage tree cover | 11-25 |
| Tree height (m) | 2-5 |
| Percentage shrub cover | 11-25 |
| Shrub height (m) | 1-2 |
| Percentage dwarf shrub cover | 2-10 |
| Dwarf shrub height (m) | < 0.5 |
| Percentage grass cover | 26-50 |
| Grass height (m) | < 0.5 |
| Dominant plant species | <i>Acacia hereroensis</i> , <i>Combretum apiculatum</i> , <i>Acacia reficiens</i> , <i>Acacia hebeclada</i> , <i>Ziziphus mucronata</i> , <i>Rhus</i> species |

Table 7-5. General fauna data (Atlas of Namibia Project, 2002)

| | |
|--------------------------|-------------------|
| Mammal Diversity | 61 - 75 Species |
| Rodent Diversity | 20 - 23 Species |
| Bird Diversity | 201 - 230 Species |
| Reptile Diversity | 71 - 80 Species |
| Snake Diversity | 35 - 39 Species |
| Lizard Diversity | > 35 Species |
| Frog Diversity | 8 - 11 Species |

| | |
|---------------------------|-----------------|
| Termite Diversity | 7 - 9 Genera |
| Scorpion Diversity | 16 - 17 Species |

Implications and Impacts

The fuel retail facility will lie within an already disturbed urban area. Thus, no immediate threat to biodiversity in the area is expected, however, uncontrolled pollution may and can cause damage to any biodiversity surrounding the site.

7.7 DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

The project area falls within the Otjozondjupa Region with a population of 143,903 and a density of 1.4 people/km² (National Planning Commission, 2012). 83% of the Otjozondjupa Region's population of 15 years and older is considered literate. In the same group of 15 and above, 18% of the population has no form of formal education while only 52% has secondary education (National Statistics Agency, 2009/2010). Unemployment in the Otjozondjupa Region is 37.2%.

At local scale the project area situated in the Okahandja Constituency with a population of 24,451 and a density of 4.2 people/km². Table 7-6 provides demographic information for the Okahandja constituency, the region and nationally.

Table 7-6. Demographic characteristics of the Okahandja Constituency, the Otjozondjupa Region and nationally (Namibia Statistics Agency, 2011)

| | Okahandja Constituency | Otjozondjupa Region | Namibia |
|---------------------------------|-----------------------------------|--------------------------------|----------------|
| Population (Males) | 12,099 | 73,902 | 1,021,912 |
| Population (Females) | 12,352 | 70,001 | 1,091,165 |
| Population (Total) | 24,451 | 143,903 | 2,113,077 |
| Unemployment (15+ years) | 40% | 37% | 33.8% |
| Literacy (15+ years) | 91% | 83% | 87.7% |

Implications and Impacts

The facility will provide employment to people from the area. Some skills development and training also benefit employees during the operational phase.

7.8 CULTURAL, HERITAGE AND ARCHAEOLOGICAL ASPECTS

There are no known cultural, heritage or archaeologically significant sites in the immediate vicinity of the proposed fuel retail facility. There are no known religions or cultural sites in the immediate vicinity of the site.

Implications and Impacts

No implications or expected impacts are expected as the project area has been previously disturbed by anthropogenic activity. Artefacts from early settlements may be present below the surface in undisturbed areas. These may be impacted on by human activity such as excavations.

8 PUBLIC CONSULTATION

Consultation with the public forms an integral component of an environmental assessment investigation and enables Interested and Affected Parties (IAPs) e.g. neighbouring landowners, local authorities, environmental groups, civic associations and communities, to comment on the potential environmental impacts associated with the proposed facility and to identify additional issues which they feel should be addressed in the environmental assessment.

Public participation notices were advertised twice in two weeks in the national papers The Namibian Sun and the Republikein on 12 and 19 October 2021 respectively. A site notice was placed on site and notification letters delivered to neighbours. The Okahandja Municipality were notified by hand delivered letter. Neighbours, the developer of Osona Village (Preferred Land Development Holdings) and the Osona Property Management Company were notified by email and by text message where e-mail addresses were not available. Proof of public participation is attached in Appendix B.

The Okahandja Municipality registered as an IAP. No comments were received on the project.

9 MAJOR IDENTIFIED IMPACTS

During the scoping exercise a number of potential environmental impacts have been identified. The following section provides a brief description of the most important of these impacts.

9.1 HYDROCARBON POLLUTION

This section describes the most pertinent potential pollution impacts that are expected from the facility and its operations. Groundwater and soil pollution from hydrocarbon products are major issues associated with the storage and handling of such products. Both forms of pollution are prohibited in Namibia.

When a release of hydrocarbon products takes place to the soil, the Light Non-Aqueous Phase Liquids (LNAPL) will infiltrate into the soil and start to migrate vertically. LNAPL transport in the subsurface environment occurs in several phases, including bulk liquid, dissolved, and vapour phases. Mechanisms that influence transport include the physicochemical properties of the specific compounds present such as density, vapour pressure, viscosity, and hydrophobicity, as well as the physical and chemical properties of the subsurface environment, including geology and hydrogeology. Hydrocarbon liquids are typically complex mixtures composed of numerous compounds, each with its own individual physicochemical and, therefore, transport properties.

