

APP-002386

**CONSTRUCTION AND OPERATIONS OF A FUEL RETAIL
FACILITY IN ROCKY CREST, WINDHOEK**

ENVIRONMENTAL SCOPING ASSESSMENT REPORT




Assessed by:



Assessed for:

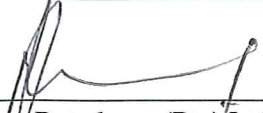
**TULAING PETROLEUM
(PTY) LTD**

March 2021

Project:	CONSTRUCTION AND OPERATIONS OF A FUEL RETAIL FACILITY IN ROCKY CREST, WINDHOEK: ENVIRONMENTAL ASSESSMENT SCOPING REPORT	
Report Version/Date:	Final March 2021	
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Report Approval	 André Faul Conservation Ecologist	

I, JOSEF Andrece, acting as representative of Tulaing Petroleum, 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 WINDHOEK on the 11 day of March 2021.


Tulaing Petroleum (Pty) Ltd

2016/0033
Business Registration/ID No.

EXECUTIVE SUMMARY

Tulaing Petroleum (Pty) Ltd requested Geo Pollution Technologies (Pty) Ltd to undertake an environmental assessment for the construction and operations of a fuel retail facility situated on erf 1464, at the corner of Long Island Street and Seal Island Road in Rocky Crest, Windhoek. The proposed facility will supply diesel and unleaded petrol from underground storage tanks via dispensers on a forecourt area. Construction activities will include the installation of underground storage tanks, all reticulation, a forecourt area with pump islands and buildings. The property is currently zoned for business purposes. Operations of the fuel retail facility will include filling of underground storage tanks from road transport tankers, dispensing of fuel to customers, tank dips and fuel volume reconciliation, and general operational activities and maintenance procedures typical of a fuel retail facility.

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. Due to the nature and location of the facility, limited impacts are expected on the surrounding environment, see summary impacts table below. The facility is surrounded mainly by open areas and residential properties. It is 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 role in contributing to a reliable supply of fuel to the residents of Rocky Crest and the surrounding business community.

The major concerns related to the operations of the facility are that of potential groundwater, surface water and soil contamination and the possibility of fire. This will however be limited by adherence to South African National Standards and to relevant Material Safety Data Sheet instructions. Furthermore, noise levels should meet the minimum requirements of the City of Windhoek. By appointing local contractors and employees and 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 and environmental policy could be used in conjunction with the environmental management plan. Operators and responsible personnel must be taught the contents of these documents. Municipal 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			2
SC	Traffic		-1		-1
SC	Health, Safety and Security		-2		-2
PC	Fire		-2		-2
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		-2
SC	Visual Impact		-1		-1
	Cumulative Impact		-3		-3

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
m/s	Meter per second
mbs	Meters 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
UNCCD	United Nations Convention to Combat Desertification
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 (I&AP) - 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 I&APs) 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 (I&APs). 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 Tulaing Petroleum (Pty) Ltd (the Proponent) to undertake an environmental assessment for the construction and operations of a fuel retail facility on erf 1464, at the corner of Long Island Street and Seal Island Road in Rocky Crest, Windhoek, Khomas Region (Figure 2-1). Preliminary site plans propose three underground storage tanks of 23 m³ each, an overhead canopy, and four pump islands. This will allow for storage and dispensing of unleaded petrol and 50 ppm diesel. Spill control infrastructure will be present on site. The establishment will also host a food court / retail shop. 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.

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 – The proposed location for the fuel retail facility is in a rapidly developing, mixed land use area of Windhoek. It will contribute towards a reliable fuel supply to nearby residents as well as various other sectors operational in the area.

Benefits of the fuel retail facility include:

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

2 SCOPE

The scope of this assessment is 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 MEFT to make an informed decision regarding the operations and possible decommissioning of the facility.

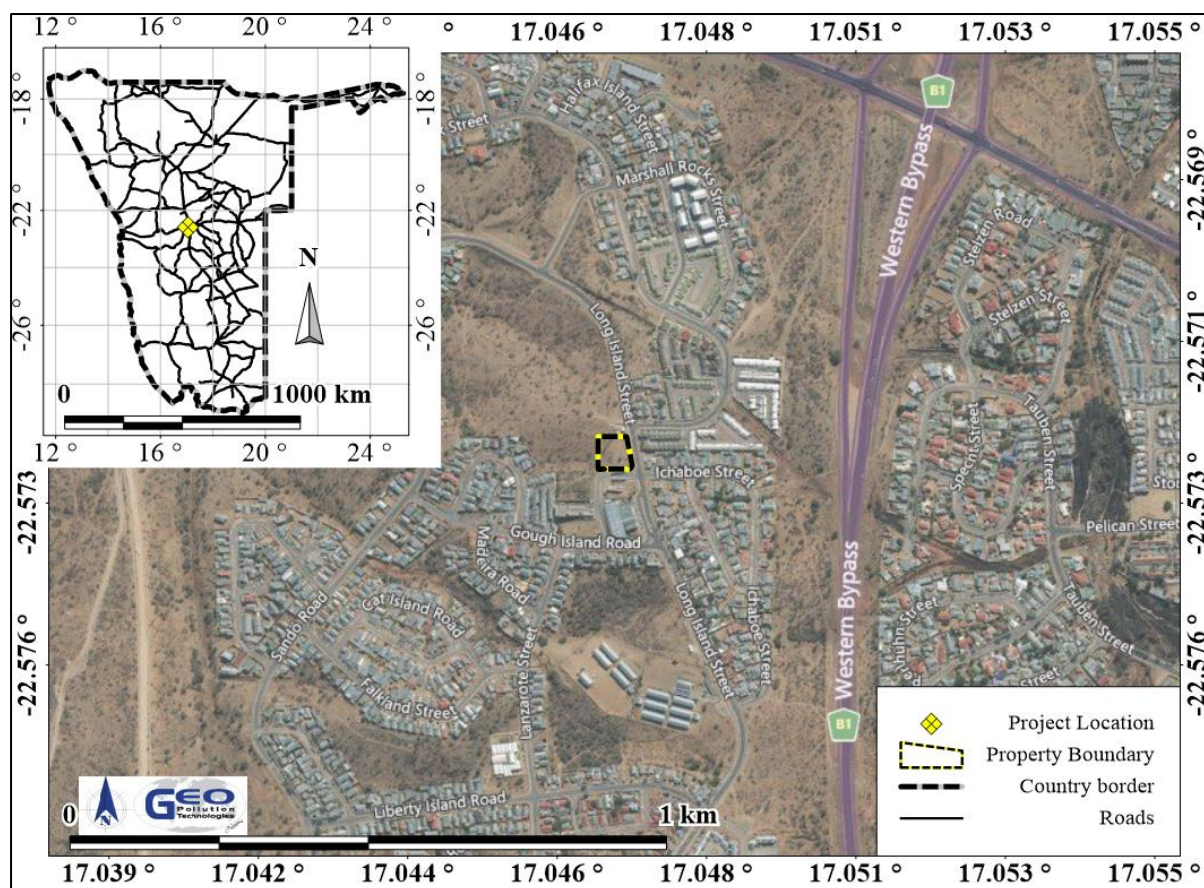


Figure 2-1. Project location

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 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.
3. Potential environmental impacts emanating from the construction, operations and decommissioning of the facility were determined and possible enhancement measures were listed for positive impacts while mitigation / preventative measures were provided for negative impacts.
4. As per the findings of this scoping report, an environmental management plan (EMP) was incorporated into this report to be submitted to the Ministry of Environment, Forestry and Tourism (MEFT).

4 PROJECT INFORMATION

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.

4.1 PLANNED INFRASTRUCTURE

Construction activities will include site preparation and earthworks as directed by a geotechnical survey. Excavations will be performed for the installation of tanks, fuel reticulation, plumbing,

electrical installations, etc. Cement works will include the construction of all spill control surfaces, pump islands and buildings.

The design for the fuel retail facility will adhere to all Namibian legislation and South African National Standards (SANS). The design will incorporate vented, underground, composite storage tanks to allow for the storage of unleaded petrol and diesel. There will be three double walled underground storage tanks of 23 m³ each. These allow for storage of unleaded petrol (ULP) and 50 ppm diesel. A forecourt area with an overhead canopy will host pump islands. Spill control infrastructure, as per the relevant SANS standards, will be present on site. All surfaces where fuel will be handled, will be covered with spill control concrete slabs with drains connected to a three stage oil / water separator. Additional safety systems include properly vented tanks with leak detection and tank pit inspection holes, emergency shutoff systems, and channelling of storm water in order to prevent contamination with hydrocarbons. Fire extinguishers and emergency stops will be placed throughout the facility and within easy reach of attendants.