If small volumes of spilled LNAPL enter the unsaturated zone (i.e. vadose zone), the LNAPL will flow through the central portion of the unsaturated pores until residual saturation is reached. A three-phase system consisting of water, LNAPL, and air is formed within the vadose zone. Infiltrating water dissolves the components within the LNAPL (e.g., benzene, xylene, and toluene) and transports them to the water table. These dissolved contaminants form a contaminated plume radiating from the area of the residual product. Many components found in LNAPL are volatile and can partition into soil air and be transported by molecular diffusion to other parts of the aquifer. As these vapours diffuse into adjoining soil areas, they may partition back into the water phase and transfer contamination over wider areas. If the soil surface is relatively impermeable, vapours will not diffuse across the surface boundary and concentrations of contaminants in the soil atmosphere may build up to equilibrium conditions. However, if the surface is not covered with an impermeable material, vapours may diffuse into the atmosphere.

If large volumes of LNAPL are spilled, the LNAPL flows through the pore space to the top of the capillary fringe of the water table. Dissolved components of the LNAPL precede the less soluble components and may change the wetting properties of the water, causing a reduction in the residual water content and a decrease in the height of the capillary fringe.

Since LNAPL are lighter than water, it will float on top of the capillary fringe. As the head formed by the infiltrating LNAPL increases, the water table is depressed and the LNAPL accumulate in the depression. If the source of the spilled LNAPL is removed or contained, LNAPL within the vadose zone continue to flow under the force of gravity until reaching residual saturation. As the LNAPL continue to enter the water table depression, it spread laterally on top of the capillary fringe. The draining of the upper portions of the vadose zone reduces the total head at the interface between the LNAPL and the groundwater, causing the water table to rebound slightly. The rebounding water displaces only a portion of the LNAPL because the LNAPL remain at residual saturation. Groundwater passing through the area of residual saturation dissolves constituents of the residual LNAPL, forming a contaminant plume. Water infiltrating from the surface also can dissolve the residual LNAPL and add to the contaminant load of the aquifer.

Decrease in the water table level from seasonal variations may lead to dropping of the pool of LNAPL. If the water table rises again, part of the LNAPL may be pushed up, but a portion remains at residual saturation below the new water table. Variations in the water table height, therefore, can spread LNAPL over a greater thickness of the aquifer, causing larger volumes of aquifer materials to be contaminated.

Hydrocarbon products do biodegrade in the subsurface, although the effectiveness of this process depends on subsurface conditions. The type of hydrocarbon product plays a further role in the duration of biodegradation, with the longer chain components taking much longer to biodegrade.

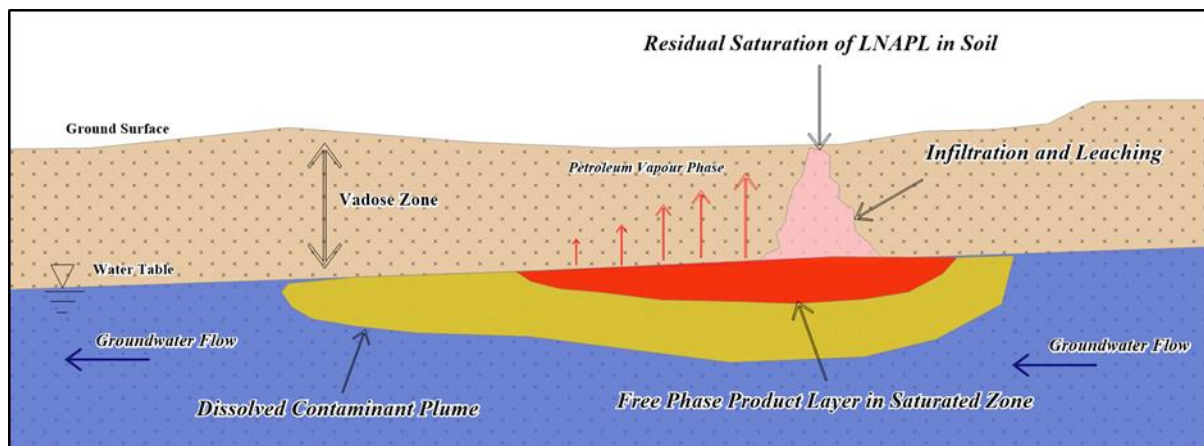


Figure 9-1. Conceptual LNAPL release to the vadose zone

9.2 NOISE IMPACTS

Noise will be a factor during the construction phase of the retail facility due to large trucks and machinery working on site. Some noise will also exist due to heavy and light motor vehicles accessing the site for delivering and collecting fuel during operations.

9.3 TRAFFIC IMPACTS

During construction and operations, some traffic impacts can be experienced in the vicinity of the fuel retail facility, especially where vehicles gain access from and to the erf. Traffic flow may be impacted by delivery trucks bringing fuel to the site, potentially resulting in incidents such as collisions if proper management measures are not in place. A slight increase in the cumulative use of the existing roads may be expected, especially during the construction phase.

9.4 FIRE

Chemicals and paints used during construction may be flammable. Machinery like welders and grinders can cause sparks that can cause fires. Unleaded petrol is extremely flammable and if fuel is not handled according to Material Safety Data Sheet instructions and SANS requirements, a fire risk exists during the operational phase.

9.5 HEALTH

Construction activities and working at heights have inherent health risks. Hydrocarbons are carcinogenic and dermal contact and inhalation of fumes should be prevented.

9.6 ECOSYSTEM AND BIODIVERSITY IMPACT

As the proposed location is void of most natural vegetation, impacts will mostly be related to pollution of the environment. Pollution of the environment and groundwater, especially by fuel, can deteriorate the ecosystem structure and function.

9.7 SOCIO-ECONOMIC IMPACTS

Construction and operations of the fuel retail facility will provide additional employment opportunities in the region. The operational phase will create permanent employment

opportunities (estimated 20 positions) and some training and skills development will take place. Social ills including spread of disease, alcohol misuse, theft, etc. may result from construction personnel moving into the area or due to the larger workforce if employees are not sourced locally.

10 ASSESSMENT AND MANAGEMENT OF IMPACTS

The purpose of this section is to assess and identify the most pertinent environmental impacts that may be expected from the construction, operational, and potential decommissioning activities of the facility. An EMP based on these identified impacts are also incorporated into this section.

For each impact an Environmental Classification was determined based on an adapted version of the Rapid Impact Assessment Method (Pastakia, 1998). Impacts are assessed according to the following categories: Importance of condition (A1); Magnitude of Change (A2); Permanence (B1); Reversibility (B2); and Cumulative Nature (B3) (see Table 10-1)

Ranking formulas are then calculated as follow:

$$\text{Environmental Classification} = A1 \times A2 \times (B1 + B2 + B3)$$

The environmental classification of impacts is provided in Table 10-2.

The probability ranking refers to the probability that a specific impact will happen following a risk event. These can be improbable (low likelihood); probable (distinct possibility); highly probable (most likely); and definite (impact will occur regardless of prevention measures).

Table 10-1. Assessment criteria

| Criteria | Score |
|---|-------|
| Importance of condition (A1) – assessed against the spatial boundaries of human interest it will affect | |
| Importance to national/international interest | 4 |
| Important to regional/national interest | 3 |
| Important to areas immediately outside the local condition | 2 |
| Important only to the local condition | 1 |
| No importance | 0 |
| Magnitude of change/effect (A2) – measure of scale in terms of benefit / disbenefit of an impact or condition | |
| Major positive benefit | 3 |
| Significant improvement in status quo | 2 |
| Improvement in status quo | 1 |
| No change in status quo | 0 |
| Negative change in status quo | -1 |
| Significant negative disbenefit or change | -2 |
| Major disbenefit or change | -3 |
| Permanence (B1) – defines whether the condition is permanent or temporary | |
| No change/Not applicable | 1 |
| Temporary | 2 |
| Permanent | 3 |
| Reversibility (B2) – defines whether the condition can be changed and is a measure of the control over the condition | |
| No change/Not applicable | 1 |
| Reversible | 2 |
| Irreversible | 3 |

| | |
|---|---|
| Cumulative (B3) – reflects whether the effect will be a single direct impact or will include cumulative impacts over time, or synergistic effect with other conditions. It is a means of judging the sustainability of the condition – not to be confused with the permanence criterion. | |
| Light or No Cumulative Character/Not applicable | 1 |
| Moderate Cumulative Character | 2 |
| Strong Cumulative Character | 3 |

Table 10-2. Environmental classification (Pastakia 1998)

| Environmental Classification | Class Value | Description of Class |
|------------------------------|-------------|-------------------------------|
| 72 to 108 | 5 | Extremely positive impact |
| 36 to 71 | 4 | Significantly positive impact |
| 19 to 35 | 3 | Moderately positive impact |
| 10 to 18 | 2 | Less positive impact |
| 1 to 9 | 1 | Reduced positive impact |
| 0 | -0 | No alteration |
| -1 to -9 | -1 | Reduced negative impact |
| -10 to -18 | -2 | Less negative impact |
| -19 to -35 | -3 | Moderately negative impact |
| -36 to -71 | -4 | Significantly negative impact |
| -72 to -108 | -5 | Extremely Negative Impact |

10.1 RISK ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

The EMP provides management options to ensure impacts of the facility are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The environmental management measures are provided in the tables and descriptions below. These management measures should be adhered to during the various phases of the construction and operation of the facility. This section of the report can act as a stand-alone document. All personnel taking part in the operations of the facility should be made aware of the contents in this section, so as to plan the operations accordingly and in an environmentally sound manner.

The objectives of the EMP are:

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

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

As depicted in the tables below, impacts related to the operational phase are expected to mostly be of medium to low significance and can mostly be mitigated to have a low significance. The extent of impacts are mostly site specific to local and are not of a permanent nature. Due to the nature of the surrounding areas, cumulative impacts are possible and include groundwater contamination and traffic impacts.

10.1.1 Planning

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

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

10.1.2 Skills, Technology and Development

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

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Employment, technological development and transfer of skills | 2 | 1 | 2 | 3 | 1 | 12 | 2 | Probable |
| Daily Operations | Employment, technological development and transfer of skills | 2 | 1 | 2 | 3 | 2 | 14 | 2 | Definite |
| Indirect Impacts | Transfer of skills and technological development | 2 | 1 | 2 | 3 | 3 | 16 | 2 | Definite |

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

Actions

Mitigation:

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

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.3 Revenue Generation and Employment

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

The change in land use will lead to changes in the way revenue is generated and paid to the national treasury. An increase of skilled and professional labour will take place due to the operations of the facility.

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|---|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Employment and contribution to local and national economy | 2 | 1 | 2 | 2 | 2 | 12 | 2 | Definite |
| Daily Operations | Employment contribution to local economy | 2 | 1 | 3 | 3 | 1 | 14 | 2 | Definite |
| Indirect Impacts | Decrease in unemployment, contribution to local economy | 3 | 1 | 3 | 3 | 3 | 27 | 3 | Definite |

Desired Outcome: Contribution to national treasury and provision of employment to local Namibians. Create a competitive environment to enhance service delivery to the area.

Actions

Mitigation:

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

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Bi-annual summary report based on employee records.

10.1.4 Demographic Profile and Community Health

The project is reliant on labour during the construction and operational phase. The scale of the project is limited and it is not foreseen that it will create a change in the demographic profile of the local community. Community health may be exposed to factors such as communicable disease like HIV/AIDS as well as alcoholism/drug abuse, associated with possible foreign construction teams and / or clients collecting fuel. An increase in foreign people in the area may potentially increase the risk of criminal and socially/culturally deviant behaviour. However, such trends are considered unlikely. Spills and leaks may present risks to members of the public. The project may further contribute to cumulative demand for services for the region which includes electricity and water supply.