Table 4-1. Tank storage details

	T1	T2	T3
Product	ULP	Diesel 50 ppm	Diesel 50 ppm
Capacity (m³)	23	23	23
Type	Underground (UST)	Underground (UST)	Underground (UST)
Age	To be installed	To be installed	To be installed
Filler Point (FP) No.	FP1	FP2	FP3

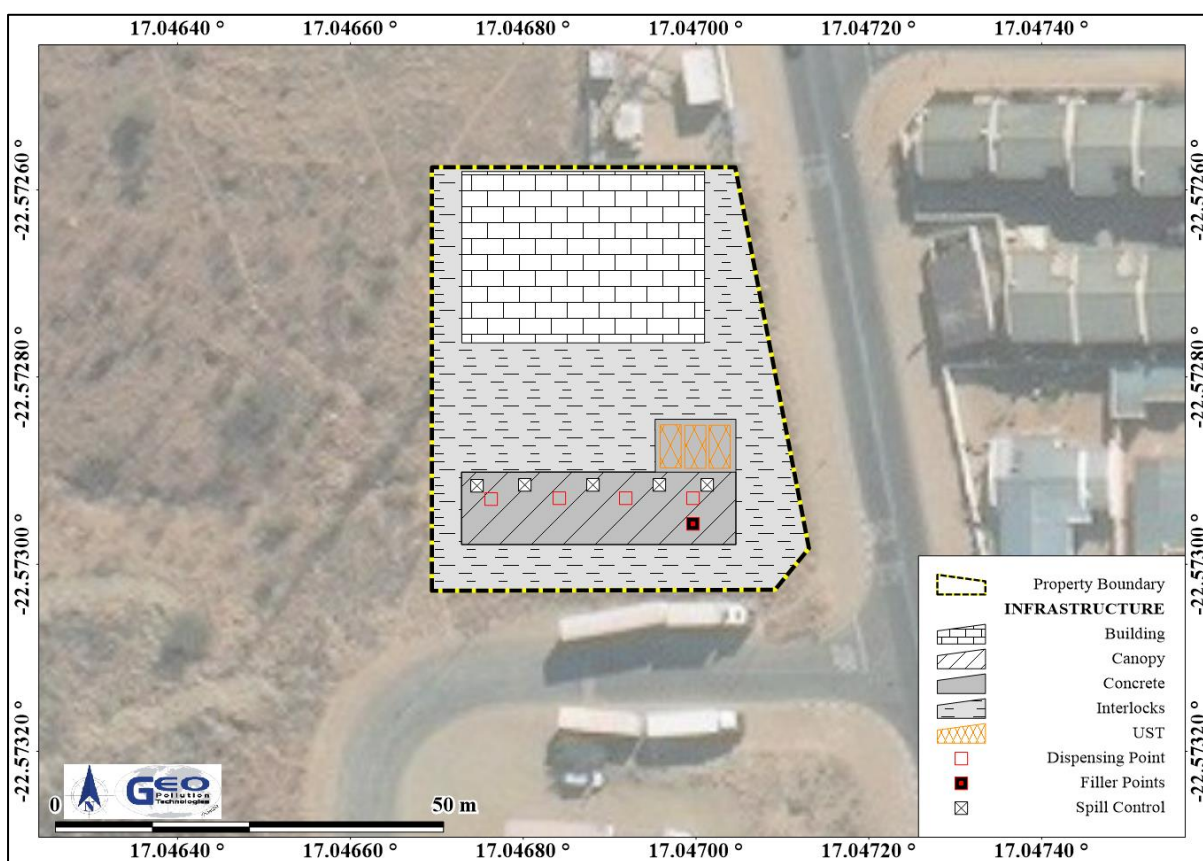


Figure 4-1. Site layout

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 pump islands by pump attendants as required. Regular tank dips and reconciliation of fuel volumes will be performed to detect any possible leaks and to ensure fuel orders are placed prior to fuel being depleted.

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. The proposed location is located in a rapidly developing area with increased residential activities and thus high future traffic volumes. The proposed fuel retail facility will aid in alleviating congestion at other fuel retail facilities while providing convenient fuel supply to nearby receptors.

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
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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.” (The fuel retail facility store and handle hazardous substances in the form of fuel.)

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.” (The fuel retail facility store and handle hazardous substances in the form of fuel which is permitted by the Ministry of Mines and Energy.)

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.” (The fuel retail facility store and handle more than 30 m³ of fuel.)

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.” (The facility is a filling station with petrol and diesel.)

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 facility is located on erf 1464 at the corner of Long Island Street and Seal Island Road in Rocky Crest, Windhoek, (22.572867 °S, 017.046947 °E). The property is zoned for business. Access to the site is gained from Long Island Street and Seal Island Road. The project location hosts some vegetation, but have been impacted on by surrounding anthropogenic activities. Nearby properties currently consist of mixed land use which mainly include residential and commercial activities. Adjacent land uses are listed in Table 4. There are no heritage or cultural sites located on or in close proximity to the site.

Table 7-1. Direct surrounding land-use

Direction	Neighbours
North-West	Open field zoned as public open space
North	MTC tower
East	Residential properties
South	Open erf followed by a Shopping centre
South-West	Block of flats

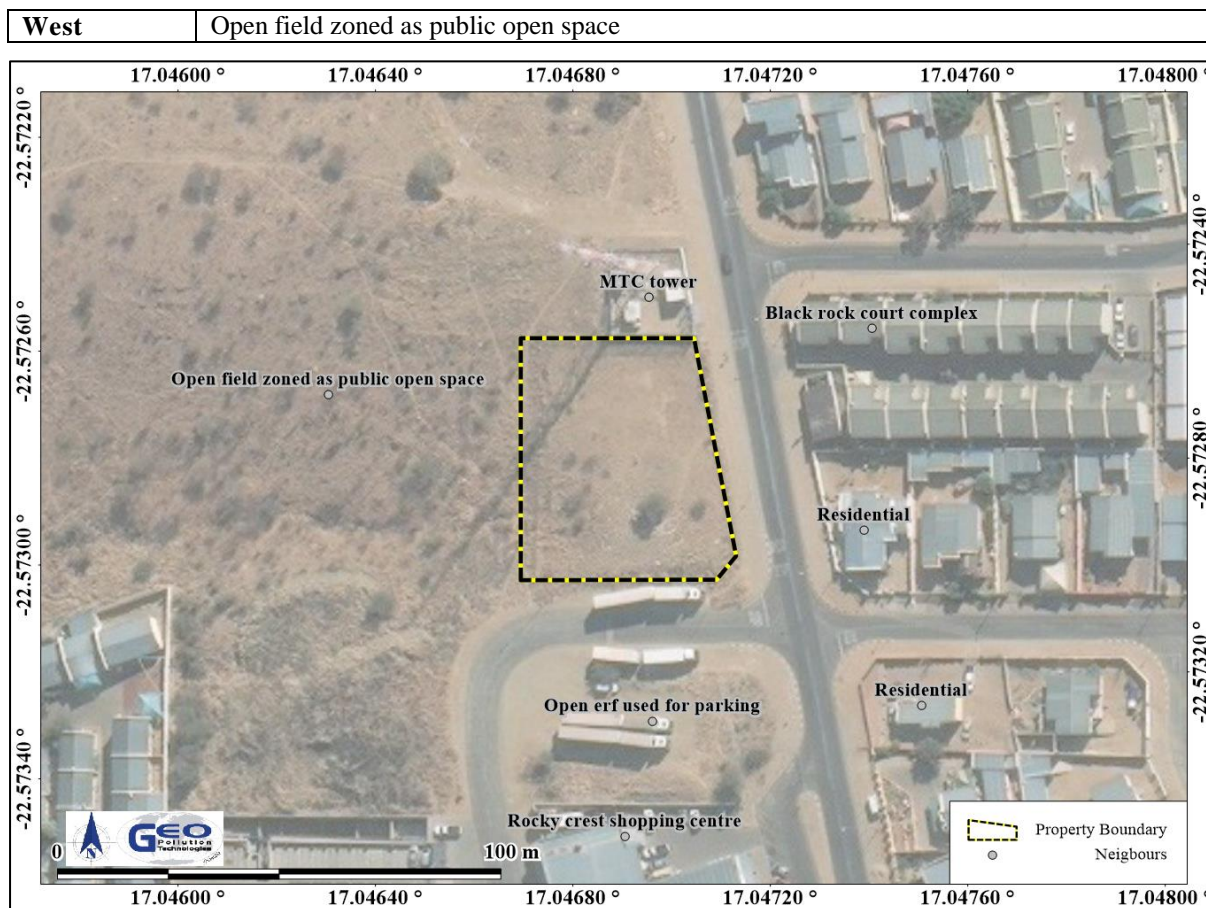


Figure 7-1. Neighbours

Implications and Impacts

Erf 1464 is zoned business use and situated in an area with mixed land use. Being relatively low impact establishments, fuel retail facilities are common within mixed land use areas.