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | In-migration and social ills related to unemployment | 2 | -1 | 1 | 1 | 2 | -8 | -1 | Probable |
| Daily Operations | In-migration and social ills related to unemployment | 2 | -1 | 1 | 2 | 2 | -10 | -2 | Probable |
| Indirect Impacts | The spread of disease | 2 | -1 | 2 | 2 | 2 | -12 | -2 | Probable |

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

Actions:

Prevention:

- ◆ Employ only local people from the area, deviations from this practice should be justified appropriately.
- ◆ Adhere to all local authority by-laws relating to environmental health which includes, but is not limited to, sand and grease traps for the various facilities and sanitation requirements.
- ◆ Facility design to incorporate water and energy saving technologies such as low energy electrical appliances and lighting.

Mitigation:

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

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

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

10.1.5 Fuel Supply

The operations of the facility will aid in securing fuel supply to the residents, business, visitors in the area as well as the transport industry.

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Daily Operations | Contribution to economy, contribution to the fuel supply in the area | 2 | 1 | 3 | 2 | 2 | 14 | 2 | Definite |
| Indirect Impacts | Secure supply in fuel allowing travel and trade | 3 | 1 | 3 | 2 | 2 | 21 | 3 | Definite |

Desired Outcome: Ensure a secure fuel supply remains available to the area.

Actions

Mitigation:

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

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

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

10.1.6 Traffic

The facility may increase the traffic flow to the site through the provision of construction material (construction phase) and fuel (operational phase). An increase in traffic to the site and from the site may increase the risk of incidents and accidents, especially during delivery of fuel and construction of the facility. Additional traffic may further contribute to road degradation.

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Delivery of equipment and building supplies | 1 | -1 | 2 | 2 | 2 | -6 | -1 | Probable |
| Daily Operations | Increase traffic, road wear and tear and accidents | 1 | -1 | 2 | 2 | 2 | -6 | -1 | Probable |

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

Actions

Prevention:

- ◆ Erect clear signage regarding access and exit points at the facility.

Mitigation:

- ◆ Tanker trucks delivering fuel should not be allowed to obstruct any traffic.
- ◆ If any traffic impacts are expected, traffic management should be performed to prevent these.
- ◆ The placement of signs to warn and direct traffic will mitigate traffic impacts.
- ◆ Consultation and approval from the town council regarding designs and access to the facility from the main road are required.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

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

10.1.7 Health, Safety and Security

Every activity that will be associated with the construction and operational phase is reliant on human labour and therefore will expose them to health and safety risks. Activities such as the operation of machinery and handling of hazardous chemicals (inhalation and carcinogenic effect of some petroleum products), will pose the main risks to employees. Security risks will be related to unauthorized entry, theft and sabotage.

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Physical injuries, exposure to chemicals and criminal activities | 1 | -2 | 3 | 3 | 1 | -14 | -2 | Probable |
| Daily Operations | Physical injuries, exposure to chemicals and criminal activities | 1 | -2 | 3 | 3 | 2 | -16 | -2 | Probable |

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

Actions

Prevention:

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

Mitigation:

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

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.8 Fire

Construction and operational activities may increase the risk of the occurrence of fires. Fuel, especially unleaded petrol, is highly flammable and therefore presents a fire risk.

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|-------------------------|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Fire and explosion risk | 2 | -2 | 2 | 2 | 1 | -20 | -3 | Probable |
| Daily Operations | Fire and explosion risk | 2 | -2 | 2 | 2 | 1 | -20 | -3 | Probable |

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

Actions:

Prevention:

- ◆ A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- ◆ Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).
- ◆ Ensure all chemicals are stored according to MSDS and SANS instructions.
- ◆ Maintain regular site, mechanical and electrical inspections and maintenance.
- ◆ Clean all spills / leaks.
- ◆ Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).
- ◆ Follow SANS standards for operation and maintenance of the facility.
- ◆ All dispensers must be equipped with devices that cut fuel supply during fires.
- ◆ Ensure all pump attendants are trained on the importance of filling only suitable containers with fuel as well as earthing of such containers when filling with unleaded petrol which can accumulate static electricity.

Mitigation:

- ◆ In case of a fire, the firefighting plan must be initiated immediately and all emergency procedures must be performed as practiced during training. This includes notifying the fire brigade, engaging emergency stops, using fire extinguishers, evacuation, etc.).

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.9 Air Quality

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

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Excessive dust generated from maintenance and upgrade activities | 1 | -1 | 2 | 2 | 2 | -6 | -1 | Probable |
| Daily Operations | Fuel vapours | 1 | -1 | 2 | 2 | 1 | -5 | -1 | Probable |

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

Actions

Mitigation:

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

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.10 Noise

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

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Excessive noise generated from construction activities – nuisance and hearing loss | 1 | -2 | 2 | 2 | 1 | -10 | -2 | Probable |
| Daily Operations | Noise generated from the operational activities – nuisance | 1 | -1 | 2 | 2 | 1 | -5 | -1 | Probable |

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

Actions

Prevention:

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

Mitigation:

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

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.11 Waste production

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

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Excessive waste production, littering, illegal dumping, contaminated materials | 1 | -2 | 2 | 2 | 2 | -12 | -2 | Definite |
| Daily Operations | Excessive waste production, littering, contaminated materials | 1 | -2 | 2 | 2 | 2 | -12 | -2 | Definite |

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

Actions

Prevention:

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

Mitigation:

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

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.12 Ecosystem and Biodiversity Impact

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

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|---|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Impact on fauna and flora. Loss of biodiversity | 1 | -1 | 3 | 2 | 2 | -7 | -1 | Definite |
| Daily Operations | Impact on fauna and flora. Loss of biodiversity | 1 | -1 | 2 | 2 | 2 | -6 | -1 | Improbable |

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

Actions.