Photo 1. Project area and view to the north



Photo 2. Project area and view to the west



Photo 3. Erf south of the site used for parking



Photo 4. Municipal building east of the site

7.2 CLIMATE

The project location is part of a semi-arid highland savannah region. 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 Atlas of Namibia Project (2002) and the CHIRPS-2 database (Funk et al., 2015), see Table 7-2, Table 7-3, Figure 7-2, Figure 7-3 and Figure 7-4. 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, where present, 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. This is especially true where the dominant rainfall is depended on localized storm cells that causes a high rainfall variability over short distances.

In the project area, 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 April, peaking in January and February. Heavier rainfall (single day events) occur between October and April, with a single event of 49.6 mm in January (last 39 years data) being the highest.

The average annual rainfall for the last 39 years was calculated as 321 mm/a, with a coefficient of variance of 36% (Table 7-3). This coefficient of variance correlates with Atlas of Namibia Project data (Table 7-2). Daily and seasonal rainfall data (Funk et al., 2015) is presented in Figure 7-3. 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 only 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 year (last 39 years data) being 2019 with just over 100 mm recorded (Figure 7-4).

Table 7-2. Summary of climate data for Windhoek (Atlas of Namibia Project, 2002)

Average annual rainfall (mm/a)	300 - 350
Variation in annual rainfall (%)	30 – 40
Average annual evaporation (mm/a)	3,000 – 3,200
Water deficit (mm/a)	1,701 – 1,900
Average annual temperatures (°C)	19 - 20

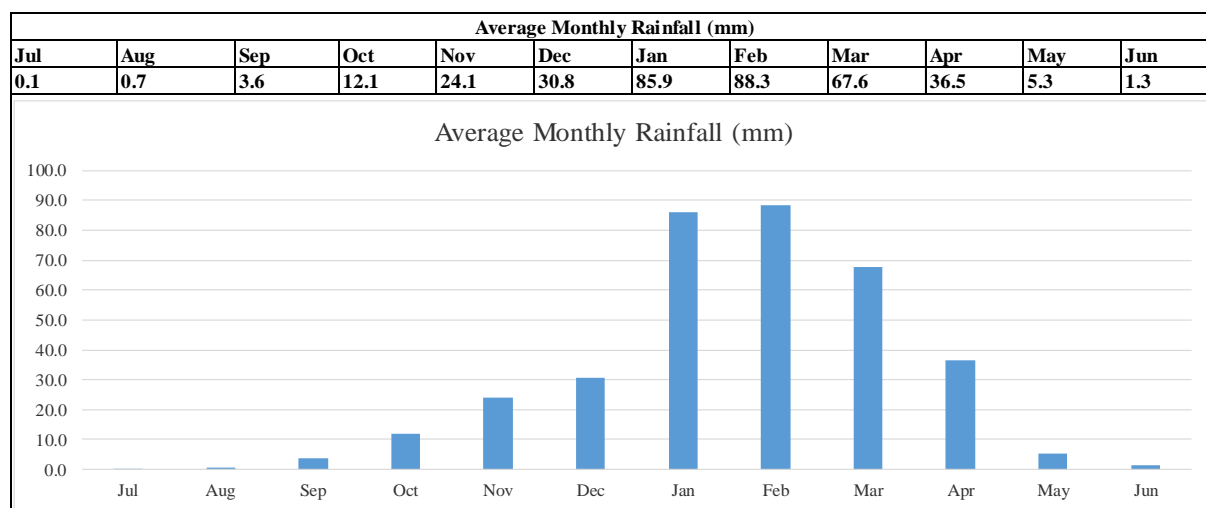


Figure 7-2. Average monthly rainfall for the Windhoek area (Atlas of Namibia Project, 2002)

Table 7-3. Rainfall statistics based on CHIRPS-2 data (Funk et al., 2015)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum (mm)	0.0	16.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum (mm)	268.5	266.4	149.3	143.5	9.0	5.0	0.2	1.9	6.9	41.8	70.8	106.5
Average (mm)	74.0	89.9	57.1	33.3	1.0	0.2	0.0	0.1	1.7	10.7	21.2	31.8
Variability (%)	73.0	59.0	64.0	96.0	229.0	405.0	430.0	368.0	137.0	91.0	72.0	80.0
Daily maximum (mm)	49.6	46.6	42.8	40.3	9.0	5.0	0.2	1.9	6.6	19.5	26.3	30.4
Average rain days	8	9	6	2	0	0	0	0	1	2	3	5
Season July - June average: 321 mm						Season coefficient of variation: 36 %						
Data range	1981-Jul-01 to					2020-Jun-30			Lat: -22.5729°S Long: 17.0469°E			

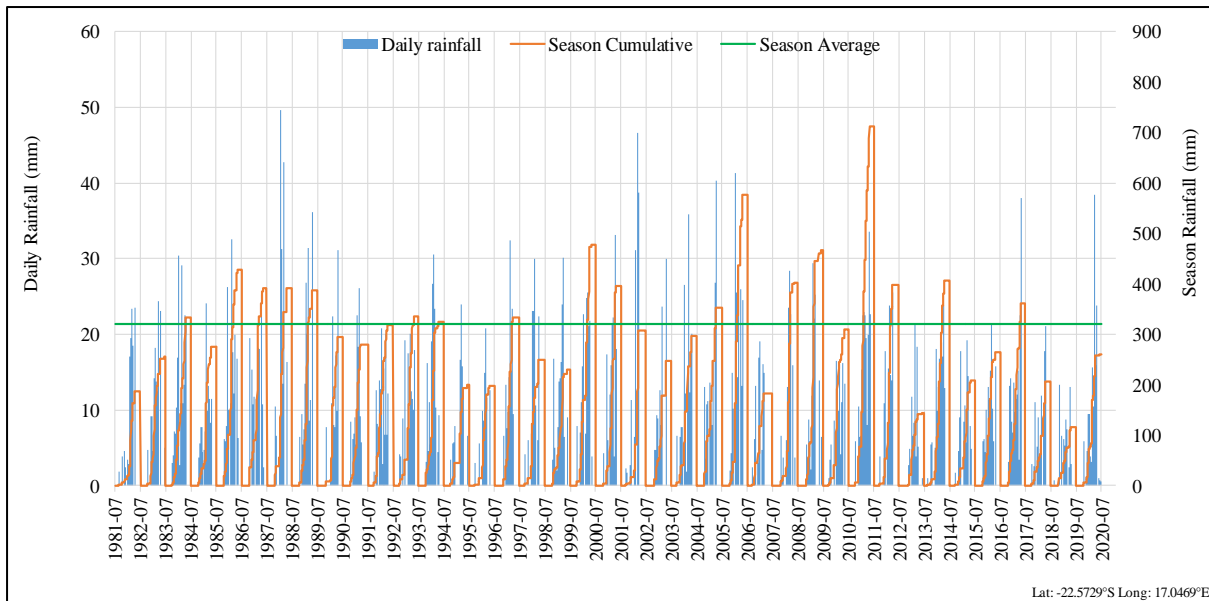


Figure 7-3. Daily and seasonal rainfall from CHIRPS-2 data (Funk et al., 2015)

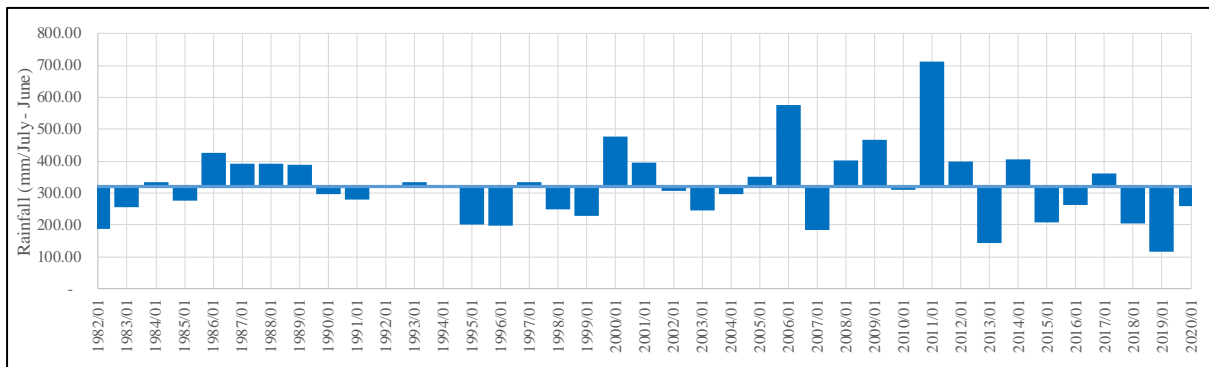


Figure 7-4. Average annual rainfall from CHIRPS-2 data (Funk et al., 2015)

Implications and Impacts

Water is a scarce and valuable resource in Namibia and the extreme 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). 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

The regional topography of the area can be described as a wide graben valley sloping north inside the surrounding hilly terrain. The valley floor is relatively flat compared to the surrounding terrain (Khomas Hochland to the west and Eros Mountains to the east) where moderate to steep slopes are the norm. A very distinct mountain range (Auas Mountains) cuts across the valley south of the city and divides the valley into two parts, with the southern part draining to the south. The Nubamisberg, just north of the site, on the northern outskirts of Windhoek causes some disruption of the valley floor and cause local drainage towards the south. The project area itself has a moderate slope towards the north and has been altered by surrounding activities such as road construction. The site is situated within the catchment of the Goreangab Dam, south of a tributary to the dam, within the upper Swakop River Basin. Runoff from the site will be to the north into storm water channels (streams). A map showing inferred surface drainage directions can be seen in Figure 7-5.

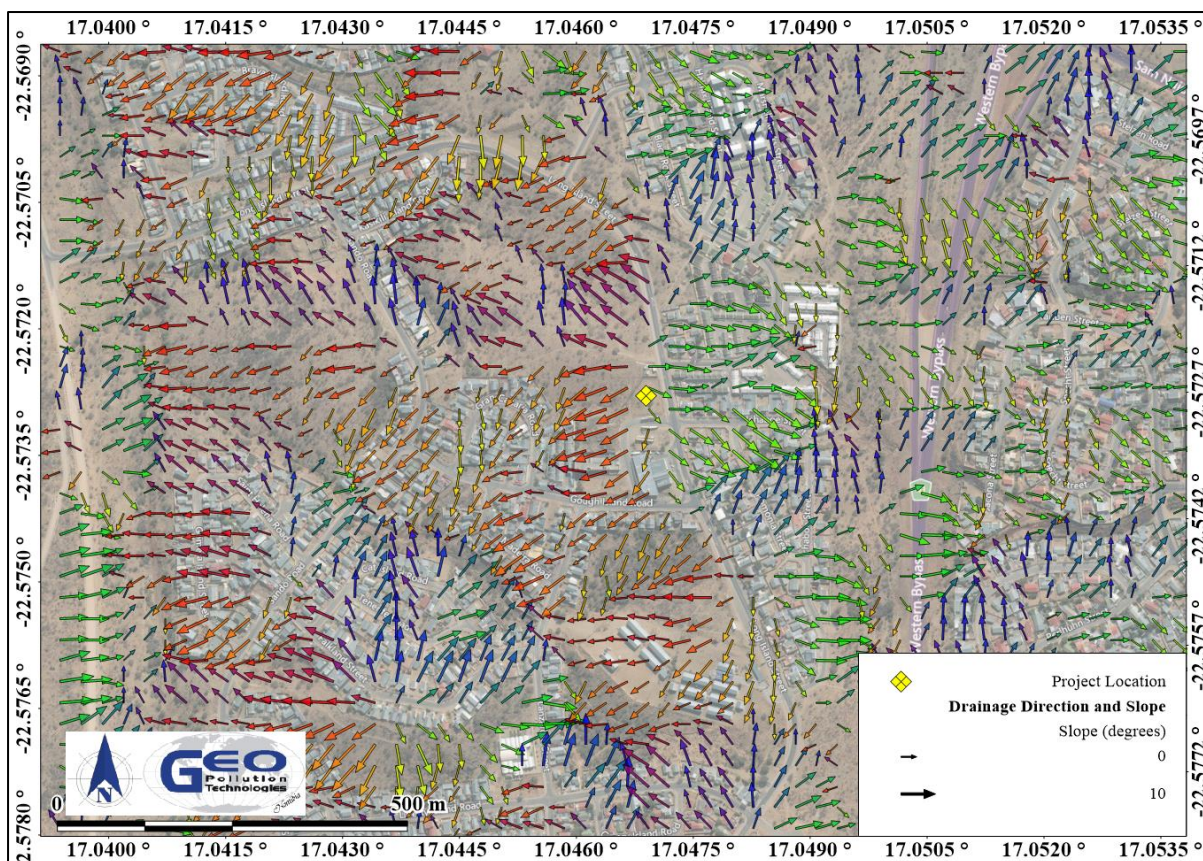


Figure 7-5. Drainage direction and slope

Implications and Impacts

Any pollutants that are not contained and are transported via surface water flow will be transported out of the site via the storm water drainage lines and potentially pollute the surrounding environment. Therefore, the storage and use of fuel must be strictly controlled according to SANS 10089 standards.

7.4 GEOLOGY AND HYDROGEOLOGY

The complex geology of the Windhoek area is a result of numerous folding and faulting episodes, including thrusting and rifting, to which the area has been subjected. Metasedimentary rocks of the Swakop Group, which is part of the Damara Sequence, constitute the Windhoek Aquifer. A number of north to north-westerly striking faults and joints found in Windhoek form the major underground water conduits and therefore determine the conditions of the aquifer. Secondary porosity giving rise to high aquifer transmissivity is best developed in faults with post hydrothermal alteration brecciation in quartzitic environments. Moreover host rock fracturing along fault planes results in better development of secondary porosity in quartzite compared to schistose terrain such that the aquifer reaches its maximum potential in this type of setting. The metasedimentary formations of the study area strike in an east-north-easterly direction and dip 15-35° to the north-northwest.

The more competent quartzite is subject to brittle deformation and thus exhibits relatively high secondary porosity and permeability due to jointing. The joints of the quartzite show evidence of fluid flow by carbonate and quartz infill and iron staining. The micaceous schist on the other hand, which is prone to plastic deformation rather than brittle fracturing, exhibits significantly lower secondary porosity and permeability and therefore a lower risk of groundwater pollution.

Two main aquifer types are found in the area, namely secondary (fractured rock) aquifers hosted in the mica schist of the Kuiseb Formation, and primary (unconsolidated sediment) aquifers formed in the Klein Windhoek River valley alluvial (Qa). Windhoek has a regional groundwater


flow from south to north. Groundwater flow is expected to take place through primary porosity in the surface cover, while it is expected to flow along fractures, faults and other geological structures (secondary porosity) present within the underlying formations (hard rock formations).

The project location is situated on biotite schist from the Kuiseb Formation, see Figure 7-6. The Kuiseb Formation formed during the Namibian Age and forms part of the Khomas Subgroup of the Swakop Group. Other rock types found in the area consists of mica schist, minor quartzite, graphitic schist and marble. From Figure 7-6 it can be interpreted that the geological sensitivity of the area is low, mainly as a result of the presence of biotite schist formations. The risk of groundwater pollution is therefore considered to be comparatively low.

Water is utilized in the area, with 23 boreholes known of within a 5 km radius. Table 7-4 presents groundwater statistics of boreholes contained in the Department of Water Affairs database. Note that this database is generally outdated and more boreholes might be present.

The project area is located within the Okahandja Groundwater Basin, see Figure 7-7. Groundwater flow at the site can be expected in a northerly direction. Local flow patterns may vary due to groundwater abstraction. The project area also falls within the Windhoek-Gobabis Subterranean Water Control Area (Extension) as per Government Notice 47 of 26 March 1976 (Figure 7-7). This means that Government controls groundwater usage and development in this area

Table 7-4. Groundwater borehole statistics for the area

Query Centre:	Rocky Crest Fuel Retail Facility; -22.5729°S; 17.0469°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)	
	23			15	13	13	11	10	8	7	9	
Minimum		-22.527904	16.998171	24	2	8	22	30	68	0	0	
Average				115	35	35	111	669	166	8	1	
Maximum		-22.617896	17.095629	524	91	80	760	950	344	36	4	
Group A				33.33%	84.62%	15.38%	0.00%	100.00%	75.00%	71.43%	77.78%	
<i>Limit</i>				50	>10	10	10	1000	200	10	1.5	
Group B				33.33%	7.69%	53.85%	54.55%	0.00%	25.00%	14.29%	11.11%	
<i>Limit</i>				100	>5	50	50	1500	600	20	2.0	
Group C				26.67%	7.69%	30.77%	36.36%	0.00%	0.00%	14.29%	0.00%	
<i>Limit</i>				200	>0.5	100	100	2000	1200	40	3.0	
Group D				6.67%	0.00%	0.00%	9.09%	0.00%	0.00%	0.00%	11.11%	
<i>Limit</i>				>200	<0.5	>100	>100	>2000	>1200	>40	>3	

Statistical grouping of parameters is for ease of interpretation, except for the grouping used for sulphate, nitrate and fluoride, which follow the Namibian guidelines for the evaluation of drinking-water quality for human consumption, with regard to chemical, physical and bacteriological quality. In this case the groupings has the following meaning:

Group A: Water with an excellent quality

Group B: Water with acceptable quality

Group C: Water with low health risk

Group D: Water with a high health risk, or water unsuitable for human consumption.