Prevention:

- ◆ Contain all food related waste as to prevent animals from scavenging and dispose of such waste regularly to prevent the attraction of vermin by such waste.
- ◆ Discourage birds from utilising structures on site for purposes of nesting.
- ◆ Educate all contracted and permanent employees on the value of biodiversity.

Mitigation:

- ◆ Report any extraordinary animal sightings to the Ministry of Environment, Forestry and Tourism.
- ◆ Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.

Responsible Body:

- ◆ Contractor
- ◆ Proponent

Data Sources and Monitoring:

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

10.1.13 Groundwater, Surface Water and Soil Contamination

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

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Contamination from hazardous material spillages and hydrocarbon leakages | 2 | -1 | 2 | 2 | 1 | -10 | -2 | Probable |
| Daily Operations | Contamination from hazardous material spillages and hydrocarbon leakages | 2 | -2 | 2 | 2 | 1 | -20 | -3 | Probable |

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

Actions

Prevention:

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

Mitigation:

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

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.14 Visual Impact

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

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|--|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction | Aesthetic appearance and integrity of the site | 1 | -1 | 2 | 2 | 2 | -6 | -1 | Probable |
| Daily Operations | Aesthetic appearance and integrity of the site | 1 | -1 | 2 | 2 | 2 | -6 | -1 | Probable |

Desired Outcome: To minimise aesthetic impacts associated with the facility and prevent lighting from being a visual disturbance.

Actions

Mitigation:

- ◆ Regular waste disposal, good housekeeping and routine maintenance on infrastructure will ensure that the longevity of structures are maximised and a low visual impact is maintained.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.15 Impacts on Utilities and Infrastructure

Impacts related to utilities and infrastructure are more prevalent during the construction phase when excavations are conducted on site. During the operational phase such damage mainly relate to the road surface and access, or an underground spill or explosion which is very unlikely. In addition, there are limited utilities in the vicinity of the erf..

| Project Activity / Resource | Nature (Status) | (A1) Importance | (A2) Magnitude | (B1) Permanence | (B2) Reversibility | (B3) Cumulative | Environmental Classification | Class Value | Probability |
|-----------------------------|---|-----------------|----------------|-----------------|--------------------|-----------------|------------------------------|-------------|-------------|
| Construction Phase | Disruption of services and damage to infrastructure | 2 | -1 | 2 | 2 | 1 | -10 | -2 | Probable |
| Daily Operations | Disruption of services and damage to infrastructure | 2 | -1 | 2 | 2 | 1 | -10 | -2 | Improbable |

Desired Outcome: No damage or destruction of utilities and infrastructure.

Actions

Prevention:

- ◆ Appointing qualified and reputable contractors is essential.
- ◆ The contractor must determine exactly where amenities and pipelines are situated before construction commences (utility clearance e.g. ground penetrating radar surveys).
- ◆ Liaison with the suppliers of services is essential.
- ◆ Ongoing consultation with the Roads Authority and regional authorities during project construction and operation.

Mitigation:

- ◆ Emergency procedures for corrective action available on file.

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

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

10.1.16 Cumulative Impact

Possible cumulative impacts associated with the construction and operational phase include beneficial and detrimental impacts. It is assessed that the project will have a positive contribution to the local economy through job creation and local sales. Noise and additional traffic have a cumulative aspect for this project. There will be a definite increase in both as well as the possible risk to soil and groundwater contamination. However, on a cumulative scale the project is perceived to have a positive net benefit for the community.

Desired Outcome: To enhance the cumulative beneficial impacts associated with the facility.

Actions

Mitigation:

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

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Bi-annual reports will provide an overall assessment of the impact of the operational phase.

10.2 DECOMMISSIONING AND REHABILITATION

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

10.3 ENVIRONMENTAL MANAGEMENT SYSTEM

The Proponent could implement an Environmental Management System (EMS) for their operations. An EMS is an internationally recognized and certified management system that will ensure ongoing incorporation of environmental constraints. At the heart of an EMS is the concept of continual improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective EMS would need to include the following elements:

- ◆ A stated environmental policy which sets the desired level of environmental performance;
- ◆ An environmental legal register;
- ◆ An institutional structure which sets out the responsibility, authority, lines of communication and resources needed to implement the EMS;
- ◆ Identification of environmental, safety and health training needs;
- ◆ An environmental program(s) stipulating environmental objectives and targets to be met, and work instructions and controls to be applied in order to achieve compliance with the environmental policy; and
- ◆ Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the EMS.
- ◆ The EMP

11 CONCLUSION

The fuel retail facility will have a positive impact on the area by providing a reliable supply of fuel to residents and businesses as well creating employment opportunities and generating revenue, see Table 11-1. In addition to this, the fuel retail facility will contribute locally to skills transfer and training which in turn develops the local workforce during operations of the facility.

Negative impacts can successfully be mitigated. SANS standards relating to the petroleum industry and prescribed by Namibian law must be followed during all operations of the fuel retail facility. Noise pollution should at all times meet the prescribed WHO requirements to prevent hearing loss and not to cause a nuisance. Fire prevention should be adequate, and health and safety regulations should be adhered to in accordance with the regulations pertaining to relevant laws and internationally accepted standards of operation. Any waste produced must be removed from site and disposed of at an appropriate facility or re-used or recycled where possible. Hazardous waste must be disposed of at an approved hazardous waste disposal site.

The environmental management plan (Section 10) should be used as an on-site reference document for the operations of the facility. Parties responsible for transgressing of the environmental management plan should be held responsible for any rehabilitation that may need to be undertaken. The Proponent could use an in-house Health, Safety, Security and Environment Management System in conjunction with the EMP. All operational personnel must be taught the contents of these documents.

Table 11-1. Impact Summary Class Values

| Impact Category | Impact Type | Construction | | Operations | |
|-----------------|---|--------------|----|------------|----|
| | <i>Positive Rating Scale: Maximum Value</i> | 5 | | 5 | |
| | <i>Negative Rating Scale: Maximum Value</i> | | -5 | | -5 |
| EO | Skills, Technology and Development | 2 | | 2 | |
| EO | Revenue Generation and Employment | 2 | | 2 | |
| SC | Demographic Profile and Community Health | | -1 | | -2 |
| EO | Fuel Supply | | | | 2 |
| SC | Traffic | | -1 | | -1 |
| SC | Health, Safety and Security | | -2 | | -2 |
| PC | Fire | | -3 | | -3 |
| PC | Air Quality | | -1 | | -1 |
| PC | Noise | | -2 | | -1 |
| PC | Waste Production | | -2 | | -2 |
| BE | Ecosystem and Biodiversity Impact | | -1 | | -1 |
| PC | Groundwater, Surface Water and Soil Contamination | | -2 | | -3 |
| SC | Visual Impact | | -1 | | -1 |
| PC | Impacts on Utilities and Infrastructure | | -2 | | -2 |
| | Cumulative Impact | | 2 | | 2 |

BE = Biological/Ecological EO = Economical/Operational PC = Physical/Chemical SC = Sociological/Cultural

12 REFERENCES

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Appendix A: Approvals



REPUBLIC OF NAMIBIA

MINISTRY OF MINES AND ENERGY

Tel: +264 61 284-8111
 Fax: +264 61 238643 / 220386
 E-mail: info@mme.gov.na
 Website: www.mme.gov.na

6 Aviation Road
 Private Bag 13297
 WINDHOEK

Enquiries: Joleen Morris

03 June 2021

Mr. Martin Van Wyk
 Northern Fuel Distributors CC
 P. O Box 654
 Otjiwarongo
 Namibia

Dear Mr. Van Wyk

**RE: LETTER OF INTENT TO CONSTRUCT A SERVICE STATION ON PORTION B, ERF 5,
 OSHONA VILLAGE**

We hereby acknowledge receipt of your letter of intent dated the 28th of April 2021.

The Ministry has assessed and evaluated your letter of intent and business plan for constructing a new fuel site on portion B, erf 5, Oshona Village. Due to the need for security of supply of the area. This site is therefore deemed viable and recommended.

We request that you submit, for our approval, three (3) sets of approved technical drawings for the proposed site. We also request that you submit for our endorsement, the application for Environmental Clearance Certificate (ECC).

The viability of the site is valid for **six (6) calendar months** from the date of this letter. You are, therefore, advised to apply for a fuel retail license in accordance with the Petroleum Products and Energy Regulations, 2000 and the published fuel retail guidelines and requirements, within the validity period.

Kindly take note, that this letter does not guarantee that you will be issued with the fuel retail license necessary to operate the site.

Sincerely,

 24 JAN 2021
TOM K. ALWEENDO, MP
 MINISTER
 OFFICIAL

Appendix B: Proof of Public Consultation

Notified IAPs

| Name | Surname | Organisation |
|-------------|----------------|--|
| Mark | Ciocolanti | Preferred Land Development Holdings (Pty) Ltd (the Developer of Osona Village) |
| Hue | Gesche | Osona Property Management Company |
| Uazukuani | | Erf 677 |
| Michael | Zamuee | Erf 690 |
| Quinton | Izaaks | Erf 691 |
| Julia | Hukununa | Manager: Environmental Health & Emergency Services Okahandja Municipality |

Registered IAPs

| Name | Surname | Organisation |
|-------------|----------------|---|
| Julia | Hukununa | Manager: Environmental Health & Emergency Services Okahandja Municipality |

Press Notices: The Namibian Sun 12 and 19 October 2021

3
TUESDAY 12 OCTOBER 2021
NEWS

Sun

• UPSURGE IN CASES REPORTED


Shoprite accused of negligence that led to elderly woman's fall

ESTER KAMATI AND LIMBA MUPETAMI
WINDHOEK

An 81-year-old Tsumeb woman, Veronika Neidel, has been unable to walk since slipping and falling at the local Shoprite grocery store in early September.

Before the incident, she lived with her 12-year-old granddaughter, but has since had to send the child to other family members as she can no longer take care of her. Neidel said she fell in an aisle where tiling work was being done. According to her, there was no warning sign. She slipped on a loose tile and fell on her hip, hitting her head in the process and losing consciousness.

Some Shoprite staff members who witnessed the incident helped Neidel up and carried her to a taxi, which they paid to take her home.



IMMOBILE: Veronika Neidel (81) tore a hip muscle after slipping on a loose tile in Shoprite Tsumeb. PHOTO CONTRIBUTED

"We asked them to help us with medical expenses and other needs. They agreed but later changed their mind. They claimed she was already suffering from ill health when she walked into the shop," Uiras told Namibian Sun.

At the age of 81, Neidel was still able to clean her house, wash her clothes and cook for herself and her granddaughter. She also liked to water her plants. These are things she can no longer do.