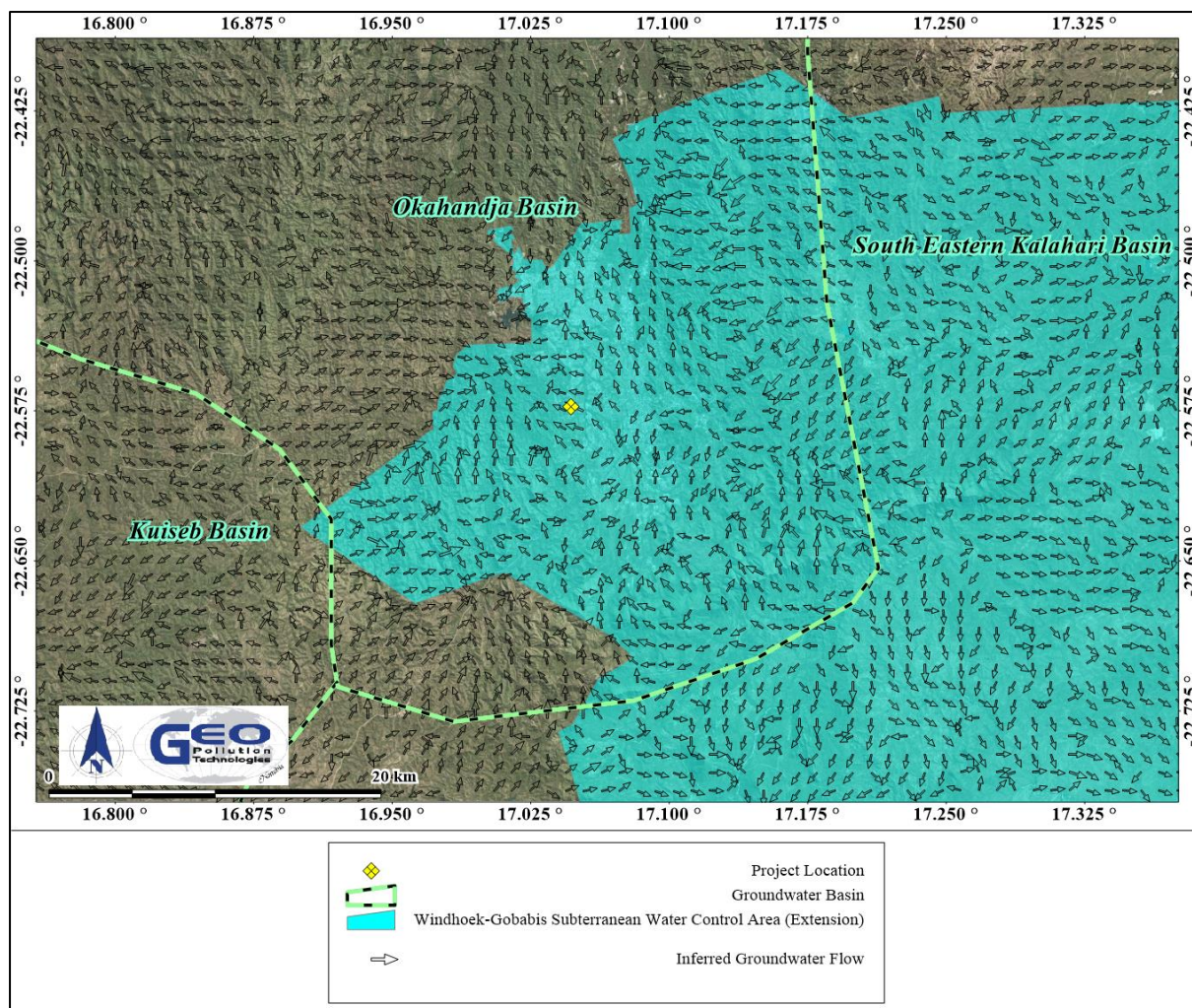


Figure 7-7. Groundwater basin, groundwater flow and water control area

Implications and Impacts

Groundwater is utilised in the area. Pollution of the groundwater is prohibited. Spill control structures installed and maintained to SANS specifications or better should successfully prevent pollution of groundwater, surface water or soil.

7.5 PUBLIC WATER SUPPLY

Water consumption in Windhoek is well managed by means of water demand management. Nevertheless, available water is one of the city's most scarce resources and represents a constraint for sustainable development in future. Consumption will increase with the soaring influx of people to the city.

Listed in order of resource development, Windhoek receives its water from boreholes in and around town, reclaimed water (New Goreangab Water Reclamation Plant), and a NamWater Scheme that transfers water from the Von Bach Dam, the Swakoppoort Dam, the Omatako Dam and the Grootfontein Karst Area. The city has also started with artificial recharge of the Windhoek aquifer and is planning to extend this scheme through the installation of new recharge boreholes as well as the development of deeper abstraction boreholes, 400 to 500 m deep. This clearly illustrates the value of the aquifer. The boreholes are the second most important water resource of the city and the sustained use of the aquifer needs to be assured. The project is located within the Swakoppoort Dam catchment which is important in terms of public water supply for the central areas of Namibia.

7.6 FAUNA AND FLORA

The site lies in the Savanna Biome with a thornbush shrubland vegetation type. Trees such as *Acacia mellifera*, *Acacia reficiens*, *Acacia fleckii*, *Boscia albitrunca*, *Lonchocarpus nelsii*, *Acacia erioloba* and a variety of other trees are characteristic of this vegetation type. The project area is within an urban area that was impacted previously. Thus, vegetation does not resemble its historic natural state. It is obvious that the area was cleared at some stage with some regrowth of grasses and shrubs. Table 7-5 and Table 7-6 present a summary of the general fauna and flora of the broader area. No animals of particular significance are expected on site and mostly include birds, small mammals and arthropods.

Table 7-5. General flora data (Atlas of Namibia)

Biome	Savanna
Vegetation type	Thornbush 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	2-5
Tree height (m)	26-50
Percentage shrub cover	26-50
Shrub height (m)	1-2
Percentage dwarf shrub cover	2-10
Dwarf shrub height (m)	< 0.5
Percentage Grass Cover	51-75
Grass Height (m)	0.5-1
Dominant plant species	<i>Acacia mellifera</i> ; <i>Acacia reficiens</i> ; <i>Acacia fleckii</i> ; <i>Boscia albitrunca</i> ; <i>Lonchocarpus nelsii</i> ; <i>Acacia erioloba</i> .

Table 7-6. General fauna data (Atlas of Namibia)

Mammal Diversity	61 - 75 Species
Rodent Diversity	20 - 23 Species
Bird Diversity	> 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	14 - 15 Species

Implications and Impacts

The fuel retail facility will be constructed within an already disturbed urban area. Some vegetation is present on the site which will require removal. No immediate threat to biodiversity in the greater area is expected. Pollution may and can cause damage to any biodiversity surrounding the site.

7.7 DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

The project area is within the capital of Namibia, Windhoek, in the Khomas Region. Windhoek is the main business and industrial hub and hosts the Executive Branch of the Government of Namibia. Unemployment is high due to an influx of jobseekers resulting in urban sprawl. Recent economic hardships have seen many businesses decreasing their workforce or even close. This was especially significant in the construction industry where many government projects were put on hold. For demographic characteristics of Windhoek, the region and Namibia as a whole, see Table 7-7 (National Planning Commission, 2012).

Table 7-7. Demographic characteristics of Windhoek, the Khomas Region and nationally (Namibia Statistics Agency, 2011)

	Windhoek	Khomas Region	Namibia
Population (Males)	159,600*	164,600	1,021,912
Population (Females)	162,800*	167,800	1,091,165
Population (Total)	322,500	332,300	2,113,077
Unemployment (15+ years)	N/A	21.7%	33.8%
Literacy (15+ years)	N/A	95.7%	87.7%
Education at secondary level (15+ years)	N/A	60.4%	51.2%
Households considered poor	N/A	5.8%	19.5%

Implications and Impacts

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

7.8 CULTURAL, HERITAGE AND ARCHAEOLOGICAL ASPECTS

Windhoek has a rich heritage and various resources of cultural and historic importance. None of these sites are however adjacent or in close proximity to the site.