"Shoprite must help us because she injured herself in their establishment. At this moment, she needs a wheelchair. I am unemployed," Uiras said.

Needs wheelchair

The next day, Neidel was unable to walk and her daughter took her to hospital, where it was confirmed that she had torn a hip muscle. Her daughter, Hetta Uiras, has since moved into her home temporarily to care for her. "She wasn't walking at all," said Uiras, and weeks after the incident, her condition has not changed.

About two days after the incident, an employee from Shoprite, whose name is known to Namibian Sun, visited the elderly woman to check on her health.

Uiras contacted the Shoprite management, who she claims initially admitted negligence and apologised to Neidel.

Shoprite responds

Approached for comment, Shoprite apologised for the way the incident was handled. "We would like to apologise to the customer for the way in which her matter was originally dealt with in store and are addressing it with the parties involved."

Shoprite said it has reached out to the family directly "to provide the necessary assistance and ensure the matter is resolved". The company added that a notice has been put up in the store to warn customers of the tiling work being done.

"The affected areas were demarcated accordingly," they added.

ester@myzone.com.na

PUBLIC PARTICIPATION NOTICE
ENVIRONMENTAL ASSESSMENT FOR A FUEL RETAIL FACILITY AT OSONA VILLAGE, OTJOZONDJUPA REGION


Geo Pollution Technologies (Pty) Ltd was appointed by Petrosol Petroleum Solutions CC to undertake an environmental assessment for the construction and operations of a fuel retail facility on erf 5 of the Osona Village, Okahandja, Otjozondjupa Region. The environmental assessment will be according to the Environmental Management Act of 2007 and its regulations as published in 2012.

The proposed facility will have two underground storage tanks for diesel and unleaded petrol. General operations will involve the receipt of fuel from road tankers and supplying of fuel to customers via dispensers in the forecourt area. More information is available at: <http://www.thenamib.com/projects/projects.html>

All interested and affected parties are invited to register with the environmental consultant. By registering you are provided with the opportunity to share any comments, issues or concerns related to the facility, for consideration in the environmental assessment. Additional information can be requested from Geo Pollution Technologies.

All comments and concerns should be submitted to Geo Pollution Technologies by **26 October 2021**.


André Faul
Geo Pollution Technologies
Telephone: +264-61-257411
Fax: +264-88626368
E-Mail: petrosol@thenamib.com



4
TUESDAY 19 OCTOBER 2021
NEWS

Sun

• SUNDAY NIGHT WAS THE REFERENCE DATE




23 NOVEMBER 2021

3 IN 1 FOCUS EDITION

27 000 DISTRIBUTED IN REPUBLIKEIN, ALGEMEINE ZEITUNG AND NAMIBIAN SUN.

THIS FOCUS WILL BE AVAILABLE ON ALL NMH DIGITAL PLATFORMS, AS WELL AS NMH DIGITAL BOOKSHELF (FLIPPER)

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lou-marie@nmh.com.na

BOOKING DEADLINE: 29 OCTOBER 2021

MANUFACTURING LOGO AND COMMERCIAL VPS

have failed or when the pregnancy will affect the pregnant person's socio-

it is permitted under the law or not.

jenima@namibiansun.com

PUBLIC PARTICIPATION NOTICE
ENVIRONMENTAL ASSESSMENT FOR A FUEL RETAIL FACILITY AT OSONA VILLAGE, OTJOZONDJUPA REGION


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André Faul
Geo Pollution Technologies
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Fax: +264-88626368
E-Mail: petrosol@thenamib.com



81% of Namibians

es, natural disasters, diets for all.

loss of biodiversity, habitat destruction and conflict, one can clearly see the magnitude of the challenge we face in meeting the world's growing food needs, while simultaneously reducing the environmental and climate impact of our agri-food systems."

Natural disasters

Agriculture minister Anna Shiweda said the ongoing Covid-19 pandemic still presents the greatest risk to communities in general and the agriculture sector in particular, which supports the livelihoods of about 70% of the Namibian population.

She said apart from the pandemic, the sector is also prone to natural disasters, such as droughts, floods, crop pests and animal diseases as well as fire outbreaks.

According to her it is a well-known fact that healthy diets protect against malnutrition in all its forms, and prevent non-communicable diseases such as diabetes, heart disease, stroke and cancer. Shiweda further said that addressing hunger, malnutrition and poverty remains a high priority on the agenda of the Namibian government.

Therefore, national high-level policies as well as sector policies clearly stipulate the government's resolve to eradicate hunger, malnutrition and poverty in Namibia.

In line with these policies, the government is implementing programmes and projects to address food and nutrition insecurity, as well as poverty.

ellanie@namibiansun.com

Press Notices: The Republikein 12 and 19 October 2021

Dinsdag 12 Oktober 2021 Republikein 5 NUUS

gestuur. Later het ek in die boekhou- het my ses dae gevat om te voltooi." asvaal mure soos by lodges, in res- ek net oor naweke en in my vrye tyd. my gerus vir kwotasies."

tanja@republikein.com na



geword." Haar passie vir skilder het sy al as **SKILDER**




termuwe uitdaging wat my vinnige energetieke lewenswyse aanval tot 'n

PUBLIC PARTICIPATION NOTICE
ENVIRONMENTAL ASSESSMENT FOR A FUEL RETAIL FACILITY AT OSONA VILLAGE, OTJOZONDJUPA REGION


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Fax: +264-88626368
E-Mail: petrosol@thenamib.com



Dinsdag 19 Oktober 2021 Republikein 3 NUUS

» **'Wilde seisoenoorgang' kom glo**
Intussen het werkkenners gewaarsku dat n verwag, wat teen vrydag oos sai begin skuur, jongste uitrykstatus van 14 Oktober ook voor-

stivra@republikein.com.na

Internasionale prestasie vir 'Hairareb'

Die veelbekroonde Namibiese rolprent Hairareb waarin die ontslape veteraanakteur David Ndjavera 'n hoofrol vertolk het, word eersdaags by nóg twee internasionale filmfeeste vertoon.