Implications and Impacts

No heritage of cultural resources will be affected by the construction or operation of the fuel retail facility.

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 Republikein on 17 February 2021 and 24 February 2021. A site notice was placed on site and notification letters delivered to neighbours and the Windhoek Municipality. No one registered for the project or provided any comments.

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 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.

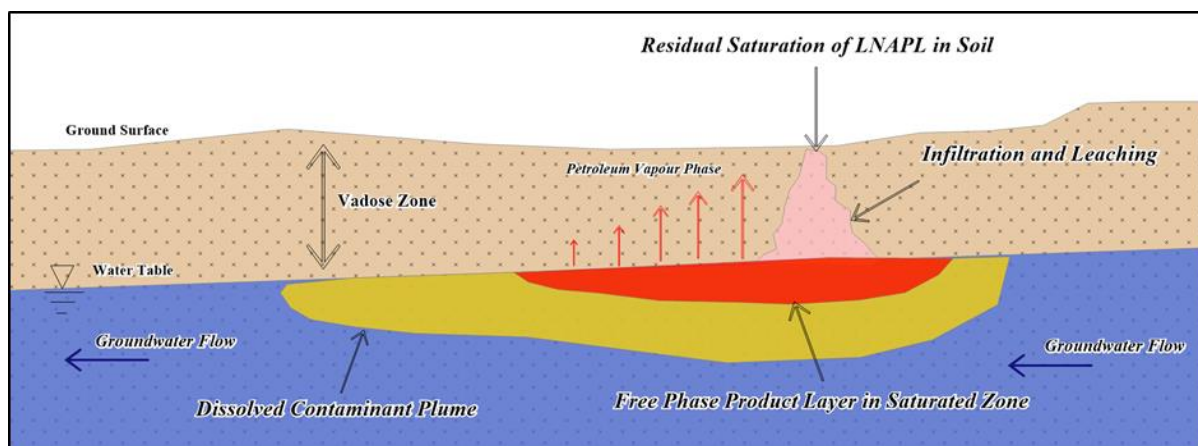


Figure 9-1. Conceptual LNAPL release to the vadose zone

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 facility. 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 in an already disturbed area and mainly hosts grasses and small shrubs, 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 area. The operational phase will create permanent employment opportunities and some training and skills development will take place. Social ills including spread of disease, alcohol misuse, theft, etc., may result from construction personnel and job seekers 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 are 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)

Ranking formulas are then calculated as follows:

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

The environmental classification of impacts is provided in Table 11.

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 future operations, construction 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 remains valid.
- ◆ Ensure all appointed contractors and employees enter into an agreement which includes the EMP. Ensure that the contents of the EMP are understood by the contractors, sub-contractors, employees and all personnel present or who will be present on site.
- ◆ Make provisions to have a Health, Safety and Environmental (HSE) Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site.
- ◆ Have the following emergency plans, equipment and personnel on site where reasonable to deal with all potential emergencies:
 - Risk management/mitigation/EMP/ Emergency Response Plan and HSE Manuals
 - Adequate protection and indemnity insurance cover for incidents;
 - Comply with the provisions of all relevant safety standards;
 - Procedures, equipment and materials required for emergencies.
- ◆ 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 reporting system to report on aspects of construction activities, operations and decommissioning as outlined in the EMP.
- ◆ Submit 6 monthly environmental monitoring reports to allow for future environmental clearance certificate renewal applications.
- ◆ Appoint a specialist environmental consultant to update the EA 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. 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 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 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 (6 monthly monitoring reports).
- ◆ Ensure that all training is certified or managerial reference provided (proof provided to the employees) inclusive of training attendance, completion and implementation.

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 facility will further aid in ensuring a reliable supply for fuel to the commercial and residential sector of Windhoek, aiding in their effective operations.

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	Probable
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 further contributes to cumulative demand for services in the region which includes electricity and sewage removal.

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 municipal 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 construction and operations of the facility will aid in securing fuel supply to the residents and commercial sector in the area and the town.

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	2	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). This may increase the risk of incidents and accidents.

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. Clear indications of fuel deliveries and related down-time communicated to motorists.

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.

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 report should be compiled every 6 months 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 kits 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 report should be compiled every 6 months 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	1	-2	2	2	1	-10	-2	Probable
Daily Operations	Fire and explosion risk	1	-2	2	2	1	-10	-2	Probable

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

Actions:

Prevention:

- ◆ Ensure all chemicals are stored according to MSDS and SANS instructions.
- ◆ Maintain regular site, mechanical and electrical inspections and maintenance.
- ◆ Clean all spills / leaks.
- ◆ Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).
- ◆ Follow SANS standards for operation and maintenance of the facility.
- ◆ All dispensers must be equipped with devices that cut fuel supply during fires.

Mitigation:

- ◆ A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.
- ◆ Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).

Responsible Body:

- ◆ Proponent
- ◆ Contractors

Data Sources and Monitoring:

- ◆ A register of all incidents must be maintained on a daily basis. This should include measures taken to ensure that such incidents do not repeat themselves.
- ◆ A report should be compiled every 6 months 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 and may disturb nearby receptors. 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 City of Windhoek regulations (Council Resolution 215/09/2006) and 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:

- ◆ City of Windhoek regulations (Council Resolution 215/09/2006) and 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 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	Probable
Daily Operations	Excessive waste production, littering, contaminated materials	1	-2	2	2	2	-12	-2	Probable

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 disposal storage facilities are available.
- ◆ Ensure waste cannot be blown away by wind.
- ◆ Prevent scavenging (human and non-human) of stored waste.

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

10.1.12 Ecosystem and Biodiversity Impact

The site is void of natural vegetation apart from four trees which may be retained in the facility design. Construction operations may present a pollution risk to the surrounding biophysical features. The nature of the operational activities is such that the probability of creating a habitat for flora and fauna to establish is low. No significant impact on the biodiversity of the area is predicted as the site is currently void of natural fauna and flora. Impacts are therefore mostly related to pollution of the environment.

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	Improbable
Daily Operations	Impact on fauna and flora. Loss of biodiversity	1	-1	3	2	2	-7	-1	Improbable

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

Actions.

Mitigation:

- ◆ Contain construction material and activities on site.
- ◆ Report any extraordinary sightings to the MEFT.
- ◆ Mitigation measures related to waste handling and the prevention of groundwater, surface water and soil contamination should limit ecosystem and biodiversity impacts.
- ◆ Avoid scavenging of waste by fauna.
- ◆ The establishment of habitats and nesting sites at the facility should be avoided where possible.

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

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

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 reduce leakages and spillages from contaminating soil and water.

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	-1	2	2	1	-10	-2	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 Ministry of Mines and Energy.
- ◆ Spill clean-up means must be readily available on site as per the relevant MSDS.
- ◆ Any spill must be cleaned up immediately.
- ◆ The spill catchment traps 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. soap usage on spill control surfaces.

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 water 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. The facility is not expected to have a significant impact on the character of the area as fuel retail facilities are regularly found in mixed residential and commercial areas.

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.

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 report should be compiled every 6 months of all complaints received and actions taken.

10.1.15 Cumulative Impact

Possible cumulative impacts associated with the construction and operational phase include increased traffic, dust and noise in the area.

Project Activity/Resource	Nature (Status)	(A1) Importance	(A2) Magnitude	(B1) Permanence	(B2) Reversibility	(B3) Cumulative	Environmental Classification	Class Value	Probability
Construction	The build-up of minor impacts to become more significant	2	-2	2	2	2	-24	-3	Probable
Daily Operations	The build-up of minor impacts to become more significant	2	-2	2	2	2	-24	-3	Probable

Desired Outcome: To minimise cumulative all impacts associated with the facility.

Actions

Mitigation:

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

Responsible Body:

- ◆ Proponent

Data Sources and Monitoring:

- ◆ Annual summary report based on all other impacts must be created to give 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 various sectors operational in the vicinity and the area as a whole, see Table 10-3. In addition to reliable and convenient fuel supply, the fuel retail facility will contribute locally to skills transfer and training which in turn develops the local workforce during operations of the facility. Construction of a fuel supply facility will enhance service delivery through competitive actions.

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 City of Windhoek regulations and 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 environmental management plan. All operational personnel must be taught the contents of these documents.

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 9, 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.