Ndapunikwa Investments, die produksie-maatskappy agter dié rolprent, het opgewonde aangekondig dat dit by die openingseremonie van die Festival International du Film Pan-Africain de Cannes vertoon sal word. Die film maak ook deel uit van vanjaar se amptelike seleksie vir dié rolprentfees, wat beteken dit kom in aanmerking vir 'n Dikalo-toekenning.

Die fliek sal in die volgende toekenningskategorieë oorweeg word:

1. Beste fiksie-rolprent
2. Beste akteur
3. Beste aktrise
4. Spesiale erkenning vir speelfiksie van die seleksiepaneel
5. Die Nord Sud Development Association se



FOTO: VERSKAF

Benewens hierdie opwindende nuus, is *Hairareb* ook genooi om deel te neem aan die 29ste jaarlikse New York African Diaspora International Film Festival (ADIFF) wat van 26 November tot 12 Desember aanlyn op die Eventive-platform sal plaasvind. Die film-makers sal aanlyn aan ADIFF deelneem aangesien meeste vertonings virtueel sal wees.

Hairareb het reeds verskeie toekennings ingepalm, waaronder die beste narratiewe rolprent, beste regisseur en die toekenning vir beste akteur vir wyle David Ndjavera by die jaarlikse Namibiese Theater- en Filmtoekennings. Die fliek het internasionale lof ontvang ná dit by talle gesogte internasionale rolprentfeeste as deel van die amptelike seleksie vertoon is – waaronder by die Europese filmfees en die Durbanse Internasionale Rolprentfees.

Hairareb is gebaseer op 'n boek deur August C. Bibeur, en deur Aina Ligola Kwedhi in 'n draaiboek omskep. Dantagos Jimmy-Melani is die uitvoerende vervaardiger, met Ellen Ernst as vervaardiger, en die bekroonde Oshoveh Shipoh in die regisseurstoel. Die verhaal is glo 'n huldeblyk aan Namibiese kinematografie en storievertelling, en word vertel vanuit die perspektief van een van Namibië se oudste en mees diepwortelde stamme – wat liefde in 'n tyd van droogte vasvang, en dus 'n gepaste voorstelling van die Namibiese kinematografie vir beide plaaslike en internasionale gehore is. - republikein@republikein.com.na

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Site Notice



Appendix C: Consultant's Curriculum Vitae

ENVIRONMENTAL SCIENTIST**André Faul**

André entered the environmental assessment profession at the beginning of 2013 and since then has worked on more than 150 Environmental Impact Assessments including assessments of the petroleum industry, harbour expansions, irrigation schemes, township establishment and power generation and transmission. André's post graduate studies focussed on zoological and ecological sciences and he holds a M.Sc. in Conservation Ecology and a Ph.D. in Medical Bioscience. His expertise is in ecotoxicological related studies focussing specifically on endocrine disrupting chemicals. His Ph.D. thesis title was The Assessment of Namibian Water Resources for Endocrine Disruptors. Before joining the environmental assessment profession he worked for 12 years in the Environmental Section of the Department of Biological Sciences at the University of Namibia, first as laboratory technician and then as lecturer in biological and ecological sciences.

CURRICULUM VITAE ANDRÉ FAUL

| | | |
|-------------------|---|--|
| Name of Firm | : | Geo Pollution Technologies (Pty) Ltd. |
| Name of Staff | : | ANDRÉ FAUL |
| Profession | : | Environmental Scientist |
| Years' Experience | : | 19 |
| Nationality | : | Namibian |
| Position | : | Environmental Scientist |
| Specialisation | : | Environmental Toxicology |
| Languages | : | Afrikaans – speaking, reading, writing – excellent English – speaking, reading, writing – excellent |

EDUCATION AND PROFESSIONAL STATUS:

| | | |
|------------------------------|---|--------------------------------------|
| B.Sc. Zoology | : | University of Stellenbosch, 1999 |
| B.Sc. (Hons.) Zoology | : | University of Stellenbosch, 2000 |
| M.Sc. (Conservation Ecology) | : | University of Stellenbosch, 2005 |
| Ph.D. (Medical Bioscience) | : | University of the Western Cape, 2018 |

| | |
|---------------------|-------------|
| First Aid Class A | EMTSS, 2017 |
| Basic Fire Fighting | EMTSS, 2017 |

PROFESSIONAL SOCIETY AFFILIATION:

Environmental Assessment Professionals of Namibia (Environmental Practitioner)

AREAS OF EXPERTISE:

Knowledge and expertise in:

- ◆ Water Sampling, Extractions and Analysis
- ◆ Biomonitoring and Bioassays
- ◆ Biodiversity Assessment
- ◆ Toxicology
- ◆ Restoration Ecology

EMPLOYMENT:

| | | |
|-----------|---|--|
| 2013-Date | : | Geo Pollution Technologies – Environmental Scientist |
| 2005-2012 | : | Lecturer, University of Namibia |
| 2001-2004 | : | Laboratory Technician, University of Namibia |

PUBLICATIONS:

| | |
|-----------------------------|------|
| Publications: | 5 |
| Contract Reports | +150 |
| Research Reports & Manuals: | 5 |
| Conference Presentations: | 1 |