Table 10-3. 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			2
SC	Traffic		-1		-1
SC	Health, Safety and Security		-2		-2
PC	Fire		-2		-2
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		-2
SC	Visual Impact		-1		-1
Cumulative Impact			-3		-3

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

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Appendix A: Proof of Public Consultation



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 CELL.: (+264-81) 1220082
 PO BOX 11073 ♦ WINDHOEK ♦ NAMIBIA
 E-MAIL: gpt@thenamib.com

To: Interested and Affected Parties

18 February 2021

Re: Environmental Scoping Assessment and Environmental Management Plan for the Construction and Operational Activities of a Fuel Retail Facility for Tulaing Petroleum in Rocky Crest, Windhoek

Dear Sir/Madam

In terms of the Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment Regulations (Government Notice No 30 of 2012), notice is hereby given to all potential interested and/or affected parties (IAPs) that an application will be made to the Environmental Commissioner for an environmental clearance certificate for the following project:

Project: Environmental Scoping Assessment and Environmental Management Plan for the Construction and Operational Activities of a Fuel Retail Facility for Tulaing Petroleum in Rocky Crest, Windhoek

Proponent: Tulaing Petroleum (Pty) Ltd

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

Tulaing Petroleum (Pty) Ltd (the Proponent) intends to construct and operate a new fuel retail facility at the corner of Long Island Street and Seal Island Road in Rocky Crest, Windhoek. The facility will be situated on erf 1464 and will host a forecourt area with pump islands underneath an overhead canopy, underground tanks for storage of diesel and unleaded petrol, and shops, offices and related infrastructure typically associated with fuel retail facilities.

Geo Pollution Technologies (Pty) Ltd was requested to conduct an environmental assessment for the proposed facility. As part of the assessment we consult with IAPs who are invited to register with the environmental consultant to receive further documentation and communication regarding the project. By registering, IAPs will be provided with an opportunity to provide input that will be considered in the drafting of the environmental assessment report and its associated management plan.

Please register as an IAP and provide comments by **03 March 2021**.

To register, please contact: Email: tulaing@thenamib.com Fax: 088-62-6368

Should you require any additional information please contact Geo Pollution Technologies at telephone 081-1452164 / 061-257411.

Thank you in advance.

Sincerely,

Geo Pollution Technologies

André Faul
 Environmental Scientist



Page 1 of 2

Directors:

P. Botha (B.Sc. Hons. Hydrogeology) (Managing)

Advertisements

Sun

WEDNESDAY 17 FEBRUARY 2021 NEWS

3

• RAMAPHOSA HAS 30 DAYS TO RESPOND

'Struggle kids' to sue South African government

to negotiate a settlement that government would need to pay.
Writing to South African High Commissioner to Namibia, Archie Whitehead, the association - through lawyer Kadhila Amoomo - said

"The atrocities committed against the Namibian people and particularly against members of our client was aggravated by the implementation of the apartheid policy of discrimination across Namibia at the time," it added.

the aforementioned atrocities, as well as an undertaking that the South African government would participate in reparation discussions which may be mediated by an independent arbitrator," it said.



Stray elephants driven to Angola

NAMPA
ONGWEDIVA

Environment ministry officials have managed to drive

SURROGACY CASE SPOTLIGHTS DANGEROUS LOOPHOLES

JANA-MARI SMITH
WINDHOEK

A Canadian woman's failed attempt to adopt twins born to a Namibian surrogate mother early last year has placed the lack of surrogacy guidelines in Namibia under the spotlight.

The gender ministry recently confirmed that the incident came to light yearly 2020 when the Canadian woman took the twins to home affairs to register their birth.

"The birth could not be registered by the adoptive parents as they are not the biological parents of the twins. That is when the case was referred to the ministry to look into the safety of the twins."

"The ministry added that "one of the twins was already not well, so they were removed to the hospital and later discharged".

Namibia's child advocate at the Office of the Ombudsman, Ingrid Husselmann, said her office investigated a complaint in connection with the circumstances of the twins' birth and surrogacy arrangement.

While Husselmann underlined the need for privacy protection, she did confirm that in this case, a surrogate mother gave birth to the twins who were removed from

her care and placed with relatives of their biological mother.
"They are now safe and well," she added.

Loopholes

A social worker, who spoke on condition of anonymity, said the current lack of a comprehensive surrogacy law is potentially ripe for exploitation of children and birth mothers.

While none of the authorities could confirm how much the Namibian mother was paid last year, the social worker said it was, to her knowledge, substantial.

She pointed out that in the aftermath, the babies were briefly stuck in no man's land.

"There are no decent guidelines on surrogacy in Namibia. That is a serious problem."

No crime

In the case of the twins, the breakdown in the surrogacy agreement was not investigated by the police due to insufficient evidence of criminal intent or trafficking.

The gender ministry confirmed that the adoptive parent did consider legal action "to get the kids back, but she later withdrew the case".

Adverts

The gender ministry pointed out that the Child Care and Protection Act prohibits the publication and advertisement for the purposes of calling upon any person to be a surrogate mother of a child.

Moreover, the Act, through its regulation of insemination and in vitro fertilisation, to a degree, makes provision for the regulation of surrogacy agreements.

The ministry, however, warned that those who engage in surrogacy arrangements "do so at their own risk because there is no legislation to protect all parties".

For hire

Online searches revealed a number of Namibians offering surrogacy services. The details of the women are shielded by paywalls. Thirty-four profiles can be found on the website findsurrogatemother.com, in which Namibian women advertise surrogacy services.

One woman writes that she is already a mother of two children, but wishes to help hopeful persons in return for money to fund her education.

On another website, surrogatfinder.com, there are 43 profiles of Namibians.

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All comments and concerns should be submitted to Geo Pollution Technologies by 03 March 2021.

André Faul

Geo Pollution Technologies

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Sun

WEDNESDAY 24 FEBRUARY 2021 NEWS

3

'Missing' quota divides Fishcor, Seaflower

OGONE TLHAGE
WINDHOEK

African Selection Trust (AST)

Police cracked down on restaurants that were operating after 20:00 at the weekend, arresting at least three people, including a 60-year-old woman. The police claimed that restaurants may not be open after 20:00 and arrested employees even though no alcohol was being sold.

This occurred at Eagles Beer Garden in Avis and also at Isabel's Table on Saturday night.

According to sources, some shebeens owners are driving around Windhoek, checking on restaurants that are open and then informing the police.

Restaurant closed

In a social media post the owners of Isabel's Table said they would be closing the restaurant from Monday until further notice after Isabel Gamito, 60, was arrested on Saturday night for having the restaurant open.

"Saturday, after one of the best days we had, around 20:30 a detective and a police agent went to the restaurant and without asking or looking for evidence of wrongdoing, arrested Isabel for having the restaurant open.

"They took her to the police station and made a 60-year-old lady stay in a filthy police station for 14 hours with detained men, some without masks or respecting social distancing.

No access to a toilet and a broken chair or a floor full of cockroaches to sit."



misinformed as we are allowed to be in our space until 22:00, the curfew being the motivational factor to clear by 21:30.

According to the post, the Namibian police ordered the restaurant closed.

"We have been complying with the restriction measures in place, not selling alcohol after 20:00 and closing the restaurant by 21:30, so that everyone is home by 22:00."

The owners further said that Gamito was severely affected by the "terrible injustice" and in no condition to keep on running the restaurant.

"We will consult with our lawyers in order to get justice for this illegal and unjustified arrest." At Eagles Beer Garden in Avis, two employees were arrested on Saturday night for trading in alcohol after 20:00, with the pro forma showing 20:04.

According to a message from the owner of Eagles, both employees have been released after paying fines totalling N\$10 000.

She said more than 12 officers entered the building while they were cashing up.

"We tried to explain our circumstances, seeing that the waiter station had techni-

of quota utilisation in August 2020. This was at the specific request of Ms [Ruth] Herunga on 18 August 2020. The total quota caught was also reported to Fishcor Lüderitz on a monthly report basis throughout the year," said Louw.

"There has been zero proof of misconduct by SPP. SPP was further not in a position to sell the quota onwards.

"The full 9000 metric tonnes were caught and processed. SPP is not in a legal position to sell any joint-venture quota to third parties.

Region, Commissioner Joseph Shikongo. PHOTO: NAMPA

Fines top N\$39 000

The regional police commander of the Khomas Region, Commissioner Joseph Shikongo, was unable to tell *Namibian Sun* how many people were arrested for violating coronavirus regulations at restaurants this weekend, just saying it was "many". He said arrests were made across the city and for all violations of the coronavirus regulations.

Shikongo said fines totalled N\$39 000 for people who had pleaded guilty to violating coronavirus regulations this past weekend. Shikongo said he was aware of the arrests at Eagles and Isabel's, but added that if people have a problem, they should take it up with the courts.

"Why should it become a police issue? They should go dispute it in court. We have the evidence that was taken."

Shikongo added that a productive meeting was held with owners of restaurants, bars and shebeens on Sunday to once explain the regulations. A representative of the attorney-general's office was also present. Shikongo stressed that restaurants may only be open until 22:00 and may not sell alcohol after 20:00.

He said if alcohol was sold before 20:00, customers may still consume it after 20:00. "Just make sure that the proof of sale can be provided." He also said that restaurants were advised to keep bills for alcohol and meals separate, to ensure that drinks are paid before 20:00.

Court case

Fishcor walked out of talks with African Selection Trust to settle a dispute involving the future of Seaflower Pelagic Processing.

Fishcor has in the meantime approached the High Court to cancel the joint-venture arrangement it has with AST.

At the centre of the dispute is Fishcor's unwillingness to proceed with an agreement that enables Seaflower to benefit from a yearly 50 000-tonne horse mackerel quota allocation.

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André Faul

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WEER

BINNELAND: Sonnig en baie tot bloedig warm in die Suid en Weste. Elders sal dit gedeeltelik bewolk en baie warm wees met enkele tot geïsoleerde donderbuie in die verre Noordooste. 'n Sterk Westewind sal in die Suid en Weste waai.

KUS: Gedeeltelik bewolk en koel tot warm met miskolle in die oggend. Enkele ligte buie word oor die verre Suid verwag.

GETYE BY WALVISBAAI: H 06:43 L 12:41H 18:57

WINDHOEK		16°	28°
GOBABIS		16°	32°
KATIMA MULILO		19°	32°
KEETMANSHOOP		16°	33°
MARIENTAL		16°	33°
OPIUWO		20°	35°
OSHAKATI		20°	33°
RUNDU		19°	34°
WALVISBAAI		17°	25°

Konstruksie begin

meer ruimte aan individue- gereed te wees om hand

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"Ek sal oor twee weke terug wees om te kom kyk!"

HOU BY TYDSBEPALING
"Die suksesvolle en tydige voltooiing van hierdie behuissingsprojek sal 'n bron van hoop en trots vir huisienaars in Otweya wees. Ek doen 'n beroep op die kontrakteurs (die Shack Dwellers Federation) om seker te maak dat hierdie projek volgens die verwagte tydsraamwerk uitgevoer word," het Utoni gesê.

Erastus Utoni
MINISTER

"Ek wil hê julle moet inspring en help."

Verder het hy die Walvisbaai-munisipaliteit aangemoedig om meer aandag aan hierdie soort projekte te gee, en bygevoeg dat hy as 'n lynmi-

gevoer word, hulle uiters 'n baken van hoop vir elke hawelose persoon in Walvisbaai. "Hierdie projek moet bewys dat hulle ook eendag huisienaars kan wees. Dit moet 'n simbool wees van wat kan bereik word as mense saamwerk."

Hy het bygevoeg die dorpsraad wil inwoners die versekering gee dat 'n plakkersvrye Walvisbaai 'n droom is waaraan hulle hard werk.

"Ons gesamentlike verbintenisse tot die verbetering van inwoners se lewens word vandag weer eens beklemtoon en bly vir ons 'n prioriteit.

"Ek kan julle verseker, met die hulp van die sentrale regering is daar nog baie sulke projekte in die toekoms."
André, die streekgoewerneur, het gesê 'n speelgrond en klein sportsentrum sal ook later in die area gebou word.
Mnr. Naftal Utoni van die Shack Dwellers Federation het belowe om die huise binne twee en 'n half maand klaar te hê.

-leandrea@republikein.com.na

Die Nasionale Salaris- en Werkbeskermingskema vir Covid-19

UITBETALINGS SOVER:

Totale aantal werkgewers: - 177
Totale bedrag aan werkgewers: - N\$18 192 751,11

Begunstigde besighede in dié bedrywe	Getal
Bou- en elektriese kontrakteurs	69
Siviele ingenieurs / Grondverskuiving	3
Lugvervoer / Lugopnames	1
Karweiers / Vervoer / Sekuriteitswagte	10
Toerisme / Verskeping / Reisagente	36
Hotelle / Kroei / Restaurante / Spyseniering	79
Nasionale parke	1

'IEB in nuwe formaat is hier om te bly'

Gelykstaande aan Gevorderde Vlak

Die voorkoms en struktuur van die nuwe IEB-vraestelle sal grotendeels dieselfde wees as waaraan leerlinge gewoond is.

"Laasgenoemde is gedoen om ons tyd en bewegingsruimte te gee indien

die suksesvolle implementering van die Senior SS (IEB) langer vat as wat beplan is. Ons aansoek vir uitstel word nou deur 'n tegniese komitee van die departement van basiese onderwys as 'n skoolverlatings- en universiteits-toelatingskwalifikasie.



derde Intermediêre Vlak (AS-vlak) en sluit ook vakke in wat gelykstaande is

en Afrikaans (leer- en onderrigtaal) 2021 verleng.

-henriette@republikein.com.na

Hof kry Heritage Health voor stok

Henriette Lamprecht

Die mediese fonds Heritage Health het 'n bloutjie in die hoër hof geloop nadat hy sy jaarlikse premies voor verhoor, maar dié stap nie deur die registrateur van mediese fondse in Namibië goedgekeur is nie.

Die kern van die hofaansoek waarin die registrateur van mediese fondse, die minister van gesondheid en maatskaplike dienste en die appèlraad van die regulerende owerheid vir finansiële instellings in Namibië (Namfisa) die respondente was, was of die verhoging 'n wysiging van die fonds se reëls is en sodende die goedkeuring van die registrateur vereis. Die aansoek volg nadat die registrateur Heritage Health se aansoek om sy jaarlikse verhoging van premies vir 2019 afgekeur het. Heritage Health se hersieningsaansoek en verklaarde bevel oor die verhoging, is met koste van die hand gewys.

In haar uitspraak sê regter Eileen Rakow dié besluit om die aansoek in te dien, hou

verband met die besluit oor die fonds se selffinansieringsgaping en dié besluit met betrekking tot herversekering.

Sy verwys na 'n brief gedateer 4 Maart 2019 waarin die voorsitter van die raad van trustees sê hulle wag nog vir kwotasies vir dié herversekeringsdekking soos vereis deur die registrateur.

Eileen Rakow
REGTER

"Die reëls van die fonds maak nie hiervoor voorsiening nie."

Op 27 Maart bevestig 'n brief die memorandum van ooreenkoms tussen die mediese fondse en Avacare vervang nie enige herversekeringsdekking nie. Dié fonds het daarom volgens Rakow nie voldoen aan die vereiste wat die registrateur oor dié dekking vereis het nie of dat 'n alternatiewe reëling in plek moet wees vir die veranderinge aan die bydraeskema om goedgekeur te word.

Met verwysing na die selffinansieringsgaping sê Rakow in haar uitspraak dit is klaarblyklik voorheen met die fonds opge-

neem, omdat dit blyk dit is reeds in 2018 deur die registrateur genoem.

"Die reëls van die fonds maak nie hiervoor voorsiening nie. Die registrateur het aangedui dit is nie in openbare belang om 'n eenmalige verhoging van 4,4% te hê in 'n poging om weg te doen met dié gaping nie. Dit is nie op goeie sakebeginsels geskook nie," lui dié uitspraak.

Heritage Health het aanvanklik 'n dringende aansoek in Desember 2019 ingedien met verhoging na 'n jaarlikse verhoging van bydraes en dat dié bydraes deel vorm van 'n wysiging van die reëls en daarom goedkeuring van die registrateur vereis. Laasgenoemde het egter volstaan dat die besluit geneem is ná deeglike oorweging van die fonds se aansoek vir die wysiging van Heritage Health se reëls. Volgens die registrateur was daar korrespondensie sowel as vergaderings tussen die personeel van die registrateur en die fonds.

Ingevolge die uitspraak is 'n aantal tekortkominge uitgewys en is 'n aantal reëls wel gewysig.

Volgens Rakow is die aanname deur Heritage Health "duidelik verkeerd" dat die wysigings slegs aanvanklik goedgekeur hoef te word en dat dit van daar af die bydraes kan verhoog deur 'n maand se kennis te gee sonder die toestemming van die registrateur.

-henriette@republikein.com.na

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Site Notice



Appendix B: 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 140 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	:	20
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 (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	+140
Research Reports & Manuals:	5
Conference Presentations:	1